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An Army of Never-Ending Strength: The Reinforcement of the Canadian Army 1944-1945

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in History

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Abstract: “An Army of Never Ending Strength: The Reinforcement of the Canadian Army 1944-1945”

This dissertation is a study of the Canadian Army’s ability to reconstitute battalion sized combat arms regiments (armour, infantry and artillery) during the last year of the Second World War in North West Europe. The central thesis argues that in combination with tactical and strategic strengths, the Canadian Army Overseas was effective at rebuilding units that had suffered severe personnel and equipment losses in combat. This ability to sustain the strength of its combat units was vitally important in maintaining their offensive capability. Units that had suffered catastrophic losses were rebuilt and re-equipped in a rapid manner that allowed them to be capable of any kind of operation. Without replacement resources at the ready, offensive capability within the Canadian Army would be inhibited, regardless of effective tactics or strategies. In comparison to the Germans, the Canadian Army was a phoenix, continually strengthening its operational units and maintaining their combat capability. By examining the record of Canadian replacements, losses, available resources and overall combat force deployed, a picture emerges of an Army with overpowering organizational, logistic and administrative strengths.

Keywords: Canadian Army, North West Europe, Second World War, First Canadian Army, reinforcements, replacements, casualties

For my wife Michele.

In love and appreciation for her infinite patience and support.

Foreword and acknowledgements;

My father in law Charles Peter Connor passed away while I was in the first year of the PhD program. During the last stages of his illness he always made the time to review and critique my work, right until the end of his life. He always showed interest in my papers and assignments, asked me many thought provoking questions and provided valuable criticism with the intent of improving my written work. Charles worked as an educator with the Hamilton Board of Education in a career that spanned three decades. He was very dedicated to his profession and cared deeply about further education. Throughout the PhD program my wife Michele Connor and my dissertation supervisor, Professor Brock Millman, have also been continuous sources of support and constructive criticism. Many nights and weekends have been spent on this project and I thank my wife for her editing efforts and patience with me.

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Abbreviations, terms and acronyms

A Echelon-Grouping that encompasses all fighting personnel and equipment to accomplish a mission, plus all supplies for their immediate needs. Divided into A1 (combat) and A2 (supply) echelons.

AFV-Armoured fighting vehicle

AGRA-Army Group Royal Artillery

B Echelon-Supply and administrative grouping that supports the A1 and A2 echelons.

Battalion-A unit made up of several companies of roughly 150 personnel each. Battalion sized units in the Canadian Army were designated as regiments. Some regiments had more than one battalion, but this was rare.

Battle casualties-These are casualties that were caused by enemy action and fall into the categories killed, wounded or missing.

Brigade-A formation made up of several battalion sized regiments.

CAC-Canadian Armoured Corps

CIC-Canadian Infantry Corps

CADR-Canadian Armoured Delivery Regiment

CAO-Canadian Army Overseas

CBRG-Canadian Base Reinforcement Group

CMHQ-Canadian Military Headquarters, London

Corps-This was a military formation that contained two or more divisions, plus corps-level troops.

Division-This was a military formation that contained two or more brigades, plus divisional units.

DP-Delivery Point

GS-General Service

LAA-Light Anti-Aircraft

LAD-Light Aid Detachment

LOB-Left out of battle

LOC-Line of Communications

LOD-Line of Departure

NCOs-Non-Commissioned Officers. In the Second World War these included Lance Corporals, Sergeants, Warrant Officers, Chief Warrant Officers.

Non-Battle Casualties-Casualties beyond the Regimental Aid Post caused by other reasons than enemy action

NRMA-National Resources Mobilization Act

NWE-North West Europe

Officer-A member of the Canadian Army commissioned by the King with the rank of Second Lieutenant and above.

O-ORs-Army Officers and other ranks-commissioned officers and non-commissioned officers and members.

OMC-Ordnance Maintenance Company

On strength-Held by, under the command of or part of an organization or unit.

Order of Battle-The list of smaller sub units contained within a larger formation, be it a division, corps or army.

Other ranks-non-commissioned members of the Canadian Army, including non-commissioned officers.

RAP-Regimental Aid Post. This was a battalion level medical clinic.

RCA-Royal Canadian Artillery

Regiment-The battalion sized unit in the Canadian Army. Three of these made up a brigade.

Reinforcements-These are new or returning personnel which join a combat arms unit.

RCEME-Corps of Royal Canadian Electrical and Mechanical Engineers

RCASC-Royal Canadian Army Service Corps

SOS-Sent off strength

TAF-Tactical Air Force

TOS-Taken on strength

War Establishment-The war establishment was what a regiment or organization was supposed to contain in both personnel and equipment in wartime.

Chapter 1: Introduction, aim, structure, scope and historiography

Following the landings of the first Canadian soldiers on Juno Beach on 6 June 1944, a very long and costly military campaign in North West Europe (NWE) began for the Canadian Army. The path that would lead to eventual victory over the Third Reich in NWE was divided into four distinct phases.¹ First was the bitter campaign of attrition in Normandy, where the Canadian Army prevailed against the strongest German formations available during 1944. Once these enemy forces were crushed by late August 1944 in the Falaise Pocket, a second phase began with a long pursuit across France that saw the conquest of enemy held channel ports. This phase concluded with the bitter fighting to clear the Scheldt Estuary, freeing the port of Antwerp by November 1944. Following these two costly phases of combat, the Canadian Army would assume defensive positions along the Maas River. They would hold these static positions from November 1944 to January 1945. Spring 1945 would consist of a final flurry of combat operations from February onward. This fourth final phase would also witness the already present 2nd Canadian Corps re-uniting with the 1st Canadian Corps, re-deployed from Italy. The First Canadian Army would now consist of two complete Canadian corps. Canadian formations within these two corps totalled three infantry divisions, two armoured divisions, two independent armoured brigades and two army level artillery groupings.² Each of these formations was near full strength in early April 1945, and together comprised the greatest Canadian military force ever assembled in the history of the nation. In the last month of hostilities this force relentlessly advanced, sweeping aside all opposition.

This battlefield dominance was not always present. Before the German collapse in mid August 1944, Canadian formations in Normandy faced challenges they had not experienced in Italy during 1943-1944. In June, July and August 1944, Canadian units had heavy casualties inflicted on them by a seasoned foe equipped with advanced weapons systems. Due to high losses in personnel, weapons and vehicles, the Army was confronted with a titanic challenge to address the demands of constant attrition.

¹ Charles Stacey, *The Official History of the Canadian Army in the Second World War. Volume III: The Victory Campaign: The Operations in North West Europe 1944-1945* (Ottawa: The Queen's Printer and Controller of Stationary. 1960). Introduction V-IX. These four phases are the most logical approach to dividing up the major events of eleven months of fighting, 1944-1945.

² Charles Stacey, *The Victory Campaign*, 657-658. Appendix F. Canadian Army order of battle in NWE.

From 6 June through 23 August 1944, the total battle casualties of the Canadian Army in Normandy were 18,444, with 5,021 being fatal.³ These losses equalled the full strength of one Canadian infantry division, its personnel war establishment in the summer of 1944 being 18,376.⁴ When large numbers of personnel were rapidly removed from the battlefield, the ability of their unit to continue was undermined. These soldiers who had been killed, wounded or were missing needed to be replaced immediately. Vehicles and weapons systems losses also quickly mounted during the summer of 1944. On 11 June 1944, the 6th Canadian Armoured Regiment had fifty-one of its Sherman tanks totally destroyed.⁵ Comparing this figure against the total Sherman strength of the regiment, the loss rate was 83 percent. For Canadian Army units to remain operational and achieve battlefield victories, adequate personnel and equipment levels had to be maintained. Offensive operations could not be mounted if they were not enough soldiers or weapons. Strategy, planning and tactics were not enough on their own, and had to be matched with adequate reserve resources and administrative systems to pay the costs of war. Canadian military leadership recognized this, and had an administrative system ready to deploy resources set aside for exactly this purpose.⁶

This study will demonstrate that for the majority of the Canadian Army's operational record in NWE during 1944-1945, it was effective at reinforcing and reconstituting units that had suffered losses. This ability to sustain the strength of combat units within what became the First Canadian Army was vitally important in maintaining their military capability. Units that had suffered catastrophic losses were rebuilt and re-equipped in a rapid manner that allowed them to be capable of immediate operations.⁷ If

³ Charles Stacey, *The Victory Campaign*, 271.

⁴ Russell Hart, *Clash of Arms: How the Allies Won in Normandy* (Boulder, CO: Lynne Reimer Publishing, 2001), 343. 2nd Canadian Infantry Division.

⁵ Charles Stacey, *The Victory Campaign*, 140.

⁶ LAC, RG 24 Volume 13,776. 3rd Canadian Infantry Division A & Q War Diary August 1944. T-10534. Letter detailing personnel reinforcements that have been dispatched by the Canadian No.2 Canadian Base Reinforcement Group (CMBG) reinforcement organization. A key example of the Army's efficient administrative performance was the supply of 6,984 new reinforcements to the 3rd Canadian Infantry Division in Normandy up to 4 August 1944.

⁷ LAC, RG 24 Volume 15,009. The Royal Highland Regiment of Canada War Diary (The Black Watch) July 1944. Losses on 25 July, 1944 were so extreme the war diarist states that "and of the forward companies, all are missing". Charles Stacey, *The Victory Campaign*, 194. Total casualties for 25 July, 1944 in the Royal Highland Regiment of Canada totalled 307, with 123 killed, 101 wounded and 83 prisoners.

units were not regularly reinforced, offensive capability within the Canadian Army would have been inhibited, regardless of effective tactics or strategies.

This system of constant reinforcement was in contrast to German units that suffered continuous losses and were rarely reinforced with new personnel or equipment. Due to ongoing attrition, these enemy units eventually had to be withdrawn for extended periods to be totally reconstituted, re-equipped and retrained. During the last year of the war, Canadian divisions were rarely withdrawn from the combat environment, and if so were tasked with a reserve role near the front line. This dissertation will also illustrate that the Canadian Army's performance in this area compared favourably with that of its major Western Front Allies, the British and U.S. armies.

This study will examine the efficiency of the Canadian personnel and equipment reinforcement systems, but will focus mainly on their effectiveness in realizing their prime objective, the defeat of the German military through quantitative means. In contrast to the German focus on a qualitative approach, a Canadian common standard for reinforcement allowed a maximum number of units to be adequately maintained. The Germans only reinforced a limited number of elite divisions at the expense of letting average infantry formations be reduced to nothing. They were then forced to construct new ones from scratch. Despite evidence of improper use of Canadian military manpower resources during the last year of the war, this study will not center on the strategic uses of personnel. This topic will only be investigated in relation to the shortage of infantry reinforcements during the last year of the war. Canadian and German combat effectiveness at the unit level will be discussed, but will focus on how the Canadian Army utilized certain tactics to maximize the attrition of the enemy and correspondingly limit their own losses. While some of these tactics minimized losses in certain areas, they influenced higher levels in others. This in turn influenced the amount of additional resources needed in specific areas of the reinforcement systems to fill these gaps.

This study will also limit itself to Canadian combat arm units at the regimental level under Canadian army, corps and divisional command.⁸ These infantry, artillery and armour units were in direct combat with the enemy or operating major weapons systems that were critical to defeating German forces. While other Canadian Army trades did suffer casualties and take on reinforcements, these three combat arms were in continuous combat and suffered the most. This is not to argue that the accomplishments and sacrifices of other trades were not critical to victory. Corps, divisional and brigade headquarters and other independent units under battalion strength are also excluded. Also not included will be the subject of consumable resources such as water, petroleum products and ammunition.⁹

In tracking the replacement, losses and inventories of vehicles and equipment, the decision was made to restrict the types of equipment monitored in this study to the major weapons systems fielded by the units in question. For an armoured or artillery regiment, this would be their heavy armoured fighting vehicles (AFVs) or artillery pieces. For an infantry regiment, this would be their medium machine guns, anti-tank guns, tracked carriers and mortars. The measure of how many of these items a unit held is indicative of the ability of the Canadian Army to replenish equipment stocks during the course of high intensity combat operations.

The theatre for this study is NWE, encompassing events and battlefields in France, Belgium, Netherlands and northern Germany. This choice was not made to denigrate the campaigns of the Canadian Army in Italy or other theatres, but its most powerful and complete force was not assembled in these locations. Against it, especially in the period June-August 1944, were the most powerful and concentrated enemy formations on the Western Front. These powerful enemy forces made their full weight felt against the 2nd Canadian Corps, resulting in catastrophic events that were without equal in Italy or Sicily.

⁸ Charles Stacey, *The Victory Campaign*, 657. Appendix F. Canadian order of battle in NWE. There were other Canadian units serving with the 6th British Airborne Division, the 79th British Armoured Division and the 107th British Anti-Aircraft Brigade, but these will be excluded.

⁹ John Ellis, *Brute Force*, (London, England: Andre Deutsch. 1990), 556. Appendices, Table 50. Allied crude oil production. It is a given that these items in 1944 were extremely plentiful on the Allied side.

The period of study for this project is 6 June 1944 to 5 May 1945, the cease fire date. It was between these two dates that the Canadian Army massed the greatest amount of resources for the largest amount of time. By choosing this time period the study can assess the amount of losses and reinforcements recorded for personnel and equipment in the most intense period of the war. It also must be noted that there were times during the early war years when the Canadian Army was largely inactive or involved in training exercises. In these periods demands were not placed on the Canadian Army to rebuild, replenish and re-equip in the face of extreme losses.

This study is a significant addition to Canadian military history due to it being the first work to examine the late war Canadian Army's ability to reconstitute its personnel and equipment losses in NWE. As such, this study is as much about the nature of twentieth century modern warfare as it is about the administrative processes of the wartime Canadian Army. Given the lethality and destructive power of modern weapons, during the last year of the war the importance of an army's ability to rebuild itself was equal to its ability to defeat its enemy.

No other work currently in existence possesses a comparable level of research on Canadian wartime unit strengths, reinforcements, casualties and equipment levels at the battalion level over an eleven month period. Detailed statistical studies of the combat records of Canadian units are rare. Supporting data within operational narratives is mainly relegated to limited appendices that are rarely analysed. The research within this study will fill this academic gap by chronicling actual Canadian Army unit strengths, losses, its administrative and logistic processes, and how challenges within certain areas were rectified in reality. Additional tables record total vehicle and major weapons systems holdings at the division or brigade level on a monthly basis. This data allows the reader to gauge Canadian equipment strengths at certain points down to the last armoured vehicle or artillery piece. Also presented is an overview of the operational record of the division or independent brigade to which each combat unit belonged. Within Canadian Second World War military historiography, the focus is overwhelmingly on the regiment or combat arms corps rather than on formations such as divisions or brigades. By including

data on larger formations and grouping together statistics on all their component combat arms units, the reader is presented with a larger picture away from the regimental focus. In addressing these subjects a new contribution can be made within this historical discourse.

With existing Canadian Second World War historiography dominated by operational histories, relatively little detailed exploration has occurred into the identity and structure of the First Canadian Army in NWE. As the greatest military force ever created by the Canadian nation, this organization's size, strength and capability was constantly evolving. Given its wartime accomplishments, and the mammoth political and military struggle that went into its creation, the continued study of this army should be a primary goal of Canadian military historians. Focus so far has centered on its operational record. With some exceptions, the questions of what it was and how it functioned administratively have been largely unanswered. This work makes a significant contribution in this area, providing detailed insight into the First Canadian Army's administrative systems, structure, personnel and equipment strengths.

The structure of this study consists of fourteen chapters. This introductory chapter supplies a brief campaign overview, a thesis statement and a set of research parameters. A concise plan for the study follows, accompanied by some notes on the administrative approach of the Canadian Army Overseas (CAO). This is followed by an overview of the historiography of the Allied war effort and how it relates to the subject of this study. The second and third chapters are devoted to the battlefield tactics and equipment operated by the Canadian Army and its German enemy. The aim of these chapters is to demonstrate why certain losses in personnel and equipment occurred, rather than assess combat effectiveness. The fourth and fifth chapters outline the personnel reinforcement system and how some significant challenges during 1944 were resolved. The sixth chapter examines the equipment replacement system for the Canadian Army during 1944-1945, and explains how this process maintained Canadian military strength. Chapters seven through thirteen deal with the actual replenishment and re-equipment of combat arms regiments in the field. Each of these seven chapters focus on a division or brigade level

formation and their assigned regimental units. These chapters have their own statistical appendices located at the end of the study. The content of these chapters are the result of interpreting very technical personnel and equipment statistics found in the matching appendix. They also trace the major battlefield actions of the formations and chronicle how various personnel and equipment challenges were resolved. A concluding fourteenth chapter provides final thoughts on the Canadian Army's replacement practices for both personnel and equipment, and how the performance of these processes was critical to Canadian victory in 1945.

A continuous theme throughout this work is that the Canadian Army's reinforcement and replacement systems were effective in achieving their end goals for a majority of the period studied. This is not to say the Canadian Army Overseas (CAO) went about this in the most efficient manner. Effectiveness is defined within a military environment as an organization being successful in producing the intended mission result. Efficiency in the same environment is the practice of achieving your mission while limiting wasted or excessive effort to a minimum. Personnel resources and the administration effort that went into attaining the Canadian Army's reinforcement goals were at times excessive. As an example, No.2 Canadian Base Reinforcement Group (No.2 CBRG), a main cog in the in the Canadian Army personnel replacement process, was militarily effective. When well supplied and given time to establish routine deliveries, it achieved its goal of the timely distribution of personnel to front line units.¹⁰ But it was excessively bureaucratic in its operations, hurting its level of efficiency.

The five No.2 CBRG reinforcement battalions supplying the units at the front were holding units, beset by the administrative processes of receiving, holding and dispatching soldiers, all of which took time. The training skills of soldiers held in these battalions eroded the longer they stayed. The total administrative moves of a replacement soldier from his arrival at a 21st Army Group reception camp in

¹⁰ LAC, RG 24 Volume 12,448. Organization and Administration of No.2 CBRG, 03/44 – 02/46. T-20276. Charles Stacey, *The Victory Campaign*, 630-631. The reinforcement battalion itself was an administrative holding organization for reinforcements, rather than an army battalion trained in a specific trade or mission. It would consist usually of several hundred transient personnel, controlled and administered by a permanent battalion command structure.

NWE to his regiment consisted of seven changes between organizations, two stops of which were within No.2 CBRG.

It would have been more efficient if each No.2 CMBG battalion was specialized for a certain trade and their number reduced, with excess replacements kept nearby in large camp environments where combat skills could be maintained. Also, the number of administrative moves needed to be reduced. This is exactly what occurred in late 1944, as the First Canadian Army's personnel reinforcement system was re-organized to focus more on quickly supplying more infantry replacements to regiments.¹¹ But during the summer and fall of 1944, needless administration consumed extra clerical personnel, time and resources in order to keep new personnel reaching units on a routine schedule.

The organization carrying out the heavy armoured fighting vehicle delivery role during the summer of 1944 could also have been more efficient. Operations within the 25th Canadian Armoured Delivery Regiment (25th CADR) were complicated and overly administrative. Its squadrons duplicated the mechanical and kit inspection process on armoured vehicles at each stop in the delivery process until a vehicle joined a unit.¹² Upon this vehicle reaching the front, it was then re-checked over a final time by the soldiers operating it. The duplication involved in this bureaucratic system was needless. Again, once the machine was rolling and well supplied with vehicles, large numbers of them reached regiments on a regular basis.

As these two examples relate, the CAO had an extensive administrative component within its personnel and equipment replacement processes. Once these processes were established and well supplied, they could achieve their main goals in a satisfactory manner. But they were not the most streamlined organizations in the category of corporate efficiency.

¹¹ LAC, RG24 Volume 10,663. Chart 2: First Canadian Army Plans Diagram of personnel replacement and releases. File 215C1.045 (D12). Charles Stacey, *The Victory Campaign*, 630-632.

¹² LAC, RG24 Volume 10,663. Chart 2: First Canadian Army Plans Diagram of AFV A Vehicle Recovery, Repair and Replacement. File 215C1.045 (D12). John Grodzinski, *Operational Handbook for the First Canadian Army, 1944-45: Formation Organization, Staff Technique and Administration*, (Lower Sackville, NS: The Regimental Historian, 1996), 93.

Was there a distinct administrative mentality within the CAO that focussed on maintaining the strength of its combat arms units while they were deployed at the front? The approach of the Canadian Army to the replacement of personnel and equipment was similar to those in the British and U.S. armies. As was the case in these armies, sophisticated and bureaucratic systems were present to see that reinforcements and new equipment reached units in the field. In the years 1939 to 1943, the CAO was not committed to combat apart from two short-lived operations in late 1941 and mid 1942. This non-operational period led to the establishment of an extensive administrative and training base in England. Administrative structures and systems increased in size and sophistication within what amounted to a nearly peace time training environment.¹³

While the Canadian Army took on a major combat role in Italy during the years 1943-1944, it did so with a limited expeditionary force. This consisted initially of one infantry division and one independent armoured brigade. Due to the limited number of Canadian formations being deployed in comparison to the U.S. and British forces, specialized attention could be given to their personnel and equipment replacement needs. This force eventually grew to a complete corps of two divisions and one independent brigade, but its losses were still manageable due to breaks in operations. After gaining experience in Sicily and Italy utilizing existing repair and reinforcement processes already present in the British Army, the systems in place for the D-Day landings and beyond in NWE were effective and battle-tested.

The battlefield doctrine of the Canadian Army reflected a focus on the use of equipment and firepower versus the expenditure of human capital in order to attain combat objectives. The massed use of equipment resources in its operations was intended to save lives, while at the same time causing

¹³ Charles Stacey, *The Victory Campaign*, 657-662. Appendix F. Within the Normandy beachhead by August 1944 two specialized reinforcement organizations were present: The No.2 Canadian Base Reinforcement Group, with five replacement battalions, existed for replacing personnel. The 25th Canadian Armoured Delivery Regiment, with four squadrons, existed for replacing heavy armoured vehicles.

extreme attrition to occur within the ranks of the enemy.¹⁴ This was a “compassionate attritionist” approach, intended to preserve Canadian strength while consistently whittling away at the strength of the enemy. Due to the limited number of Canadian formations engaged in battle, deployed front-line divisions were lavishly equipped with a complete establishment of the latest weapons and equipment in the Commonwealth arsenal. Losses in these inventories were rapidly made good. This allowed these formations to fully utilize a large percentage of their weapons systems on an ongoing basis, continually hammering away at the enemy with a focus on his continued attrition.

It also should be mentioned that while Canada had suffered severe personnel losses at Hong Kong in late 1941 and Dieppe in 1942, it never endured the kind of military disaster that befell certain German armies on the Eastern Front during 1941-1945. The possibility that a unit would be completely destroyed was an eventuality the CAO was extremely resistant to ever accept. The reality of total war, practiced on a grand scale by nations literally fighting for their military survival, was not a challenge that faced the Canadian military in NWE. It was never involved in a desperate, do or die struggle with a superior foe during the last year of the war. The Normandy lodgement, as an example, was never in serious danger of liquidation past June 1944. Personnel and equipment challenges could be administratively managed, and no disastrous event equivalent to the German debacle at Stalingrad upset the orderly management of the war in NWE. Also, the increasing military dominance of the Allies on the Western Front post Normandy from September 1944 onward allowed a situation where battalion sized units could be withdrawn into reserve for training, rest or partial reconstitution. This rotation was completed on a relaxed schedule as determined by 2nd Canadian Corps or First Canadian Army headquarters.

The situation was radically different within the German armies. The process of constantly reinforcing a division in the field was not always seen as the most efficient way to maintain a field army's military strength. Often German units would be allowed to be annihilated by attrition before they would

¹⁴ Angleo Caravaggio, "The Human Dimension of Compromised Command: Major General George Kitching and the 4th Canadian Armoured Division in Normandy", (Kingston: Unpublished research paper, RMCC Kingston War Studies 504. 2002), 45. The air attack for the first phase of 8 August 1944's Operation "Totalize" included the dropping of 3,500 tons of bombs by four-engined bombers.

be withdrawn for a program of total reconstitution. National honour or unit history never prevented certain German formations from being completely destroyed on occasion. Their place would be taken by a fresh unit that had been raised recently with new personnel and equipment. Due to a lack of reinforcement, German formations were often perceived within their corps headquarters as employable tools with a temporary value. This led to their ruthless combat employment by higher command with little regard for their welfare or status.¹⁵

This study will also examine the conditions which led to the fall 1944 Conscription Crisis which placed significant political pressures of the War Committee of Prime Minister Mackenzie King. This political crisis stemmed from a shortage of available trained infantry, and led to a November 1944 decision to employ home defence conscripts overseas. Prior to this during a sixty-day period in August and September 1944, serious personnel deficiencies existed in Canadian infantry regiments due to a limited supply of reinforcements. It will be shown that this brief shortage was the result of poor planning for the high-intensity operations in Normandy and in the Low Countries. Casualty projection planning at the Canadian Military Headquarters (CMHQ) in London was influenced by the Eighth British Army's recorded casualties by army trade in North Africa during 1941-1943. Compared to combat in NWE, the warfare in the desert was much more fluid, with the possibility of a logistic and infantry unit suffering similar casualties from wide-ranging German battle groups.¹⁶ As a result, the mass of North African Commonwealth casualties were not borne exclusively by the infantry in this mobile armoured warfare theatre. This led Canadian planners to calculate lower levels of infantry replacements than would actually be required to maintain 100 percent unit strengths during 1944-1945. Low casualties estimates were also perceived very favourably from a Canadian Government political standpoint. Conscription was to be avoided at all costs, but the manpower limits to an all volunteer force overseas were rapidly being reached by 1943.

¹⁵ Niklas Zetterling, *Normandy 1944: German Military Organization, Combat Power and Organizational Effectiveness* (Winnipeg: J.J. Fedorowicz. 2000), 389. The German Panzer Lehr Panzer Division suffered nearly 7,411 casualties in Normandy out of a 1 June 1944 strength of 14,699. These casualties effectively destroyed the infantry component of this elite division. The division was withdrawn to be rebuilt in the fall of 1944.

¹⁶ E.L.M. Burns, *Manpower in the Canadian Army. 1939-1945* (Toronto: Clarke, Irwin & Company Ltd. 1956), 89-90.

The number of primary documents researched to produce this study were extensive. These documents included daily and weekly returns within the First Canadian Army Adjutant and Quartermaster (A & Q) war diaries tracked the flow of new human and major weapon system resources. Within First Canadian Army headquarters there were constant returns regarding operational vehicles, vehicles under repair, personnel strengths and casualties. Using these reports, it is possible to track personnel and material losses and their replacement, and measure the fighting strength of Canadian units at any given time. There were also organizations within 1st and 2nd Canadian Corps in NWE that were specifically tasked with delivering new ordnance to the field units.¹⁷ Given the value of the assets they were signing for, be it a Sherman Firefly tank or 25-Pounder artillery piece, accurate records were needed for this important job. Tanks, anti-tank guns and tracked carriers were examples of items of equipment that suffered the highest rates of wastage due to their vulnerability to direct enemy fire. While personnel replacement was an all-Canadian affair, the material to equip the British and Canadian armies came from the same common stocks. These stocks consisted of British produced or U.S. Lend-Lease war material. Depots of this equipment were located in the U.K or in liberated France. Very few Canadian Army heavy weapons were actually produced within Canada and then shipped overseas. All major land weapons systems, from artillery pieces to tanks, were found within these common stocks and used to issue replacements to the Commonwealth land forces.

Reviewing the current body of military history on the last year of fighting on Western Front, few military historians mention reinforcements and fewer still focus on the topic. This study expands on the author's 2005 University of New Brunswick MA thesis "The Defeat and Attrition of the 12th SS Panzer Division "Hitlerjugend": A Case Study June 6th - July 12th, 1944". By shifting focus to the other side of the lines, it examines corresponding levels of Canadian losses, re-equipment, reinforcement and monthly strength returns.¹⁸ In reviewing newer additions to the historiography of the 1944 Normandy Campaign,

¹⁷ LAC, RG 24 Volume 14,276. C Squadron, 25th Canadian Armoured Delivery Regiment War Diary October 1943-December 1944. This forward delivery squadron was tasked with bringing up new or repaired armoured vehicles to their units at the front.

¹⁸ A.W. Gullachsen, "The Defeat and Attrition of the 12th SS Panzer Division: "Hitlerjugend" A Case Study: June 6th-July 12th, 1944" (Fredericton: University of New Brunswick MA Thesis. 2005).

the only two works that come near the research subject of this study are devoted to German forces. Hungarian author Norbert Szamverber's *Waffen SS Armour in Normandy: The Combat History of SS-Panzer Regiment 12 and SS-Panzerjager Abteilung 12 Normandy 1944* is a very detailed work on one of the Canadian Army's most effective battlefield opponents.¹⁹ This analytical unit history covers personnel and equipment strengths, major actions, reinforcements and details the fate of all German personnel and AFVs within this unit over a specific time frame. Niklas Zetterling's *Normandy 1944: German Military Organization, Combat Power and Organizational Effectiveness* traces German divisional strengths, losses, their personnel and equipment reinforcements and their status at the end of the campaign.²⁰ This highly detailed work illustrates how effectively German units were resupplied, the rate of attrition they suffered and what their combat power was at important stages of the campaign.

Have recent works in Canadian military history acknowledged the military importance of the ability of the Canadian Army to replenish itself in the face of severe losses? Study of the Canadian Army in NWE 1944-1945 over the last twenty years has instead focused on the operational record, with research adding significantly to the historical narrative of key events and personalities. Beginning in the 1990s, historians Mark Zuehlke, John English, Terry Copp, Brian Reid and others chronicled the Canadian Army's fight from the Normandy beaches that culminated in northern Germany and the Netherlands in May 1945.²¹ Popular histories, academic studies and biographies of leading commanders have presented new detail and have offered new historical conclusions. Many of these studies have focused on a particular campaign, the grand narrative and operational performance. While not being totally ignored, the logistical and personnel infrastructure that enabled victory has not received the same level of attention.

¹⁹ Norbert Szamverber, *Waffen SS Armour in Normandy: The Combat History of SS-Panzer Regiment 12 and SS-Panzerjager Abteilung 12 Normandy 1944 based on their original War Diaries* (Solihull, England: Helion and Company. 2012).

²⁰ Niklas Zetterling, *Normandy 1944*.

²¹ Bryan Reid, *No Holding Back: Operation Totalize Normandy August 1944* (Toronto: Robin Brass Studio. 2004). This is a very widely acclaimed and detailed account of the August 1944 Canadian-led operation, and a good example of excellent research.

How important was reinforcement, equipment replacement and unit strength to the Canadian Army's battlefield performance? An investigation into this question would be very enlightening given contrasting views with respect to Canadian military effectiveness. Second World War military historians find themselves on opposite sides of the debate on whether numerical and resource superiority won the war, rather than Allied strategic or tactical acumen. With regard to the Canadian performance in the pivotal Normandy Campaign, proponents of Canadian tactical strengths include authors Marc Milner and Terry Copp, while the critics include John English and Russell Hart.²² Some feel that the Allies' ability to supply reinforcements and replace materiel strength gave it a vital edge in NWE, while others feel that there were challenges that hampered operational performance. There are also those who ignore unit personnel and equipment strengths altogether, considering it as a given that all units were completely up to strength.²³

Evaluating the broader historiography of the Allied campaign in NWE 1944-1945, a unified academic consensus has not emerged. The topics of Allied material strength and the tactical prowess of each side divide the military history community. The immediate post-war school of thought put forward by authors such as Charles Stacey and Chester Wilmot argued that the German land forces suffered seriously from attrition to the point that their ability to form a strong, cohesive front collapsed.²⁴ These early works supported a viewpoint that the force of overwhelming Allied numerical and material superiority attained victory. This thesis has not lost steam over the years, and authors such as Russell Hart have become even more critical of Allied combat proficiency, observing that German units were very effective defensively.²⁵ In contrast, a recent revisionist movement led by authors such as Terry Copp and Marc Milner make viable arguments that Allied forces actually were tactically proficient against the

²² Terry Copp, *Fields of Fire* (Toronto: University of Toronto Press. 2003). John English, *The Canadian Army in the Normandy Campaign: A Study in the Failure of High Command* (Mechanicsburg: Stackpole Works. 1991). Russell Hart, *Clash of Arms*. Marc Milner, *Stopping the Panzers* (Lawrence, KS: University Press of Kansas. 2014).

²³ Bryan Reid, *No Holding Back: Operation Totalize Normandy August 1944*. John English, *The Canadian Army in the Normandy Campaign*. Despite the detail of Reid's work, unit strengths and equipment totals rarely enters the discussion. English rarely discusses unit strengths and the role logistics and administration plays within military operations.

²⁴ Charles Stacey, *The Victory Campaign*. Chester Wilmot, *Struggle for Europe* (London: Wordsworth Military Library. 1998).

²⁵ Russell Hart, *Clash of Arms*, 374-377. Discussion of effective German defensive tactics.

Germans.²⁶ This is supported by the record of Allied successes in the fall of 1944. When this factor was matched with a superior strategic approach, this school of thought points out that victory was assured. Other revisionists such as Peter Mansoor also make the observation that with the exception of elite units, German combat formations were largely ineffective in the late war period.²⁷

Both of these approaches reach historical conclusions that are valid when certain examples are presented. This study does not aim to disprove either argument. While not evaluating its operational effectiveness, this study illustrates the ability of the Canadian Army to effectively replace equipment and personnel losses on a regular basis. Rapid reinforcement within the Canadian Army created a constant state of material and personnel numerical superiority over the enemy. This practice ensured that a maximum number of units were ready for any assigned mission, allowing the Canadian Army to operate at the highest level of its capability. Conversely, it could also exert sheer brute force to overpower determined resistance and accept large losses if necessary.

The question of whether or not an adequate level of combat efficiency was attained operationally by Allied units has its origins in post-war western official histories. German units were perceived to have been superior in performance despite a myriad number of logistical and leadership handicaps. This myth of superiority was accepted post 1945 in the context of the immediate expectation that Western NATO powers would be engaging the U.S.S.R. militarily. Secrets of so-called German successes were thought to be necessary to reform military doctrine to fight the massed Soviet formations. Post-war historians such as Basil Liddell Hart were harsh in their assessments of Western Allied formations in combat, describing them as sluggish while letting overwhelming firepower do their work for them.²⁸ Their academic attitudes suggested a Cold War agenda that endorsed German tactics, as they seemingly had been successful against the Soviets. The Germans were credited with holding back attacking Soviet formations for long periods of time before succumbing, and this perception established a historical aura of

²⁶ Marc Milner, *Stopping the Panzers*. Terry Copp, *Fields of Fire*.

²⁷ Peter Mansoor, *The GI Offensive in Europe. The Triumph of American Infantry Divisions, 1941-1945* (Lawrence, KS: The University of Kansas Press. 1999).

²⁸ B.H. Liddell-Hart, *History of the Second World War* (London, England: Konecky & Konecky. 2007).

effectiveness. This viewpoint neglects the fact that vast amounts of land were lost quickly due to Soviet armoured thrusts. The Canadian Army has been the target of the worst of these harsh assessments of Allied forces on the Western Front. Works by John Ellis and Russell Hart have described Canadian command and control methods as inept and clumsy. They describe Canadian operations repeatedly falling prey to German combat effectiveness, defensive strength and flexibility.²⁹

In response to these criticisms of the Canadian Army's performance, a revisionist school of thought emerged in the 1990s. Proponents of this school illustrated how the combat power of the Germans was exaggerated in post-war literature regarding the 1943-1945 late war period. Associated with the movement to disprove German military efficiency was the theme of dispelling the myth of Allied tactical ineptitude.³⁰ Important factors that have been raised by revisionists include the Western Allies' unwillingness to destroy their infantry manpower pool and the technical inferiority of several major weapons systems. To the Allies credit, these obstacles were mitigated while simultaneously successful tactics were developed to defeat the German military in detail during 1943-1945. Newer research has shown that the German ground forces were only marginally effective in the late war period. They were incapacitated by ineffective higher command and control, were immobile, employed ineffective weapons systems and often lacked the resources to accomplish their missions. The German war economy could not produce enough weapons, equipment or fuel to replace losses and sustain units in the field. Offensive operations that had no chance of success were mounted against superior forces, squandering what resources remained for Germany in the late war period. An example noted in recent research was the effects of the German tactic of the immediate counterattack to regain lost ground.³¹ This commonly employed tactic was tremendously self-destructive in the face of overwhelming Allied firepower. The

²⁹ Russell Hart, *Clash of Arms*, 349. John Ellis, *Brute Force*, 382. Throughout his work Ellis raises valid points regarding the numerical superiority of the Allies in Normandy and NWE, pointing to an Allied inability to wield this massive force to achieve a victory in a reasonable amount of time.

³⁰ Terry Copp, *Fields of Fire*, 258. Chapter 10: Normandy, A New Balance Sheet.

³¹ Terry Copp, *Cinderella Army*, 288. Copp criticizes the German tactic of the immediate counterattack as poorly organized and costly. German manpower was uselessly sapped in these exercises.

German ground formations could not cope with the losses, and having no effective replacement system, were soon combat ineffective.

The topic of reinforcements and unit personnel and equipment strengths has been touched on intermittently in Canadian Second World War historiography. Lieutenant General E.L.M. Burns, the early Italian campaign 1st Canadian Corps commander, gives a very detailed analysis of manpower use in the wartime Canadian Army in *Manpower in the Canadian Army, 1939-1945*.³² As noted earlier, the most relevant finding within Burn's work is that the Canadian Army was planning with casualty figures derived from the Eighth British Army's experiences in North Africa during 1941-1943. These figures influenced the official British Everett casualty rates, which in turn influenced Canadian estimates.³³ Until this planning error was rectified, shortages in infantrymen were present. Burns observes there was never a shortage of personnel within the nearly all-volunteer CAO in the spring of 1944. It could have theoretically met the demands placed upon it and continued to operate despite casualties. What it did have an issue with was recognizing future personnel demands in vital areas and allocating the proper number of trained personnel to be available at certain times.³⁴ In the final six months of the war this was goal was accomplished, but during the summer and early fall of 1944, large demands for infantry reinforcements could not be instantly serviced. While infantry units were never ineffective, some were forced to operate in a deficit position. It took time to shift resources, and this was at a period when there was no respite from continuous losses. Burns comes to the conclusion that certain headquarters and administrative functions were overmanned and duplicated. He also suggests new and innovative ways to reduce poor management of manpower resources for future wars.

The perspective that German formations were more effective than more numerous Allied units surfaces in the Canadian Official history of the late war period, *The Official History of the Canadian Army in the Second World War. Volume III: The Victory Campaign: The Operations in North West*

³² E.L.M. Burns, *Manpower in the Canadian Army*.

³³ E.L.M. Burns, *Manpower in the Canadian Army*, 89-92.

³⁴ E.L.M. Burns, *Manpower in the Canadian Army*, 97-98.

Europe 1944-1945.³⁵ Its author, Charles Stacey, asserts that in Normandy the Canadian Army had been delayed by a more experienced and efficient German enemy. While outnumbered, this enemy used its meagre resources adequately to delay a victory that Allied arms should have secured sooner. Allied tactical reverses were perceived as examples to support this viewpoint. Stacey postulates that the weight of Allied material superiority and the cost of ongoing attrition wore the Germans down to the point they could no longer maintain a cohesive front.³⁶ While noting the shortage of infantry reinforcements in 1944, Stacey never observes that Canadian units were so weak that they were combat ineffective. Stacey's conclusion falls into the Cold War school of thought that Allied victory in the Second World War was a result of superior numbers, the application of brute force and limitless resources. At the time of its publication, it was theorized that a Cold War NATO army would have to resist a Soviet onslaught in similar circumstances.

Denis and Shelagh Whitaker's *Tug of War* is an account of the Canadian Army's infantry led operations in Belgium and the Netherlands during 1944-1945.³⁷ In recounting Canadian losses, this work criticizes the performance of the Canadian chain of command in supplying trained infantry reinforcements. While the calibre of reinforcements is criticized, it is important to note that there is little or no mention of infantry platoons or companies being so handicapped prior to offensive actions they could not attack. Scheduled operations were continuously carried out, and there is no observation that Canadian offensives in the late war period were ever hindered due to lack of available forces.

Martin Van Creveld's study on battlefield operational effectiveness, *Fighting Power: German & U.S. Army Fighting Performance, 1939-1945*, is a detailed examination of the combat records of significantly different opposing forces during the Second World War.³⁸ Written shortly after the conclusion of the Vietnam War, Van Creveld's work observes that U.S. Army doctrine during the Second

³⁵ Charles Stacey, *The Victory Campaign*.

³⁶ Charles Stacey, *The Victory Campaign*, 270-278.

³⁷ Denis & Shelaugh Whitaker, *Tug of War* (Toronto: Stoddart Publishing. 1984).

³⁸ Martin Van Creveld, *Fighting Power: German & U.S. Army Fighting Performance, 1939-1945* (Westport, CT: Greenwood Press, 1982).

World War was often inflexible. When confronted with challenges that demanded adaptability, it was often slow to react, as U.S. challenges in South East Asia had demonstrated.

Second World War U.S. Army leadership style as observed by Van Creveld stood in stark contrast to that practiced by the land forces of the Third Reich. He argues that the managerial doctrine-oriented approach of the U.S. Army was inferior to German Auftragstaktik, a mission command oriented approach in which junior commanders were given much more latitude to accomplish higher command's intent. Despite their inferior approach to warfare, Van Creveld concludes that the U.S. military prevailed through the application of brute force, utilizing its material dominance in order to achieve victory. Van Creveld argues the Germans, crippled by material shortages and the inflexibility of Adolf Hitler, were doomed to defeat despite their higher level of performance with less resources.

Containing a thesis very similar to other Cold War works praising German military performance while portraying the Allied armies as stumbling monoliths, Van Creveld fails to acknowledge important doctrinal failures in the German land forces. The strength-wasting tactic of the immediate counterattack and the weakness of German artillery are ignored by the author as significant failings. Also not included in his discussion is the German inability to consistently and effectively reinforce combat units that had suffered significant losses. While the German practice of Auftragstaktik was very progressive, mission command orders could not bring success if an army employed faulty tactical doctrine and could not reinforce units in the field.

Carlo D'Este's work on the Normandy Campaign, *Decision in Normandy*, raises many points concerning reinforcement and manpower not present within operation histories on the Normandy Campaign.³⁹ D'Este's thesis argues that 21st Army Group commander General Bernard Law Montgomery's statements on the overall strategic plan for the Normandy Campaign and the assigned battlefield roles of the British and Canadian Armies were not accurate. He asserts that the statements

³⁹ Carlo D'Este, *Decision in Normandy* (New York: Konecky & Konecky. 1983).

were adapted to fit the outcome of the fighting, and that it was not the intention of the British and Canadian armies to tie down significant German forces, allowing the breakout of the U.S. VII Corps to occur in late July 1944.

D'Este is one of the few military historians of the Normandy Campaign to focus a portion of his study to the question of personnel reinforcements. His fifteenth chapter is devoted to the manpower challenges facing the British, Canadian and American armies, and the subsequent chapter raises the point that British formations were often cautious in their attacks due to a lack of available reinforcements. Another point raised is that the Normandy fighting was largely infantry oriented, with the primary victims of the attritional struggle being infantrymen of all armies. Insight is also given into the manpower situation within the British and Canadian armies, and D'Este identifies potentially untapped human resources that could have been utilized.⁴⁰

F.W. Perry's *The Commonwealth Armies* displays how mobilization occurred and what sort of land forces were established for each of the overseas Dominion nations over the course of two world wars.⁴¹ Perry argues that the creation of a large Canadian military establishment was a slow process, only sped up at points by serious British reverses. In addressing the 1944 issue of shortages in Canadian infantry personnel, Perry makes the important point that this was a problem of deployment, rather than an actual shortage.⁴² While the work is far from detailed concerning Canadian militarization, the sheer bureaucratic nature of the Canadian military and its political masters is well documented. The side effects of this bureaucratic approach were a series of delays that hindered the ability to quickly train and deploy a capable force into a combat theatre.

⁴⁰ Carlo D'Este, *Decision in Normandy*, 268.

⁴¹ F.W. Perry, *The Commonwealth Armies. Manpower and Organization in the Two World Wars* (Manchester, England: Manchester University Press. 1988).

⁴² F.W. Perry, *The Commonwealth Armies*, 143.

British author John Ellis in his work *Brute Force* makes the argument that Western Allied superiority in military might was the main reason for Allied victory in 1945.⁴³ Ellis goes on to make his case with charts and statistics, depicting a war that was pursued at a leisurely pace due to the dominant position of the Allies. This work goes to great statistical lengths to illustrate the superiority of the Allied war machine and the combat power that was concentrated in the 1944-1945 late war period. Ellis observes that personnel reinforcements and replacement equipment was so plentiful that losses inflicted by the Germans on the Allies did nothing to change the overall situation. Furthermore, he argues that the time it took from the Normandy invasion until Germany's collapse nearly a year later was due to the plodding nature of the Western Allies. With the scale of forces deployed, Ellis postulates the war should have ended much sooner.

Canadian military historian John English's *The Canadian Army in Normandy: A Failure in High Command* endorses Charles Stacey's views on the combat effectiveness of the Canadian Army.⁴⁴ In this work a far more critical approach to the Canadian Army's record is put forward. English seeks to expand upon the Cold War assessment that Allied armies performed poorly when confronted by German tactical supremacy. English's thesis states that Canadian tactical defeats in Normandy and the loss of life that accompanied them were due to ineptitude within the highest levels of the Canadian Army.

For three years prior to the invasion of France, English argues that Canadian units preparing for service in NWE trained in a peace-time environment. He goes further to state that the Canadian high command did not properly enforce tactical discipline and failed to adjust to new modern dynamics of war. Important matters such as doctrine for combined arms operations involving tanks, artillery, and air power were not finalized when the time came to deploy to France. For example, when 2nd Canadian Corps became operational in July 1944, it immediately was plagued by tactical reverses at the hands of the Germans who exploited gaps in Canadian training and doctrine. English states that Canadian

⁴³ John Ellis, *Brute Force*, 356-357. An example given are Tables 16-17 on German vs. Allied tanks strengths in Normandy, summer 1944. These illustrate massive Allied superiority

⁴⁴ John English, *The Canadian Army in the Normandy Campaign*.

commanders lacked the ability to employ armour effectively, took too long to prepare and mishandled the forces under their command.⁴⁵ All of this was not true in the case of their opponents, English implies. While very good at summarizing the Canadian Army's reverses, English gives little insight regarding reinforcements and replacing losses. It would seem that within his account Canadian units were always up to strength when beginning operations or never suffered losses that could not be immediately replaced. His criticisms cover mainly command decisions regarding training and operational leadership, ignoring numerical and resource superiority as a factor.

The McGill PhD dissertation of Roman Jarymowycz, *The Quest for Operational Maneuver in the Normandy Campaign: Simonds and Montgomery Attempt the Armoured Breakout*, presents perhaps the best analysis of the Canadian armoured battles of the Normandy Campaign.⁴⁶ Jarymowycz makes the argument that while Canadian and British armoured formations had difficulty in exercising offensive manoeuvres, this was due to poor use of the armoured assets at hand. While focusing on the Canadian operations, he also supplies important data as to the armoured vehicle strengths within Canadian armoured formations. This data indicates that an effective repair and replacement program was present, allowing Canadian units to remain strong in contrast to growing German weakness due to attrition.⁴⁷ Jarymowycz' dissertation is very detailed, but lacks specific information on the actual process of reinforcement and replacement.

Revisionist authors looking at the combat records of Allied formations on the Western Front have discovered that Allied units were often more than a match for their German counterparts. This is illustrated in Kevin Mansoor's *The GI Offensive in Europe. The Triumph of American Infantry Divisions, 1941-1945*.⁴⁸ Mansoor makes the important observation that continual reinforcement kept U.S. formations effective, and this maintenance was key to U.S. military performance. The central thesis put forward within this work is that in comparing average German infantry divisions to the average American

⁴⁵ John English, *The Canadian Army in the Normandy Campaign*, 237-240. Chapter 13: Final Casting.

⁴⁶ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign. Simonds and Montgomery Attempt the Armoured Breakout" (Montreal: Department of History PhD Dissertation. McGill University. 1997).

⁴⁷ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 336. Appendix E.

⁴⁸ Peter Mansoor, *The GI Offensive in Europe*.

infantry divisions, the American formations were superior. While U.S. airborne and German Waffen SS panzer formations were considered the elite of both armies, it was the average infantry divisions that did the majority of the fighting. As U.S. conscript formations continued to defeat increasingly inferior German conscript formations, the tide was irrevocably turned against Germany. This thesis is applicable to Canadian divisions as they remained strong in comparison to decimated third-rate German formations in the late war period.

Mansoor points out that average conscript U.S. infantry divisions were kept at a high level of numerical strength, despite losses from constant operations.⁴⁹ In contrast, German units fought to disintegration, were defeated, and then had to be taken out of the line to be rebuilt. This was never the case with American divisions, as they kept on fighting or were in ready reserve, rebuilding near the front. Comprehensive training allowed for the roughest mix of conscript soldiers to become excellent infantrymen, a process that was accelerated by combat and the will to survive. An effective replacement system kept U.S. infantry divisions combat capable, and their ability to adapt and use their ample resources to maximum effect brought victory.

Adding to this argument, British military historian David French's *Raising Churchill's Army: The British Army in the Second World War* describes the composition of the British Army and reasons behind its success in the years 1942-1945.⁵⁰ It also tackles the topics of technology and British Army doctrinal evolution. It argues that the British made the maximum use of their strengths and did not take dangerous risks to make quick gains. This allowed critics to unjustly accuse them of operating too ponderously. French also notes that the British Army of the late war period in NWE was very conscious of infantry casualties, understanding that there was no large trained pool of replacements available.⁵¹ While the Canadian and U.S. Armies were rather fresh going into the 1944 Normandy Campaign, the British Army

⁴⁹ Peter Mansoor, *The GI Offensive in Europe*, 251-253. This was accomplished by ruthlessly stripping personnel from infantry divisions still forming in the U.S.

⁵⁰ David French, *Raising Churchill's Army: The British Army in the Second World War* (Oxford: Oxford University Press, 2000).

⁵¹ David French, *Raising Churchill's Army*, 243-245.

was reaching its manpower limits and could not afford large losses. Its tactics soon adapted to the unwillingness of commanders to sacrifice men for ground, forcing a reliance on firepower, mechanization and innovative strategies.

U.S. author Russell Hart is very critical of the Canadian Army's performance in the Normandy Campaign, characterizing Canadian command and control as inept. Within *Clash of Arms: How The Allies won in Normandy*, he points out Canadian shortcomings in combined arms operations, application of force and the use of initiative. Hart believes these factors combined led to the northern pincer of the Allied Falaise encirclement to not close properly in a timely manner, allowing German forces to escape.⁵² He also argues poor training and peacetime neglect had limited the abilities of the Canadian Army. When it came time to adapt to the demands of modern mechanized warfare, it failed. As part of his criticism, Hart also identifies shortcomings in Canadian administrative skills. Mismanagement of personnel resources led to a severe shortage of infantry when it was needed most, hampering First Canadian Army operations in mid August 1944. He also points out that the poor management of armoured assets and their replacement system led to certain regiments being under strength during critical offensive operations. Conversely, he observes that Canadian combined arms tactics and tactical flexibility improved during the late summer of 1944. While combat efficiency did grow in the Canadian Army, Hart states the reinforcement factor hampered it from showing its true potential in Normandy.

Terry Copp's *Fields of Fire*, an analysis of the Canadian Normandy Campaign, contains a thesis that contrasts sharply with those critical of the Canadian Army's performance. Copp argues that the record of Allied arms has been underrated, due to the overrating of a German enemy that was repeatedly defeated.⁵³ Copp's analysis of battlefield strategies practiced by Canadian commanders allows new insight into Canadian operations. The artillery based doctrine facilitated by 2nd Canadian Corps commander Lieutenant-General Guy Simonds during the Normandy Campaign was very suitable for attritional warfare. Correctly applied, Copp argues this strategy created the conditions that aided in the

⁵² Russell Hart, *Clash of Arms*, 357.

⁵³ Terry Copp, *Fields of Fire*, 256-257.

eventual collapse of the German front. He also points out that immediate German counter-attacks, constantly launched against Canadian operations, were contained by the artillery based doctrine, rendering the German offensive tactics ineffective. The effects of attrition and reduced levels of infantry unit strength are acknowledged by Copp, but there is no mention that offensive operations were suspended by these shortages⁵⁴. He points out that the increasing tempo of the Normandy fighting demanded continuous attacks by Canadian infantry and armoured regiments, regardless of losses. Detailed appendixes record personnel deficits, but there is never a suggestion that these were crippling factors.

Though one of the most detailed operational histories of the Canadian Normandy Campaign, Bryan Reid's *No Holding Back: Operation Totalize, Normandy, August 1944* says very little about reinforcements and unit strengths, or how these factors affected battlefield performance.⁵⁵ Perhaps this can be taken as his perception that Canadian units were nearly up to strength at all times and losses were a non-issue. This very detailed account chronicles the challenges and accomplishments of the Canadian Army's largest armoured operation of the war. Detailed unit vehicle holding charts are provided, but all with the indication that units were at 100 percent of their establishments.⁵⁶ The various strengths and recorded losses of units involved were significant factors during August 1944, and this missing information would add to this account. Like John English, Reid somewhat ignores unit strengths, losses and reinforcements as factors in his narrative.

John Buckley's *British Armour in Normandy* seeks to investigate the Cold War thesis that there were serious performance issues within the British Army's Royal Armour Corps during the Normandy Campaign.⁵⁷ Focussing on the topics of armoured doctrine, equipment inadequacies and morale, Buckley highlights difficulties in the first two areas that in turn affected morale during the early stages of the campaign. These challenges affected the capability of the British to successfully advance and were

⁵⁴ Terry Copp, *Fields of Fire*, 261. Mention of attrition losses and personnel shortages in the 2nd Canadian Infantry Division.

⁵⁵ Bryan Reid, *No Holding Back*.

⁵⁶ Bryan Reid, *No Holding Back*, 140-141. Operation "Totalize" armoured columns diagrams.

⁵⁷ John Buckley, *British Armour in the Normandy Campaign 1944* (London, England: Frank Cass, 2004).

influential factors during the stalemate portions of the fighting in Normandy during early June and July 1944.

In the area of statistics, strength tables and actual British tank losses, comparatively little data is presented. Focus is instead placed on examining the morale, doctrine and technology of the Royal Armoured Corps. Considering the attrition aspect of the campaign and the importance of the number of tanks that could be fielded by each side, it is unexpected that records of losses and strength returns do not figure more prominently.

Buckley comes to the conclusion that when British armoured forces finally adapted to their new environment by forming part of the combined arms teams utilized in "bite and hold" tactics, reasonable success was achieved. Buckley notes that all armoured forces in Normandy had trouble advancing in the difficult bocage terrain that favoured the defender. The Germans, forced to abandon a mobile defence by Hitler, were forced into a attritional slug-match they could not win when confronted with superior tactics that forced them into costly counter attacks.

In Terry Copp's *Cinderella Army*, the 2006 sequel to *Fields of Fire*, he reinforces his thesis concerning the Canadian Army's battlefield record in NWE. He observes that the Canadian Army experienced a series of successes and the occasional failure in the period from Normandy until the war's conclusion. This is in contrast to Stacey's view that after a poor start in Normandy the Canadian Army finished the war as very capable in all aspects. Another important observation Copp makes is that Canadian formations suffered a larger amount of casualties than British units, suggesting the combat encountered by Canadian units was more intense. He also points out that Canadian operations were often launched with meagre resources to subdue fortified enemy positions, yet still achieved their goals.⁵⁸ These two observations further support his final assessment that the Canadian Army was tactically

⁵⁸ Terry Copp, *Cinderella Army. The Canadians in North West Europe 1944-1945* (Toronto: University of Toronto Press. 2006), 292-293. Copp argues the 2nd Canadian Infantry Division fought in the Battle of the Scheldt with a fraction of the support given to other major operations and the difficult Canadian assault on Walcheren Island was denied RAF bomber support. In contrast September 1944's British-led Operation *Market Garden* enjoyed lavish resources.

proficient while at the same time shouldering a larger share of difficult operations. Copp does include in his appendixes a detailed chart of infantry manpower shortages within the 1st and 2nd Canadian Corps in NWE during 1944-1945.⁵⁹ Copp's observation of personnel challenges within the Canadian Army is never compounded by mention of any sort of equipment shortages. While there is never a conclusion on whether personnel shortages were an important factor affecting Canadian combat effectiveness, Copp does not discount it as a non-issue.

Angelo Caravaggio's 2009 Wilfred Laurier University PhD dissertation *Commanding the Green Centre Line in Normandy: A Case Study of Division Command in the Second World War* is a detailed study of the battles of the 4th Canadian Armoured Division in the Normandy Campaign and the subsequent pursuit of the retreating German military across northern France.⁶⁰ In contrast to many post war accounts of the division's 1944 operational record, Caravaggio's thesis argues that effective training prior to its deployment to France as well as its first combat operations had a positive impact. He states that these experiences resulted in it developing into one of the most effective Canadian divisions by the fall of 1944. Despite a combination of unfortunate battlefield events that led to the dismissal of its commanding officer in mid August, the division's new commander and his key subordinates rebounded in spectacular fashion. By the end of the Normandy Campaign and during the subsequent pursuit across France, the division is depicted as one transformed from an inexperienced formation into a battle-tested force.

On the topic of reinforcements and unit strengths, Caravaggio's work does contain detailed appendices on unit personnel strengths, but other unit vehicle data is missing. Also not present is insight on how the reinforcement organizations in Normandy supported the division. However, the work importantly details the slow erosion of the infantry regiments with the 10th Canadian Infantry Brigade, and notes how a lack of reinforcements robbed its three regiments of their effective strength when they arguably needed it the most in late August.

⁵⁹ Terry Copp, *Cinderella Army*, 297. Appendix A.

⁶⁰ Angelo Caravaggio, "Commanding the Green Centre Line in Normandy: A Case Study of Divisional Command in The Second World War", (Waterloo: Department of History PhD Dissertation. Wilfred Laurier University. 2009).

In a concluding statement on the Campaign in NWE historiography, the historical discourse concerning the causes for Allied victory and German defeat is constantly evolving. But this evolution is toward acrimony, rather than consensus. Opposing perspectives are becoming only more entrenched, with author's appreciations of their nations' military performance often being improved at the expense of others. Sharp contrasts exist between historians who are polar opposites in their historical appreciations of military doctrines, tactics, and events.

In summary, the main aim of this dissertation is to illustrate the Canadian Army in NWE's ability to sustain and reconstitute its combat units in spite of losses. This ability allowed for the creation of a perpetual state of overwhelming offensive capability. This constant state of strength was indicative of the CAO's administrative and logistic military effectiveness. The appendices found in this study also act as a reference. They encapsulate orders of battle, monthly strength reports and losses and record the flow of replacement personnel and equipment. Conclusions presented give the reader an appreciation of the administrative strengths and total combat power of the CAO, and how these factors were influential attributes that brought eventual victory.

Chapter 2: Canadian Army doctrine in North West Europe 1944-1945: Tactical and technological strengths, weaknesses and resulting losses

A theoretically perfect army has few difficulties or challenges. It is tactically flawless in its operations, has clear strategic goals, cutting edge technology and is well supplied. On the battlefield it will annihilate the opposing forces quickly and suffer negligible losses. The closest real example of this hypothetically perfect army was the U.S. led coalition forces that liberated Kuwait and invaded parts of Iraq in 1991.¹ This force was perfectly equipped for warfare in a desert environment, had numerical superiority over the enemy, plentiful resources and technological advantages. It was competently led by experienced officers and supported by superb staff and logistic systems. Satellite imagery provided reliable intelligence on all Iraqis positions and movements. The ground campaign started after a lengthy air campaign that destroyed or reduced Iraqis fortifications, achieved air superiority and provided powerful tactical air support on call. Coalition ground forces went on to execute manoeuvre warfare, capturing or destroying all enemy forces that opposed them in a very short period of time, without a single reverse.

Any army that is not as overwhelmingly superior to its enemy as the U.S. led coalition in 1991 was will face challenges. Exposure to a similar enemy force and its weapons technology will result in losses in personnel and equipment. This was the case for the Canadian Army in its campaign in North West Europe (NWE). Although it had significant strengths that allowed it to methodically defeat the German ground forces, it also possessed weaknesses. It was these weaknesses that German forces exploited to cause the majority of Canadian material and personnel losses. The purpose of this chapter is to illustrate both the strengths and weaknesses of the Canadian Army during operations, and explain when and how the majority of Canadian personnel casualties and equipment losses occurred. By describing Canadian artillery, armour and infantry tactics and those of combined arms teams including ground

¹ Michael Spilling, Editor. *Battles that changed Warfare 1457-1991* (London, England: Amber Books Ltd. 2008.), 208.

support aircraft, the reader will comprehend how Canadian units fought in NWE and what challenges were present.

The majority of Canadian personnel casualties in NWE were borne by the infantry, it being dismounted and exposed to direct and indirect fire. This chapter will also explore why infantry casualty rates were so high in comparison to other combat arms, such as the artillery, and why little could be done to mitigate this problem.² Ground combat in Normandy extracted such a toll on the Canadian infantry that total Canadian Army other ranks (non-officer) infantry deficiencies by 27 August 1944 totalled 3,125. This figure was the equivalent to twenty-five 125-personnel strong infantry companies. This was also after the regiments in question had received reinforcements throughout June, July and August 1944.³ Losses were so rapid that during the second half of Normandy Campaign there was a lack of readily available trained infantry replacements. This was largely due to poor planning and the main reinforcement bases being in the United Kingdom (U.K.).

During the summer of 1944, the Canadian Army fought arguably the strongest German formations available. The resulting losses at the unit level were at times catastrophic. After Normandy, the German forces were never again so consistently strong. The fall of 1944 and spring 1945 saw the Canadian Army facing a primarily defensive infantry opponent, short of armour and devoid of continuous artillery and air support. The Germans could launch limited counter-attacks, but they did not deploy enough resources or have a strategic plan to conduct large scale offensive operations against the Anglo-Canadian front after August 1944. The Allies held the initiative and could choose when and where to attack, fighting the war at their own pace.

The First Canadian Army was the last of the great British imperial armies. British and Canadian organization, doctrine and equipment were intended to be identical. This was further enhanced by Canadian units being totally equipped with British and American war material. Canadian officers were

² LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. LAC, RG 24 Volume 14,419. 2nd Field Regiment, RCA War Diary April 1945. T-15936. The April 1945 recorded casualties for this field artillery regiment were two battle and three non-battle, for a total of five.

³ LAC, RG 24 Volume 10,669. Report: Deficiencies and holdings of Canadian Infantry, Other Ranks; North West Europe, 27 August 1944-28 April 1945.

also influenced by being under British corps command during operations in Sicily and in Italy during 1943-1944.⁴ Prior to the invasion of France in June 1944, the divisions of the 2nd Canadian Corps had conducted intensive training during the spring. These exercises were supervised by the 21st Army Group commander, British General Bernard Montgomery. As part of his role as commander, he sought to ensure that the proper steps in Canadian Army doctrinal evolution took place. This training sought to implement within Canadian corps, divisional and brigade headquarters staffs the current British method of warfare. During this period he developed capable Canadian officers and culled those he found lacking. He was very influential in developing the most promising officers, 2nd Canadian Corps commander Lieutenant-General Guy G. Simonds being the foremost example.

The Eighth British Army in North Africa during the period 1941-1942 was defeated repeatedly by the German Afrika Korps. These reverses were critical in fostering the conditions that allowed for its evolution. Resulting changes in doctrine and the arrival of General Montgomery turned the Eighth British Army into a different organization. It was these doctrinal changes that allowed future Anglo-Canadian armies to defeat the German Army in NWE. Canadian doctrine on U.K. training grounds in the spring of 1944 was correspondingly transitional. New operational methods that stemmed from the 1943 successes in North Africa were implemented as Canadian training mirrored British. The most influential change that occurred was the re-emergence of the supremacy of concentrated artillery as an operational instrument. Following the British defeat in France in 1940, a de-centralization of artillery command and control had occurred. This resulted in an increased allotment of artillery at the division and brigade level during 1940-1941. This allowed more artillery to be available to divisional and brigade commanders during a fluid, mobile battle, similar to the German model. British failures in North Africa showed that this dilution of artillery force made it a non-unified organization whose power could not be massed for a serious blow against enemy attacks or defensive positions.⁵

⁴ John English, *The Canadian Army in the Normandy Campaign*, 123-124.

⁵ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Total indirect artillery assets attached to RCA Headquarters, 1st Canadian Infantry Division on 22 April 1945 included the 1st, 2nd, 3rd and 11th RCA Field

This battlefield reality led to an urgent re-organization of the British Royal Regiment of Artillery, commonly known as the Royal Artillery (RA). This parent organization encompassed all British Army artillery regiments. Command structures such as Divisional Commander Royal Artillery (CRA) and Corps Commander Corps Royal Artillery (CCRA) were reintroduced, and tactical groupings such as the corps level Army Group Royal Artillery (AGRA) were re-formed. Sophisticated communication nets and synchronized tactics were developed that were superior to anything fielded by the German Army, and were amazingly destructive.⁶ This led to the concentrated use in late 1942 of the devastating 25-Pounder and other British artillery pieces to destroy German counter attacks and reduce their defensive positions. In a departure from the tank-dominated tactics of 1941-1942 that often led to failure in the desert war, concentrated artillery began to be perceived by the British as essential to all operations.⁷ This included the use of anti-tank weapons and all armoured fighting vehicles (AFVs) which came under the artillery arm. If manoeuvring German armour could be dashed against these gun lines, their strength could be whittled away to nothing. German defensive positions would then be reduced by methodical and concentrated artillery fire, allowing the infantry and supporting armour to invest them.

These reforms were mirrored within the Canadian Army's Royal Regiment of Canadian Artillery (RCA). In 1944 U.K. training exercises, an attacking Canadian division or brigade eschewed any surprise manoeuvres utilizing infantry or armour. Their operational planning corresponded to strict timetables that were supplied by the divisional or corps RCA fire plan. 2nd Canadian Corps commander Lieutenant General Guy Simonds was himself an artillery officer, and often worked out the major features of operational plans in the solitary workspace of his command caravan. This allowed him to focus on artillery and aerial bombardment as factors on which large operational plans often revolved.⁸ As shown in Figure 2.1, Anglo-Canadian artillery-supported operations were extremely sophisticated, well-planned

Regiments, the 68th Medium Regiment, RA and the 3rd Medium Regiment, RCA. This was a tremendous amount of indirect firepower.

⁶ John English, *The Canadian Army in the Normandy Campaign*, 123-124.

⁷ John English, *The Canadian Army in the Normandy Campaign*, 126.

⁸ LAC, RG 24 Volume 13,712. 2nd Canadian Corps General Staff War Diary August 1944. T-1866. Operation "Totalize" Air Programme. The operational phases (I and II) and "Totalize" were anchored around massed four engined bomber attacks.

say the 25-Pounder divisional field regiments were inadequate, but larger assets and more of them would certainly increase the odds of success.¹⁰

After August 1944, the lack of German artillery counter-battery capability paired with ineffective German Luftwaffe (German air force) ground attack assets allowed RCA artillery units to operate with impunity. The ability of the enemy to attack and destroy their positions was drastically reduced. Given their location on the battlefield, artillery units were rarely the target for mortar fire in the way infantry units were. Properly deployed and with their fire adjusted, RCA medium and field artillery regiments could pound away at enemy positions with very little threat to themselves. This allowed for an excellent ratio of damage done to the enemy versus casualties suffered by these units.¹¹ During April 1945, the 1st Field Regiment, Royal Canadian Horse Artillery (RCHA), suffered ten battle (related to enemy action) and ten non-battle (non-battle related injuries) casualties. These were a very small number of losses considering the ferocious bombardments this unit unleashed on the enemy. German forces were simply reduced to digging in deeper, as there was no other defence against the devastating and continuous artillery strikes.¹²

Due to its effective battlefield performance, Canadian views on the employment of massed artillery mirrored that of the British. Employment of RCA artillery assets was perceived by Canadian leadership as the essential building block of any feasible operational plan in NWE. This combat arm was the most effective tool to attain results while keeping casualties to a minimum. It could simultaneously destroy enemy fortifications and impede all observed battlefield movement within the combat zone. Its flexibility, speed and power enabled infantry, anti-tank and armoured units to gain their objectives and hold them against enemy counterattack.¹³ The employment of “Uncle”, “Victor”, “Yoke” and “Mike” fire

¹⁰ Charles Stacey, *The Victory Campaign*, 658. There were three medium AGRA regiments and a rocket battery of captured German Nebelwerfers on strength within the First Canadian Army order of battle during September 1944.

¹¹ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1863. LAC, RG24 Volume 14,412. 1st Field Regiment, RCHA War Diary April 1945. T-15928.

¹² Terry Copp, *Fields of Fire*, 159.

¹³ LAC, RG24 Volume 14,445. 5th Field Regiment, RCA War Diary October 1944. 8 October 1944 saw 82 rounds per gun (RPG) fired, and 9 October 1944 saw 92 RPG fired, crushing German counterattacks on the Canadian infantry. These were average daily numbers.

plan tactics could coordinate increasing levels of massed firepower for a single purpose in a very short amount of time.¹⁴

While the RCA field artillery regiments were equipped with superb weapons that were very effective, this state of affairs did not necessarily extend to the Canadian Armoured Corps (CAC) and Canadian Infantry Corps (CIC). While it would have been advantageous for the Canadian Army Overseas (CAO) to have increased allotments of a certain types of vehicles or weapons systems, or more effective variants, it had limited ability to influence these matters. The British Army was largely in control of what and how much the First Canadian Army received in NWE, and the 21st Army Group had strict regulations on what was to be contained in the establishment of each type of combat arms regiment. The British argument for this was that uniformity in unit establishment was essential to the proper reinforcement of personnel and the maintenance of equipment inventories. While the minute details of these unit establishments were modified virtually on a monthly basis, general orders enforced these changes on all units of the same type within the 21st Army Group. An example of the enforcement of these regulations was the rapid re-organization of arriving Canadian formations from Italy in 1945 to conform with the standards in effect.¹⁵

Commonwealth nations such as Canada, New Zealand and Australia were extremely dependent on the arsenal of U.K. for some of their most advanced weapons systems.¹⁶ There were exceptions of course, such as the Canadian-produced Sexton 25-Pounder self-propelled artillery piece, but for the most part their vehicles and weapons were British or U.S lend lease in origin. While it was very desirable to have more Wasp II flame thrower carriers, Ram armoured personnel carriers and more advanced small

¹⁴ Nigel F. Evans, "British Artillery in WWII: Artillery Methods", *British Artillery World War 2*. Retrieved 8 November 2015 from <http://nigelf.tripod.com/maindoc.htm#Basic Procedures for Opportunity Targets>. Royal Artillery (RA) targeting is explained as such: A Mike target is a concentration of fire by all the guns of an artillery regiment, an Uncle target is a concentration of fire by a division, a Victor target is a concentration of fire by a corps and a Yoke target concentration was fired by a complete AGRA.

¹⁵ John Grodzinski, *Operational Handbook*, 48. 5th Canadian Armoured Division order of battle.

¹⁶ John English, *The Canadian Army in the Normandy Campaign*, 54.

arms, the availability of these items was limited. While Canadian units most certainly wanted better technology and more of it, so did every other Commonwealth army.

The Canadian Armoured Corps (CAC) had significantly more battlefield challenges than the artillery. The German Army was very experienced in dealing with massed armoured attacks due to its experiences in Russia 1941-1944. As evidenced in reverses such as the 6th Canadian Armoured Regiment's failed attack on Le Mesnil-Patry, Normandy, on 11 June 1944, Canadian armour faced difficulties when assaulting prepared German defences.¹⁷ This is not to say they did not carry out assaults in a determined manner. Up to the closure of the Falaise Gap on 21 August 1944, Canadian armoured regiments led fifteen major attacks. Some were executed successfully when combined arms tactics were utilized and infantry, anti-tank, artillery and air assets were present. But when Canadian armour took a more forward or independent role, it often suffered severe losses due to enemy anti-tank gun fire.¹⁸ This issue was especially prominent during the 27th Canadian Armoured Regiment's attempt to capture Carpiquet Airfield and the outskirts of Caen on 7 June 1944. In this case the temporary loss of artillery support significantly contributed to armour's challenges during the mobile tank battle.¹⁹ This was not an exclusively Canadian problem, and strong anti-tank defences posed a serious problem for German, U.S. and British armoured forces in Normandy and beyond. Due to these challenges, the scope of Canadian armoured objectives in late summer 1944 was limited by the range of the guns and the infantry's ability to keep up. To go beyond the limitations of the First Canadian Army's artillery-based doctrine would risk disaster.

During the later stages of August 1944's Operations "Totalize" and "Tractable", the armoured regiments of the 4th Canadian Armoured Brigade were asked to manoeuvre rapidly in a fluid situation that

¹⁷ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 107-110.

¹⁸ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 314.

¹⁹ John English, *The Canadian Army in the Normandy Campaign*, 160.

demanding aggression and initiative from all squadron commanders.²⁰ What occurred were operations that were temporarily blocked by weak German armoured forces and held up by traffic jams. The performance of the brigade was lacklustre due to a large number of officer casualties and the effect of inexperience. During Operation "Totalize" fighting near Rocquancourt-Cintheaux on 9 August 1944, a number of 22nd Canadian Armoured Regiment command tanks were destroyed. The loss of a Squadron commander and two troop leaders at the forefront of the battle significantly influenced effective command and control.²¹ This newly deployed formation was fighting its first battles in August 1944 at the vanguard of the First Canadian Army's advance. What was needed to take on this role was an abundance of experienced armoured regiments, not ones carrying out their first operations.²²

Without intimate artillery and infantry support, Canadian tanks were vulnerable to all forms of anti-tank weapons. Canadian Sherman 75mm and 17-Pounder Firefly variants were very susceptible to high-velocity German armour piercing anti-tank rounds. The Sherman's armoured plate was not angled enough, not hardened enough and not thick enough in the frontal areas of the tank. Operational research reports found it took on average 1.63 hits to destroy or knock out a Sherman, and 91.2 percent of Shermans that had gasoline engines quickly burned out.²³ German fire hitting the internal hull shell racks caused explosions that were catastrophic. Also, the Sherman's profile was too high and it lacked a 360 degree episcope cupola for the commander to see out of in battle without exposing his head.²⁴

The great majority of casualties for the armoured crews occurred on the assault or in fending off German counter attacks. When not engaged in offensive operations, armoured squadrons were placed in defensive positions or in leaguer, an administrative grouping for refueling, maintenance and re-arming.

²⁰ LAC, RG 24 Volume 13,712. 2nd Canadian Corps General Staff War Diary August 1944. T-1866. Operation "Totalize" Operation Order No.4. Exploitation roles of Canadian armoured units were to be flexible and guided by the corps commander once a breakthrough was achieved. The initial armoured breakthrough had to occur first, though.

²¹ LAC, RG 24 Volume 14,260. 22nd Canadian Armoured Regiment War Diary August 1944. T-12727. 8 August 1944 entry. Near Rocquancourt-Cintheaux the destruction of the No.3 Squadron command tanks of Major Smith, Lieutenant Smith and Lieutenant Fisher significantly influenced command and control in the squadron.

²² LAC, RG 24 Volume 14,260. 22nd Canadian Armoured Regiment War Diary August 1944. T-12727. 8 August 1944 entry. Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 208-210. Due to traffic jams, the 22nd Canadian Armoured Regiment advanced from 0900 to 1500 without contact with the enemy, moving exceedingly slowly.

²³ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 316.

²⁴ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 280.

Few losses occurred during this administrative tactical grouping. Due to the ability of the crew to use the tank as protection, losses from all forms of indirect fire were light.²⁵ If the tank was hit during combat, CAC crews developed the ability to bail out quickly under fire and shelter behind the burning hulk. Out of a crew of five, this quick exit technique allowed for only one to two casualties per Sherman destroyed. Despite losing fifty-one Shermans during the attack on Le Mesnil-Patry on 11 June 1944, the 6th Canadian Armoured Regiment lost only eighty personnel as casualties.²⁶ Given the total crew strength of the knocked out tanks numbered 255 potential casualties, the results could have been more severe. In response to the weakness of their tank's armour, crews began to weld on extra track links to up armour their tanks.²⁷ If a firefight broke out, commanders would often be very cautious due to the German ability to destroy a Sherman with one round. This led to a preference for overwatch or ambush tactics rather than an advance to contact, with superior numbers of Shermans arranged to effectively smother a German armoured counter thrust against a newly-acquired objective.²⁸

The ability of the Canadian Army in the summer 1944 to field only one Sherman Firefly per four or three tank troop due to supply shortages was a major problem. The 17-Pounder Firefly tank cannon was the only armament that had the penetration power to destroy a German Tiger or Panther tank at medium range. It could also destroy a German Panzer IV or Sturmgeschütz III (self-propelled assault gun) easily at long range. However, the Firefly also had some negative attributes. It had excessive fuel consumption, engine issues and main gun misfires. The lack of an effective flash suppressor or smokeless power led to large muzzle flashes when firing, blinding the gunner as to the location of fall of shot. This made correction difficult, and this could be fatal in a tank firefight. It also initially did not fire high explosive shells, only armoured-piercing anti-tank. This made it near useless in reducing enemy infantry positions. Despite these limitations, the other tanks in the troop depended on the Firefly for success in

²⁵ LAC, RG 24 Volume 13,661. First Canadian Army A & Q War Diary December 1944. Due to a lack of offensive operations, there were no recorded battle casualties for the 21st Canadian Armoured Regiment for the month of December 1944.

²⁶ Terry Copp, *Fields of Fire*, 76.

²⁷ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 278.

²⁸ LAC, RG 24 Volume 14,213. 6th Canadian Armoured Regiment War Diary June 1944. T-12657. 9 June 1944 entry. During 9 June 1944, all operational tanks were involved in defensive tasks, and successfully inflicted heavy casualties on the enemy. One Sherman 17-Pounder Firefly knocked out five German Panther tanks.

long range firefights with Sturmgeschütz or panzers, as the short barrelled 75mm gunned Sherman was not as effective.²⁹

Offensive armoured operations in the summer of 1944 could be delayed or halted by the Germans' skillful anti-tank defense and devastating counter attacks. The apparent inability of Canadian armour to decisively attack and destroy German armour and anti-tank guns has led some prominent Canadian military historians, such as John English, to label the CAC as the weakest of the Canadian combat arms.³⁰ This is an exaggeration, but this impression was fuelled by a battlefield doctrine that did not place large numbers of tanks in the vanguard of the attack. Secondly, the technical inferiority of Allied tanks when compared to their German counterparts inhibited offensive tactics and forced a reliance on infantry and artillery support in certain tactical situations.³¹

As of May 1944, the Canadian Army had not fought a major armoured engagement in open country or desert terrain, where the advantages of long distance tank gunnery could be utilized to their maximum. While Canadians had fought in Sicily and Italy, the nature of the terrain and the defensive advantages it brought the defender had forced armoured units to insist upon artillery and infantry support. Fluid armoured operations over large distances were a rarity for the Canadian Army in this theatre. What combat experience was gained remained in Italy, as none of the 1st Canadian Corps armoured units fought in Normandy. As a result, by spring 1944 Canadian armoured regiments in the U.K. had exactly no combat experience advancing as the offensive vanguard. When this was attempted in Normandy, German

²⁹ LAC, RG 24 Volume 14,213. 6th Canadian Armoured Regiment War Diary June 1944. T-12657. 9 June 1944 entry. The most successful tank commander for the 1st Hussars (5 kills) on 9 June 1944, commanded a Firefly. He was 26-year old Lieutenant Gordon Henry. Marc Milner, *Stopping the Panzers* (Lawrence, KS: University Press of Kansas.), 92-294.

³⁰ John English, *The Canadian Army in the Normandy Campaign*, 312.

³¹ LAC, RG 24 Volume 14,260. 22nd Canadian Armoured Regiment War Diary August 1944. T-12727. 8-10 August 1944 entries. During the period 8-10 August, 1944 the regiment was constantly occupied in anti-infantry actions rather than focusing on by-passing opposition to advance south. During this time period movement was also inhibited by losses due to mines and long distance anti-tank fire. While it was successful against infantry opposition, a breakthrough by the regiment was not achieved.

anti-tank fire incurred large casualties on Canadian armoured squadrons equipped with inferior technology.³²

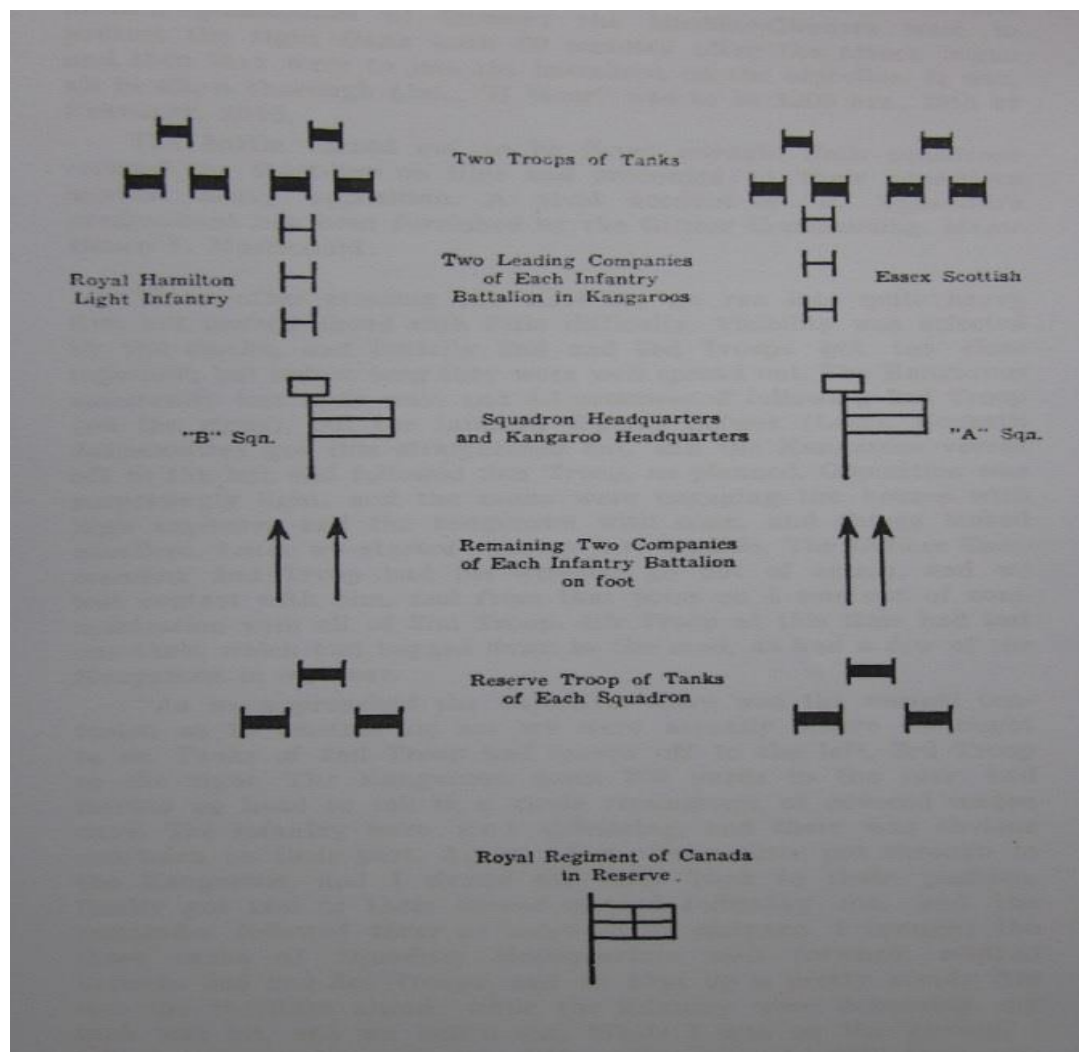
The logical solution to this challenge was the fielding of combined-arms teams of armour, infantry and anti-tank forces, superbly supported by artillery and air assets. These infantry-led groupings would be used to capture limited objectives, never outstripping supporting indirect assets or the ability of reserves to join the battle. These tactics were more polished post Normandy, and when all elements were adequately represented a very high chance of success was present. Later actions near Bergen Op Zoom, the Netherlands and Louisendorf, Germany in 1944-1945 are examples of successful combined arms tactics involving armour. In Figure 2.2, the advance to contact formation for the 10th Canadian Armoured Regiment while supporting the 4th Canadian Infantry Brigade during operations in the Rhineland is illustrated. In one of the last tank battles of the war for the Canadian Army, significant numbers of counter-attacking German tanks and self-propelled guns of the German Panzer Lehr panzer division were destroyed near Louisendorf, Germany, during 19-20 February 1945. In this action the Canadian combined arms task force seized its objective and then defeated repeated German counter-attacks³³

While the two main supporting arms of artillery and armour could significantly influence the battle, its ultimate outcome depended on the infantry. Canadian infantry forces were intimately involved in all aspects of capturing and holding ground during the fighting in NWE. Allied success in offensive operations during 1944 was often achieved through overwhelming force. However, the more personnel a commander employed in a given area, the higher the probability of casualties existed. Canadian infantry actions in Normandy and beyond were often characterized by leadership utilizing minimum infantry force against enemy units deployed in depth. Increased artillery firepower was seen as the solution to make up for the lack of infantry numbers and to reduce casualties. Rather than a whole brigade attacking with numerical superiority of at least 3:1, a single infantry battalion would be used to take an objective, often

³²LAC, RG 24 Volume 14,213. 6th Canadian Armoured Regiment War Diary June 1944. T-12657. 11 June 1944 entry. Large tank losses were suffered by the 1st Hussar "B" Squadron in the 11 June 1944 attack on Le Mesnil-Paltry, France.

³³ Charles Stacey, *The Victory Campaign*, 487-489

Figure 2.2: Fort Garry Horse (10th Canadian Armoured Regiment) two-squadron combined arms tactics with infantry, Louisendorf, Germany 1945³⁴



held by a complete enemy battalion. This attack would usually be made with two companies up front and two to the rear. The battalion heavy weapons would be held ready should an enemy armoured or infantry counter attack appear. As of October, 1944, the support company of an infantry battalion was seven officers and 184 other ranks, and an individual infantry company comprised of five officers and 120 other

³⁴ Fort Garry Horse, *Vanguard: The Fort Garry Horse in the Second World War* (Doetinchem, the Netherlands: Regimental Association History. 1945).

ranks. With only two companies up front, the actual attacking group to first make contact was not the full weight of the 850 strong battalion, only 18 percent.³⁵

The tactic of the direct-fire “firebase”, a firm part of Canadian Army doctrine today, was often not utilized. Tanks concentrated at a right angle to the infantry assault could use combined firepower to suppress the enemy, but circumstances often hampered this tactic. Poor coordination, tank obstacles, effective German anti-tank fire, smoke from artillery fire or other factors conspired to inhibit the effectiveness of the firebase. Regardless if the tanks were intimately involved, an artillery rolling barrage would commence at the attack, matched with concentrations on or near the objective. The rolling barrage would lift and move forward at a set pace per minute towards the enemy lines. Once the artillery fire commenced, the infantry, supported by armour and anti-tank assets further back, would begin to move. The idea was that the infantry would closely follow the barrage, just as in the First World War, and be in the enemy trench lines before they could react.

The battlefield could be very challenging for Canadian infantry if it was not part of a combined arms team. Canadian tactics in NWE during late 1944 and early 1945 sought to mitigate this, but those used in the summer of 1944 were often found lacking. If the infantry was on its own and the enemy continued to resist when the artillery barrage had ended, company and platoon tactics would be used. All light machine guns and mortars would be grouped together to lay down suppressive direct and indirect fire, forming a firebase. The remaining force would infiltrate onto an enemy flank under an infantry company commander’s leadership, forming an assault force. Suppression of the enemy would allow the manoeuvring sections of this force to use fire and movement to eventually reach and destroy the enemy positions.

Speed and effective suppression of the enemy were crucial at this stage. If the advance of the assault force was halted or driven back, the attack would likely fail. The 25 July 1944 night attack by the

³⁵ LAC, RG 24, Volume 13,662. First Canadian Army A & Q War Diary November 1944. T-7093. Infantry Division War Establishment Staff Tables Infantry Battalion (Regiment) WE II/233/4 October 1944. The support company of an infantry battalion was seven officers and 184 other ranks, and an infantry company comprised of five officers and 120 other ranks. Total strength per battalion was thirty-eight Officers, 812 Other Ranks.

North Nova Scotia Highlanders on Tilly-La-Campagne, Normandy was an example of the type of reverse that could occur.³⁶ Before the assault force could penetrate the village it was halted by machine gun and tank fire and then counterattacked. What remained of the companies were driven back their start lines. Canadian battle casualties in this action were very heavy, totalling 139.³⁷ Attacks were much more likely to succeed if an assault force of superior numbers could quickly break into the enemy's trench system while they were suppressed by indirect and direct fire. Using close quarter techniques, the attacking force would then either destroy the enemy or force them to surrender.

For these infantry tactics noted above to succeed, it certainly helped to have the most advanced weapons and armoured battlefield transport available. It was crucial to get an infantry company or platoon onto its objective quickly if it was under fire. This is an area where the Canadian Army was weak. In NWE, Canadian infantry battalions were largely trucked aboard military pattern Ford and Chevrolet trucks. In their assembly areas they de-bussed and mated up with armour or other supporting assets. They then walked to start-line for the assault or "Line of Departure" (LOD). At the prescribed time or "H-hour", they would commence the advance to contact with the enemy. While the battalion Universal (Bren Gun) Carrier platoon rode along and other carriers took the 6-Pounder anti-tank and mortar platoons into battle, the remainder of the battalion was on foot. An infantry company could ride upon a tank squadron occasionally, but most of the time they either marched or were trucked along hard-pack roads to their assembly areas. If the battalion was manning the front lines in defensive positions, the carriers and the trucks would be deployed far to the rear of the position.

While Canadian infantry and reconnaissance regiments used their Universal tracked carriers to good effect, the vehicles were small and not designed to carry a fully-armed section of infantry into

³⁶ Charles Stacey, *The Victory Campaign*, 189-207. There were four failed major assaults on this village during the period 25 July-5 August 1944.

³⁷ LAC, RG24 Volume 15,122. The North Nova Scotia Highlanders War Diary July 1944. 25 July 1944 entry. A dismounted night attack without tanks or heavy artillery support on Tilly-La-Campagne, Normandy failed due to intense machine gun and tank main gun fire with high explosive rounds. Charles Stacey, *The Victory Campaign*, 190.

battle.³⁸ Canadian dismounted infantry regiments did not have the equivalent of a machine-gun armed American White M3 or German SPW 251 half-track armoured personnel carrier. These carriers were capable of carrying an infantry section with all its weapons. The two motor battalions of the 4th and 5th Canadian Armoured Brigades in summer 1944 were equipped as such, but only expressly to allow them to follow a rapid armoured advance. These vehicles were limited in their cross-country capability, and having an open top they offered poor protection from artillery airbursts and sustained heavy machine gun fire. In the way of positive attributes, half-tracks could provide fire support, increased speed and some protection to infantry while travelling to the objective. In a similar fashion to World War One, Canadian infantry took heavy casualties during their dismounted approach to the objective. What was needed was something that could transport over any terrain while providing armour protection against mortar shrapnel, machine gun bullets and near misses from artillery.³⁹

A capable infantry fighting vehicle did not exist in the Canadian inventory until August 1944's Operation "Totalize", when a number of Kangaroos (modified Priest 105mm self-propelled artillery with the guns removed and armour plate added) were made operational. The Kangaroo armoured personnel carrier (APC) mounted battalions during Operation "Totalize" suffered sixty-three casualties in comparison to the 260 suffered by dismounted battalions.⁴⁰ Due to this success, the unit was frequently used and expanded. Once the Priest armoured personnel carriers were all destroyed or worn out, obsolete Canadian Ram tanks without turrets were utilized. But there were a limited number of these vehicles, and the Kangaroo regiment was shuffled from battalion to battalion, often in support of British infantry. In December 1944 the CIC dismounted regiments were still equipped with a single platoon of Universal Carriers per regiment. During the same period the two motor battalions of the armoured brigades had just

³⁸ John Martenson, Michael McNorgan, *The Royal Canadian Armoured Corps: An Illustrated History* (Toronto: Robin Brass Studio. 2000.), 250. One of the 7th Canadian Reconnaissance Regiment's B Squadron troops, with fifteen Universal Carriers, charged through a Waffen-SS panzer grenadier position during Operation "Charnwood". This turned the tide of a battle near Gruchy, France.

³⁹ LAC, RG 24 Volume 15,020. The Calgary Highlanders War Diary August 1944. Entry 1 August 1944. Canadian infantry assaulting Tilly-la-Campagne France on the night of 31 July-1 August 1944 were badly shelled on their dismounted approach in pitch darkness. It also appears the British Scots Greys armour squadron in support did not advance in support on the first failed assault, and only committed three tanks (one troop) to the second failed assault, losing two of the three tanks.

⁴⁰ Russell Hart, *Clash of Arms*, 367.

fifty-three armoured 15-cwt-C15TA trucks per battalion, having exchanged the M3 White half-tracks. As of November 1944, there were only two squadrons of fifty-three Kangaroos each in the 1st Canadian Armoured Personnel Carrier Regiment.⁴¹ These desperately needed APCs were not even fully subordinated to Canadian command, being part of the 79th British Armoured Division.

Supplementing the Kangaroo from fall 1944, onwards was the Universal Wasp II flame-thrower carrier. This was the flame-throwing version of the tracked Universal Carrier. This fearsome weapon could reduce enemy infantry positions very quickly by killing defenders or forcing them to withdraw. Production challenges encountered in creating an effective three-man vehicle meant that there were virtually none available for the June-July 1944 battles in Normandy. As of August 31 1944, the Canadian Army in NWE boasted one on strength while its formation's war establishments were authorized a total of 132.⁴²

Commonwealth section level infantry weapons were functional and dependable. However, they were not cutting-edge technology, and this factor arguably influenced the level of infantry casualties. The sooner an infantry firefight was won, the sooner the battle could be concluded. The British First World War bolt-action Lee-Enfield .303 battle rifle, the magazine-fed Bren section automatic weapon, Sten sub machine gun (SMG) and PIAT (projector, infantry, anti-tank) anti-tank weapon were inferior weapons when compared to American and German equivalents. The section Bren guns were not the equivalent in the sustained fire role of a machine gun firing 100-round belts. To protect the light machine gun, riflemen also needed adequate arms. The German Gewehr 43 and American M1 Garand battle rifles were semi-automatic, powerful and fed by clips or magazines. The Gewehr 43 could also be mounted with a scope. Both of these were inferior to the newer German Sturmgewehr 44 fully automatic 7.92mm assault rifle, the predecessor to the present day Russian AK-47. This weapon began to appear in late 1944 and was cutting-edge technology. The Sten SMG was poorly engineered and cheaply made in comparison to an

⁴¹ 1st Canadian Armoured Personnel Carrier Regiment. *1st Armoured Personnel Carrier Regiment. History of the Kangaroos.* (St. Thomas: Regimental Association pamphlet. 1962).

⁴² LAC, RG 24 Volume 10,553.. 21st Army Group A & B Vehicle State Position Report. File 215A21.085(D1). 31 August 1944 entry. In August 1944 the 3rd Canadian Infantry Division had one vehicle on strength.

American Thompson or German MP 40 9mm SMGs. While effective, the PIAT was not the equivalent of the German Panzerschreck or U.S. M9 Bazooka. Having the proper weapons to conduct close quarter fighting at 100 meters or less was essential. Advancing against a German defender with multiple MG-42 machine guns was a challenging situation. Unless tanks, Wasp II flame thrower carriers or heavy Vickers .303 water-cooled machine guns were brought up, the assault could bog down. If the assault stalled, the chances of increased casualties multiplied.

German defensive efforts focused on the destruction of dismounted Canadian infantry. As a result, the bulk of Canadian infantry casualties in NWE occurred during these types of assaults or defending against an immediate German counterattack. While small numbers of battle casualties would occur daily due to harassing mortar or artillery fire, the Germans saved the majority of their artillery resources to repulse Canadian attacks. Large numbers of casualties could occur very quickly due to German indirect and direct-fire weapons. Since Canadian attacks were usually infantry-led and supported by armour and anti-tank forces, the infantry nearly always bore the brunt of massed German defensive fires. The Germans realized that if the infantry were beaten back, any armour present would more often than not withdraw, being naked without infantry support. During an average month of war in NWE, a Canadian infantry regiment might see four to five days of intensive offensive combat. The remainder of the time would be spent patrolling, conducting training or in defensive positions. Casualties during these inactive phases would be light due to the inability of the German forces post August 1944 to launch major offensive operations.⁴³

Though Canadian armour and anti-tank forces took a subordinate role in offensive operations, it was important to coordinate with them prior to battle to ensure their effective participation. Examples from Normandy illustrate that the failure to accomplish this would invite disaster. Attempting to keep in contact with the enemy on 5 August 1944, The Royal Highland Regiment of Canada (The Black Watch)

⁴³ LAC, RG 24 Volume 13,663. First Canadian Army A & Q War Diary February 1945. T-7094. In the consolidated strength and casualty report daily returns for February 1945, there are two days of intensive combat identified for The Algonquin Regiment.

advanced on May-sur-Orne, Normandy without intimate tank support or enough artillery support. On reaching the objective it suffered heavy casualties from German mortar, machine gun and tank fire. The commander of "A" Company was killed and his company took heavy losses. The battalion then withdrew back to its start point of St Andre-sur-Orne. The role of Canadian armour designated to support the infantry in this action is unclear. This action came directly on the heels of a 25 July 1944 reverse on Verrieres Ridge which decimated the regiment, with its casualties totalling just over 300.⁴⁴ In this previous action the battalion had also attacked without intimate armoured support, attempting to cross a ridgeline which was devoid of cover. Preparatory artillery fire at not neutralized the defences at the summit, which came to life and annihilated the attackers.

Combat losses robbed Canadian units of more than just personnel when large numbers of battle casualties occurred during a short period of time. This type of casualty could total over 200 personnel in one day, as evidenced by the experience of the previously mentioned The Royal Highland Regiment of Canada.⁴⁵ Its losses on 25 July 1944 were almost exclusively confined to its four forward infantry line companies. Due to the experienced, highly-trained and effective infantry platoons of these companies being the real fighting power of the unit, its combat effectiveness in the immediate aftermath was reduced to nothing. The Black Watch would not regain its previous combat effectiveness for some time due to inexperienced replacements not performing at the same level as their predecessors.

It was very dangerous for an Canadian combat arms unit in NWE to immediately launch a new operation after receiving a large amount of new replacements. If a gradual integration of new personnel was not completed with appropriate refresher training, further heavy losses could occur. This is exactly what befell the Black Watch during its second failed operation on 5 August 1944 in the village of May-

⁴⁴ LAC, RG 24 Volume 15,009. The Royal Highland Regiment of Canada (The Black Watch) War Diary August 1944. Entry 5 August 1944. Attempting to keep in contact with the enemy, the regiment advanced to May sur Orne. There it suffered heavy casualties from German tank and infantry defensive fire. David R. O'Keefe, (2006) "'Pushing Their Necks Out': Ultra, The Black Watch, and Command Relations, May-sur-Orne, Normandy, 5 August 1944," *Canadian Military History*: Vol. 15: Iss. 1, Article 3. Available at: <http://scholars.wlu.ca/cmh/vol15/iss1/3>. Charles Stacey, *The Victory Campaign*, 207. Stacey states the 10th Canadian Armoured Regiment was slated to support the Black Watch in this operation.

⁴⁵ John English, *The Canadian Army and the Normandy Campaign*, 193. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

sur-Orne. This action involved many new replacement personnel, and it is arguable they had not had to time to acclimatize themselves and lacked experienced NCO section leadership.⁴⁶

It was most beneficial to slow acclimatize new personnel to front line conditions, regardless of the combat arm. Upon arrival, a new infantry replacement would not know any of his fellow platoon members or his section commander. To function as a well-oiled machine in combat, each section member had to possess a certain confidence in his fellow soldiers and his weapons. This came through training and shared experiences, the most valuable but most dangerous of the latter being combat itself. Prior to combat operations it was necessary to have new Canadian soldiers become confident in themselves and their teammates as soon as possible due to the often immediate need to thrust them back into action. While it was beneficial for this goal to be achieved on a regular basis within Canadian combat arms units in NWE, military necessity and a lack of forces often did not allow it to occur.

Failure to accomplish successful integration could result poor combat performance and increased casualties within the ranks of the new personnel, especially in the infantry. While a shortage of infantry and constant high-intensity operations from August to November 1944 had hurt the ability of new Canadian infantry replacements to integrate, a period of inactivity during the winter of 1944-1945 allowed unit training and gradual integration to occur. The U.S. Army approach to integrating new personnel into infantry units had negative results in the years 1943-1944. Replacements were thrown into combat with little chance to know their fellow squad members or conduct realistic training prior to reaching the front line. While maintaining the strength of front line units, this practice reduced the combat effectiveness of individual companies within the U.S. infantry battalions. In the fall of 1944 this practice changed and new replacements were received in divisional replacement camps that gave

⁴⁶ David, O'Keefe, "Pushing Their Necks Out": Ultra, The Black Watch, and Command Relations, May-sur-Orne, Normandy, 5 August 1944," *Canadian Military History*: Vol. 15: Iss. 1, Article 3. Retrieved January 2016 from <http://scholars.wlu.ca/cmh/vol15/iss1/3>. On 5 August 1944 the Black Watch suffered another reverse near May-sur-Orne, losing seventy personnel in the process.

refresher training.⁴⁷ They were then posted to companies that were out of the front line, giving them additional time to acclimatize themselves.

Canadian armoured vehicle and heavy weapons systems losses resulted in similar reduction in unit combat effectiveness, regardless of how quick a replacement piece of equipment was allocated. Given the relative abundance of Allied armoured vehicles and heavy weapons in comparison to the limited numbers of replacement infantry personnel, units were rarely short of equipment. But how effectively heavy weapons systems such as tanks and artillery pieces were used depended on the team performance of the crews operating them. As an example, if a tank was knocked out, usually one or two crew members would be lost. Given the tight knit camaraderie of tank crews, a reduction of combat effectiveness would be expected until new members were acclimatized to combat conditions and the leadership of their tank commander. Losses of artillery pieces post Normandy for the CAO were rare due to the weakness of the German capability to engage in sustained counter battery fire or air strikes. As was the case with U.S. artillery crews, the combat effectiveness of the RCA artillery regiments rose with time.⁴⁸ Their team performance increased with experience, and artillery battery cohesion was not destroyed by heavy losses and the constant need to integrate and train new personnel.

Air support is an important factor to consider when reviewing Canadian military operations in NWE. The operations of the RAF 2nd TAF's 83 and later 84 Composite Groups were very successful at providing tactical air support of the First Canadian Army in NWE. German logistical and operational movement during daylight hours was terribly inhibited. Air support from the RAF and RCAF was also crucial for softening up German defensive positions. The breaching of Dutch dikes by air power was critical to flooding the German Scheldt defences in September-October 1944, making the conquering of this area easier in later battles.

⁴⁷ Peter Mansoor, *The GI Offensive in Europe*, 253.

⁴⁸ Peter Mansoor, *The GI Offensive in Europe*, 251.

The ever present Typhoon fighter-bomber was a great asset not for its rocket or bomb carrying capability, but for its four 20mm automatic wing mounted cannons. It was these cannons that struck the rear decks of German armour in Normandy, putting tanks out of action. Soft targets such as trucks and cars could be totally destroyed, sapping enemy morale and ability to move openly in column on roadways in daylight. The German infantry formations were impotent against these attacks, and Canadian morale was boosted greatly by seeing the impact of rockets, bombs and cannon fire.

The designated role of the British Royal Air Force's (RAF) Second Tactical Air Force (2nd TAF) was to fight the air battle and support the 21st Army Group by means of aerial reconnaissance and ground attack.⁴⁹ For this purpose the RAF Composite Group Headquarters (HQs) and the Army HQs met regularly to discuss support for operations. However, the ties between the RAF, Royal Canadian Air Force (RCAF) and Canadian Army in NWE were not particularly strong. A certain amount of animosity existed between the services regarding the role and utilization of tactical aircraft in support of the ground troops on offensive operations. Air-ground cooperation in the form of an established doctrine was not an institutionalized practice as it in the modern Canadian Army. Today's forward air controllers (FACs), the trained Army artillery and infantry officers who communicate with aircraft, were not something that existed in 1944. Due to this, the potential effectiveness of tactical airpower in support of Canadian ground operations was never reached in NWE. If a ground-controller was present, this role was usually taken on by a RAF Air Support Signals Unit (ASSU). These units were RAF controlled and strictly retained control of RAF and RCAF air activity, regardless of what the Canadian Army wanted or needed.⁵⁰

The practice of embedding RAF and RCAF ground controllers in a manner similar to the artillery Forward Observation Officer (FOO) in an infantry battalion was accomplished on a limited scale with the

⁴⁹ John Grodzinski, *Operational Handbook*, 113-115.

⁵⁰ LAC, RG24 Volume 14,287. 27th Canadian Armoured Regiment War Diary July 1944. On 23 July 1944 a large grouping of German armour was spotted by this regiment east of May sur Orne. Two hours later the message was received that air support was not available.

use of CAC “Contact Cars” from September 1944 onwards.⁵¹ These were CAC armoured vehicles manned by RCAF and RAF ground signallers with a CAC crew commander and driver. These vehicles would be in close contact with the most forward infantry or armoured tactical HQ, but were still subordinate to a nearby ASSU with regards to directing RAF or RCAF ground attack sorties. Direct communication with air assets by Canadian Army personnel, which could have further enhanced the quality of air support in NWE, was totally lacking.⁵² Also, terrible instances of fratricide occurred when large numbers of RAF, RCAF and United States Army Air Force (USSAF) four-engined strategic bombers were utilized to destroy in depth German defences. The danger of this occurring was not something that the Canadian Army recognized or had trained for in the months leading up to Operation “Overlord”. Reduction of the risk of short bombing and target misidentification was tackled in an ad-hoc manner by the Canadian Army as the situation demanded.⁵³ Offsetting the excellent support of the RAF and RCAF provided on the battlefield was the CAO's lack of influence in air support matters. This state of affairs led to continued misunderstandings and frustration over friendly fire incidents and cancelled ground support missions until the end of hostilities.⁵⁴

Victory was achieved for the Canadian Army most frequently when it employed balanced combined arms teams to achieve limited objectives, aided by air and artillery support. The best example of this was the defeat of the German 25th SS Panzer Grenadier Regiment in the villages of Authie and Gruchy, Normandy on 8 July 1944.⁵⁵ In this action 3rd Canadian Infantry Division infantry units with supporting arms overran fortified German defences, attaining all their objectives. They then defeated a

⁵¹ John Grodzinski, *Operational Handbook*, 113-115.

⁵² LAC, RG 24 Volume 15,000. The Algonquin Regiment War Diary August 1944. Entry 9 August 1944. As the combined arms “Worthington Force” (28th Canadian Armoured Regiment and a company of the Algonquin Regiment) was being destroyed in their isolated position on Hill 140, there were no RAF or RCAF forward air controllers present. Armour and infantry personnel were reduced to signalling Typhoon ground support aircraft with yellow smoke and ground panels. These two aircraft provided excellent ground support.

⁵³ LAC, RG 24 Volume 13,789. 4th Canadian Armoured Division War Diary August 1944. T-10546. 14-15 August, 1944 entries. John Grodzinski, *Operational Handbook*, 60. The 14 August, 1944 destruction of the 4th Canadian Armoured Division Headquarters communications equipment and vehicles by friendly aerial bombing inhibited command and control.

⁵⁴ Charles Stacey, *The Victory Campaign*, 559. As an example, a medium bomber strike requested three days prior on a significant rail junction and military barracks in Oldenburg, Germany was cancelled en route by the 2nd Tactical Air Force. RAF leadership was convinced that the barracks would be needed post-war by the occupation forces. First Canadian Army HQ staff officers were embittered by this, despite successful strikes later.

⁵⁵ Niklas Zetterling, *Normandy 1944*, 355. Total personnel losses 27 June-11 July 1944 are estimated at least 600 personnel from a regiment that was already at 60 percent strength.

powerful German armoured counterattack, inflicting even more casualties on the enemy. This was an impressive victory that reflected an improved level of tactical effectiveness as a result of combat experience over the month of June 1944. It was even more impressive considering the Canadian forces involved utilized a combined arms method of fighting that had not been perfected during training in the U.K.

Large scale combined arms training in the U.K. for some Canadian formations of the First Canadian Army prior to operations in NWE was a challenge. The process of equipping the divisions of the 2nd Canadian Corps with their full equipment establishments was very slow. In March 1944, the 4th Canadian Armoured Division and 2nd Canadian Infantry Division were deemed non-operational due to having not received enough weapons and vehicles.⁵⁶ At this stage it was critical for both formations to be fully equipped and involved in constant, realistic and intensive combined arms field exercises.⁵⁷ Exercises in tank-infantry cooperation for some Canadian divisions in the U.K. had only begun sporadically in the fall of 1943.⁵⁸ During the campaign in NWE, the utilization of RCA Forward Observation Officers (FOOs) to call down timely artillery support was necessary to consistently defeat German counter attacks.⁵⁹ This skill of summoning and maintaining artillery support had not been perfected in infantry and armoured regiments, despite the long period of time spent training in the U.K. from 1940 to 1944. To make matters worse, Canadian D-Day assault formations had focused training solely on the one-day amphibious assault. They were in as bad shape as the follow-on divisions regarding combined arms training.

Compounding these disadvantages was a complete lack of recent combat experience within the divisions about to be deployed to NWE. Recent lessons learned from Italy and Sicily in the way of

⁵⁶ LAC, RG 24 Volume 10,553. 21st Army Group A & B Vehicle Position Report. File 215A21.85 (D1). 31 May 1944 Report. The 4th Canadian Armoured Division at this point held none of its forty-five authorized 17-Pounder Firefly tanks. It was authorized thirty-six Wasp II flamethrowers, but had only obtained two. These weapons systems were to be some of the most effective for the Canadian Army in NWE. Uselessly, this formation still contained 102 obsolete Ram II tanks.

⁵⁷ Russell Hart, *Clash of Arms*, 186.

⁵⁸ John English, *The Canadian Army in Normandy*, 104.

⁵⁹ John English, *The Canadian Army in Normandy*, 160.

reports on operations and enemy tactics were not passed down rapidly or effectively to U.K. based Canadian units in early 1944.⁶⁰ Once in Normandy, the British practice of keeping units forward did not allow Canadian regiments to be easily removed from the line for re-training in the field. Mated with the erosion of Canadian infantry strength in the summer of 1944 was the arrival of remustered inexperienced replacements. These factors led to occasional performance issues in the fall.⁶¹ Problematically, experienced Canadian personnel remained in Italy while green, inexperienced units were used in Normandy.⁶² Mistakes would be costly against powerful German units with advanced weapons and veteran officers.

Despite initial operational challenges during June-August 1944, Canadian formations had achieved sufficient combat experience by September to allow offensive performance levels to rise.⁶³ When an all arms combat team well versed in assault tactics was employed with heavy artillery support, good results could be achieved. Infantry platoons with intimate armoured support assaulted the objective while other tanks suppressed the enemy in a firebase role. The tanks would move at an infantry pace, following the artillery barrage and using their machine guns to suppress the enemy. Supplementary artillery tactics were used in addition to the rolling barrage, such as surprise concentrations, air-bursts and bombardments of all suspected armoured assembly areas and anti-tank positions. Intensive counter battery fire was placed simultaneously on all suspected enemy artillery and mortar positions. Once the assault force had reached the objective, the tanks could churn up the trenches by turning on their tracks and firing directly into bunkers and dug-outs. They would knock out German anti-tank guns and machine gun positions, protecting the infantry until they were literally on top of the objective. At this point the tanks were very vulnerable to enemy infantry anti-tank teams, so friendly infantry had to be close at hand. All gains would immediately be fortified by the infantry and their supporting arms, as the German

⁶⁰ John English, *The Canadian Army in Normandy*, 133.

⁶¹ Russell Hart, *Clash of Arms*, 361.

⁶² LAC, RG 24 Volume 14,237-14,238. 11th Canadian Armoured Regiment War Diary December 1942-August 1944. T-12702. This Regiment, one of three within the 1st Canadian Armoured Brigade, performed at a very high level in all their operations in Italy and Sicily.

⁶³ Russell Hart, *Clash of Arms*, 361.

counter-thrust would be expected at any moment. This was a second victory waiting to happen, as the new defenders would crush the German counter-attack and inflict heavy casualties.

Canadian Army strategy in NWE was not focused on constantly being on the offensive. The transition phase between offensive operations was very defensive, with a focus placed upon creating "fortress" and "firm base" positions. Both in Italy and NWE, once an objective was captured an evolved version of First World War "Bite and Hold" tactics were utilized. Anti-tank, armoured and mortar assets were rushed in to help to create an infantry battalion or brigade "fortress".⁶⁴ In Normandy there was initially the very real risk that powerful German formations would attack and successfully liquidate the Allied beachhead. It was onto these fortresses that the German land forces would be enticed to shatter themselves in failed counter-attacks. This was the opportunity for Canadian and British artillery forces to expend the full weight of their defensive fires on the enemy with coordinated "Mike" and "Uncle" targets. These RA and RCA tactics utilized massive amounts of on-call firepower on a point or area target. It was these tactics that largely pushed the German 12th SS Panzer Division Hitlerjugend onto the defensive in June 1944, its counterattacks and attempts to gain the initiative being crushed.⁶⁵ This practice was very successful in destroying German counterattacks in the month of June, but with the caveat that it led to static warfare. Periods of inactivity when the Allies were between offensive operations gave the Germans time to fortify in-depth defensive zones that could be only be conquered with major losses. They were so strong in fact, the Allies turned massive aerial bombardment using four-engine bombers and naval bombardment on occasion.⁶⁶

Following the collapse of the German front in Normandy due to attrition, the September 1944 to May 1945 period for the Canadian Army was primarily infantry orientated. Infantry-led offensive operations were tied to elaborate artillery fire-plans designed to annihilate dug-in German defenders. While there were some operations that were led by armour, set piece attacks by infantry units with

⁶⁴ Terry Copp, "The Bite and Hold Approach: Army, Part 80", *Legion Magazine*, February 2009. Retrieved 5 February 2016 from <https://legionmagazine.com/en/2009/02/the-bite-and-hold-approach-army-part-80/>

⁶⁵ Marc Milner, *Stopping the Panzers*, 301.

⁶⁶ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 285.

supporting arms and extensive artillery support were the standard. To be fair, flooded Dutch polders and peninsulas of the Scheldt Estuary restricted armour movement terribly. Individual Canadian armour squadrons were assigned to support attacking infantry battalions, rather than operating together in regimental strength. Limited objectives were “bitten” off and defended in a “hold” manner until Canadian units were ready for the next bite. The defensive “hold” was supported by tanks, mortars and anti-tank guns which were hurried onto the objective to stave off the inevitable German counter-attack. The total destruction of the enemy by encircling mechanized pincer movements was not envisioned, and the terrain rarely allowed for it. This methodical approach by Anglo-Canadian formations led to repeated set piece operations, even against very poor quality German forces during the last two months of the war. For example, despite the German defences on the IJssel River in April 1945 being weak, lengthy preparations were made for attacking them.⁶⁷

Anglo-Canadian doctrine was the polar opposite of the tactics that were present on the Eastern Front 1944-1945. In this theatre armour dominated the attack, and Red Army infantry often specialized in riding on the engine decks of the Russian T-34 tanks. The Soviet commander conducted the deep armoured battle, one of extreme penetration and manoeuvre based on available logistics, opportunities and attacking the enemy at its weakest point. Strong artillery fire was present on the Eastern Front, but on a much smaller scale and between intervals, the guns taking a long time to catch up with the tanks. On the Anglo-Canadian front the opposite was true. Armour and infantry were always within reach of the guns, and a pattern of long-range mechanized manoeuvre warfare did not occur. Troop density in Normandy and the Netherlands stood in stark contrast to the Eastern Front. The limited size of the area of operations meant that movement was always observed by the enemy. These factors in Normandy severely limited the Canadian Army’s ability to find a weak spot in German defenses and achieve tactical surprise.⁶⁸ Periods of inactivity would allow each side to build defenses in depth, making it very difficult

⁶⁷ Charles Stacey, *The Victory Campaign*, 547.

⁶⁸ LAC, RG 24 Volume 13,711. 2nd Canadian Corps General Staff War Diary July 1944. T-1865. During Operations “Atlantic” and “Spring”, no less than eighteen Canadian infantry battalions and two machine gun battalions of the 2nd and 3rd Canadian Infantry Divisions were active or present near the area of Verrieres Ridge. This is not counting CAC or RCA forces.

for the opposing force to achieve a breakthrough. Every factor became multiplied in an ongoing campaign of attrition, and artillery and armour resources from each side could quickly be brought to bear.

To summarize, Anglo-Canadian "Bite and Hold" tactics, with specific objectives allotted per infantry battalion, allowed the campaign proceed at a slow, steady grind. This grind slowly defeated the Germans in Normandy and beyond with limited Canadian casualties. The casualties that were suffered were mainly in the infantry regiments, and these occurred during offensive operations. There were two main reasons for this: Due to their role as the vanguard of the attack, they drew the most fire. Secondly, their un-armoured bodies were vulnerable to all types of German weaponry while they were advancing in open ground. The non-infantry RCA and CAC regiments suffered significantly less casualties due to their role, tactics, position on the battlefield and the capability of the enemy to attack them.

The Canadian Army in NWE quickly learned to maximize its strengths and minimize its weaknesses while in combat. Following initial challenges in Normandy during June-July of 1944, necessary modifications were made to place greater emphasis on indirect firepower and combined arms tactics. Armour would take on a reduced role and operate within the limits of the infantry and artillery units it was working with. Once these modifications were made, infantry led combined arms teams executed assaults with better cooperation, achieving improved results. In doing this the Canadian Army sacrificed armoured manoeuvre in return for the set-piece limited attack with overpowering indirect fire support. Weakened German formations in late 1944 and spring 1945 had limited assets in which to defeat these assaults. Devastating firepower from the RCA, operating with impunity, would reduce resistance and crush all German counterattacks.⁶⁹ Assaulting Canadian infantry with plentiful armoured and anti-

⁶⁹ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. LAC, RG24 Volume 14,437. 3rd Field Regiment, RCA War Diary April 1945. T-15956. April 1945 casualties for the 3rd Field Regiment, RCA consisted of eleven non-battle casualties and no battle casualties, despite the intensity of constant indirect fire missions to support 1st Canadian Corps. The regiment received thirteen replacement personnel during this month.

tank support would then capture and consolidate their objectives, taking an acceptable number of casualties on average in the process.⁷⁰

⁷⁰ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. The Loyal Edmonton Regiment in April 1945 suffered ninety-seven battle casualties and twenty-seven non-battle casualties despite offensive operations throughout the month.

Chapter 3: The German Army, Waffen SS, and Luftwaffe ground troops: Strengths and weaknesses of the German forces and their tactics against Canadian Army operations in North West Europe, 1944-1945

As a sequel to the previous chapter, this section of the study will continue to address the question of how and why Canadian casualties occurred during operations in NWE 1944-1945. How did the Canadian Army's foes during this period, the German Army, Waffen SS (military wing of the Nazis party) and Luftwaffe (air force) ground forces, operate tactically to inflict casualties? What allowed them to inflict casualties on some Canadian units, while failing to launch successful attacks on others? This chapter will describe the strengths and challenges faced by the German forces and in the process outline their defensive doctrine in NWE from 6 June 1944 to 5 May 1945. Once this is accomplished, the reader will comprehend why some Canadian units suffered more than others, building upon the factors presented in the last chapter.

The enemy the Canadian Army faced for the majority of the campaign in NWE, September 1944 to May 1945, was on average poorly equipped and less trained compared to German units that fought in Normandy. During the June-August 1944 period, Canadian formations had faced well-equipped, semi-mechanized units that had an adequate amount of armour and medium quality infantry. German units performed well enough that there were occasions where Canadian units suffered reverses and were driven out of their positions.¹ German Luftwaffe ground attack assets were active by day and night, seeking to bomb and strafe Canadian units.² Enemy artillery units occasionally attempted counter-battery fire and sustained bombardments of targets of importance.³ Large groupings of German tanks, with mechanized infantry support, launched coordinated counterattacks that inflicted significant casualties on Canadian

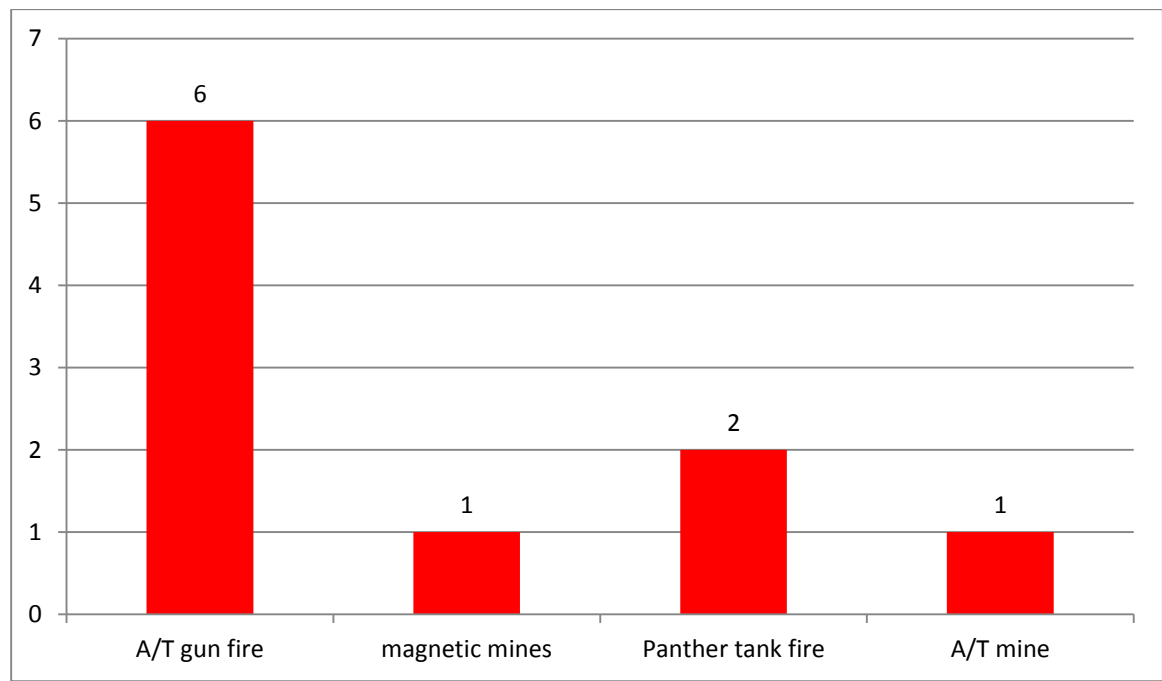
¹ LAC RG 24 Volume 15,009. The Royal Highland Regiment of Canada ("The Black Watch") War Diary July 1944. Entry for 25 July 1944. Terry Copp, *Fields of Fire*, 175. The most significant example was The Royal Highland Regiment of Canada, ("The Black Watch"). Set upon by tank fire from a reverse slope position, its advancing companies were destroyed on 25 July 1944, during Operation "Spring".

² LAC, RG 24 Volume 14,591. 3rd Light Anti-Aircraft Regiment, RCA War Diary July 1944. T-16740. Airstrikes on 2nd Canadian Infantry Division positions occurred on 11 and 12 July 1944. These involved twelve Bf 109s in the first strike and six Bf 109s in the second. The Luftwaffe suffered a total of eight Bf 109s shot down in these raids.

³ LAC, RG 24 Volume 14,591. 3rd Light Anti-Aircraft Regiment, RCA War Diary July 1944. T-16740. The period 11 to 12 July 1944 also saw constant German artillery strikes on 2nd Canadian Division positions, with rear deployed light anti-aircraft units such as this one suffering constant casualties.

units. As shown in chart 3.1, the Germans had the resources to inflict significant losses on attacking Canadian Army units in short periods of time. The Canadian Army during this period was facing a well-equipped enemy that sought to destroy and later contain the Normandy beachhead.

Chart 3.1: B Squadron, 27th Canadian Armoured Regiment tank losses in 8 July 1944's Operation "Charnwood". Squadron war establishment strength: 19 tanks⁴



In later battles to liberate the Low Countries and invade Northern Germany, Canadians encountered sub-standard enemy forces.⁵ There were exceptions, but German formations in contact with the Canadian Army post 21 August 1944 were short of heavy weapons and staffed with a mixture of conscripts that were not highly motivated.⁶ As illustrated in Chart 3.2, the defenders in some of the difficult Scheldt battles of fall 1944 were a mixture of unit remnants, alarm battalions, Kriegsmarine

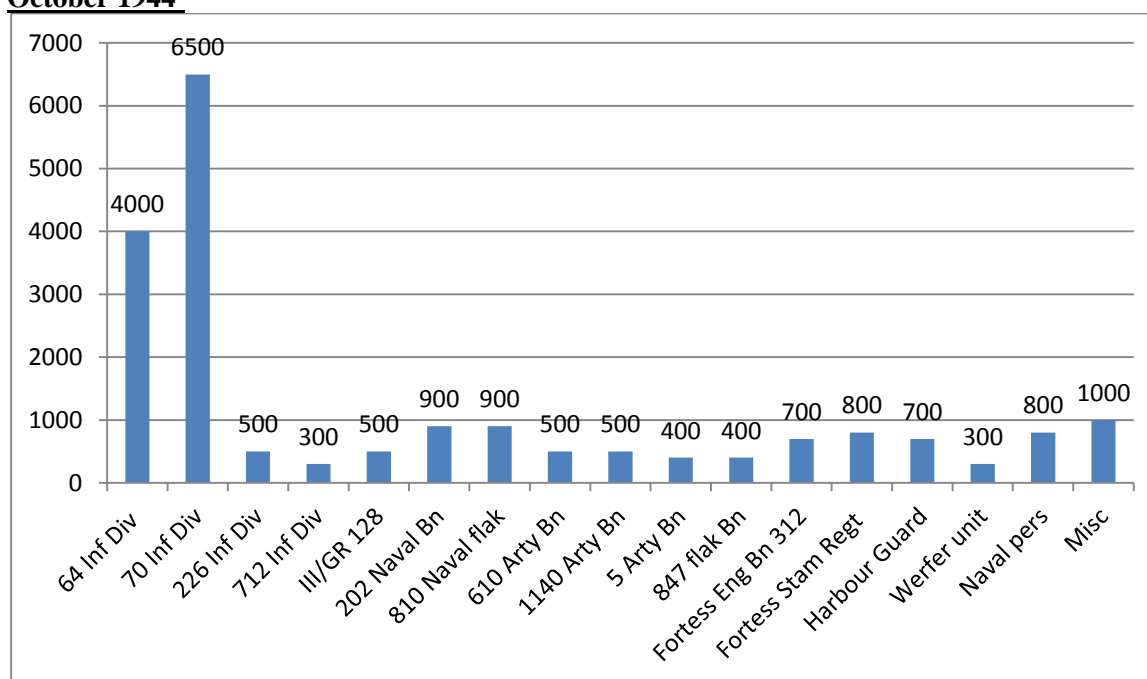
⁴ LAC, RG 24 Volume 14,287. 27th Canadian Armour Regiment War Diary July 1944. T-12757. B Squadron report on Operation "Charnwood" fighting 8-9 July 1944.

⁵ Terry Copp, *Cinderella Army*, 203. Against the upcoming February 1945, Operation "Veritable" which saw five Anglo-Canadian divisions attack along a very limited frontage, the Germans initially only deployed a few formations. These were the under-strength 10,000 personnel strong 84th Infantry Division, one parachute (Fallschirmjäger) regiment and an under strength battalion of assault guns.

⁶ LAC RG 24, Volume 14,560. 2nd Canadian Anti-Tank Regiment, RCA War Diary February 1945. T-16453. 19-20 February 1945 saw the 2nd Canadian Anti-Tank Regiment, RCA engage German tanks for the first time since October 1944. These tanks were Panthers and Panzer IVs of Panzer Lehr Regiment 130. At this stage the German Panzer Lehr panzer division could only field twenty-two tanks for operations against the 2nd Canadian Division during Operation "Veritable".

(Navy) personnel and cut-off Luftwaffe and supply troops. These cobbled together forces were not the equivalent of the panzer divisions of July 1944. Mated with this difference was a marked departure from the rolling fields of eastern Normandy, which were suitable for armoured warfare. The Canadian Army area of operations in fall 1944 was interspersed with dikes, flooded fields, canals and rivers. Dry areas were often filled with thick forests. It was not terrain for large scale armoured operations, and the fighting soon devolved into a series of separate infantry battalion-level operations, many being amphibious. It was a different war in all respects.

Chart 3.2: Strength of Walcheren, North & South Beveland German forces October 1944⁷



Despite the chaotic state of the German ground forces, a stiffening of German resistance occurred in mid September and early October 1944. Within military history circles debate still occurs whether the war could have ended sooner if a more complete encirclement of the Falaise Pocket had occurred. If the encircled German forces had been totally destroyed and a concerted effort had eliminated scattered remnants fleeing France, the German military would have had trouble establishing a cohesive front line. Instead, a fall 1944 recovery took place after a majority of the reduced German formations managed to

⁷ LAC, RG 24 Volume 13,646. First Canadian Army General Intelligence War Diary October 1944. T-7079.

escape the Falaise encirclement.⁸ None of the formerly encircled German Army or Waffen SS panzer divisions ceased to exist, and reconstitution began immediately with the remnants. That this occurred was largely due to German administrative and organizational qualities rather than an abundance of replacement resources or personnel. Remnants of the escaped units were determinedly re-organized, reinforced and employed as small delaying battle groups near the German border. Others were hastily rebuilt from scratch and re-equipped as a final dredging of the manpower bucket in Germany occurred.⁹ In the wake of fierce German resistance against the September 1944 Allied airborne Operation “Market Garden”, a semi-cohesive front line had been established. Further aiding the Germans were Allied supply difficulties that stranded advancing Allied armoured formations. The fluid tactical situation of late summer 1944 had disappeared.

As the First Canadian Army’s front moved north from Antwerp in September 1944, the previously mentioned multiple natural obstacles made their presence felt. Canals, rivers, dikes and thick forests dotted the landscape. Concentrated armoured attacks ceased as deliberate set-piece infantry operations were needed to overcome entrenched opposition in a partially amphibious environment.¹⁰ It was against these infantry led operations that the German forces deployed weak infantry defences. These were backed up at times with a sprinkling of static coastal artillery, concrete fortifications and support from Sturmgeschütz (self-propelled assault guns). Heavy weapon support for the German infantry forces mainly consisted of mortars, MG-42 machine guns in the static role and dug in flak (anti-aircraft) weapons.¹¹ These forces that sought to establish a cohesive front were limited in their abilities due to many factors. The leadership within German units tried in vain to minimize these factors, but some limitations were so powerful the Germans could not mask them. Being a massively superior force, the

⁸ Russell Hart, *Clash of Arms*, 392. Though equipment losses were nearly total, a large percentage of personnel that made it to the Seine River in August 1944 were incorporated into the defences on the border of the Reich in fall 1944.

⁹ Charles Stacey, *The Victory Campaign*, 295.

¹⁰ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7093. Casualty figures for The Algonquin Regiment during the fighting 13-14 September 1944 in the village of Moerkerke on the Leopold Canal totalled 168 killed, wounded or missing.

¹¹ LAC RG 24 Volume 14,234. 10th Canadian Armoured Regiment War Diary October 1944. T-12648. Entries 7-9 October 1944. Terry Copp, *Cinderella Army*, 136. In fighting near Hoogerheide on 7-10 October 1944 only small numbers of tanks (one Panther) and self-propelled assault guns were encountered. The German defences largely depended on mortars as well as 88mm and 20mm flak weapons.

Canadian Army could not be held back and continued to advance by launching successive well-planned and supported infantry-led operations. Regardless of German efforts, as British historian John Ellis points out, the Allied superiority in all categories was stupendous.¹²

The most serious weakness within the German Army, Waffen SS and Luftwaffe ground forces in 1944-1945 was the scarcity of reinforcements, supplies and new equipment flowing to front line units. Powerful German formations in Normandy had attempted to conduct armoured maneuver warfare to eliminate the invasion force. Thwarted by Allied firepower and crushed by superior strength in an attritional campaign, these divisions had been bled dry. German commanders facing the Canadian Army maximized their efforts and husbanded their resources, but were constantly hampered by the inability of the OKH (Oberkommando des Heeres) high command to supply them with what was urgently required. Cumulative effects of gradual attrition during June and early July 1944 led to a complete collapse of the western Normandy front, allowing the U.S. VII Corps to achieve a decisive breakthrough on 27 July 1944. This breakthrough, part of the larger U.S. Operation "Cobra", marked the beginning of the end for German forces in Normandy.¹³ The best equipped and manned armoured divisions, the absolute cream of the German ground forces in the summer of 1944, were then destroyed in the Falaise Pocket battle. The Western Front increased in size after the Normandy breakout and with it the number of Allied divisions. Facing this onslaught across France were poorly equipped German remnants. The post-Normandy conditions of September 1944 were in stark contrast to those present south of Caen, Normandy in July 1944.¹⁴ There a very large number of elite panzer divisions had been concentrated to conduct a competent defence in depth. Across France and Belgium in September 1944 reduced German formations struggled to hold a static defensive line.

¹² John Ellis, *Brute Force*, 395-396, 398.

¹³ Russell Hart, *Clash of Arms*, 254-255.

¹⁴ LAC, RG 24 Volume 13,645. First Canadian Army General Intelligence War Diary July 1944. T-7077. Intelligence summaries 23-26 July 1944 indicate contact with no less than four German panzer divisions facing the 2nd Canadian Corps. This strength was not present on the Allied western flank, leading to a disintegration of the defence under the onslaught of the U.S. Operation "Cobra". Losses to key German units were not replaced, and local reserves had not been built up as they had on the eastern flank.

German resources that were available post-September 1944 often went to forces facing American or British troops, not those facing the Canadian Army. The main threat to the German border and the Siegfried Line defences was rightly perceived to be the advances of the Americans and British. German light infantry paratroop regiments fighting north of Antwerp in October 1944 were not panzer divisions, and were not equipped as such.¹⁵ While the denial of the Channel ports was seen as strategically important, it was not the main German defensive focus. American and British armour driving hard for German territory, in particular the Rhine bridges, was the main threat. As a result, the meagre remains of German armoured formations did not face Canadian troops.¹⁶ The overall scarcity of German armoured forces post Normandy was highlighted during the Allied Operation “Market Garden” of September 1944. In spite of the urgent threat of this Anglo-American airborne-armoured assault, all that could be committed was fragmented quarter-strength battle groups.¹⁷

The ongoing reinforcement situation for the German military post Normandy was the exact opposite to that in the Canadian Army.¹⁸ While the situation markedly improved for the Canadians in fall 1944, it got progressively worse for the German ground forces. Losses during the fighting in Normandy and later in the Netherlands were not offset by a continuous reinforcement system, in contrast to the Canadian Army.¹⁹ A German unit would have to be bled white before it was withdrawn to reconstitute itself.²⁰ German armoured fighting vehicles (AFVs) and heavy weapons would not be replaced if they were destroyed or damaged, their number within units dwindling until there were few left. As a result, in the fall of 1944 units of the German 15th Army opposing the First Canadian Army were not equipped for

¹⁵ Terry Copp, *Cinderella Army*, 137-140.

¹⁶ LAC, RG24 Volume 13,647. First Canadian Army General Intelligence War Diary October 1944. T-7080. Intelligence Summary for 2nd Canadian Infantry Division Front 1650 hours. Entry 16 October 1944. Facing the 2nd Canadian Infantry Division was a mixture of weak German Army infantry battalions and Luftwaffe ground force parachute training and regular parachute battalions.

¹⁷ Terry Copp, *Cinderella Army*, 125. German forces committed to trying to recapture Eindhoven in late September were under strength and facing serious equipment shortages.

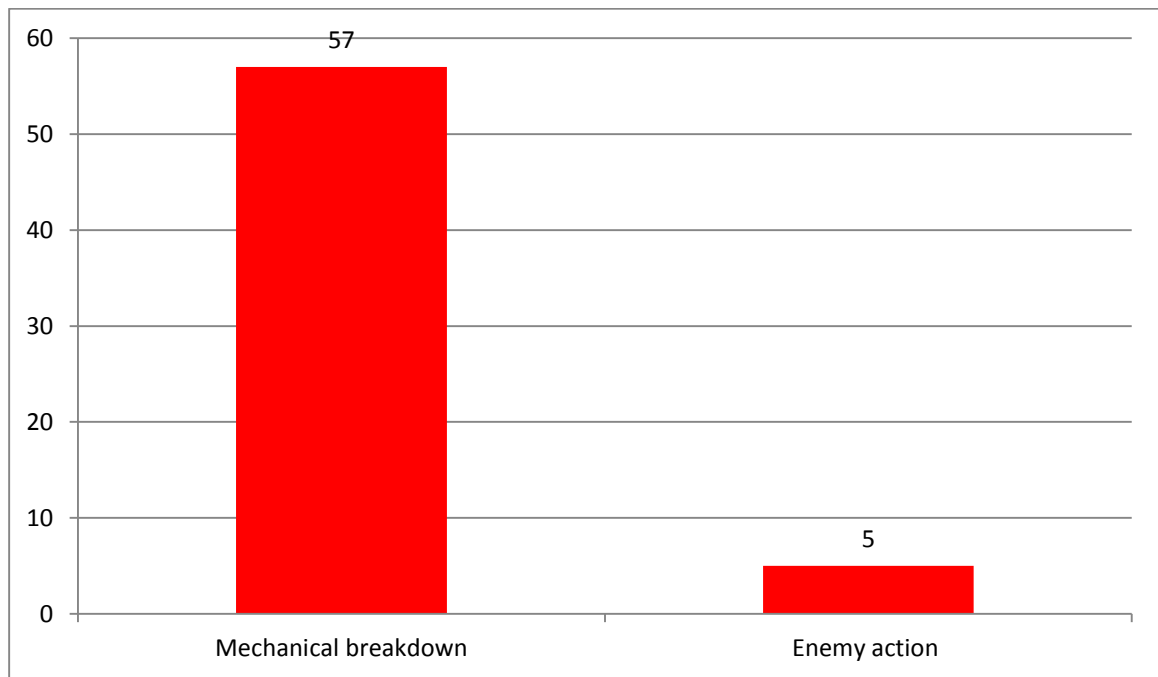
¹⁸ LAC, RG24 Volume 10,699. Report: Deficiencies and Holdings of Canadian Infantry, Other Ranks: NWE 27-August-28 April 1945. On 10 November 1944, all combined infantry regiments within 2nd Canadian Corps divisions were only 1,070 other ranks short of their war establishment strengths. Averaged out per regiment, this was an insignificant number.

¹⁹ Russell Hart, *Clash of Arms*, 385. By 6 August 1944, the German ground forces had taken 144,265 casualties, but received only 19,914 replacements. This was only 19 percent of what was needed to replace their losses.

²⁰ LAC, RG24 Volume 13,647. First Canadian Army General Intelligence War Diary October 1944. T-7080. 0200 15 October 1944 intelligence report entry refers to a prisoner of war stating the 1st battalion of the 1037 Grenadier Regiment facing the 2nd Canadian Infantry Division had been dissolved, leaving only the 2nd. (I. and II./Grenadier Regiment 1037.)

modern war. Infantry units were not mechanized and were equipped with bicycles or horses to add mobility.²¹ Vehicles and AFVs present were often immobile due to a lack of spare parts or gasoline. Chart 3.3 displays the difficulty the German Army had inflicting tank losses on the advancing Allies as they swept through France post Normandy.

Chart 3.3: Causes of 4th Canadian Armoured Division Sherman tank casualties between 28 August-7 September 1944²²



The ability of the German ground forces at this stage to conduct limited armoured counterattacks was very low due to a lack of AFVs and resources to fuel and supply them. If it was deemed essential that a weakened German formation keep fighting, it would be designated as a reduced battle group and delegated only missions it could accomplish.

One of the most challenging aspects of the reinforcement situation for the German ground forces in 1944 was the calibre of the replacement infantry personnel. Apart from elite units, the average

²¹ LAC, RG24 Volume 13,647. First Canadian Army General Intelligence War Diary October 1944. T-7080. Intelligence Summary for 2nd Canadian Infantry Division Front 1650 hours 16 October 1944. A counterattack on RHLI positions was supported by three self-propelled guns, but no half-tracks or regular tanks.

²² British Tank Museum Archives, Bovington. No.2 Operational Research Section, Report No.18. Report on tank Casualties during the exploitation phase after crossing the Seine River, August-September 1944.

conscript infantry unit did not perform to a high standard.²³ Elderly or unfit conscripts, former Russian prisoners of war (POWs), Volksdeutsche (ethnic Germans) and Luftwaffe and Kriegsmarine transfers were not veteran infantry. These men were not politically committed and lacked the high level of training the German grenadier of 1942 or the Waffen SS soldier of 1944 possessed. It was truly a case of hit or miss for Canadian units as to which group they would bump up against, hard-fighting Waffen SS and Fallschirmjager (Luftwaffe paratroops), or former Russian POWs and medically unfit conscripts.

During the German defensive campaign of 1944-1945 in NWE, the average German Army grenadier (infantryman) was a conscript often forced into tactically untenable positions with none of the advantages afforded a Canadian soldier. In many cases German troops were surrounded with no way to withdraw, and had no reserves behind them to bolster their positions. To achieve a strategic goal the German high command had no reservations about condemning a low-quality formation to destruction or surrender. Examples of this practice were the defense of the Channel ports and the Scheldt Estuary. During the Scheldt battles, elements of the German 70th and 64th Infantry Divisions were left behind to buy time, strategically delaying the opening of the port of Antwerp to the Allies.²⁴ These decisions seriously affected German morale, as no soldier happily looks forward to certain death, wounds or capture. Since no resources were deployed to support them, they were helpless against sustained air and artillery strikes that pounded their positions. Surrounded, the realization hit that they would have to pay with their lives to achieve the German high command's dubious goals. When unsupervised by officers or non-commissioned officers (NCOs), conscript German line infantry would often surrender if they were unsupported, hungry, cut off or had little chance of survival.²⁵ Chart 3.4 displays the total amount of prisoners that had been captured in various locations along the channel coast by the Canadian Army by

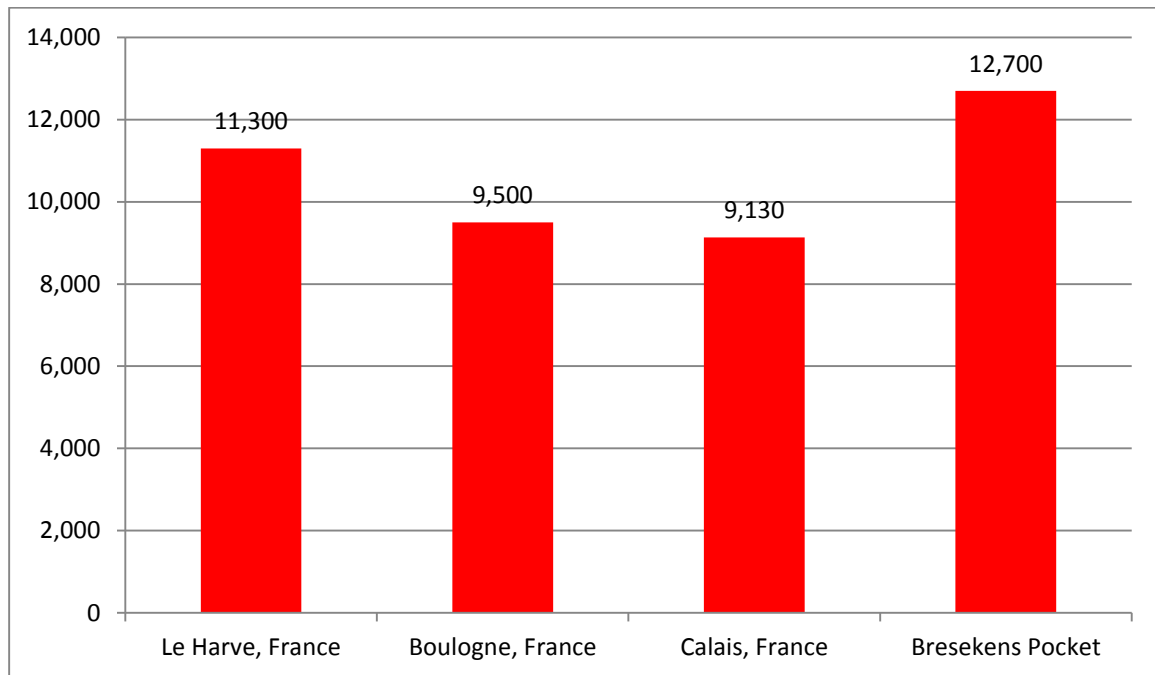
²³ Denis and Shelaugh Whitaker, *Tug of War*, 350. The German 70th Infantry Division was composed of soldiers exclusively with various stomach ailments. These men were not healthy and were of a much lower calibre than their 1942 equivalents.

²⁴ Mark Zuehlke, *Terrible Victory* (Toronto: Douglas & McIntyre. 2014), 326-327.

²⁵ LAC, RG 24 Volume 14,234. 10th Canadian Armoured Regiment War Diary September 1944. T-12698. Contained within is the 3rd Canadian Infantry Division Intelligence dated 17 September, 1944. Report on the defences of German Calais Harbour positions. Grand total estimates were of nearly 4,450 to 5,550 well-equipped, entrenched German Army, Kriegsmarine and static fortress troops in excellent fortifications. Charles Stacey, *The Victory Campaign*, 352-354. Total German prisoners taken from the Calais port and Cape Griz Nez fortifications were 9,128.

fall 1944 These soldiers, equalling three complete 1945 German infantry divisions, could have played an important role in defending Germany's borders.

Chart 3.4: German prisoner of war totals from surrendered German garrison positions, September-November 1944²⁶



In this way the German high command was writing off its own soldiers to gain time for the remainder of the Reich. This was at a time when there were a finite number of available infantry soldiers available to the German military. The manpower crunch was seriously beginning to bite due to the catastrophic defeats Germany had suffered in 1944. Decisions to simply dispose whole infantry divisions to Canadian prisoner of war cages were highly questionable. The fighting within the Normandy Campaign, the Scheldt and the final defence of the Netherlands and northern Germany was characterized by severe German infantry casualties.²⁷ This was largely due to the numbers that surrendered in contrast to those that were annihilated by artillery, air strikes or infantry ground combat. While other arms trades also suffered, the grenadier casualties were out of proportion to armoured and artillery personnel

²⁶ Charles Stacey, *The Victory Campaign*, 355. Total amount of prisoners was just under 30,000 for the three French ports. Charles Stacey, *The Victory Campaign*, 400. The Breskens Pocket yielded 12,707 prisoners.

²⁷ Charles Stacey, *The Victory Campaign*, 270. Close to 200,000 German soldiers had been placed in prisoner of war cages in the period 6 June to 21 August, 1944. This was out of a total of 400,000 killed, wounded or captured.

operating in the same area. On the other side of the spectrum, despite near total Allied air superiority, rear services and supply troops suffered little. The "tail" could be intact in a German formation, while its front-line infantry "teeth" strength could be reduced to less than 100 men per grenadier battalion.²⁸

The second most challenging factor concerning the German land forces was the inadequacy of their divisional and corps level artillery. While armoured, assault gun, anti-tank and some infantry units fought with skill that made up for numerical inferiority, the artillery arm of the German forces was consistently inferior. It was totally outclassed by the Royal Canadian Artillery (RCA) due to it being starved of advanced weapons, modern transport, effective command and control and ammunition itself.²⁹ The level of doctrine, communication and organization that allowed the RCA to concentrate massive force was not present in the German artillery structure. While devastating to Canadian morale, German Nebelwerfer rocket units were inaccurate and their rocket ammunition supply was limited. The launching site was easily recognizable, and Canadian counter battery fire soon arrived. There were some impressive artillery emplacements in channel coastal fortifications, but these were often pointing the wrong way or neutralized by air strikes or counter battery fire. Largely horse drawn within the average German infantry division, artillery units could not redeploy quickly in the manner of Anglo-Canadian artillery units. Lack of ammunition and fear of counter battery strikes saw German artillery activity drop significantly by September 1944. Correspondingly, Canadian artillery battle casualties dropped significantly as Germans made fewer and fewer attempts at sustained counter-battery fire.³⁰ German grenadier regiments found themselves depending on their own organic mortar units to smother Canadian infantry attacks. It was these indirect assets that sought to make up for the failures of divisional and corps level German artillery units.

²⁸ Niklas Zetterling, *Normandy 1944*, 39. The 12th SS Panzer Division suffered 730 casualties, mainly within the battalions of the 26th SS Panzer Grenadier Regiment, on 26 June 1944.

²⁹ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary August 1944. T-16360. Analyzing the war diary, there are five days (10th, 11th, 12th, 13th, 14th August) in August, 1944 which regimental positions were hit by German artillery counter-battery fire. Russell Hart, *Clash of Arms*, 378-379. German batteries were consistently starved of ammunition in Normandy.

³⁰ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary August 1944. T-16360. Analyzing the war diary, there are five days (10-14 August) in August, 1944 which regimental positions were hit by German artillery counter-battery fire.

The complete lack of an effective intelligence picture was a third obstacle to the effectiveness of the German ground forces. By mid 1944, German Kriegsmarine and Luftwaffe operations were curtailed to point where they were insignificant. The complete lack of aerial and maritime intelligence and timely code-breaking of Allied encoded signal traffic put German ground forces completely in the dark. Apart from signals intelligence at the divisional level, prisoner interrogations and reconnaissance patrol reports, the average German divisional headquarters had little knowledge of enemy intentions. When Canadian units began moving to assembly areas or artillery barrages began, it would be too late for a German commander to meet the demands of the situation.³¹

A fourth important failing was the German ground force's utter impotence in the face of Allied air superiority. Despite an abundance of towed Luftwaffe-manned flak weapons, the absence of air support from mid-1944 onwards was devastating to the German military situation. The Luftwaffe was now a largely spent force whose remains were hamstrung due to a lack of fuel and poorly-trained replacement pilots. Any operation it mounted was immediately met with numerically and tactically superior Allied air assets. The result of this immediate crushing of any air operation mounted in strength was an inability to launch effective ground attack sorties.³² A difficult battle of attrition in Normandy was decisively lost by the Luftwaffe, with the result that Canadian anti-aircraft units had much less in the way of targets by September 1944.

Despite a lack of Canadian Army direction, the ground attack tactics of the RAF and RCAF were a decisive factor against German operational movement, counterattacks and the defence of fortifications. Though devastating to German ground forces, an Allied strategic carpet bombing attack was a rare occurrence. It was the ever-present Royal Canadian Air Force (RCAF) and Royal Air Force (RAF) Typhoon fighter-bombers that greatly inhibited all German operations. As mentioned in the previous

³¹ Russell Hart, *Clash of Arms*, 381-382. German front line units were forced to rely on signals and patrol intelligence to gain a picture of Allied intentions.

³² LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary September 1944. T-16360. Analyzing the War Diary of the 12th Field Regiment, RCA for the September 1944 period when it was fighting to clear the channel ports, there is no entry recording an enemy air attack or Luftwaffe activity (30 days).

chapter, these fighter-bombers struck trains, convoys, AFVs, and even dismounted troops in the open. Daylight enemy movement was made nearly impossible in good weather.

Allied airpower did not have to directly attack German military units on the ground to severely impair their performance. Attacking the means of transportation and production would starve them of what they needed most. These targets were to suffer the most from incessant Allied strategic and tactical airpower attack. Spare parts, gasoline, ammunition, medical supplies and new reinforcements had a very difficult time reaching the front. This was due to the damage done to bridges, railways and the German transport motor pool.³³ Damage was so severe to railroad sidings, junctions and crucial bridges that the Reichsbahn (German Railroad authority) and the railroad systems of the Netherlands, France and Belgium began to malfunction. The already low performance of the German artillery units was further inhibited by the lack of munitions. The ammunition supply to German batteries in action had to be constant, day and night. It was not an effective option for these batteries to husband their rounds for a limited number of strikes against pre-arranged targets, yet this is what occurred. The second biggest victim of the aerial destruction of the transport network were the German heavy tanks units, those fielding the Panther and Tiger. Each had a monstrous appetite for gasoline, and the lack of fuel deliveries for these behemoths limited their capability to be quickly switched to new combat zones.³⁴ In addition to the damage done to the transport system, the impact of Allied strategic bombing of all industrial war production facilities in Germany began to have an impact mid-1944. At this point the Germans were reaching the zenith of their production capability, and after this Allied bombing would force production levels to decline.³⁵ In the early fall of 1944 production of AFVs and munitions was still being completed that could replace losses from Normandy, but getting these resources to the front was a difficult challenge.³⁶

³³ Russell Hart, *Clash of Arms*, 388-389, 403. Notes. German transport truck losses in Normandy were up to thirty per day from air attack.

³⁴ LAC, RG 24 Volume 14,292. 28th Canadian Armoured Regiment War Diary August 1944. T-12764. Analysing the War Diary of the regiment for the period 18-31 August 1944, there is one noted contact with enemy armour. Russell Hart, *Clash of Arms*, 390. The 2nd. SS Panzer Division Das Reich was forced to abandon two companies of Panther tanks in late July 1944.

³⁵ Richard Overy, *The Bombing War: Europe 1939-1945* (London, England: Allen Lane. 2013). Overy makes the point at length throughout his work that aerial bombing only became effective when the U.S.A.A.F. established air superiority in mid 1944.

³⁶ Russell Hart, *Clash of Arms*, 387.

Having no alternative, the German ground forces facing the Canadian Army sought to adapt to their limitations and still attempt to conduct a successful defensive campaign. They decided to attempt this by capitalizing on their remaining strengths to inflict maximum damage. One of the most effective strengths of the German ground forces over the course of the last year of the war was the skilled use of light indirect fire. The resources for sustained heavy artillery programs such as lifting barrages or counter battery fire were not present in 1944.³⁷ The response to the inconvenience of weak supporting artillery was the concentrated use of mortars. German doctrine perceived the medium mortar as a mobile light weapon that could bring immediate combat power to bear on an enemy. The resulting extensive use of the German 80mm Grenatwerfer mortar was responsible of an inordinate number of Canadian infantry casualties. The tactic of bombarding lost defensive positions as Canadian infantry consolidated on them was easy since the target was pre-registered. Mortar crews could conduct intermittent harassing fire or fire an intensive barrage to mark the beginning of a counterattack. A mortar crew's location was also very difficult to pinpoint and suppress. The weapon itself could be broken down and transported by a four man crew. A 1944 German Grenadier regiment of two battalions contained twenty-four 80mm mortars and six 75mm infantry guns in the way of light indirect assets.³⁸ These totals did not include the heavy 120mm mortar battery that was often present in some grenadier regiments. Mortar ammunition was plentiful and the boxes of mortar bombs were easy to move forward from the rear. The mortar crew were able to disperse out of sight near the front line, which was difficult for the heavy divisional 150mm and 105mm howitzer crews to do.³⁹

A second source of strength for German ground forces was the abundance of high velocity anti-aircraft (flak) weapons. The use of flak weaponry against Canadian infantry and tanks was not the best

³⁷ Russell Hart, *Clash of Arms*, 378.

³⁸ Gary Kennedy, "The German Grenadier Battalion 1943-1945." *Battalion Organization during the Second World War*. Modified in 2010. http://www.bayonetstrength.150m.com/German/Infanterie/german_grenadier_battalionpercent201943percent20toppercent . Retrieved 15 October 2015.

³⁹ LAC, RG 24 Volume 15,226. The Royal Regiment of Canada War Diary July 1944. Diary entries for 18-19 July 1944 relate the assault by the regiment on the village of Louvigny, against elements of the 272nd German Infantry Division. During this whole period intensive mortaring by the Germans inflicted 111 casualties on elements of the Canadian assault force that reached the village.

use of these weapons, as these guns were not designed for a ground role. But due to their high velocity and capability to engage ground targets, they were effective. Due to the increasing number of strategic bombing missions over Germany in 1942, a significant effort had been made to increase the number of Luftwaffe flak emplacements. What this meant was that there were plenty of flak batteries in the Low Countries that could be employed in a ground role by the local area commander. As the Canadian Army advanced in August-September 1944 and gaps in the German lines needed filling, available Luftwaffe flak units were pressed into service. A Canadian infantry attack with a squadron of tanks supporting it would often be fighting dug in 88mm flak and quadruple 20mm Flakverling anti-aircraft guns. These weapons could damage or destroy a Sherman tank and could start a fire-fight at ranges in excess of 2000 meters.⁴⁰ Weapons such as these often had high profiles and were easy to locate on the battlefield. This led to a limited combat life expectancy of hours, but they could slow down Allied advances, and this was the goal. Since they were not anti-tank guns they often had no shields, and could be silenced with one high explosive (HE) shell from a Sherman or sustained fire from a .50 caliber tank machine gun.

The third strength of German ground forces was the performance of AFV crews in combat. Aggressive tactics by German armoured units in Normandy were often in contrast to Allied practices. Often without infantry support, German tanks would seek to outflank Canadian armoured and infantry advances. They also had no inhibitions about conducting road moves and combat operations at night. Engaging targets from long range, they used their armament to its fullest potential. These aggressive tactics could lead to disaster for the German tanks if they ran up against Allied AFVs or anti-tank guns in ambush.⁴¹ They were also very vulnerable to infantry anti-tank weapons in poor light or urban conditions. This did not stop them from doing their utmost to stop Canadian attacks and support grenadier battalions. The German tank crews were fully cognizant that they were the force holding

⁴⁰ LAC RG 24 Volume 31,056. The Royal Highland Regiment of Canada (The Black Watch) War Diary October 1944. Diary entry of 31 October 1944 regarding the assault on the Walcheren Causeway. A high-velocity anti-tank or anti-aircraft (88mm) weapon was used to fire down the causeway.

⁴¹ Terry Copp, *Fields of Fire*, 74. The 3rd Company of SS Panzer Regiment 12 lost six Panthers as complete write-offs on 9 June 1944 to a M4 Sherman 75mm and Sherman Firefly 17-Pounder ambush.

together a cohesive front and had to act accordingly. This aggressive attitude and disregard for losses could often bring impressive results, delaying numerically superior forces.⁴²

The Canadian Army fielded technologically inferior tanks and relied on other nations to supply them. The German Panther and Tiger tanks, despite fuel consumption and reliability issues, had highly advanced armour and armament. Some of this armour was sloped, which provided a defensive advantage when faced with anti-tank guns and other tanks. German AFVs were equipped with high velocity weapons, which allowed for a devastating first hit advantage when it came to tank vs. tank duels. German tanks could also engage targets effectively at much longer ranges than a 75mm-gunned M4 Sherman, which made up the majority of Canadian armoured regiments in Normandy.⁴³ All a Tiger or Panther gunner needed was one successful shot, while a Canadian gunner might need several shots, preferably in the flank, to get a decisive hit. Allied tanks often came with gasoline engines, whose fuel burned easily. The Tigers and Panther's engines were also gasoline, but they carried more armour in this area of the hull. The German AFV crews could thus operate tactically with less restrictions than Allied tanks, whose tactics were curtailed by technology and the need to have other arms in support.

Supporting the German infantry in a manner similar to the tanks was the most functional and effective arm of the German artillery, the Sturmgeschütz (self-propelled assault gun) units. In fall 1944 all forms of German AFVs became scarce on the Canadian front. What remained from September 1944 onwards were limited numbers of Sturmgeschütz III and other self-propelled guns.⁴⁴ This was due to panzer and assault gun units being employed elsewhere against British and American operations, some of which had reached German territory. The Sturmgeschütz III and 88mm gunned Jagdpanther vehicles had

⁴² LAC, RG 24 Volume 14,260. 22nd Canadian Armoured Regiment War Diary August 1944. T-12727. Diary entry 8 August, 1944 relates Canadian tank losses inflicted by panzers in the vicinity of Cintheaux, bringing their advance to a halt. Brian Reid, *No Holding Back*, 312. One Panther and one Tiger tank platoon were responsible for destroying two squadrons of the 28th Canadian Armoured Regiment (British Columbia Regiment) on 8-9 August, 1944, by manoeuvring around the Canadian defensive position.

⁴³ Brian Reid, *No Holding Back*, 374. Comparative German tank effective ranges to kill a Sherman chart.

⁴⁴ LAC, RG 24 Volume 14,568. 96th Battery, 5th Anti-Tank Regiment, RCA War Diary March 1945. T-16718. For the month of March 1945, not one enemy AFV is recorded in war diary entries as contacted, despite the 4th Canadian Armoured Division's participation in Operation "Blockbuster".

low profiles, effective armament and the crews were proficient at working with German infantry. This last attribute was not always the case with the German tank units.

Despite their best efforts and aggressive tactics, nothing could make up for strength of numbers or the lack thereof in the German armoured units. In Normandy and the Low Countries, armoured units were constantly hindered by the lack of replacement vehicles and spare parts.⁴⁵ As long as the front line was somewhat stable they could recover damaged or broken down vehicles at night and repair them. However, if the front was in a state of flux and German units were withdrawing, damaged AFVs or those out of gasoline would be lost. An aggressive defence had to be continuously mounted by armoured forces, as the German infantry units were very weak without AFV support. This resulted in ongoing losses due to Allied anti-tank efforts. If a unit that was constantly fighting, withdrawing and receiving no replacement AFVs or spares, their numbers would quickly ebb away.

A fourth strength was the rare emergence of the exceptional infantry unit in late 1944 and early 1945. These would often consist of motivated soldiers who had been given adequate training and were well equipped to conduct limited defensive tasks. Despite the calibre of the German infantry at this stage of the war, their training system was still intact and attempting to do its best. By utilizing young but motivated recruits, such as the Fallschirmjäger (paratroop) light infantry facing the Canadian Army in fall of 1944, adequate combat performance could be expected. This was the case during the fall 1944 combat performance of “Kampfgruppe Chill” south of Bergen Op Zoom, the Netherlands, against attacking Canadian units.⁴⁶ Despite the Fallschirmjäger being numerically inferior and having limited self-propelled (SP) gun and artillery support, they delivered a reasonable combat performance in defence. However, ill-advised counter-attacks wasted their strength and combat power. These units were a rarity

⁴⁵ Pier Battistelli, *Panzer Divisions 1944-45* (Oxford, England: Osprey Publishing. 2009), 173. Of the 480 Panzer IV tanks produced in August-September, 166 were sent to the Western Front to replace 610 Panzer IVs lost in France and the Low Countries.

⁴⁶ LAC RG 24 Volume 14,234. 10th Canadian Armoured Regiment War Diary October 1944. T-12698. In the fighting south of Bergen Op Zoom, The Netherlands on 7-10 October 1944, serious resistance was offered by the German 6th Parachute (fallschirmjäger) Regiment. Despite defensive successes, their strength was wasted in ill-advised counter-attacks.

in late 1944 and early 1945, and were often thrown away due to “hold to the last round” defensive directives issued by OKH and Adolf Hitler.

The fifth strength that was crucial to the German recovery post-Normandy was strong organizational skills within division and corps level headquarters. German units that had reached an extremely low level of personnel were withdrawn in order to be reconstituted. Weak units that were not chosen to be re-built were consolidated to make one strong unit. Alarm units were also raised to offset the effects of attrition among the front line grenadier companies. Supply and rear area troops no longer required were immediately designated infantrymen and pushed forward into the company platoons as replacements.⁴⁷ While reinforcement personnel were few and rarely arrived, maximum use of what personnel that were available was achieved by German commanders.

A sixth strength was the effective use of limited resources. Fuel and ammunition became scarce as the Allied bomber offensive became effective in mid-1944.⁴⁸ Apart from withdrawals and forced retreats, the German ground forces were not highly mobile and did not consume major resources by conducting constant offensive movement. Once German forces were back near the borders of Germany in late 1944 their supply lines were shortened, making the supply situation better. When formations did deplete resources, reinforcements and supplies could arrive quickly due to the geographic proximity of supply depots.⁴⁹ The German ground forces had none of the long distance challenges to logistics that the advancing Canadian Army had, and they could use their meagre resources to their maximum within a set defensive zone.

⁴⁷ Russell Hart, *Clash of Arms*, 386.

⁴⁸ Russell Hart, *Clash of Arms*, 389. German forces facing the U.S. Operation “Cobra” in July 1944 had less than two days fuel at average consumption rates.

⁴⁹ LAC, RG 24 Volume 15,061. The Essex Scottish War Diary February 1945. WW2 Talk Forum online article “Veritable, the Canadian Finale” (Moyland Wood & Goch-Calcar Road)” by online WW2 forum member Stolpi. Modified 2015. <http://ww2talk.com/forums/topic/47307-veritable-the-canadian-finale-moyland-wood-goch-calcar-road/page-2>. Retrieved 31 October 2015. Battle-groups of the 116th and Panzer Lehr panzer divisions were brought in by rail via Germany to bring the Anglo-Canadian Operation “Veritable” to a halt. Armoured elements included roughly forty-five Panthers, Panzer IVs and Jagdpanther self-propelled guns. This was a large amount of armour for the Canadian front in 1945.

A seventh strength of the German ground forces were the employment of effective defensive tactics to slow down Canadian Army advances in 1944-1945. From July 1944 onward, apart from local counterattacks, German ground forces were on the defensive. They had to adapt their tactics to the new situation, and attempt to defend large areas of territory with limited resources. In this situation it became imperative to utilize whatever advantages were present. While lacking the initiative, the Germans could analyse where and when the Canadian Army would possibly strike. They would then decide where and when to seek to hold Canadian forces off, and when to withdraw. If their forces were skilful enough, they could successfully ambush advancing Canadian reconnaissance, armour or infantry forces.⁵⁰

The defending German ground forces utilized obstacles, anti-tank guns and machine gun bunkers that were sited to create suitable "kill zones". These defences were backed up by dug in mortar positions. The often ponderous Allied advance, coupled with four years of German military occupation, allowed for the construction of impressive defensive works.⁵¹ These advantages often negated Allied armoured, artillery and air support combat force multipliers. The norm of 3:1 attacking odds was often minimized by the strength of these defensive positions, and attacking Canadian infantry units worn down by past battles often had to attack at 1:1 odds. Canadian forces would often attack on a narrow front to concentrate their combat power. In turn, this allowed the Germans to concentrate all possible fires on this restricted area, increasing attacker casualties.

When a German defensive victory was achieved, it was often not due to a lack of Canadian determination, effective tactics, or sufficient firepower. The German method of defence was not unsophisticated. German defences began with a line of thinly manned outposts, with riflemen, small infantry mortars and MG-42 machine guns. These outposts were 400 meters from enemy forward positions. In front of the outpost line would be anti-personnel and anti-tank mines, on obvious routes of

⁵⁰ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 290. ⁵⁰ LAC, RG 24 Volume 15,262. The South Saskatchewan Regiment War Diary July 1944. Entries 19-21 July 1944. A well-timed combined arms counterattack by Waffen SS tanks and infantry inflicted 222 casualties killed, wounded or missing. Rather than a wasteful counterattack against fortified Canadian positions, this attack caught Canadian infantry in the open and without tank support.

⁵¹ Terry Copp, *Cinderella Army*, 201. The defences facing the First Canadian Army for Operation "Veritable" in February 1945 consisted of three belts, each 500-1000 meters wide.

approach. Further in front of the outpost line would be pre-registered targets for mortars and artillery. This line of outposts would be held as long as it took to ascertain the direction and strength of the Canadian attack. If radio communications or field phones were not installed, flare guns could be used as a signal for tanks or infantry. The tell-tale Canadian moving artillery barrage would alert the defenders regardless. The non-stop tactic of “sniping”, as it is referred to within Canadian unit war diaries, was often the work of these outposts. This was not done by dedicated snipers, but by infiltrating German soldiers using their weapons at their maximum range. This tactic had the potential to impair Canadian infantry platoon movement and inhibit a battalion attack.

Behind this outer perimeter were stronger German advanced positions at the company level that interlocked with each other and contained MG-42s on tripod mounts and more riflemen. These positions were located 1,500 to 2,000 meters from the enemy. Behind these at the battalion level was the main line of resistance, located up to 5,000 meters from the enemy. This distance illustrates the German belief in depth, and how they utilized the concept. In these positions were 80mm mortars and 75mm anti-tank guns from the mortar and anti-tank gun platoons. Further behind these positions were camouflaged Sturmgeschütz IIIs or panzers in ambush positions. The armour could assume the counter attack role immediately and begin to manoeuvre to hit Canadian forces in the flank. The mortars and anti-tank guns would be sighted so they could fire at targets attacking the company-level positions, and have free fields of fire so that they could use their maximum range. Tripod-mounted MG-42s in the sustained fire role would also be sighted with interlocking arcs in order to cut down the attacking Canadian infantry following its moving artillery barrage.⁵²

Due to the depth of German positions, German commanders could enact a mobile or elastic defence as the battle progressed. This defence caused continuous damage to the attacker as the defenders would withdraw before becoming decisively engaged. Ground would be surrendered, but in exchange for damage done to the enemy. If the defending German units needed to withdraw a small distance tactically,

⁵² Russell Hart, *Clash of Arms*, 375.

they could. With the attacker sufficiently weakened over time, the defence would “bounce back” with a counter-attack at the right moment with reserves set aside for this purpose.

There were two practices that inhibited the success of the above defensive tactics. The Festung (fortress) orders of Hitler was the first. These orders (Führerbefehls) and similar ones emanating from within Berlin's OKH headquarters hamstrung German divisional commanders from executing an elastic, or mobile defence.⁵³ By forcing overwhelmed units to try to hold on to a fixed position rather than fight a mobile battle, the defenders were forced into a decisive struggle they could not win. In 1944 it was very likely the ground would be lost regardless. Units forced to fight to the last round against the Canadian Army rarely did, and readily surrendered when they faced annihilation and no way to withdraw. The manpower losses were irreplaceable and were the last thing needed by German commanders such as Oberbefehlshaber West, (Commander-in-Chief West) Feldmarschall Walter Model, in 1944. Model as a commander did carry considerable political prestige with Hitler, and could exercise resistance against the worst of his orders. In some cases resistance to the Führer's directives was futile, and significant infantry losses were the result.

Secondly, the tactic of the immediate counterattack to regain a small area of lost ground or prominent map feature was a wasteful exercise that rarely succeeded. This was a practice that sought to evict Canadian infantry companies and supporting assets that were consolidating on a newly-conquered former German position.⁵⁴ The German infantry often did not have the support nor numbers to expend what little strength they had to re-capture lost ground. Canadian artillery, anti-tank, machine gun, mortar and tank fire would crush these attacks. This was due to the Canadian Army anticipating the now routine German counterattacks and fortifying their new positions. Canadian defensive assets were rushed into newly occupied objectives to seize the opportunity of destroying the attacking Germans in the open,

⁵³ Charles Stacey, *The Victory Campaign*, 368. General Wilhelm Daser, commander of the German 70th Infantry Division, received the order to hold to the last round on Walcheren Island.

⁵⁴ LAC, RG 24 Volume 15,217. The Royal Hamilton Light Infantry War Diary February 1945. Entries 19-21 February 1945. Nine Panther tanks, two Jagdpanthers and two SPW-251 half-tracks were recorded as knocked out by Canadian infantry and supporting 2nd Canadian Anti-Tank Regiment tank destroyers. This occurred during German counter-attacks on Canadian positions during the February, 1945 Operation "Veritable" fighting near Louisendorf, Germany.

utilizing a maximum number of weapons systems.⁵⁵ The immediate counter attack was the wrong move. The correct choice was to utilize powerful reserves at the right moment against a weakened enemy on the move.

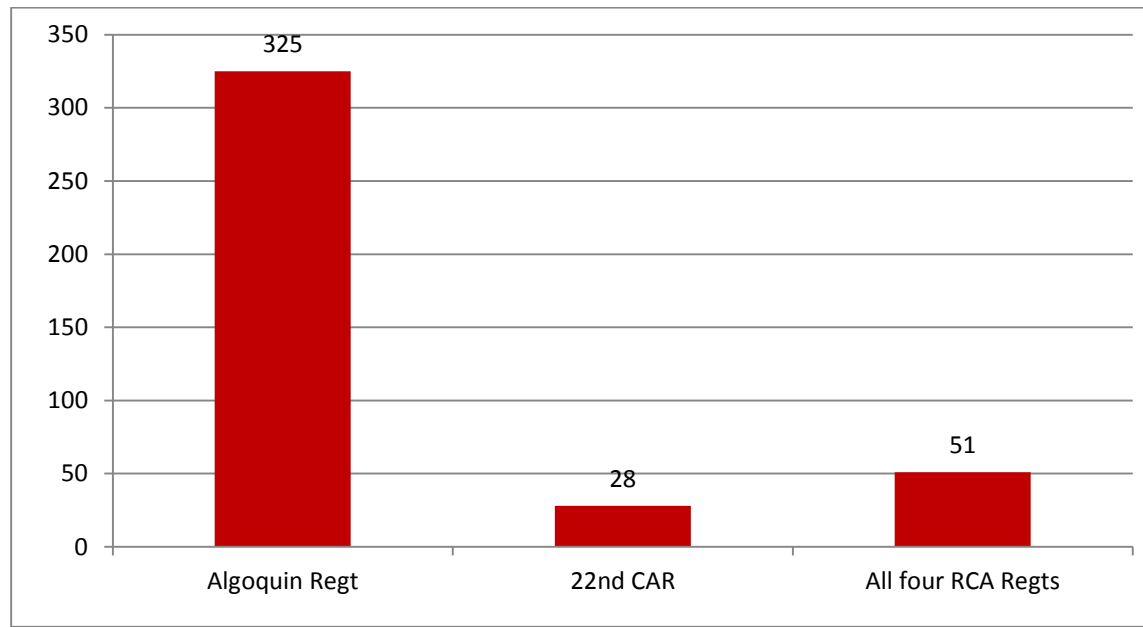
In summary, German ground forces in the mid 1944 to spring 1945 period possessed some strengths, but were handicapped by damaging limitations. The small numbers of available mortars, AFVs and trained infantry units were skilfully used to conduct effective defensive tactics where possible or permitted. Effective administration in the way of personnel and resource management allowed operations to continue despite shortages of everything. Major limitations included a lack of replacement personnel and equipment, a poor intelligence picture, no air support and a reduced heavy artillery capability. Due to these challenges, the majority of Canadian casualties during the campaign in NWE were borne by front-line units receiving direct fire and light indirect fire. Attacking Canadian infantry units suffered large losses due to in-depth German defensive tactics and their vulnerability to all forms of defensive fire. Chart 3.5 illustrates the limited abilities of the German forces, and how they could only inflict limited damage on the Canadian armoured and RCA artillery regiments in the spring of 1945.

Poor leadership at the strategic level increased the impact of the limitations already affecting the weak German ground forces by regularly making two unrealistic demands. Higher headquarters demanded that certain locations or localities be held until the last round, and that immediate counterattacks with insufficient forces be launched to regain lost strong points. Rather than conduct a mobile elastic defence, German forces were often forced to execute these two wasteful tactics that gained nothing. With poor quality infantry and little in the way of fire support in comparison to the Allies, these missions had little chance of success. Canadian artillery was so powerful it could defeat all but the most determined counter-attack. If these operations did not immediately succeed, there was little point to

⁵⁵ Mark Zuehlke, *Terrible Victory*, 316-319. During a battalion level German paratroop (Fallschirmjager) attack supported by three Sturmgeschutz III's on The Royal Hamilton Light Infantry in Woensdrecht, the Netherlands, a RCA "Victor" Target was called in by a Forward Observation Officer(FOO). Three divisional RCA field regiments, three RCA AGRA medium regiments and three heavy anti-aircraft regiments fired 4,000 shells to utterly destroy the German infantry in the open.

continuing the fighting as losses would only mount. Units that were surrounded or facing annihilation quickly surrendered rather than "fight to the last round".

Chart 3.5: March 1945 Battle casualty totals for the 4th Canadian Armoured Division: Figures for the Algonquin Regiment (infantry), the 22nd Armoured Regiment and all four divisional RCA regiments.⁵⁶



⁵⁶ LAC, RG 24 Volume 13,663. First Canadian Army A & Q War Diary March 1945. T-7094. LAC, RG 24 Volume 13,793. 4th Canadian Armoured Division A & Q War Diary March 1945. T-10551. All RCA personnel battle casualties for the division combined.

Chapter 4: The Canadian Army's system for deploying personnel reinforcements to combat arms units in North West Europe 1944-1945

This chapter will describe the process for deploying Canadian combat arms reinforcements to positions within an assigned infantry, armoured or artillery unit. Charts within this chapter will illustrate this reinforcement system, provide data on the Canadian Army's reinforcement abilities and give comparative insight on German replacement capabilities. Comparisons with the records of the U.S. and British armies are included in the subsequent chapter dealing with personnel challenges in the Canadian Army Overseas (CAO). With regard to the total reinforcement system, this study will limit itself to the analysis of the deployment of reinforcement personnel on the European continent through the Canadian Base Reinforcement Groups (CBRG). Information on the extensive reinforcement structures located in the U.K and Canada, taking on for the most part a personnel holding and training role, will not be included.

The personnel replacement system within the Canadian Army was designed to be a constantly ongoing process, maintaining formations over the long term. It was designed to be effective, but responsive at every level of its operation. The several layers of bureaucracy necessary to properly administer and control the process came at the expense of simplicity and speed. This allowed resources to be diverted or increased at any juncture, giving the machine flexibility. The process of deploying a replacement soldier to his designated unit was not instantaneous, due to the route being lengthy. But once the process was started, reinforcements would arrive at units as needed and at regular intervals, as long as there was a pool of trained soldiers to feed the machine. In June 1944, the staff officers within the Canadian Military Headquarters (CMHQ) London were reasonably confident that they had created an adequate system that was well stocked for any challenges that lay ahead in North West Europe (NWE).¹

¹ Charles Stacey, *The Victory Campaign*, 284-285. Despite evidence of higher infantry casualty rates in Italy and totally different geographical terrain, North African level wastage rates were utilized by CMHQ for NWE. Using these projections, it appeared that enough Canadian reinforcements were present in U.K. during the spring of 1944.

Personnel matters were the responsibility of the Adjutant General's Branch within the Canadian Army, and were referred to as "A" branch staff concerns.² Logistic matters concerning supplies and war material were "Q" branch staff concerns and the domain of the Quartermaster General Branch. "Q" matters were more complicated due to the large amounts of war material and consumable supplies required to sustain the Canadian Army in the field. Two Canadian staff echelons, or groupings, one each for "A" (Adjutant General) and "Q" (Quartermaster General) concerns were created at 21st Army Group headquarters prior to June 1944's Operation "Overlord". This was accomplished to free up First Canadian Army headquarters of all future administrative and logistic matters not immediately related to operations. The larger grouping, encompassing all "Q" branch staff, was titled 1st Echelon, and the smaller grouping containing all "A" branch staff was titled 2nd Echelon. The leadership of Canadian 1st Echelon at 21st Army Group also oversaw and directed 2nd Echelon activities. The 2nd Echelon's primary focus was personnel administration and replacement.³ The larger grouping was commanded throughout 1944 by Brigadier B.A. Beament. Following his tenure, Major-General E.L.M. Burns took command in January 1945 following his relinquishment of command of 1st Canadian Corps in Italy. Both men were very experienced administrators who understood the importance of their responsibilities. The commanding officer of Canadian 2nd Echelon during 1944-1945 was Colonel V. S. C. McClenaghan. He was also an officer who had gained experience in administration and planning duties while serving in the Mediterranean theatre.

The principal headquarters for the Canadian personnel reinforcement organization that directly supplied Canadian divisions in NWE during 1944 was No.2 Headquarters, Canadian Base Reinforcement Group (CBRG). This headquarters controlled the distribution of reinforcement personnel for all army trades in NWE from 6 June 1944 to the appearance of No. 3 CBRG in March 1945. The newer No.2 CBRG was decidedly smaller than its twin reinforcement organization in Italy, the No.1 CBRG. While

² Charles Stacey, *The Victory Campaign*, 623.

³ Charles Stacey, *The Victory Campaign*, 630.

No.1 CBRG had a total of eight reinforcement battalions, No.2 CBRG had only five.⁴ It was felt that because of the effect of training level deterioration over time, it was better to have a smaller organization that would hold reinforcements for a shorter period. It was planned to hold two to three weeks supply at "intense" casualty rates for the assault forces that would immediately take part in the invasion, the 3rd Canadian Infantry Division and the 2nd Canadian Armoured Brigade. In contrast to this relatively small number of reinforcements immediately available for Normandy, two full months worth of reinforcements had been set aside for the July 1943 invasion of Sicily, Operation "Husky". The next chapter of this study will discuss in more detail Canadian Army calculation errors concerning projected casualty rates and other personnel challenges.

The No.2 CBRG was under the direct command of 21st Army Group and its Canadian echelons, yet worked closely later at all junctures with the headquarters of 2nd Canadian Corps, First Canadian Army and CMHQ in London. Its five reinforcement battalions were numbered nine through thirteen.⁵ As soon as the Normandy landings occurred, a forward base was established on the continent. The first battalion to establish itself in France was the 10th, landing on 9 June 1944. Next was the 9th battalion, which was ashore on 13 June 1944. These battalions were soon followed by the 11th and 12th. All four fed a British advance reinforcement battalion which in turn supplied the 1st British Corps reinforcement company with Canadian replacements until mid July 1944. It was at this time that the 2nd Canadian Corps became operational, taking over the leadership and administration of all Canadian formations ashore from the 1st British Corps. The 2nd Canadian Corps was placed under command of the Second British Army, but this was short-lived. Early August 1944 saw the First Canadian Army become operational, utilizing the 2nd Canadian Corps as one of its two corps. With this act Canadian control of the personnel reinforcement process became nearly total, with only the 21st Army Group headquarters maintaining administrative oversight.

⁴ Charles Stacey, *The Victory Campaign*, 630. General Order 297 21 June 1944 relating to the establishment of No.2 CBRG..

⁵ LAC, RG 24 Volume 12,448. Organization and Administration of No.2 CBRG, 03/44 – 02/46. T-20276. Charles Stacey, *The Victory Campaign*, 631.

The last No.2 CBRG battalion in France, the 13th, landed on 3 August 1944. Once the 13th was ashore, it based itself forward at the newly operational First Canadian Army road head staging area. This unit's task was to act as the advance reinforcement battalion, replacing a British Army equivalent battalion in this role. It oversaw the flow of personnel to the 2nd Canadian Corps reinforcement company and the divisional reinforcement companies, and sought to ensure a consistent reinforcement supply to the combat units as operations continued from August 1944 onward.⁶

The 1944 Canadian reinforcement battalion would usually consist of several categories of personnel in addition to new overseas Active Service Force volunteers.⁷ The battalion's title gives the impression that it consisted of all brand-new reinforcement personnel, and this was not the case. Personnel could be returning battle or non-battle casualties, re-musters from another trade or volunteer former National Resources Mobilization Act (NRMA) soldiers. Some were new to the Canadian Army, while others had been in it for a longer period of time. To address limited transportation concerns and the necessity of placing personnel where they were needed quickly, a single administrative process was essential. Thus all personnel, both returning and new reinforcements, were mixed together in one pipeline that stretched from the reinforcement battalion to the divisional reinforcement company.⁸

There was one Canadian Army trade that had its own separate reinforcement process. In contrast to the path of other reinforcements in 1944-1945, all reinforcement Canadian Armoured Corps (CAC) personnel were split away halfway through the process. This was done at the corps level reinforcement company stage or earlier, depending on the situation. They were then attached to 25th Canadian Armoured Delivery Regiment (25th CADR) squadrons. This separation was done in accordance with CAC policy. The 25th CADR took control of all CAC replacements and ferried them, often as complete

⁶ Charles Stacey, *The Victory Campaign*, 631.

⁷ LAC, RG 24 Volume 12,448. Organization and Administration of No.2 CBRG, 03/44 – 02/46. T-20276. Charles Stacey, *The Victory Campaign*, 630-631. The reinforcement battalion itself was an administrative holding organization for reinforcements, rather than an army battalion trained in a specific trade or mission. It would consist usually of several hundred transient personnel, controlled and administered by a permanent battalion command structure.

⁸ LAC, RG24 Volume 15,001. Algonquin Regiment War Diary April 1945. An April 1945 war diary entry makes reference to only 25percent of the reinforcements having combat experience, illustrating the mix they were receiving in way of replacements.

armoured fighting vehicle (AFV) crews, to the Canadian armoured regiments. In this way they were guaranteed to remain with the AFVs and not have their skill sets lost due to emergency re-mustering. Also, if the tanks and the tank crews were isolated from each other, they would both lose their combat power.

In January 1945, the No.2 CBRG was re-organized to improve its effectiveness. One large pool of reinforcements was collected in Ghent, the Netherlands, to be distributed within First Canadian Army formations. By this time in the war the transport time for reinforcements to reach the front was lessened considerably by the opening of the port of Antwerp in Belgium. The re-organization began with the disbandment of all companies except one within the 12th Battalion. Next, the 10th and 11th battalions were specialized to feed infantrymen to infantry regiments.⁹ The 9th battalion was re-configured to feed replacements to divisional level units, and the 13th took responsibility for replacements to Canadian corps and army level units.¹⁰ This re-organization placed a focus on the processing of infantry reinforcements. This was necessary due to the majority of all battle casualties occurring within the Canadian Infantry Corps (CIC) and relatively few replacements being needed within other trades in comparison.

In April 1945 the 1st Canadian Corps was declared operational and it commenced combat operations in the Netherlands. Due to the arrival of the 1st Canadian Infantry Division, the 1st Canadian Armoured Brigade and the 5th Canadian Armoured Division, the need arose to have a separate reinforcement organization to feed these formations. The headquarters of the disbanded 12th Canadian Infantry Brigade, formerly part of the 5th Canadian Armoured Division, was configured to form a headquarters for this new replacement structure. This group consisted of three reinforcement battalions and was designated the No. 3 Canadian Base Reinforcement Group (No. 3 CBRG). With the creation of

⁹ LAC, RG 24 Volume 12,448. Organization and Administration of No.2 CBRG, 03/44 – 02/46. T-20276. Charles Stacey, *The Victory Campaign*, 632.

¹⁰ LAC, RG 24 Volume 12,448. Organization and Administration of No.2 CBRG, 03/44 – 02/46. T-20276. Charles Stacey, *The Victory Campaign*, 632.

this organization, the 1st and 2nd Canadian Corps each had their own reinforcement systems. No. 3 CBRG's battalions were numbered 14 through 16.¹¹

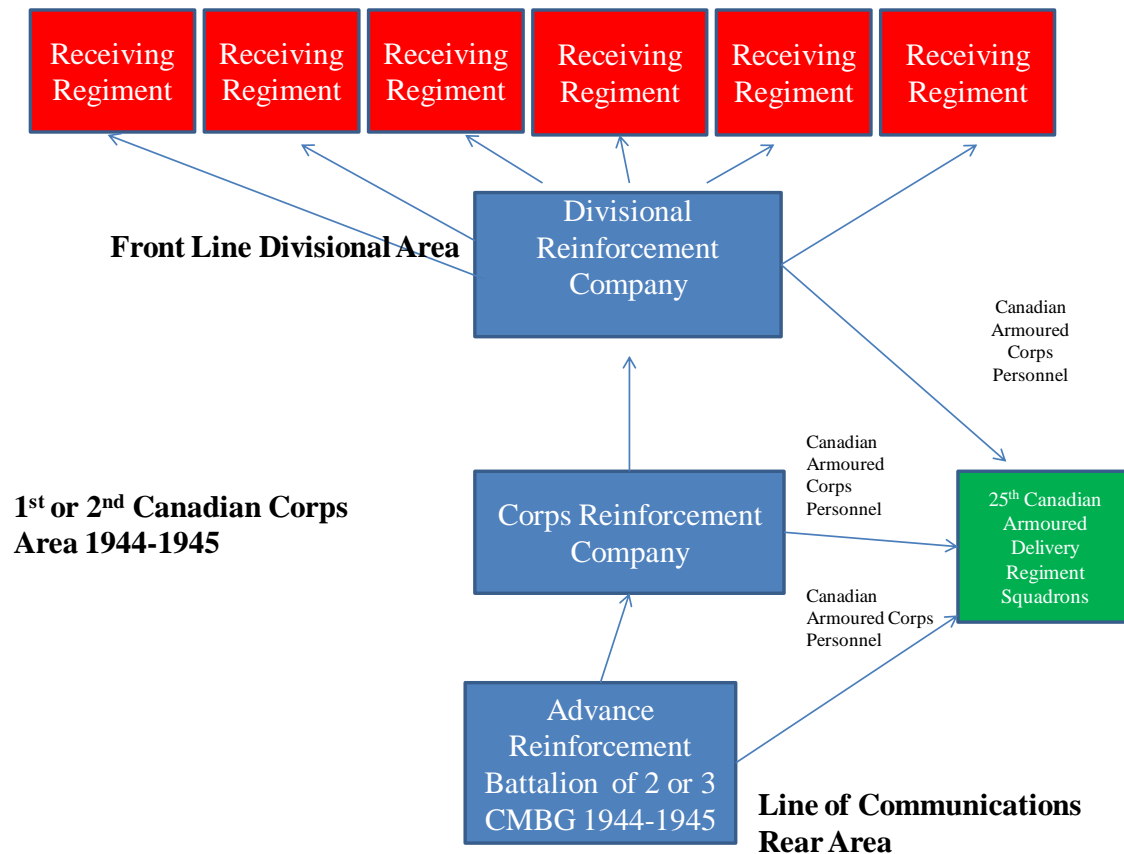
The process of arranging for the delivery of required reinforcement personnel was administrative. The regimental headquarters (RHQ) of an infantry regiment would request its personnel reinforcements needs through weekly officer and other ranks field returns. After an evaluation of the reinforcement pool and how many reinforcements other regiments required, a decision would be made on what could be spared, when and to what regiment. This decision would often be influenced by the corps level general staff, as certain units slated for operations had to be as strong as possible. Reinforcements arriving on Juno Beach in Normandy or Antwerp in Belgium during 1944 were often just a short distance from the front lines. Despite this short distance, there were many administrative steps involved for reinforcement soldiers to get to their final destination.

Chart 4.1 illustrates the route reinforcement personnel would take after their arrival on the continent to get to their combat arms unit. As an example, Canadian general duty infantry reinforcements on arrival in France in July 1944 would be first processed through a 21st Army Group reception camp's Canadian section. From there the soldiers would be posted to a No.2 CBRG reinforcement battalion. Then they would move to the No.2 CBRG advanced reinforcement battalion. The next step was a move to the corps level reinforcement company. Following this, the soldiers would then arrive at the divisional level reinforcement company. Personnel would then be transported to a regiment within a brigade, but not to their designated infantry company immediately. The new arrivals would spend time in the regimental B (Supply and administrative) Echelon or Left out of Battle (LOB) grouping in order to acclimatize to conditions at the front. Following this short period, the reinforcements would then be

¹¹ LAC, RG24 Volume 12,448. Organization and Administration of No.3 CBRG 04/45 – 05/45. T-20276. Charles Stacey, *The Victory Campaign*, 632.

posted to a platoon within a rifle company. Including shipboard transport from the U.K. to Normandy, reinforcement infantry soldiers had a the total of eight moves between different camp organizations.¹²

Chart 4.1: First Canadian Army personnel delivery system chart¹³



At various way-points within the reinforcement process a soldier could be redirected if requirements or the situation changed. During the general duty infantry reinforcement shortage in the summer of 1944, soldiers from other trades were re-mustered into infantry regiments after a period of re-training. Nothing else could be done to address the problem in the immediate short term. During the fall

¹² LAC, RG24 Volume 10,663. Chart 2: First Canadian Army Plans Diagram of personnel replacement and releases . File 215C1.045 (D12). Charles Stacey, *The Victory Campaign*, 630-632.

¹³ LAC, RG24 Volume 10,663. Chart 2: First Canadian Army Plans Diagram of personnel replacement and releases. File 215C1.045 (D12).

of 1944, re-mustering of excess non-infantry personnel continued and reinforcements in the U.K. and the continent were re-trained to upgrade what infantry skills they had.¹⁴

Rapid mass transfers were not an everyday occurrence for the No.2 CBRG. This organization had to consistently maintain a float of personnel, should an unforeseen disaster occur that would place the majority of one or several infantry battalions in large deficit positions. If the reinforcement battalions had given away all their personnel at this point it would be impossible to respond to such a disaster. They always had to be ready for the possibility that a military reverse could occur. With the period near the war's end being the exception, this factor influenced their behaviour with regards to releasing reinforcements. On top of this were administrative and travel time waiting periods that were imposed on the requesting regiment, extending the time before the regiment actually had the men arrive at its B Echelon.¹⁵ Transfers of over 200 personnel reinforcements in one day were extremely rare and the entire process was very bureaucratic.¹⁶ To qualify for a large immediate transfer, a regiment's immediate future performance in an upcoming operation would have to be in doubt.

Despite various integration challenges, once reinforcements joined their units, they were taken on strength (TOS) by the regimental adjutant. They would then appear as part of the unit on returns for the next day to the higher chain of command. Thus a unit's status could change very rapidly, from a weakened state to one of being potentially capable of accepting losses in high intensity combat. It is important to note that a transfer of new reinforcements often did not alter the capability of the receiving regiment immediately. Despite urgent requests for new personnel by a receiving regiment, the same unit would often unwittingly slow down the "arrival" process. This action could make the regiment look strong on paper when it had not fully re-organized itself to absorb its new strength. Theoretically, the

¹⁴ Terry Copp, *Cinderella Army*, 294-295. Copp relates the infantry re-mustering and re-training of Lieutenant Walter Keith, a Signals Corps officer, in the U.K. over the winter of 1944-1945.

¹⁵ "Glossary –E. Echelon" article. *Canadiansoldiers.com* <http://www.canadiansoldiers.com/glossary/glossarye.htm>. Retrieved 20 February 2016. Combat arms regiments consisted F, A and B Echelons. F was the fighting component of the unit, containing everything needed for the combat mission, while A and B echelons were for supply and administrative roles.

¹⁶ LAC, RG24 Volume 18,616. Reinforcement Drafts from U.K. by date and amount. The 2 September 1944 draft from the U.K., SP INF 4, consisted of ninety-one officers and 562 other ranks. Divided amongst the infantry regiments of the 2nd and 3rd Canadian Infantry Divisions and 4th Canadian Armoured Division, it was not a huge amount.

reinforcement personnel would reach the unit and report to the Regimental Sergeant Major (RSM) or Adjutant, then swiftly make their way to their infantry companies, armour squadrons or artillery batteries. As noted previously, the new arrivals would often be given time to acclimatize themselves within a regiment's B Echelon or LOB contingents. This was done to avoid unnecessary errors in the field that might make them casualties within hours of arriving.¹⁷

An important secondary function of the personnel reinforcement system was not one that its designers envisioned. Separate from new personnel but part of the incoming reinforcement stream were medical casualties returning to their units. The return of battle and non-battle casualties without psychological problems was fairly straightforward, and these rehabilitated personnel utilized the system to rejoin their units with minimal delay. However, after intense combat operations a portion of the resulting non-battle casualties within combat arms regiments were psychiatric. A segment of these cases could be rehabilitated through a short but intense rest period close to the front line in the battalion regimental aid post (RAP), but others needed further rest.¹⁸

As part of their medical rehabilitation, these soldiers were reverse fed directly into the reinforcement companies.¹⁹ The 2nd Canadian Corps reinforcement company during 1944-1945 often acted as a tool to extend the rehabilitation period for battle exhaustion cases. Its bureaucratic process could be used to give soldiers who needed extra time an additional waiting period. Within the system, the battle exhaustion casualty would have to transit from the corps level reinforcement company to the divisional level reinforcement company. This valuable time was used for rest, therapy and rehabilitation. Also, if an emergency was to occur, the soldier in question was not far away from the regimental or brigade area of operations. Appendix 9 within this study supplies a breakdown of 3rd Canadian Infantry Division neuro-psychiatric casualties that occurred in the fall of 1944. Tables within this appendix

¹⁷ Charles Stacey, *The Victory Campaign*, 631-633. Reinforcements coming though took a average of three-four days transit to show up on the nominal rolls of the receiving regiment. In October 1944, before the Port of Antwerp opened, reinforcements took seven days to arrive. This was due to the increased distance from the Normandy beachhead to the front line in the Scheldt.

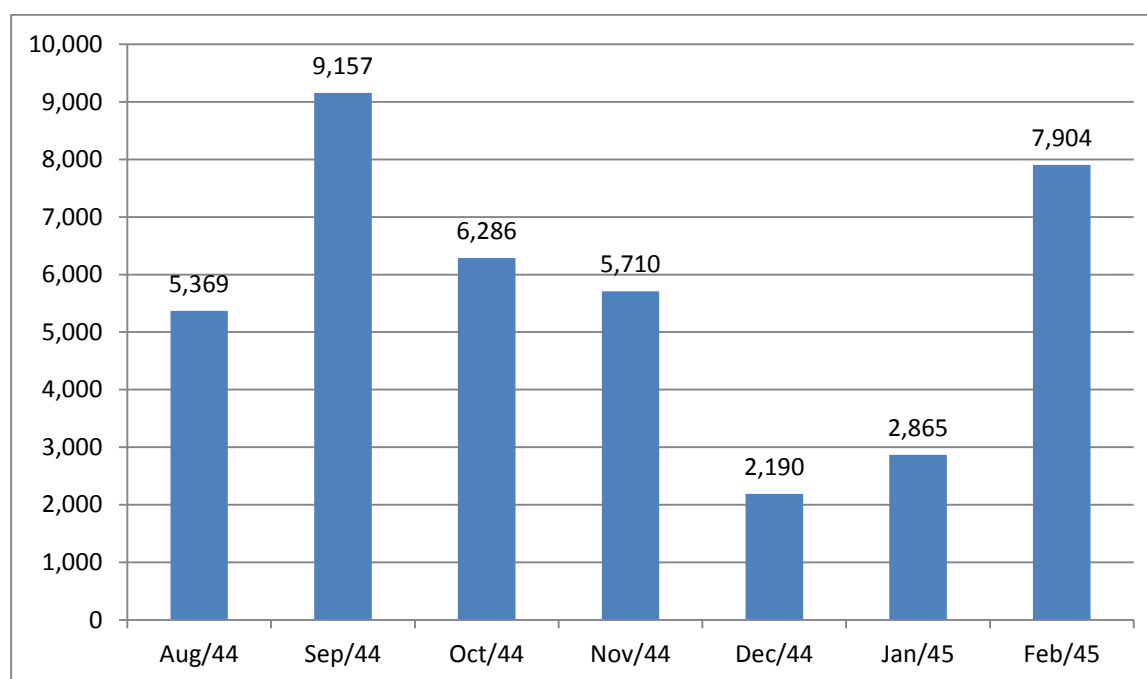
¹⁸ Terry Copp, Bill McAndrew, *Battle Exhaustion: Soldiers and Psychiatrists in the Canadian Army 1939-1945*. (Kingston: McGill-Queens University Press. 1990.), 57.

¹⁹ Terry Copp, *Cinderella Army*. Appendix E, 308-311. LAC War Diary ADMS 3rd Canadian Infantry Division.

illustrate that the corps reinforcement company was utilized as the treatment option for 67.5 percent of all battle exhaustion casualties within division. These neuro-psychiatric casualties constituted 15 percent of total divisional casualties. This was a large percentage and highlights the importance of the reinforcement company in this additional role.²⁰

The capacity of the reinforcement system to deliver personnel was impressive. Chart 4.2 illustrates total Canadian reinforcements dispatched to the 21st Army Group in the months August 1944 to February 1945. Considering the number of Canadian formations in NWE in contrast to British and U.S.

Chart 4.2: Total Canadian reinforcements dispatched to the 21st Army Group in NWE from the U.K. August 1944-February 1945²¹



forces, the monthly totals are significant amounts. The one blemish on the overall record is the number of personnel sent in August 1944, which did not match demands for reinforcements. This occurred due to poor planning on the part of Canadian Army leadership, and is discussed in detail in the subsequent chapter. The strength of Canadian units was adequately re-built in September 1944 and all units on the

²⁰ Terry Copp, *Cinderella Army*. Appendix E, 308-311. LAC War Diary ADMS 3rd Canadian Infantry Division.

²¹ LAC, RG 24 Volume 18,616. 17 March 1945 report on Canadian reinforcements dispatched to 21st Army Group in NWE, 5 August 1944-28 February 1945. File 133.035 (D92).

eve of the Scheldt fighting were close to their war establishment figures. This rebuilding occurred again in November 1944 post Battle of the Scheldt. The First Canadian Army was largely operationally inactive during December 1944 and January 1945, resulting in low demand for reinforcements other than for ongoing non-battle losses. These reinforcement numbers spike again with the resumption of high intensity operations in February 1945.

This reinforcement ability of the Canadian Army was superior to that of the German land forces. As shown in Chart 4.3, the German Army, Waffen SS and Luftwaffe ground units were bled white in Normandy and their losses were not replaced. The two points for every date in Chart 4.3 chronicle the gulf between losses and replacements. With new losses occurring every day, German units on the front line never had a break to build up their strength. The failure to provide large numbers of replacements to at least halt the haemorrhaging meant that units got progressively weaker.

Chart 4.3: Cumulative figures of German battle losses in Normandy and total replacements issued, July-August 1944²²

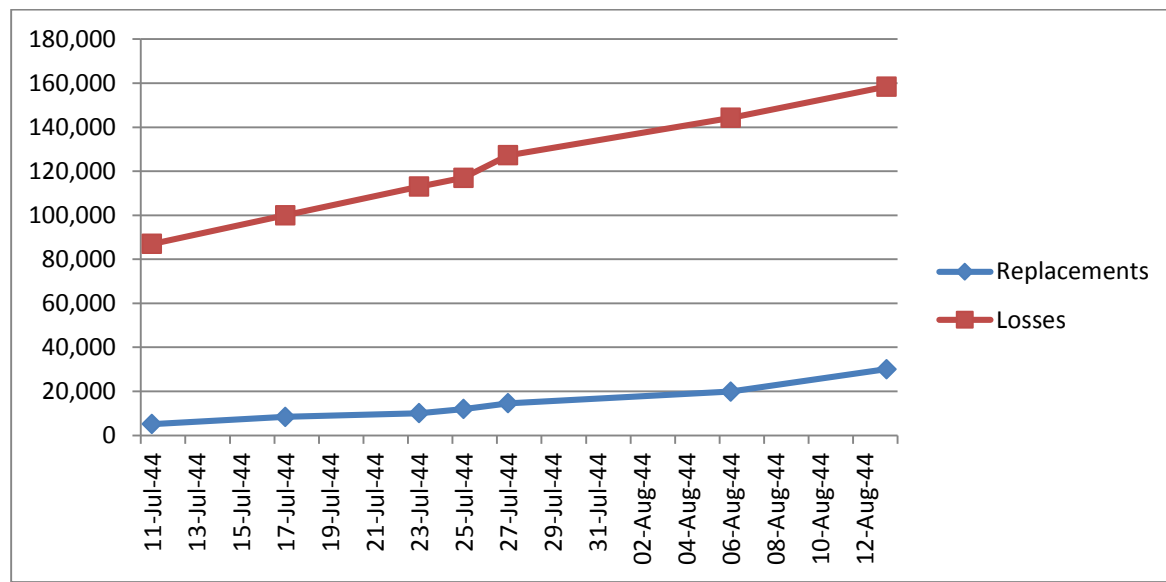
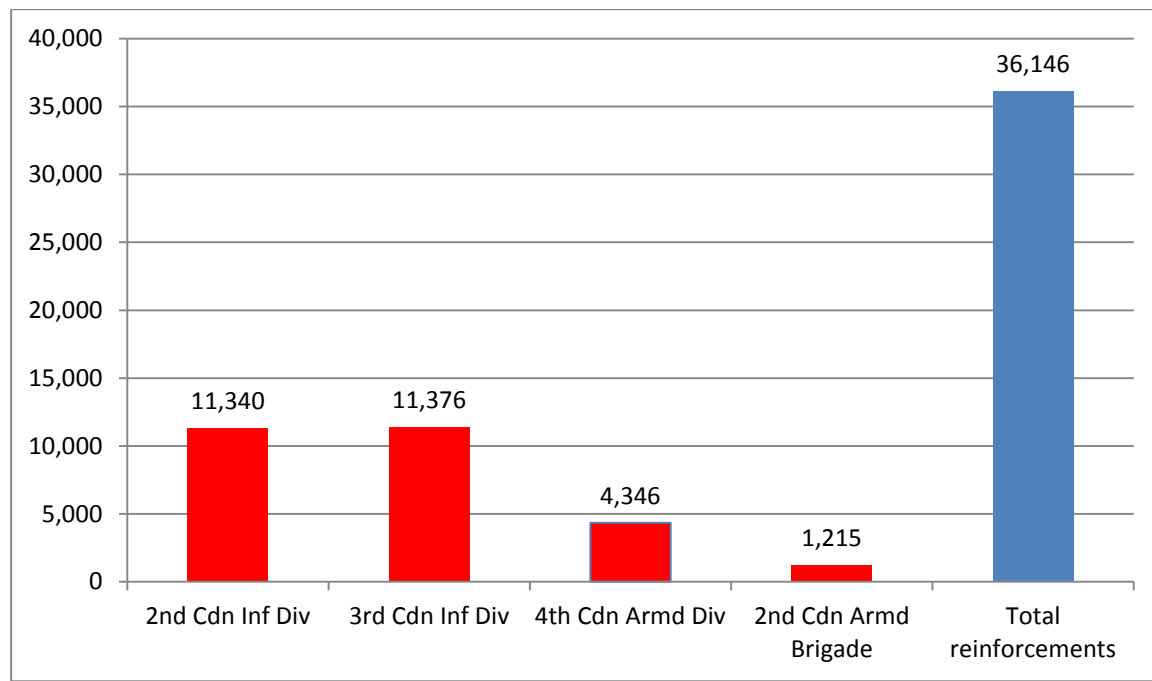


Chart 4.4 addresses the question of whether sufficient replacement Canadian Army personnel were provided to cope with ongoing losses. Reviewing the chart, it would appear that the number of

²² Russell Hart, *Clash of Arms*, 385.

reinforcements dispatched to keep units at 100 percent of their war establishments was excessive. This is due to other causes of losses that were unrecorded at the division level on a monthly basis, and not included in this chart. These included non-battle casualties, transfers, imprisonment and AWOL (away without leave) cases. These categories combined constituted a ongoing drain to personnel levels, removing soldiers from units just as effectively as battle losses.

Chart 4.4: Dispatched Canadian reinforcement draft totals from the U.K. (blue) versus battle casualties (red)for major Canadian Army formations in NWE, 6 June-8 December 1944²³



In summary, despite its limited speed and bureaucratic complexity, the reinforcement systems production at the CBRG level was continuous, making weekly or twice weekly deliveries at regimental unit B echelons. It was also flexible and could be manipulated, albeit slowly. Once in operation, deliveries of new personnel would continue on a regular basis until either the machine ran out of replacement soldiers or it was ordered to stop. In this way the ongoing problem of wartime personnel losses could be serviced.

²³ LAC, RG 24 Volume 18,616. 17 March 1945 report on Canadian reinforcements dispatched to 21st Army Group in NWE: 5 August 1944-28 February 1945. File 133.035(D92). Canadian Army Historical Section Report: Comparison battle casualties Cdn/Brit Western European Theatre.

Chapter 5: The growth of the Canadian Army Overseas and infantry reinforcement challenges

For a sixty day period in August and September 1944, the Canadian Infantry Corps (CIC) had a reduced number of personnel reinforcements available to it. This occurred due to poor strategic planning that failed to properly account for future personnel needs of infantry regiments over the long term. Due to this miscalculation, a sufficient reserve of reinforcement infantry other ranks (non-officer) personnel was not created by spring 1944. The size of the Canadian Army Overseas (CAO) had grown exponentially over the period 1942-1944, but was still an all volunteer force. What existing reinforcements it had access to were limited in number. As a result of the shortage of infantry replacements, the No.2 Canadian Base Reinforcement Group (No.2 CBRG) had a reduced ability to rebuild infantry units engaged in ongoing combat operations during the late summer of 1944. The mistakes that led to the issues of August and September were serious, and for a sixty day period impaired the combat effectiveness of the First Canadian Army. For two weeks of this period, 8 to 21 August 1944, it was engaged in some of the most difficult fighting of the Normandy Campaign.¹ This period is a blemish on a otherwise satisfactory record of personnel replacement. Due to this episode's brief but significant impact on the strength of the Canadian Army, it is important that this event and the conditions that influenced it be included within this study.

After a slow start, by early October 1944 Canadian Military Headquarters (CMHQ) London had significantly reduced personnel deficits within the infantry regiments by the large scale re-mustering surplus personnel from other trades. The number of re-mustered personnel totalled 10,000 by December 1944. The shortage lasted for only two months out of the eleven month campaign in North West Europe (NWE), and the other combat arms trades in this study, armour and artillery, were unaffected. From early June to late July 1944 and from October 1944 to May 1945 all infantry regiments engaged in combat were kept at adequate personnel strength levels.

¹ LAC, RG 24 Volume 10,517. Daily record of casualties for the 3rd Canadian Infantry Division from 6 June 1944. File 215A21.009 (D167). The 3rd Canadian Infantry Division suffered 564 battle casualties in the period 1-16 August 1944.

This shortage was separate from the November 1944 political Conscription Crisis in Ottawa over the uncertain future supply of infantry reinforcements, but its severity certainly influenced the latter event. After the infantry regiments were rebuilt and a reserve of 16,825 personnel was created by late October 1944, the larger problem of maintaining this reserve proved challenging. The War Committee of Mackenzie King's Liberal Government was divided on how to accomplish this goal. Conscriptionists believed the use of National Resources Mobilization Act (NRMA) home defence conscripts was inevitable while anti-conscriptionists, the Prime Minister among them, hoped that all future needs could be met with Active Service Force volunteers. The Canadian Army could not present a viable plan that would utilize only volunteers already overseas or personnel converted from NRMA status to cover its reinforcement needs into 1945. Further political impasse and pressure from the Prime Minister led to the resignation of the Minister of National Defence, J.L. Ralston. Left with no other option, the King Government made the decision on 23 November 1944 to deploy NMRA personnel overseas to ensure the reserve was maintained.²

The origins of the infantry personnel challenge the Canadian Army Overseas (CAO) suffered in mid 1944 are located within earlier decisions to radically expand it, yet retain its all volunteer status. The CAO grew in size tremendously from 1939 until 1944, when the focus of this study begins. Initially only one infantry division in 1940, by September 1944 it consisted of five divisions and two independent brigades, along with all the necessary support units to sustain them. In the fall of 1944 these formations formed one complete corps in Italy and a second corps made up half the strength of the First Canadian Army in NWE. Yet evolution within the CAO went past its sheer size. By early 1944 it had also created a completely new trade, the Corps of Royal Canadian Electrical and Mechanical Engineers (RCEME), and had embraced the latest combat, command and logistical doctrine of the Commonwealth armies. These practices had evolved out of combat experience during campaigns in North Africa, Sicily and Italy over the years 1941-1944.

² Charles Stacey, *Arms, Men and Governments, the War Policies of Canada 1939-1945*. (Ottawa: The Queen's Printer for Canada. 1970), 473.

While the Canadian Army maintained control over military matters, its leadership, organization and battlefield doctrine, it did not have access to the Canadian population or its government's treasury in order to increase its size. During wartime, the Minister of National Defence managed the size of the army in accordance with the decisions made by the Prime Minister and rest of the War Committee. Political and financial considerations as well as the needs of the other two services forced the government to tightly control army expansion. It is important to note that during the early war years there was a focus on minimizing Canada's wartime contribution. While the pre-war Canadian Army had many plans for expansion, none was firmly endorsed the government when war broke out. Such was the disarray that emerged from the interwar period that the army was near its nadir as an organization by 1939 with regard to personnel and equipment. As a result, there was no strategic plan that clearly and strictly defined what the full size of the CAO was to be, how it was to be reinforced and who exactly was going to equip it.³

During the early war years the other two services, the Royal Canadian Navy (RCN) and Royal Canadian Air Force (RCAF), were also competing for resources, personnel and funding. The Battle of the Atlantic was in full swing during 1941 and the Luftwaffe was still a powerful force within Western Europe. With these two services fully engaged in escorting convoys and embarking on the bomber offensive over occupied Europe, the King Government was in no rush to expand the role of the Canadian Army. Furthermore, while defence of the United Kingdom (U.K.) was seen by the Canadian public as important, it was felt public opinion would not endorse the employment of Canadian forces in North Africa or further abroad.⁴ Heavy combat on land might also force the introduction of conscription, which at the outbreak of war was politically unacceptable to the Liberal King government.⁵

The use conscription in Canada during the First World War made a large political impact on the nation. It was extremely damaging to national unity, and the Liberal Government in 1939 viewed even the proposed use of conscription as a serious matter. During the First World War the enforced overseas

³ John Grodzinski, *Operational Handbook*, 4-6.

⁴ Charles Stacey, *Arms, Men and Governments*, 39.

⁵ Charles Stacey, *Arms, Men and Governments*, 43.

service of Canadians had been enacted by the passing of the Military Services Act by Prime Minister Robert Borden's Unionist Government in August 1917.⁶ This legislation was tabled to maintain the strength of Canadian forces overseas at a time when the war was going badly for the Allies and the supply of volunteers had dried up. Over 45,000 personnel conscripted from mid 1917 onward reached the front lines by war's end.⁷ These men were taken directly from their civilian environment and placed in military training camps. The cost of this decision was national disunity along provincial lines. The country was bitterly divided, with Anglophone Canada overwhelming pro-conscriptionist and Quebec's population being vehemently opposed. Unrest resulted in riots and numerous revolutionary acts in Quebec. Politically, it significantly damaged the Liberal party's standings in English Canada, reducing Wilfred Laurier's federal Liberal Party to seats largely within Quebec after the election of 1917.

Following the fall of France, Canadian Parliament passed the National Resources Mobilization Act (NRMA) in June 1940. This act created national service, but with very different aims than the conscription legislation of the First World War. The act registered men and women nationwide, moving them into proper employment to aid the war effort. It also mobilized Canadians for military service, some for only a limited thirty day period. The act established twin Canadian armies, one for home defence consisting of conscripts and another composed of volunteer Active Service Force personnel designated for overseas service. The Liberal Party proponents of this legislation stressed that there would never be enforced overseas service. While appeasing conscriptionists, it did not arouse the political ire of anti-conscriptionists nationwide who opposed overseas military involvement. Liberal Prime Minister Mackenzie King was extremely aware of the damage done to both national unity and the Liberal Party during 1917-1918, and was determined not to let the same events reoccur.⁸

When P.M. King was forced to eventually reverse his political decision not to employ conscripts overseas during the fall of 1944 out of military necessity, the resulting damage to national unity did not

⁶ J.L. Granatstein, *Conscription in the Second World War 1939-1945*, 9.

⁷ J.L. Granatstein, *Conscription in the Second World War 1939-1945*, 9.

⁸ Charles Stacey, *Arms, Men and Governments*, 449. P.M. King was concerned about the state national unity in fall 1944.

equal that of 1917-1918. The servicemen sent were NRMA personnel who had been in the Army in some cases for several years, instead of new recruits violently stripped from the civilian population. Civilian men who were not in the Army in late 1944 did not have their lives affected by this decision. This factor was extremely influential in reducing negative political reaction within Quebec.

Army growth from 1941 to 1944 occurred against a backdrop of political infighting over the issue of conscription. This battle pitted the pro-conscription Minister of National Defence, J.L. Ralston, against the anti-conscriptionist forces within the War Committee, most notably the Prime Minister and T.A. Crerar, Minister of Mines and Resources. Those in the Prime Minister's camp consistently held onto the main goal of resisting conscription in order to achieve three main goals: to retain the Liberal Party's hold on power and political fortunes, to avoid nationwide unrest over conscription; and, to maintain Canada's contribution to the war effort at a manageable minimum level. This was made clear by the War Committee's 29 July 1941 rejection of Canadian Army demands to increase the size of the CAO by a full two divisions.⁹

By 1941, there were signs from National Defence Headquarters (NDHQ) in Ottawa that Canadian Army leadership was not fully committed to the current recruitment program for overseas Active Service Force volunteers. Canadian historian Richard Walker argues that this resistance was intentional in order to facilitate the King Government being forced by military necessity to utilize conscription.¹⁰ Conscription would give the CAO the military might needed to achieve its goals and at the same time make a large force, such as a complete field army, sustainable. Senior Canadian Army leadership did not endorse the concept of the twin armies, one of overseas personnel and one of NRMA home defence conscripts. At this time the Canadian Army had the highest standards for acceptance in the world, and all men under nineteen and over thirty-seven were declared ineligible. Furthermore, many thousands of

⁹ Richard Walker, *The Political Management of Army Leadership: The Evolution of Canadian Civil-Army Relations 1898-1945* (London: History Department PhD Dissertation. University of Western Ontario. 2003), 332.

¹⁰ Richard Walker, *The Political Management of Army Leadership*, 334.

civilians were rejected due to physical standards that would have unacceptable in the United States and British military recruitment processes.¹¹

In August 1941, Major-General H.D.G. Crerar, Canadian Army Chief of the General Staff, completed a plan to construct an overseas Canadian Army of two corps. To realize this plan, his successor, Major-General Kenneth Stuart, forwarded on 18 November 1941 the proposal *Army Programme 1942-1943*. This proposal sought to radically enlarge the army and fully utilize available Canadian manpower. Defence Minister J.L. Ralston endorsed this proposal and supplied data in the form of the Walker-Robinson Report to illustrate that it was feasible. This report reflected that Canada could supply the necessary manpower without damaging national industry. The NDHQ General Staff also stated that this programme could be completed without resorting to conscription, the main issue of resistance in the Liberal Government. Ralston at this point was proving very susceptible to the advice of the General Staff on matters of army expansion. A former Colonel, he began to be perceived by his Liberal Party colleagues as a mouthpiece for army demands and would in time, they believed, eventually endorse conscription to utilize available personnel for overseas service.¹²

Prime Minister Mackenzie King relented to the demands for a larger army on 6 January 1942.¹³ Political pressure against King from all sides had been growing within Canada for a more robust war effort. The Conservative party was pushing for a coalition government, and powerful Toronto business leaders were lobbying for conscription and a more "total war" approach to Canada's contribution. There was also the disturbing trend of senior Canadian Army officers speaking to the press regarding perceived challenges the Army the facing in sustaining the war effort. These transgressions were not stopped by the Minister of National Defence, and continued throughout the war. At this point Ralston perceived army expansion to be so important to the war effort that it was worth resigning over should the program be rebuffed by King and others. Threatening King with this politically damaging act and acting fully in

¹¹ Richard Walker, *The Political Management of Army Leadership*, 364.

¹² Richard Walker, *The Political Management of Army Leadership*, 329.

¹³ Richard Walker, *The Political Management of Army Leadership*, 341.

cooperation with the Army's long-term corporate interests, Ralston divorced himself from his Liberal colleagues to form a pro-conscription camp within the Ottawa War Committee.

By late 1942 the foundations for what would eventually be the First Canadian Army were laid. What was missing was a strategic reinforcement plan to sustain this colossus, the political will to create a reserve of reinforcements through conscription and finally the means to equip a large army. Concerning the last point, Canada totally lacked the diversified arms industry to supply all its needs in the way of modern weapons systems. Within the army all-volunteer personnel pool at hand, a sufficient reinforcement reserve did not exist to deal with all possibilities, military disaster on a massive scale being among them.

A primary presupposition held by NDHQ at this point would be that it would be politically impossible for the Canadian Government to not to sustain a larger army once it was operational in a combat zone. The political opponents of the Liberal Party would not tolerate it "withering on the vine". It was also clear to senior Canadian Army leadership that it would be impossible for this large army to be sustained during combat operations without the implementation of conscription, a strategic, if undisclosed, goal of NDHQ. This point was never clearly passed onto the Minister of National Defence or the Prime Minister in 1942. NDHQ was also sure that the British Government, grateful for the formations, would equip it with their most modern weapons to ensure success. There were also long-term plans afoot to maintain this creation post war. Once a larger army was constructed, it was quite plausible that it would be politically difficult to disassemble. Part of Crerar's intent in his plans for a "Big Army" included never revisiting Canada's military insignificance of the 1930s.¹⁴

A factor that made it even more impossible to sustain the then current all volunteer CAO was its approach to utilising personnel. Personnel resources were managed poorly and all administrative organizations within the CAO were bloated prior to the Normandy Campaign. As pointed out in E.L.M.

¹⁴ Richard Walker, *The Political Management of Army Leadership*, 332.

Burns *Manpower in the Canadian Army*, only 34.2 percent of all personnel were combat arms. A disturbing total of 28.2 percent of personnel made up Canadian headquarters, compared to 11.6 percent in the U.S. Army. The army took no corrective action to re-organize itself during 1943-1944 to cope with a possible future shortage of infantry replacements. Compounding matters, the CAO was fully committed to maintaining this bloated establishment.¹⁵ In March 1944, Major-General A.E. Walford, Deputy Adjutant and Quartermaster General of the First Canadian Army, stated it was over strength and could not be sustained. His recommendations that its structure be altered were ignored.¹⁶

What presuppositions did P.M. King and the remainder of his War Committee colleagues possess in January 1942? A main assumption was that the "Big Army" program was so massive a request it would be the last of its kind foisted upon them for the remainder of the war. King also accepted Major-General Stuart's dubious assurance that it would not be necessary to utilize conscription to supply the enlarged CAO in the future. Though not a military man, it cannot have escaped King's comprehension that to support such a large organization in wartime meant large numbers of replacement personnel would be needed. That this point was not clearly conveyed by NDHQ to the War Committee is troubling, but understandable. If it had been more clearly stated, this factor would have undermined gradually easing King and other anti-conscription committee members into accepting conscription. Secondly, it would have badly damaged the whole bid for an enlarged army. It is also plausible that King was considering purely political problems at the time of his decision to accept the rapid expansion of the army. His current main goal, the placation of the conscriptionist and "total war" forces, including some within his own War Committee, had to be achieved presently.

Having dealt with immediate problems, King in late January 1942 looked to address future issues following the decision to expand the army. Anticipating the possible need to use conscripts overseas to maintain the war effort, the Liberal Government made the decision to conduct a plebiscite to release the

¹⁵ Richard Walker, *The Political Management of Army Leadership*, 353.

¹⁶ Richard Walker, *The Political Management of Army Leadership*, 383.

government from its previous promise that enforced overseas service would never occur. The 27 April 1942 plebiscite passed, and though the province of Quebec largely voted against it, political resistance was much reduced compared to that of 1917-1918.¹⁷ To mollify Quebec, it was stressed that conscription was not necessary at present, and might possibly never be needed.¹⁸ King had again succeeded politically, regardless of what the future was to contain for the CAO. Following the early January 1942 approval for the rapid expansion of the army, new divisions were raised from large numbers of volunteer Active Service Force members. The construction of these divisions will be discussed in subsequent chapters in detail.

Near the end of this expansion process, the CAO's period of relative inactivity in England would end with the deployment of one infantry division and one armoured brigade to Sicily in July 1943. Until this point, the CAO had not had any experience with large numbers of battle and non-battle casualties over an extended period of combat operations. Battlefield experience is an essential factor in the successful projection of casualty rates. When operations began in Sicily, projected Canadian Army casualty rates for infantry were extremely unrealistic.

The inaccurate projection of casualty rates within the Canadian Army had first begun with the establishment of projected losses tables by the Ottawa War Office in 1939. These tables had been sent to CMHQ London shortly after the outbreak of war.¹⁹ These rates erroneously projected monthly infantry losses that maxed out for other ranks at 20 percent for "intense activity" (intense combat). Since the war had just begun, these rates were purely hypothetical because no one really knew what effects modern weapons or tactics would have on the Canadian Army. The plan devised for reinforcements was to keep a three month reserve of "intense" rates on standby in the U.K. This amount was to equal 60 percent of whatever infantry personnel were present in operational units. This reserve would be drawn upon as

¹⁷ Charles Stacey, *Arms, Men and Governments*, 400-401.

¹⁸ J.L. Granatstein, *Conscription in the Second World War: 1939-1945*, 47-48.

¹⁹ Terry Copp Papers (Waterloo, ON: Laurier Military History Centre Archives. 2015.), Colonel C.P. Stacey, Canadian Army Historical Report No.134. Historical Sketch, Rates of Wastage of Personnel. Canadian Army Overseas, 1939-1945. Canadian Military Headquarters, London, U.K. 5 April 1945,3.

needed, and would be supplemented by one month's worth of personnel placed forward in the immediate theatre of operations, for a total of four months at "intense" rates.²⁰

After the fall of France in 1940, CMHQ London perceived that Canadian forces in the U.K. would take on a defensive rather than offensive role in the immediate future. This meant that there would be correspondingly smaller projected casualties. The figure utilized for "intense" monthly losses was recommended to be lowered to 10 percent, the same figure then utilized for "normal" monthly losses. These new levels were approved by NDHQ in Ottawa in August 1940. It was ordered that three months worth of reinforcements at "normal" rates would remain in Canada so as not to build up an excessive amount in reinforcement personnel overseas. Within the U.K. itself, it was believed that should an invasion occur, the estimated period of fighting would only last a month in a worst case scenario.

The U.K. reserve of infantry reinforcements was then re-organized to contain only three months worth at the new "intense" rates of only 10 percent losses. Anything beyond that would have to be transported from Canada.²¹ These rates continued to be in effect until July 1943. As a result of this reinforcement strategy over the years 1940-1943, there was no major influx of reinforcements from Canada to build up a large reserve. In both January of 1941 and January of 1942 the question of rates were examined with reference to the most recent British casualties figures from North Africa.²² After researching this data, it was decided that the rates would remain unchanged and the amount of reinforcements kept in the U.K. would remain the same.

With Canadian forces set to participate in offensive operations in Sicily and Italy during the years 1943-1944, measures were taken to revise the casualty rates in the face of impending combat. Canadian rates were brought in line with British casualty projections of intense rates being 20 percent for other ranks infantry.²³ These new rates were brought into effect as of July 1943. Due to the relatively

²⁰ Terry Copp Papers, Canadian Army Historical Report No.134, 4.

²¹ Terry Copp Papers, Canadian Army Historical Report No.134, 5. Chart depicting projected wastage by Army trades.

²² Terry Copp Papers, Canadian Army Historical Report No.134, 6.

²³ Terry Copp Papers, Canadian Army Historical Report No.134, 10.

small number of forces initially engaged in operations in the Mediterranean, one infantry division and one armoured brigade, any casualties that were incurred were easily replaced. Despite the number of infantry casualties being out of proportion to other trades, total losses for all trades were manageable and within the July 1943 wastage rates. The eight reinforcement battalions of the No.1 Canadian Base Reinforcement Group (No.1 CBRG) were well supplied with two months worth of replacements, and easily replaced losses.²⁴ But due to the higher infantry casualty rates encountered in these operations, it became obvious that 20 percent was not a sufficient number.

The number of reinforcements that were present in each combat arms trade pool in Italy and the U.K. in the spring of 1944 was influenced by the projected casualties figures authorized in July 1943. It was important that these projections be correct, or the Canadian Army would be left with surplus reinforcements in one trade and a shortage of replacements in another. The current calculations adopted from the British and had been influenced by the records of the Eighth British Army in North Africa.²⁵ Due to the fluid nature of the mechanized war in the desert, enemy armoured forces could appear in places that were unexpected.²⁶ Artillery, armoured and infantry casualties had been roughly equal, with no trade that took significantly more casualties. Rear area supply services were often just as vulnerable, and could be caught off guard by an enemy advance which happened to break through.

The use of these British figures was a miscalculation that ignored the most recent Canadian Army casualty returns from operations in Sicily and the boot of Italy in 1943-1944. In this type of warfare the armoured fighting vehicle (AFV) was not the determinant of battlefield strength. The constricting terrain, rivers, mountains, weather conditions and other obstacles made it easy for anti-tank defences to halt armour's forward movement. Operations became dependent on the use of artillery and innovative infantry tactics to root out determined German defenders. The fighting was often static, with the Germans

²⁴ Charles Stacey, *The Victory Campaign*, 630.

²⁵ E.L.M. Burns, *Manpower in the Canadian Army*, 91. July 1943 assumed wastage rates.

²⁶ E.L.M. Burns, *Manpower in the Canadian Army*, 90.

conducting successful defensive operations that blocked Allied forces from advancing. This led to increased casualties in the infantry battalions, and a noted decrease in armoured and artillery casualties.

Attempts were made by certain staff officers within CMHQ London and the Canadian Army in the Mediterranean to raise the issue of miscalculations concerning the number of infantry reinforcements available. In December 1943, Brigadier A.W. Beament, the Officer-in-Charge (OIC) of the 1st Canadian Echelon in the Mediterranean, noticed that combat casualties were significantly higher for infantry other ranks and officers than the projected figures for normal rates of wastage.²⁷ He came to the conclusion that this wastage would result in a significant shortcoming in available infantry officer and other ranks reinforcements in the foreseeable future. This deduction led him to argue that personnel in other trades should be forcibly re-mustered into infantry as soon as possible. NDHQ and CMHQ London refused to validate these views, and stuck to the recent July 1943 revisions.²⁸ For the time being Brigadier Beament's concerns were dismissed. This officer recognized that there were enough personnel in the CAO to supply a suitable number of infantry reinforcements, but only if they were managed correctly.

In the fall of 1943 the pool of reinforcements within the CAO was not being managed properly, both in the U.K. and the Mediterranean. Within non-infantry trades there were miscalculations regarding future casualty figures which in turn retarded the growth of a reserve of available infantry reinforcements. Projected "intense" rate losses for Royal Canadian Ordnance Corps (RCOC) and what would become Corps of Royal Canadian Electrical and Mechanical Engineers (RCEME) personnel was projected to be nearly 9 percent in July 1943. This was a gross overestimate of what reinforcements would be required. Actual casualties for the RCOC and RCEME troops in the three worst months in 1944 turned out to be 1 percent of total personnel.²⁹ During early 1944 RCOC and RCEME reinforcement personnel continued to train within their trades when the time could have been used to effectively re-muster them into infantry regiments.

²⁷ E.L.M. Burns, *Manpower in the Canadian Army*, 91.

²⁸ E.L.M. Burns, *Manpower in the Canadian Army*, 92.

²⁹ E.L.M. Burns, *Manpower in the Canadian Army*, Table 3, 91.

Total Canadian Army reinforcement personnel of all trades within the U.K. as of 16 March 1944 consisted of 3,597 officers and 36,145 other ranks identified as fit soldiers.³⁰ These totals reflected a surplus of 890 officers and 1,790 other ranks over what was authorized as reinforcements in accordance with the July 1943 casualty projection rates. The number of available reinforcement personnel was never the issue for the CAO in the spring of 1944. The challenge was allocating the proper number of personnel to the correct trade, in this case infantry.

British Army pressure on CMHQ London prevented the August and September 1944 infantry reinforcement shortage from being far worse. 21st Army Group commander General Bernard Montgomery had taken an increased interest in the Canadian reinforcement situation in March 1944. During the same month his headquarters communicated the possibility to CMHQ that casualties on the initial beachhead assault of Operation “Overlord” could possibly be higher than the official forecasted rates.³¹ This caused alarm within CMHQ London and NDHQ. Canadian leadership at this point was slowly becoming cognizant to the fact that there were potentially far fewer infantry reinforcements than what was required. Rapid plans were made to enact a large re-mustering program as the need for an improvised solution became urgent. It is troubling that CMHQ London was driven into action by the perception that the one day Normandy beachhead assault would be a cause for an upsurge in future casualties, and not an extended period of high intensity warfare afterwards.

During further investigations by Montgomery it was revealed that within the Canadian reinforcement units present in the U.K., there was a massive shortfall of infantry other ranks reinforcements present when available totals were compared with authorized levels.³² Also observed by Montgomery were the large number of personnel attached to ad-hoc and training units, and this state of affairs made them less ready to be deployed to fulfill their reinforcement role. At the time of

³⁰ LAC, RG 24 Volume 13,581. Canadian Section, GHQ 1st Echelon, 21st Army Group. CMHQ correspondence to Canadian Section, 1st Echelon 21st A.G. Headquarters dated 16 March 1944.

³¹ LAC, RG 24 Volume 12,295. Rates of wastage and policy of reserves - Personnel. File 1/Wastage /2 Correspondence of General Stuart to Secretary D.N.D. 16 March 1944.

³² Charles Stacey, *Arms, Men and Governments*, 427. There was a shortage of 8,777 infantry other ranks against an authorized total of 23,000.

Montgomery's observations, Lieutenant-General Ken Stuart, the CMHQ London Chief of Staff, was in hospital. He responded to Montgomery's inquiries by stating that the matter of identifying and preselecting suitable personnel for re-mustering was being addressed.³³

In response to his anxious inquiries, a report was forwarded to General Montgomery by CMHQ London in late March 1944 that verified that the U.K. reinforcements on hand were satisfactory. The total number was satisfactory, but the content of the reinforcement pool was not. Of an authorized level of 23,000 infantry reinforcements, three months holdings at "intense" 20 percent rates under the erroneous 1943 tables, the reinforcement organization in the U.K. contained only 14,500 personnel. Of these 14,500, 43 percent were serving in ad-hoc units in non-infantry roles, unfit, soldiers waiting to be re-mustered or discipline cases. Thus the real number of Canadian infantry reinforcements ready to be deployed quickly was less than 8,000 out of an authorized total of 23,000.³⁴ Also, the practice common to all armies of dumping unfit or problem soldiers in temporary holding units was rampant in the CAO.

The late March 1944 report forwarded to Montgomery stating all was well masked the great blow that had been done to the capability and strength of the CIC. This corps was on the eve of some of the most challenging fighting the Canadian Army would face within the Second World War. The demanding tests of the D-Day assault, Verrieres Ridge and the battles to close the Falaise Gap all lay on the horizon. By robbing it of a large fluid reserve of infantry other ranks replacements, the high ranking officers in CMHQ London were condemning it to temporary weakness if large losses occurred at a rapid pace.

The emergency re-mustering program begun in late spring 1944 to enlarge the U.K. reserve of infantry reinforcements was hamstrung by the ill-timed creation of further operational units. The 2nd Canadian Corps was still forming the 10th Canadian Infantry Brigade for the 4th Canadian Armoured Division. As of spring 1944 it was still filling out the brigade's three infantry regiments with required personnel. In Italy, the 12th Canadian Infantry Brigade was being created for the 5th Canadian Armoured

³³ Charles Stacey, *Arms, Men and Governments*, 428.

³⁴ Charles Stacey, *Arms, Men and Governments*, 425-427. E.L.M. Burns, *Manpower in the Canadian Army*, Table 13,91. Russell Hart, *Clash of Arms*, 190. Endnotes.

Division. The authorized ceilings for infantry personnel in the CAO had thus grown to 57,592 from 51,083 in January 1944. These building projects, necessary as they were, greatly impaired the creation of an untouched infantry reinforcement reserve pool.³⁵

Options never exercised in this time period included possible disbandment of certain combat units to reinforce others, the reduction of the establishment of existing combat units, the reduction in size of headquarters and support units, utilising excess RCAF personnel or relaxing the overly strict recruiting standards for volunteers in Canada. Concerning this last point, large numbers of able-bodied men were being refused entry on dubious grounds, the age exclusion limits of anyone above thirty-seven and below nineteen being the worst practices.³⁶

As Operation "Overlord" approached, a greater sense of urgency took hold. By the end of March 1944 over 2,000 men had voluntarily or forcibly been re-mustered as infantry.³⁷ April and May 1944 saw the deployment of 5,565 personnel to the U.K. from Canada, and a further 2,000 were transported in early June 1944.³⁸ Montgomery and other senior British generals were well aware of the potential consequences of inaction and categorized the deficit in allocated Canadian infantry reinforcements as "most serious" in communications to CMHQ dated 16 March 1944.³⁹

In the days following the D-Day landings, Canadian combat arms units were in need of personnel replacements to cover losses suffered during the amphibious assault and the combat inland. No.2 CBRG units deployed to France immediately began providing reinforcements. Initially there were no personnel shortages within the Normandy beachhead due to the relatively small number of Canadian units involved. In the month of June 1944 only the 2nd Canadian Armoured Brigade and 3rd Canadian Infantry Division were deployed, employing a total of three infantry brigades with nine regiments. Replacing losses within

³⁵ Charles Stacey, *Arms, Men and Governments*, 428.

³⁶ Charles Stacey, *Arms, Men and Governments*, 451.

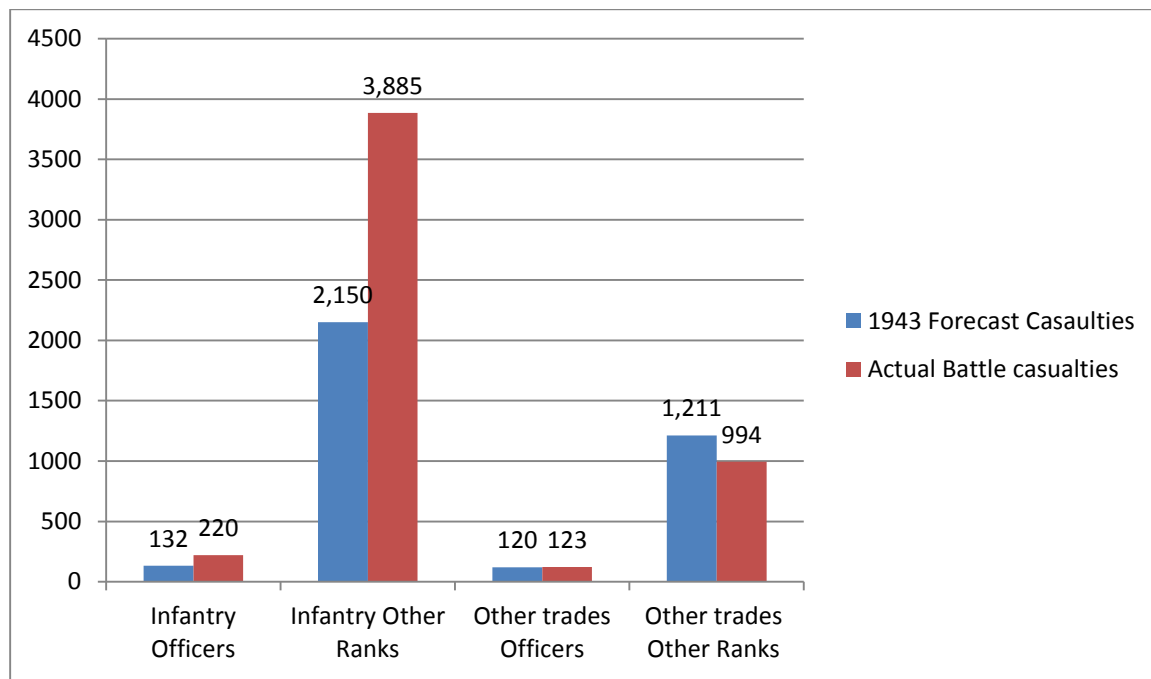
³⁷ Caroline D'Amours, "Reassessment of a Crisis. Canadian Infantry Reinforcements during the Second World War". *Canadian Army Journal*. (February 2012): 73-89.

³⁸ E.L.M. Burns, *Manpower in the Canadian Army*, 88-89.

³⁹ Charles Stacey, *Arms, Men and Governments*, 425-427.

these regiments was a relatively small task and the system appeared to be working with few issues. Casualties to the end of June 1944 were significant but not unacceptable.⁴⁰ What was disturbing was the percentage of losses that were taken by the infantry. As shown in Chart 5.1, the infantry as of 10 July 1944 had taken the majority of total battle casualties. As this chart indicates, the need for a large reservoir of infantry replacements for future losses was quite apparent at this time.

Chart 5.1: Infantry and other trades battle casualties versus July 1943 wastage rates forecasts 6 June-10 July 1944 ⁴¹



Once other units such as 2nd Canadian Infantry Division and 4th Canadian Armoured Division became operational to join the original two formations, shortages in the number of liquid infantry reinforcements began to appear. The scale and intensity of offensive combat operations increased significantly in July and August 1944. All four Canadian formations could not be sustained at once with the number of infantry reinforcements on hand. Delays occurred as troops ships had to sail from the U.K. to reach the bridgehead, and then the personnel reinforcements had to go through the bureaucratic

⁴⁰ Charles Stacey, *Arms, Men and Governments*, 434. LAC, RG 24 Volume 10,517. Daily record of casualties for the 3rd Canadian Infantry Division from 6 June 1944. File 215A21.009 (D167). The 3rd Canadian Infantry Division as of 30 June 1944 recorded 2,978 battle casualties

⁴¹ Charles Stacey, *Arms, Men and Governments*, 435.

process of the No.2 CBRG battalions. No.2 CBRG did not divest itself of all infantry reinforcements it had at this point, and sought to retain a small reserve if some large event occurred.

At 21st Army Group Headquarters, Canadian 1st Echelon's OIC Brigadier A.W. Beament, transferred from Italy, observed that his forecasts of December 1943 were coming true. By mid July, exactly as he had predicted, there were indications of a shortage of immediately available general duty other ranks reinforcements. By 15 July 1944 it was certain that there were not enough meet future demands from all formations.⁴² Despite his urgings that the situation be resolved quickly by CMHQ, this could not be accomplished overnight. Beament's recommendations for mass re-mustering were passed to Major-General Montague, in charge of administration at CMHQ London on 17 July 1944. He had to then communicate them to Lieutenant-General Stuart, who was in Italy. Ironically, he was involved in discussing the creation of the new infantry brigade for the 5th Canadian Armoured Division. A full five days passed before Stuart returned to the U.K. and then flew to First Canadian Army Headquarters to speak with its commander, General H.D.G. Crerar. On 25 July 1944 Stuart finally took drastic corrective action. On this date he issued orders to begin a large scale re-mustering of general duty personnel in other trades. A full 25 percent of all Royal Canadian Artillery (RCA) reinforcements and 60 percent of all Royal Canadian Service Corps (RCSC) reinforcements were to be remustered as other ranks infantry. This was the correct course of action, but he had arrived at it far too late. On 2 August 1944, Stuart spoke with NDHQ Chief of Staff, Lieutenant General J.C. Murchie, during a trip to Ottawa.⁴³ While not appearing alarmist, General Stuart did not competently communicate the urgency of what the problem was and how it was to be solved. Canadian Minister of National Defence J.L. Ralston would later claim that at this point he was not fully informed of events.

At the same time casualties were continuing to be incurred at a rapid rate. On 25 July 1944 alone, Operation "Spring" cost roughly 1,500 battle casualties.⁴⁴ Despite receiving reinforcements, the strength

⁴² E.L.M. Burns, *Manpower in the Canadian Army*, 92.

⁴³ Charles Stacey, *Arms, Men and Governments*, 435.

⁴⁴ Charles Stacey, *The Victory Campaign*, 194.

of the 2nd Canadian Infantry Division had dropped by 1,211 personnel by 31 July 1944.⁴⁵ On 4 August 1944, General Crerar stated in a report that the reinforcement problem was the most serious problem facing the First Canadian Army at that time, the deficit on this date hovering at over 1,900 personnel. He went on to state "it would seriously impair our breakout exploitation tasks" if it were allowed to continue.⁴⁶ On 8 August 1944, on the eve of Operation "Totalize", the largest Canadian armoured attack of the Second World War, Crerar again pressed for urgent action on reinforcements from his headquarters.⁴⁷

On 10 August 1944, Brigadier M.H.S. Penhale of CMHQ visited First Canadian Army headquarters to further discuss the situation. It was decided here that Canadian infantry training standards would in no way would be compromised, and there would be no dilution or shortening of training for re-mustered soldiers. In the following weeks a significant number of infantry reinforcements did reach the First Canadian Army, but on 15 August 1944 the regiments were still 2,644 personnel short. By 19 August 1944 over 3,773 reinforcements had been dispatched, but casualties continued to mount faster than the No.2 CBRG could dispatch replacements. Total infantry reinforcements sent to Normandy from the U.K. in August 1944 numbered 375 officers and 2,831 other ranks.⁴⁸ Infantry other ranks deficiencies by 31 August 1944 had grown to 4,318, and this was after monthly reinforcements had been accepted. These numbers illustrate that the August replacements had not made a dent in the overall infantry shortage.⁴⁹

The shortage situation reached its nadir on 31 August 1944, when the average personnel deficit within Canadian infantry regiments was 206. As of 4 September 1944, there were only 731 other ranks infantry reinforcements present in the No.2 CBRG holdings.⁵⁰ From 12 August to 1 September 1944, a

⁴⁵ LAC, RG 24 Volume 13,719. 2nd Canadian Corps A & Q War Diary July 1944. T-1871. 31 July 1944 return.

⁴⁶ Charles Stacey, *Arms, Men and Government*, 437.

⁴⁷ Charles Stacey, *Arms, men and Government*, 438.

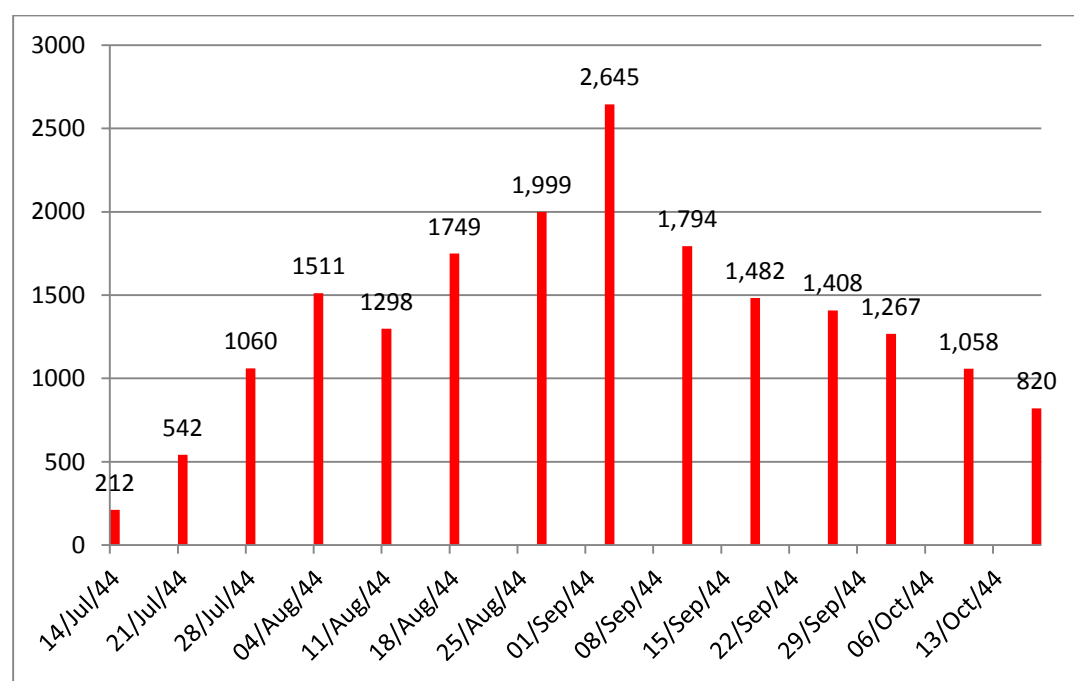
⁴⁸ LAC, RG 24 Volume 18,616. Reinforcement Drafts sent to NWE from U.K. Reinforcements dispatched to 21 A.G. from U.K., UKAG 1 to 30 inclusive August 1944. File 44/Svy Rfts/1 A.G. Stats. 17 March 1945.

⁴⁹ LAC, RG 24 Volume 10,699. Deficiencies and holdings of Canadian Infantry, Other Ranks; Northwest Europe, 27 August, 1944-28 April 1945.

⁵⁰ LAC, RG 24 Volume 10,699. Deficiencies and holdings of Canadian Infantry, Other Ranks; Northwest Europe, 27 August, 1944-28 April 1945.

total of 4,088 men were re-mustered and began training to become qualified infantrymen. This did nothing to solve the problem quickly, because these personnel had to complete their training before they could be sent to the front. Chart 5.2 illustrates the infantry other ranks shortage in the 2nd Canadian Infantry Division for the period July to September 1944. This formation was the one hardest hit by the failure to rapidly replace its losses. The totals were spread among its nine infantry regiments and one machine gun battalion, all of which were largely composed of other ranks infantrymen.

Chart 5.2 Infantry other ranks shortages in the 2nd Canadian Infantry Division July-September 1944⁵¹

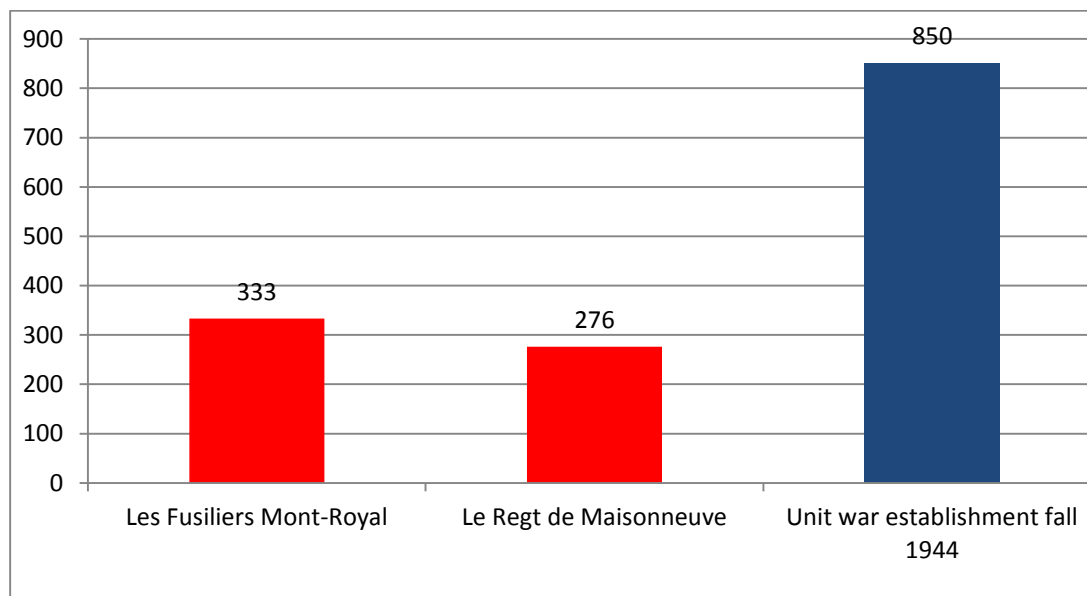


The infantry reinforcements shortage was particularly difficult for the three francophone infantry battalions in NWE. Le Regiment de Maisonneuve, Le Regiment de la Chaudière and Les Fusiliers Mont-Royal had all experienced high losses during the July-August 1944 battles in Normandy. By late August 1944 their losses still had not been replaced. The total of francophone infantry other ranks reinforcement soldiers within the U.K. on 6 June 1944 had numbered only 348, or nearly three infantry companies. For three infantry regiments about to be engaged in high intensity combat, this was not nearly enough. On 23

⁵¹ LAC, RG 24 Volume 10,699. Deficiencies and holdings of Canadian Infantry, Other Ranks: Northwest Europe, 27 August 1944-28 April 1945.

October 1944, despite some reinforcements being taken on, these three regiments were still 340 other ranks short, the equivalent of an infantry company each.⁵² Chart 5.3 reflects the challenges facing francophone regiments at the beginning of September 1944 due to a severe shortage of francophone other ranks reinforcements.

Chart 5.3: Infantry other ranks shortages in francophone infantry regiments by 1 September 1944⁵³

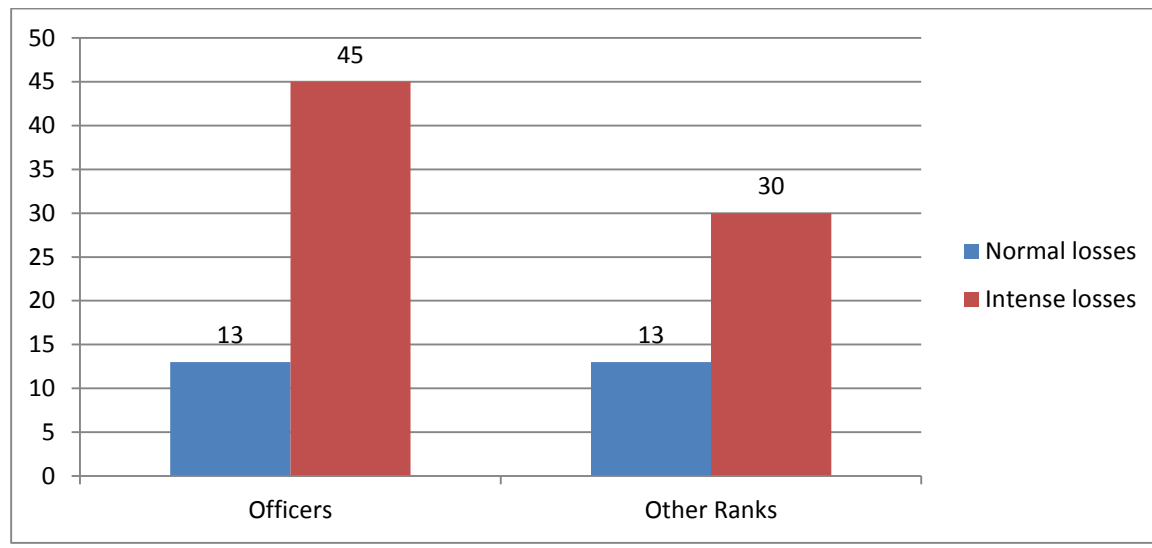


On the same date that the infantry other ranks situation reached its low point, 31 August 1944, an accurate set of casualty projection rates for the Canadian Army was produced. As shown in Chart 5.4, these new realistic wastage rates were in line with the cost of warfare in NWE. They accurately indicated what should be set aside for monthly reinforcements, and large reserves could be created to cope with losses in the CIC. September 1944 witnessed a continued re-mustering effort and the beginning of the end of the other ranks infantry shortage within the CAO. The situation improved rapidly throughout the month, but during this period weak rifle companies were given the same tasks as full strength companies on the battlefield. During September a total of 4,720 troops from other trades had begun infantry training.

⁵² Charles Stacey, *Arms, Men and Governments*, 439.

⁵³ LAC, RG 24 13,660. Canadian A & Q War Diary September 1944. T-7092. Charles Stacey, *Arms, Men and Governments*, 439.

Chart 5.4: New monthly infantry loss rates, percentages of total strength effective 31 August 1944.⁵⁴



The shortage continued to be reduced as weeks passed, and by 24 October 1944 it was down to fifty-four soldiers per regiment.⁵⁵ By 5 November, due to the losses in the Battle of the Scheldt fighting, it had jumped back up to 100 personnel. While this seemed a high figure, no infantry battalion involved in combat operations during the Second World War was maintained at 100 percent of its war establishment. Unless daily reinforcements were made to counteract losses, it was impossible to keep them at exactly 100 percent of their establishment totals. By November 1944, the number of personnel that had been remustered was approaching 7,850 troops. The crisis at this point for all intensive purposes had passed. Returns for December 1944 reflected that a total 10,000 soldiers had been re-mustered.

How did the personnel replacement record of the Canadian Army compare to that within the British and U.S. armies? Like the Canadian Army in the last year of the war, both allies had significant manpower challenges that centered on infantry replacements. While the U.S. Army successfully combated the effects of attrition in the last year of the war in NWE, the British Army could not continue to make good its losses. The British possessed a similar replacement system to that of the Canadian Army, and it was also very effective at reinforcing units that has suffered personnel losses. But like the

⁵⁴ Terry Copp Papers, Historical Report No.134, 14. Appendix A.

⁵⁵ Charles Stacey, *The Victory Campaign*, 631-632.

Canadian system, it was only effective if the process was well supplied with new personnel. By mid 1944, the number of new infantry recruits and re-mustered Army personnel designated as deployable infantry was dwindling within the U.K. The British Army at this point had two complete field armies fighting the Germans, one engaged in Italy and the other in France. Making matters more challenging, these two armies did not encompass numerous British units that made up parts of other British armies in the Far East and Middle East. In 1944 infantry units were taking 80 percent of all combat losses within the British Army. High losses sustained by the British between September 1939 and August 1942 in the Low Countries, France, the Mediterranean and the Far East had been severe. Over 326,877 troops had become casualties or prisoners of war. British infantry units had accepted 51 percent of this total.⁵⁶

During the Normandy Campaign, the British Army rapidly consumed what was left of its deployable infantry other ranks personnel reserve. By the end of August, the majority of one complete British infantry division, the 59th, had to be broken up to provide reinforcements to other formations. The break-up of this division was followed by a second, the 50th, in late November 1944.⁵⁷ The disappearance of these two complete divisions led the British Army to depend increasingly on Commonwealth formations during the last year of the war. The CAO, despite its challenges, never faced similar personnel shortages to the extent that it had to have even a single infantry regiment, never mind a full division, broken up to provide replacements.

Military historians such as Carlo D'Este have posed questions whether the British military of the late war period successfully managed what personnel resources it.⁵⁸ Evidence exists of large numbers of personnel attached to training and territorial infantry units within the U.K. that could have utilized for replacements. However, the fitness and age of these personnel may have limited their combat capability. Other untapped areas consisted of surplus RAF and Royal Navy personnel that could have been ruthlessly

⁵⁶ Carlo D'Este, *Decision in Normandy*, 260.

⁵⁷ Carlo D'Este, *Decision in Normandy*, 262.

⁵⁸ Carlo D'Este, *Decision in Normandy*, 268.

re-mustered as infantry. Also, a British strict adherence to the territorial and bureaucratic regimental system impaired the employment of personnel where they were needed in the shortest amount of time.

The U.S. Army also suffered heavy infantry losses in NWE, with infantry battalions in Normandy suffering 90 percent of its total battle casualties in the bocage terrain.⁵⁹ However, it possesses a record of being far more effective than the British in maintaining the strength of infantry battalions engaged in combat operations. Infantry and armoured divisions still forming in the U.S. were cannibalized ruthlessly, destroying what progress they had made in their training programs to make them combat ready. Despite this, the number of operational U.S. combat divisions in Europe grew exponentially in the last year of the war. Large surplus reserves of personnel in other trades were raided on a regular basis. Also, there was no adherence to a regimental system that would take personnel from certain U.S. states to supply certain regiments. This approach was completely alien to the corporate personnel management style of the U.S. military.⁶⁰ A former casualty returning from hospital from one infantry battalion could also easily wind up in another after re-entering the replacement pipeline.⁶¹ The U.S. Army also had no qualms about rapidly utilizing replacements whose infantry skills had eroded due to inactivity following their initial training. This practice resulted in heavy losses, but the main goal of consistently high personnel levels within U.S. infantry line companies was achieved, despite heavy combat.

Following the successful reconstitution of all its infantry regiments by October 1944, the next hurdle for the CAO to stabilize its infantry personnel situation was the creation of a sizeable reserve of reinforcements. This reserve would be maintained in order that all ongoing and future infantry attrition could be serviced. Despite the large number of re-musters, as of 30 November 1944 the CAO was having trouble creating an infantry reinforcement reserve in the U.K. containing the number of personnel it was authorized. As soon as infantry personnel arrived in the reinforcement system they were being dispatched to the regiments. This resulted in a gulf between the authorized reinforcement strength and the actual

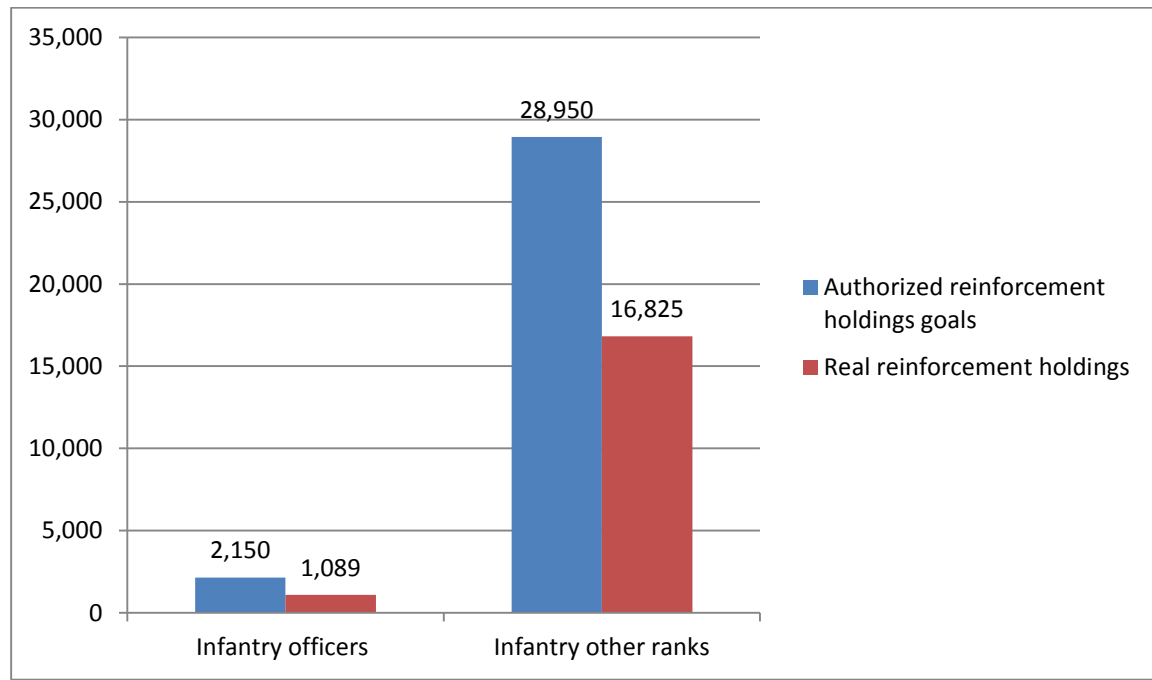
⁵⁹ Carlo D'Este, *Decision in Normandy*, 267.

⁶⁰ Peter Mansoor, *The G.I. Offensive in Europe*, 155.

⁶¹ Peter Mansoor, *The G.I. Offensive in Europe*, 115.

total reinforcements on hand within bases in the U.K. and Belgium in late 1944. Chart 5.5 illustrates the challenge facing the CAO in the creation of a large reserve of infantry reinforcements.

Chart 5.5: Real infantry reinforcement holdings versus authorized target figures November 1944⁶²



When the shortage of available reinforcements for infantry units ended, the political conscription crisis of 1944 began in Ottawa. In October 1944, the Minister of National Defence returned from visiting the CAO in the Netherlands and Italy. Meetings during his travels had raised the concern that if infantry casualties in NWE continued at their current pace or that a large military event occurred, the available reinforcement pools for the CAO could be extinguished by 31 December 1944.⁶³ His concerns were based on uncertainty within the CAO that an adequate reserve of trained infantry replacements could be created from the all volunteer Active Service Force.⁶⁴ On 13 October 1944, the Chief of Staff of CMHQ, Lieutenant General Stuart, informed the Chief of the General Staff in Ottawa that 60,000 to 40,000 more losses could be expected in the coming months. Stuart made the immediate request for a further 16,000

⁶² E.L.M. Burns, *Manpower in the Canadian Army*, 97, Table 14.

⁶³ Charles Stacey, *Arms, Men and Governments*, 442.

⁶⁴ Charles Stacey, *Arms, Men and Governments*, 442.

men above those already in the reinforcement stream. At this stage in the war it took the Canadian Army nearly four months to give an infantryman basic training. Due to the time needed to get what could only be the trained NMRA personnel to the front from Canada, the question of whether they could be used needed an immediate answer.

Ralston felt that his hand was forced to argue within the War Committee that there was no other option but to supply NRMA soldiers to fill the gap. The real possibility that the CAO would run out of personnel it could re-muster into infantry reinforcements was unacceptable to him. The reason it was unacceptable in the Minister's and many Canadians minds was that there was a large trained NMRA conscript force that was untapped. It had not been touched due to the Liberal Government's aversion to the overseas deployment of conscripts. P.M. King at this time was very attuned to the fragility of national unity and the need to avoid conscription in order to preserve the political status quo with Quebec. After some investigation, it was determined by Minister Ralston that it was impossible for the Army to testify that it could fulfill all its overseas missions utilizing only volunteer personnel.⁶⁵ It was felt by members of the pro-conscription forces within the War Committee that the CAO's needs in wartime were second to the P.M.'s desire to maintain national unity. A perception also existed that the P.M. and others within the government refused to come to grips with the reality that NRMA military personnel would have to be used. A schism was created within the Ottawa War Committee on the subject of the use of conscripts, and this led to Ralston's resignation on 1 November 1944 due to pressure from the Prime Minister. While King and elements of his cabinet were willingly to take Ralston's resignation, the reality of the possibility of heavy combat in spring and summer 1945 remained.

Under the new Minister of Defence, former General Andrew McNaughton, a decision was taken to send 16,000 NRMA personnel overseas on 23 November 1944.⁶⁶ 5,000 were to be sent in December,

⁶⁵ LAC, RG 24 Volume 10,699. Deficiencies and Holdings of Canadian Infantry, other ranks: NWE, 27 August 1944-28 April 1945. In October 1944 daily casualties were continuing to be high. On this date, there was no way of knowing the casualties figures for November, December and January would be very low.

⁶⁶ Charles Stacey, *The Victory Campaign*, 633.

with another 5,000 in January and 6,000 per month in succeeding months.⁶⁷ In the end only a small amount of this number reached infantry regiments. A total of 12,908 personnel reached the U.K., 9,677 went to the continent and 2,463 soldiers found their way to the front line in time to see battle. Split evenly between regiments, this would have been seventy soldiers each, or roughly two platoons worth. The total amount of NRMA casualties suffered in combat was 313. Of these, sixty-nine were fatal.⁶⁸ The performance of the NRMA men within the infantry regiments was good. If more conscripted men had reached the front, it is highly probable that they would have performed adequately in whatever role was selected for them.

There is no way the leadership of the CAO could judge in October of 1944 whether or not a large number of infantry reinforcements would be needed for future operations. Given the challenges encountered while trying to create an reinforcement reserve out of re-mustered personnel in fall 1944, the only feasible option was to dip into the NMRA personnel supply. Furthermore, there were many military uncertainties in late 1944 that made the utilization of NRMA personnel appear to be a necessity.⁶⁹ Had Allied operations in the Rhineland not been postponed, had the German military fought on until mid 1945 and had the Netherlands been aggressively liberated, it is likely that large numbers of NRMA personnel would have been needed. A large infantry reinforcement pool needed to be created to sustain all Canadian combat arms units for a possible long-term struggle, and previous attempts using only volunteers had not been successful. The reserve that was so difficult to establish contained 24,500 personnel by late April 1945. It was never needed due to the surrender of Germany being imminent, despite the great administrative and political struggle to create it.⁷⁰

In conclusion, while the Ottawa War Committee had approved the rapid growth of the CAO after 1942, both it and NDHQ in Ottawa had ignored the need for a detailed plan to reinforce it when it engaged in combat operations. Both parties understood that the costs of modern warfare would demand

⁶⁷ Richard Walker, *The Political Management of Army Leadership*, 391.

⁶⁸ Charles Stacey, *The Victory Campaign*, 633.

⁶⁹ Charles Stacey, *Arms, Men and Governments*, 482.

⁷⁰ Charles Stacey, *Arms, Men and Governments*, 482.

potentially large numbers of new personnel to sustain this military entity. The need for conscription was a topic that was politically unacceptable to the Liberal Government and one the Canadian Army did not wish to force because it would have endangered its expansion plans. Richard Walker also argues that the Canadian Army put no particular emphasis on the need to be efficient in its use of manpower or pursuing a successful volunteer recruitment campaign in Canada. If it did it would be endorsing the then current all volunteer status of the CAO, a situation it did not approve of. During the months leading up to Operation "Overlord", CMHQ Chief of Staff Lieutenant-General Stuart failed to heed clear indications that a shortage infantry other ranks reinforcements could occur. NDHQ and CMHQ London significantly failed in their responsibility to accurately forecast future infantry casualties for the campaign in NWE. These two headquarters accepted 1943 British infantry loss projections as accurate when ample operational evidence suggested otherwise. The final failure was a long term inability to create an adequate reserve of reinforcement infantry in the months leading up to the invasion of Europe, despite having sufficient excess Active Service Force personnel. Due to these failures, infantry units engaged in ongoing combat operations were weakened by a lack of reinforcements to make good their rapid losses.

The shortage of infantry other ranks reinforcements only significantly affected the CIC in the months of August and September 1944. The situation was resolved in late September 1944 due to the earlier implementation of a large scale re-mustering program. While this re-mustering program was temporarily effective, its effects were not rapid and the shortage persisted over a sixty day period. It is arguable that a more ruthless management of personnel in the all volunteer Active Service Force could have minimized the events of the summer 1944. The crucial decision to create an adequate reserve of infantry reinforcements in spring 1944 was never made, and only half-measures were taken to resolve the situation, allowing the events of August and September 1944 to occur. This reserve, incompetently pursued by the Army during 1944, was only successfully created after the political decision to insert large numbers of conscript NRMA personnel. Due to a limited number of these personnel reaching the front, the First Canadian Army maintained its nearly all volunteer status to the war's conclusion.

Chapter 6: The Canadian Army's system for the recovery, repair and replacement of A and B vehicles and major weapons systems

The constant repair and replacement of A (combat) vehicles, B (non-combat) vehicles and major weapons systems was critical to keeping Canadian unit's offensive and defensive capabilities at a high level during 1944-1945.¹ If a unit's equipment inventories were below 75 percent of their war establishment levels, it did not possess its full capability to accomplish its objectives. Canadian units suffered equipment losses due to all causes, and often at a rapid rate within infantry, armoured and anti-tank regiments. How rapidly losses such as this occurred was determined by unit activity and exposure to enemy action. Accidents and normal wear and tear was also unrelenting, so an effective system was required to constantly supply new and repaired vehicles and weapons.

The total amount of equipment removed from the strength of combat arms units on the front line because of mechanical failure or enemy action usually amounted to 100 percent of the unit establishment within a short period of time. This was due to excessive use, enemy action and harsh combat conditions. Combat for the Canadian Army in Normandy was more intense and occurred for a longer period of time than subsequent battles in NWE that took place in the Netherlands and the Rhineland. A greater amount of German heavy weapons and armoured vehicles were present within multiple German panzer divisions, the Canadian Army's primary opponent in the months of June through August 1944. The fighting power of these German formations made a sizeable impact on the monthly totals of Canadian equipment losses. These losses drop off markedly once the campaign in Normandy came to a halt in late August, and are relatively low on average for the remainder of the war, as remaining German armoured forces were mainly engaged to the south against the British and U.S. Armies.

Of the sixty-one Sherman tanks the 6th Canadian Armoured Regiment (1st Hussars) fielded on D-Day, nearly all were lost to enemy action or mechanical failure by the end of June 1944. The Hussar M4

¹ LAC, RG 24 Volume 10,553. 21st AG. A & B Canadian Vehicle Position Report. File 215A21.085 (D1). Monthly returns from May 1944 to May 1945 detail exactly what was considered an A or B vehicle, and how many were held at the divisional, corps and army level. Within the British Army, all combat vehicles were classified as "A" vehicles, while non-combat soft-skinned vehicles were classified as "B" vehicles.

Sherman tank "Holy Roller", now a monument in London, Ontario, was the only one to survive in the regiment's possession from D-Day until the end of hostilities.² Enemy action was not often the real threat. Tanks sent away for heavy maintenance would often return with another unit, or not at all, being replaced by a newer variant that was more technologically advanced. The fate of "Holy Roller" was very much the exception rather than the rule.

This chapter will provide an outline of Canadian Army repair and replacement services for A and B vehicles and major weapons systems in NWE. The process of delivering new and repaired items will be discussed first, followed by an outline of the Corps of Royal Canadian Electrical and Mechanical Engineers (RCEME) repair system. As the larger twin to the personnel replacement organization, the 1st Canadian Echelon within 21st Army Group headquarters controlled these parts of the First Canadian Army's operations. However, Canadian command, control and administration had its limitations. Like all Commonwealth armies, the Canadian Army Overseas (CAO) was dependent on the will and ability of the British government to supply it with large amounts war material.³ By late 1943, a majority of Canadian units designated for the 1944 invasion of the continent were properly equipped and training intensively.⁴ As the campaign in Normandy raged in the summer of 1944, the continued stockpiling of large amounts of war material on the continent was not a great challenge. This was due to the Battle of the Atlantic being largely won by late 1943, Allied economies reaching their full production capacities by mid 1944 and the Normandy beachhead being securely established in June of that year. British political will and ample cooperation with the Canadian government was also present, and this allowed the Canadian military to be equipped and re-supplied as needed. As a result, the Canadian Army enjoyed full access to a well-stocked common pool of American Lend-Lease and British produced equipment.

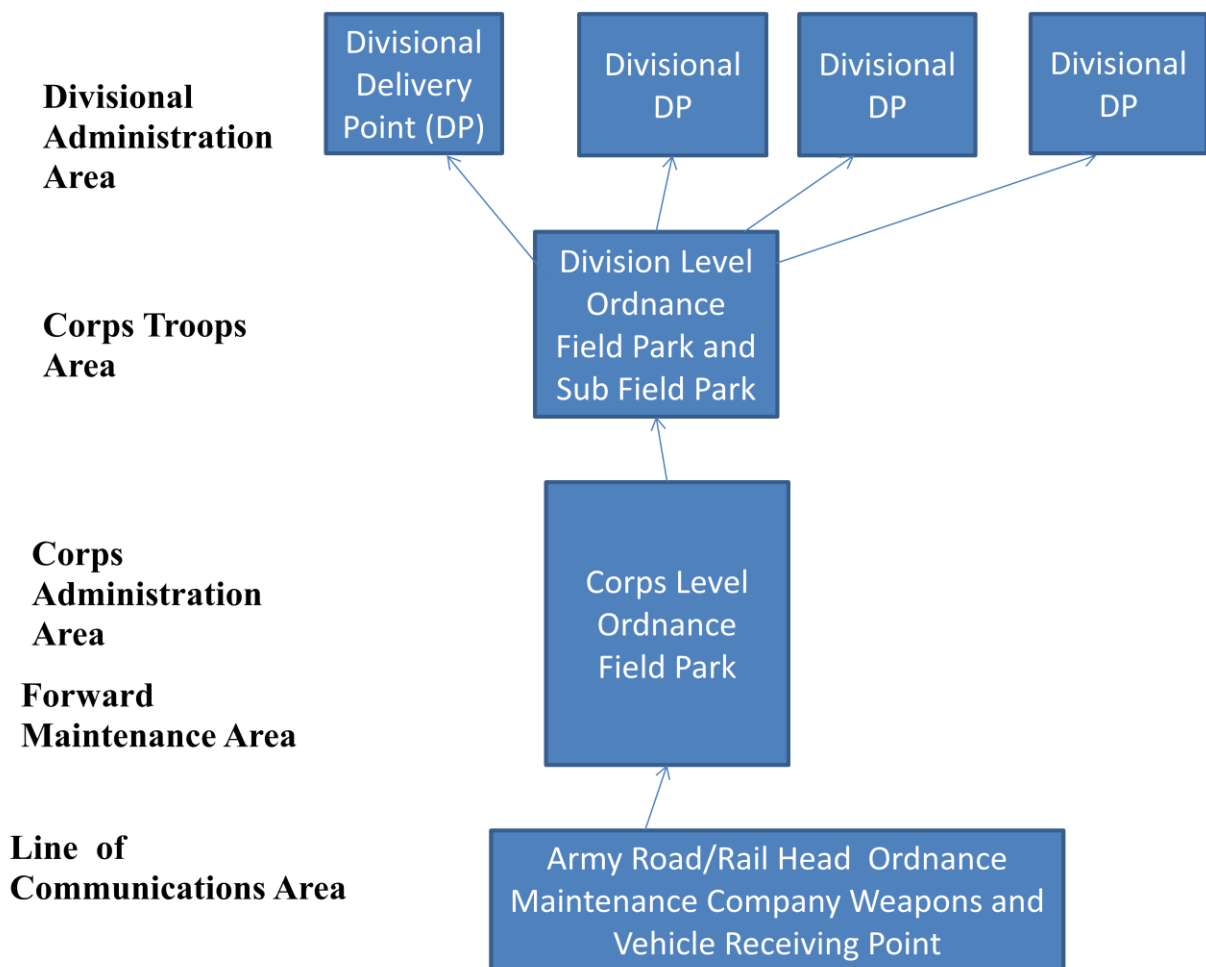
² The Family of Captain Proctor Clifford Neil. "Captain Neil's Story ~ Bio & Military Cross Award." *Captain Proctor Clifford Neil. Honouring the life and accomplishments of a WWII Hero*. Retrieved 5 July 2016 from <http://www.captainpcneil.com/holy-roller.html>

³"4th Canadian (Armoured) Division" article. "*Canadiansoldiers.com*". As of October 1942, the 4th Canadian Armoured Division only had 255 Universal Bren Gun Carriers with which to train with. It did not receive tanks until later. Retrieved 14 January, 2016. <http://www.canadiansoldiers.com/organization/fieldforces/casf/4thdivision.htm>

⁴ John English, *The Canadian Army in the Normandy Campaign*, 104.

As illustrated in Chart 6.1, there were a total of five administrative areas within the First Canadian Army's area of operations. From the front lines to the rear areas, these zones consisted of the Divisional Administrative Area, the Corps Troops Area, the Corps Administrative Area, the Forward Maintenance Area and the Line of Communications Area.⁵ Canadian 1st Echelon control of major

Chart 6.1: Path of new major weapons systems and A & B vehicles (excluding heavy armoured fighting vehicles)⁶



weapons systems and vehicle logistics began with the Canadian Army Ordnance Maintenance Company (OMC), which was actually much larger strength than a company. It consisted of a headquarters, a regulating station section, a stores section, an ammunition section and a tank section. It received all

⁵ John Grodzinski, *Operational Handbook*, 91.

⁶ John Grodzinski, *Operational Handbook*, 92-93.

manner of supplies, vehicles and equipment from British controlled vehicle and ordnance depots located within close transportation distance to the First Canadian Army rail or road head.

Rail and road heads were located in the Line of Communications Area and were the logistical start points for the Canadian Army in NWE. There were often multiple First Canadian Army rail and road heads in existence during 1944-1945 as the front moved forward. At these rail and road heads various Royal Canadian Army Service Corps (RCASC) units and numbered supply depots were present. The Canadian Army OMC then distributed what it received from the British Army to Canadian army level equipment storage locations, fuel and ammunition dumps and vehicle parks. Before anything moved or entered storage, the OMC and road and rail head personnel worked to prepare all war material for these possibilities as required. In a reverse flow, these road and rail heads also received damaged or obsolete equipment that had been removed from the front.⁷

If railroad transport was not available, new vehicles and ordnance was driven forward by 2nd line transport from the Line of Communication Area depots to the corps-level Ordnance Field Park.⁸ 2nd line transport consisted of trucks and other assets operated at the corps and army level, 1st line being those in the fighting divisions and their formations. There were eventually a total of two Ordnance Field Parks within the First Canadian Army in April 1945.⁹ The corps level Ordnance Field Park would contain everything in order to support a complete army corps, with the exception of rations, water and petroleum products. All forms of heavy and light weapons and quantities of all types of ammunition and spares for all weapon assemblies were present. Smaller stores such as small arms, optics, engineer, signals and workshop equipment were also held. Large parking areas were present new and repaired vehicles, with row upon row of A and B types. Only light A vehicles were present, the heavier armoured fighting vehicles (AFVs) having their own separate transport and replacement system. On top of all this,

⁷ John Grodzinski, *Operational Handbook*, 92-93.

⁸ John Grodzinski, *Operational Handbook*, 92. 2nd line transport was corps and army level transport, and 1st line transport was attached to divisional units.

⁹ Charles Stacey, *The Victory Campaign*, 661. Appendix F. Order of battle for all Canadian Army units in NWE.

quantities of specialist A and B vehicles (command vehicles, wireless trucks, recovery vehicles and specialist tracked carriers) were present.¹⁰

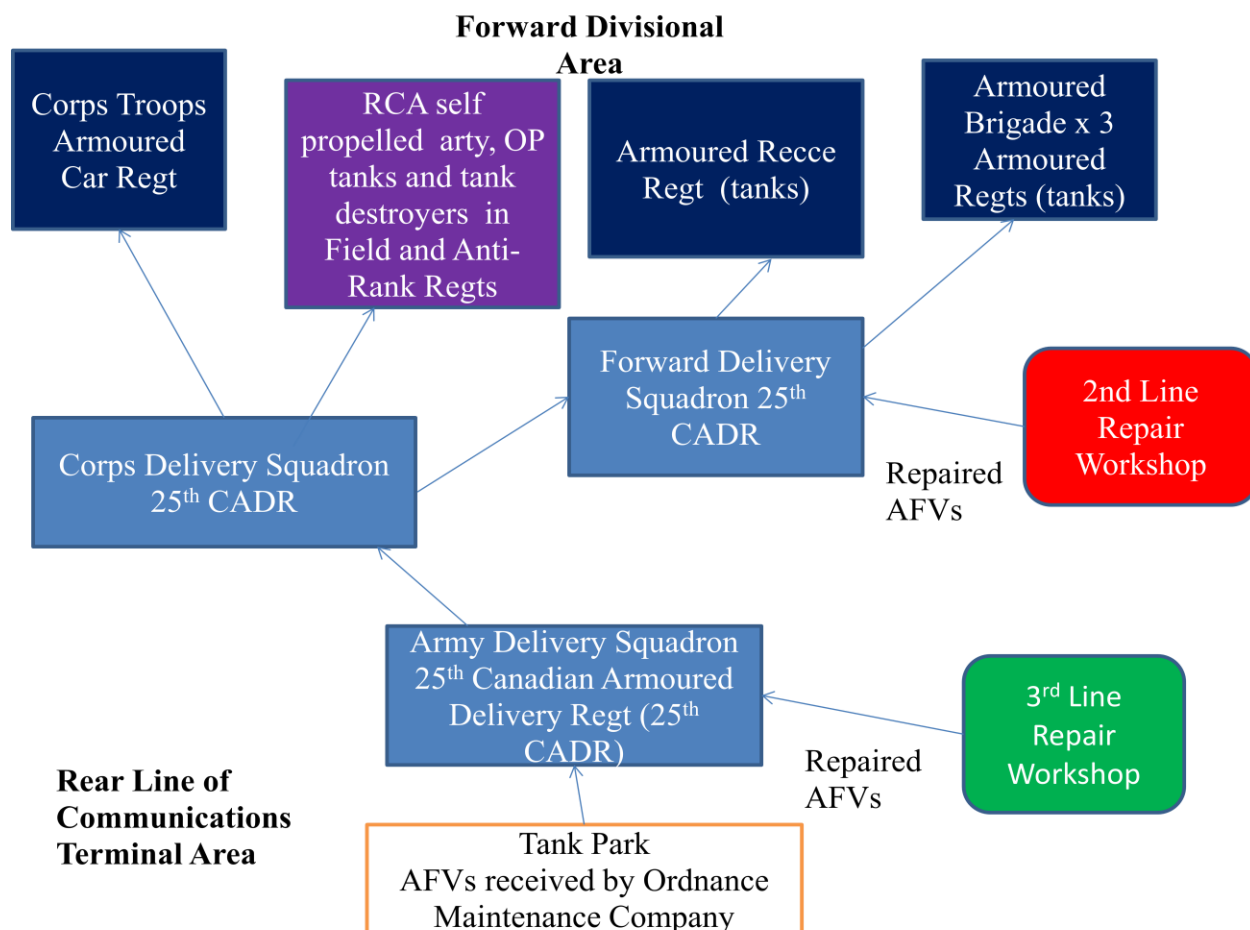
This park then fed the forward division level Ordnance Field Parks and respective armoured or infantry Sub Field Parks. From these parks, deliveries were made to further supply points or the items were directly picked up by regimental level units that required them. To receive a new piece of weaponry or a light A or regular B vehicle, an authorized unit transport party would arrive to help itself. For smaller deliverable items that could be pushed forward, these parks supplied divisional Delivery Points (DPs). At these DPs, unit B echelon (supply and administrative) troops of the combat arms regiments showed up to receive equipment.

The weapons systems delivered to the Canadian Army OMC that required the largest logistical resources to transport them to the front were heavy armoured fighting vehicles (AFVs). As depicted in Chart 6.2, these were cut away from the remainder of the logistic process at the OMC and began their own transport path. These vehicles were the major weapons systems of the armoured, armoured reconnaissance, self-propelled field artillery and anti-tank units. Prior to large scale operations, Canadian armoured regiments saw it as imperative to have the number of operational tanks be close as possible to the war establishment tables. The 2nd Canadian Armoured Brigade's strength as of 31 January 1945, immediately prior to February's Operation "Veritable", was 214 tanks against a war establishment figure of 226.¹¹ Units containing armour would report their replacement needs through an AFV or tank state that would be reported on a daily or weekly basis. These daily and weekly returns from the regimental headquarters (RHQ) of each unit were forwarded up the chain of command. For example, an armoured regiment's AFV state would be a daily summary of fit/not fit/written off status of 75mm cruiser tanks (M4 Sherman), 17-Pounder Fireflies (Sherman Ic or Vc with the longer gun) and 37 mm reconnaissance

¹⁰ John Grodzinski, *Operational Handbook*, 92-93.

¹¹ LAC, RG 24 Volume 10,553. 21st AG. A & B Canadian Vehicle Position Report. File 215A21.085 (D1). 31 January 1945 return.

Chart 6.2: First Canadian Army system of armoured fighting vehicle (AFV) replacement: Paths of new/repaired AFVs to combat arms regiments¹²



(M3 Stuart) light tanks. “Fit” would refer to a AFV being fully combat operational. As of 1 November 1944, the 4th Canadian Armoured Division fielded 247 “fit” tanks of all makes and seventy-nine “fit” scout cars.¹³ For RCA field artillery and anti-tank units, self-propelled (SP) M-10 tank destroyers and SP Sexton howitzers would be reported as part of their gun state.¹⁴ At the armoured brigade level the combined states of all armoured regiments would be forwarded to higher command from the brigade headquarters. If an armoured unit was short tanks in any of its troops or squadrons, it would be tasked to

¹² LAC, RG24 Volume 10,663. Chart 2: First Canadian Army Plans Diagram of AFV A Vehicle Recovery, Repair and Replacement. File 215C1.045 (D12). John Grodzinski, *Operational Handbook*, 93.

¹³ LAC, RG 24 Volume 13,793. 4th Canadian Armoured Division A & Q War Diary November, 1944. T-10550. Return on AFVs within the division, 1 November, 1944.

¹⁴ LAC, RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). The final report at the Army level was the above monthly returns of all controlled stores, such as 25-Pounder Howitzers and 17-Pounder anti-tank guns on a divisional basis.

receive new AFVs at a certain date. These repaired or new replacement tanks would be driven to the front, transported by low-bed trailer or loaded onto rail cars and then received at the B Echelon of the receiving regiment.

The key component of the replacement process for armour was the 25th Canadian Armoured Delivery Regiment (25th CADR), previously mentioned in Chapter 4. This regiment was divided into a total of eight functioning squadrons, titled A through H.¹⁵ The 25th CADR squadrons in NWE operated a very sophisticated and efficient system for supplying new and repaired AFVs to all Canadian Army units that operated them. They also supplied British, Polish and Czech units operating within the British Second Army and First Canadian Army. The first 25th CADR squadrons to land in France during June-July 1944 were initially under the command of the 1st British Corps. These were then incorporated into the 2nd Canadian Corps and the First Canadian Army after both became operational in mid July and early August 1944. "C" Squadron landed in Normandy on 7 June 1944, and immediately began transferring tanks to the three armoured regiments of the 2nd Canadian Armoured Brigade.¹⁶ On 10 July 1944, "E" Squadron arrived within the beachhead. This squadron was responsible for tank deliveries at the 2nd Canadian Corps level. These two squadrons were followed by "F" Squadron landing on 23 July 1944. This squadron was to aid in railhead acceptance of AFVs and be responsible for delivery of vehicles at the First Canadian Army level once the army became operational. In this role it was also the squadron responsible for sending tanks to British, Czech and Polish armoured units under First Canadian Army

¹⁵ LAC, RG24 Volume 14,276. C Squadron, 25th Canadian Armoured Delivery Regiment War Diary June 1944. T-12748. The 25th CADR squadron war diaries are very detailed regarding actual deliveries of tanks to the units. The only caveat is that often there are discrepancies between the numbers reported being delivered to a regiment and the receiving regiment's strength increase. This was largely due to breakdowns in transit, delays in reporting and tanks being sent back to delivery squadron to correct kit deficiencies. It was also noted in the course of this research that early in the campaign due to a shortage of AFVs there was some "borrowing" between armoured regiments. Also, when a regiment was in action they often did not have time to report their strengths and losses. It would take a day or two afterwards for all tanks and crews to be accounted for.

¹⁶ Leonard Curchin, *The Elgins: A Regimental History*, (St. Thomas: The Sutherland Press. 1977),78. These regiments had suffered large losses in the period of fighting 6-7 June 1944.

command. "D" Squadron of the 25th CADR landed on 26 July 1944, and was responsible for all units within the 4th Canadian Armoured Brigade.¹⁷

British stocks of replacement AFVs were delivered to large vehicle depots on the continent near road heads and rail heads by transport units of the British Army. The Canadian Army receiving procedure to accept these vehicles into service was quite comprehensive. Working together in tandem during this process from August 1944 onward was the OMC's (RCOC) Tank Railhead Section and the 25th CADR's "F" squadron. These two groups would receive a shipment of AFVs from the British Army's Vehicle Company, Army Ordnance Delivery organization. Once they had arrived, the new AFVs would have their documents examined and kit removed and re-checked at the "F" Squadron tank park. Next, the armament would be degreased and a general cleaning of the fighting compartment would take place. After this, the sprockets, road wheels and tracks would be adjusted and repaired as required. Following this, a general servicing of weapons, radios, and the power traverse would occur. Any modifications needed would be completed by the Canadian Army's 3rd Canadian AFV Support Unit and the 4th Canadian Armoured Troops (3rd line Maintenance) Workshop, working alongside "F" Squadron. Once this was concluded, optics, radios and fragile equipment would be installed or boxed for transport. Next, all onboard stowage of ammunition would be completed in accordance with authorized tables. Finally, the light aid detachment (LAD) attached to "F" Squadron would then recertify all the AFVs to make sure they were mechanically fit. Once this was completed, the tanks were ready to be sent out.¹⁸ If "fit" tanks were not issued right away, they would be maintained by 25th CADR personnel in the "F" Squadron tank park.

Once an order was received for tanks to be sent forward, the appropriate number would then be driven, transported by rail or loaded onto tank transporters for the trip from "F" Squadron to the 25th

¹⁷ Leonard Curchin, *The Elgins*, 78. Once D Squadron disembarked it immediately turned over twenty-two tanks with full crews to 4th Canadian Armoured Brigade to cover losses suffered 9-10 August 1944.

¹⁸ LAC, RG 24 Volume 14,279. F Squadron, 25th Canadian Armoured Delivery Squadron War Diary, October 1944. On 2 October 1944, several Kangaroo armoured personnel carriers slated for delivery to the 1st Canadian Armoured Personnel Carrier Regiment by "F" Squadron, 25th CADR, were instead re-routed back to RCEME maintenance units due to mechanical issues.

CADR corps delivery squadron.¹⁹ This squadron would then feed the two forward delivery squadrons of the 25th CADR present in NWE in August 1944. Within their operating bases, 25th CADR squadrons operated "tank circuits", with each stop in the circuit checking over an area of the tank. This repetitive inspection and receiving process at each squadron could take time. While of questionable efficiency, it was effective at resolving issues vehicles had arrived with and prevented these problems from reaching armoured regiments in the field. At any point repaired vehicles which had come from RCEME facilities could join a 25th CADR squadron.

In order to meet demands for new AFVs quickly, 25th CADR squadrons usually had an AFV "float", or balance that they could draw from, similar to the Canadian Army reinforcement CBRG units. This float was a percentage of the total AFVs in service with the front line units that a 25th CADR squadron was designated to support. Though this percentage went up and down with supply and demand, there was always an effort made to maintain the desired inventory level to deal with emergencies. This allowed the 25th CADR to be able to respond very quickly to a recipient unit's requests for large reinforcements. The best example of this rapid response capability is the 10 August 1944 delivery by "D" Squadron, 25th CADR of twenty-two fully-crewed M4 Sherman tanks to the 28th Canadian Armoured Regiment.²⁰ This regiment had lost forty-four Shermans, two Stuarts, one Crusader anti-aircraft tank and one scout car totally destroyed in battle on 9 August 1944.²¹ This immediate resupply, plus four tanks the regiment had as a reserve Left Out of Battle (LOB) contingent, gave it a total reinforcement of twenty-six new tanks. This number would theoretically make it capable of immediate combat operations. On 12 August 1944, a further sixteen tanks were delivered, bringing up the regiment's new tank deliveries

¹⁹ LAC, RG24 Volume 10,457. Tank Replaces and Releases. File 212C1.1009 (D28). Chart detailing the actions of a rear delivery squadron of the 25th Canadian Armoured Delivery Regiment.

²⁰ LAC, RG 24 Volume 14,277. D Squadron, 25th Canadian Armoured Delivery Regiment War Diary August 1944. T-12748. 9 August 1944 entry.

²¹ LAC, RG24 Volume 14,292. 28th Canadian Armoured Regiment War Diary August 1944. T-12764. War Diary entry for 9 August 1944 notes the one-day loss on Hill 140 of forty-four Shermans, two Stuarts, one Crusader anti-aircraft tank and one scout car.

to thirty-eight for the period 10-12 August 1944.²² The number of tanks delivered in this example and the speed in which they arrived is very impressive.

The process of AFV replacement and repair within an average Canadian armoured regiment over a eighteen day period during August 1944 is depicted in Chart 6.3. In these two and half weeks, the 27th Canadian Armoured Regiment lost a significant number of vehicles due to enemy action and mechanical failure. It had participated in Operations “Totalize”, “Tractable” and the initial battles of the Falaise Pocket. Though significantly weakened, after the delivery of new and repaired vehicles the regiment fielded thirty-eight “fit” tanks on 18 August. With an additional two tanks in the light aid detachment repairable within two days, forty would be “ fit” by 20 August. Though not perfect, this was enough to theoretically field three squadrons of four troops. Each troop could field three tanks each, plus four for the headquarters squadron.

Within the German Army, tank losses due to combat and mechanical failure were not replaced as efficiently as within the Canadian Army. As an example, the second battalion of the German Panzer Lehr Regiment 130 in Normandy was sent only eleven replacement Panzer IV tanks on 8 July 1944, having received none in June.²³ As illustrated in Chart 6.4, the effects of combat, mechanical failure and battle damage on the battalion’s strength in the period 1 to 26 June 1944 were severe. Repairs were also slow, as they occurred within the panzer units rather than in specialized separate repair units. As of 26 June, there were forty-seven Panzer IVs in short and long term repair near the chaos of the front lines.

Over the course of the campaign in NWE, the 25th CADR was successful at re-supplying all Canadian units operating heavy AFVs. This was due to large levels of production from repair workshops

²² LAC, RG 24 Volume 14,277. D Squadron, 25th Canadian Armoured Delivery Regiment War Diary August 1944. T-12748. 12 August 1944 entry.

²³ Niklas Zetterling, *Normandy* 1944, 386.

Chart 6.3: 27th Canadian Armoured Regiment M4 Sherman 75mm and Firefly 17-Pounder losses, replacements and “fit” status 1-18 August 1944²⁴

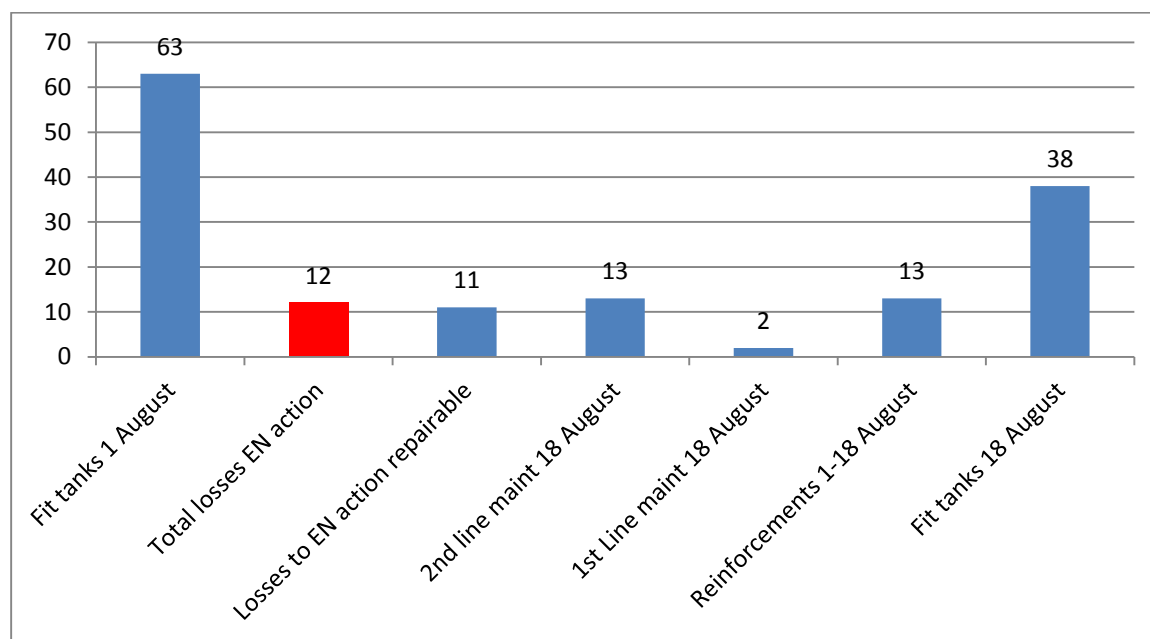
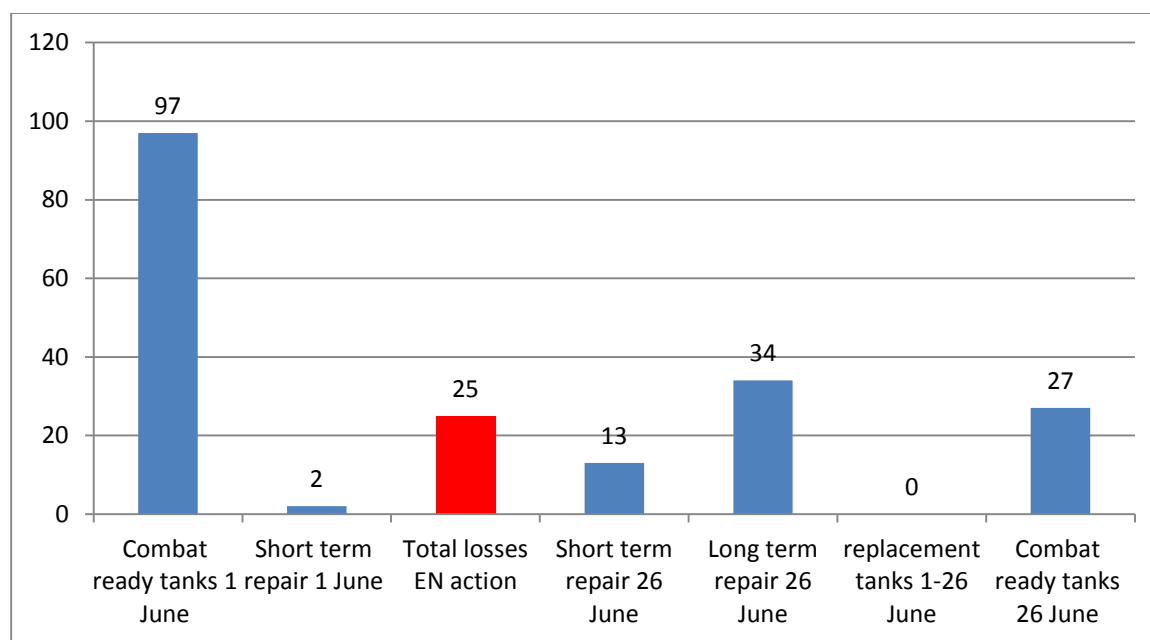


Chart 6.4: German II./Panzer Lehr Regiment 130's Panzer IV tank strength returns and losses due enemy action and mechanical failure 1-26 June 1944²⁵



²⁴ LAC, RG 24 Volume 14,287. 27th Canadian Armoured Regiment tanks state report. File 1044.

²⁵ Niklas Zetterling, *Normandy 1944*, 390.

and 25th CADR forward delivery squadrons being able to maintain large “floats”. As an example, “D” Squadron, 25th CADR delivered a total of 295 new and repaired AFVs to the 4th Canadian Armoured Division during the month of October 1944.²⁶ This was enough to nearly re-equip the entire division. As illustrated in Charts 6.5 and 6.6, Canadian armoured regiments maintained their strength while opposing German units withered. It also certainly helped that Allied forces in NWE during 1944-1945 possessed total air superiority, had large amounts of replacement equipment and vehicle movement and recovery was unimpeded.

The delivery of non AFV major weapons systems and other equipment did not utilize any special delivery squadrons to transport it to a fighting unit. Once past army level ordnance parks, it was deposited or driven to corps level ordnance field parks by 2nd line transport. From these locations it was then moved to the divisional level field parks. At the division level there was a divisional ordnance field park and a corresponding armoured or infantry ordnance sub-park. One of each was allocated to each Canadian armoured or infantry division.²⁷ The field parks were numbered by the division number, and the sub-parks were numbered 201-205. For example, the 5th Canadian Armoured Division’s ordnance depots consisted of the 5th Canadian Armoured Division Ordnance Field Park and the 205th Canadian Armoured Ordnance Sub-Park.²⁸ In these large parks all manner of equipment, vehicles and stores were located in a manner similar to the corps level parks. From these points divisional units would be authorized on a need basis to help themselves in order to retain their wartime establishments.

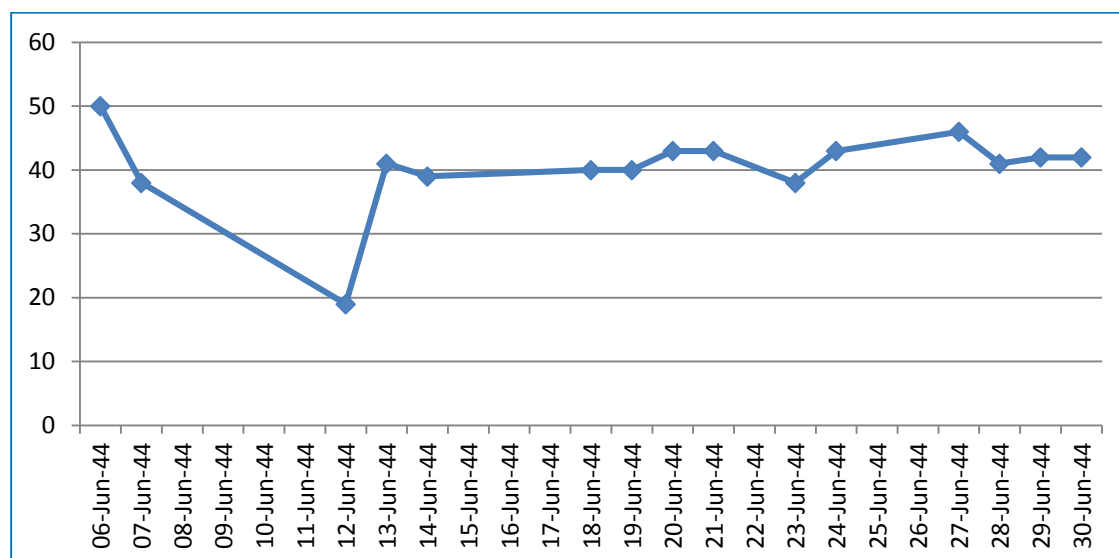
RCA field artillery, anti-tank and light anti-aircraft regiments reported their status in a very similar manner as the armoured units. For artillery regiments, the guns were their primary piece of

²⁶ LAC, RG 24 Volume 14,278. D Squadron, 25th Canadian Armoured Delivery Regiment War Diary October 1944. T-12748.

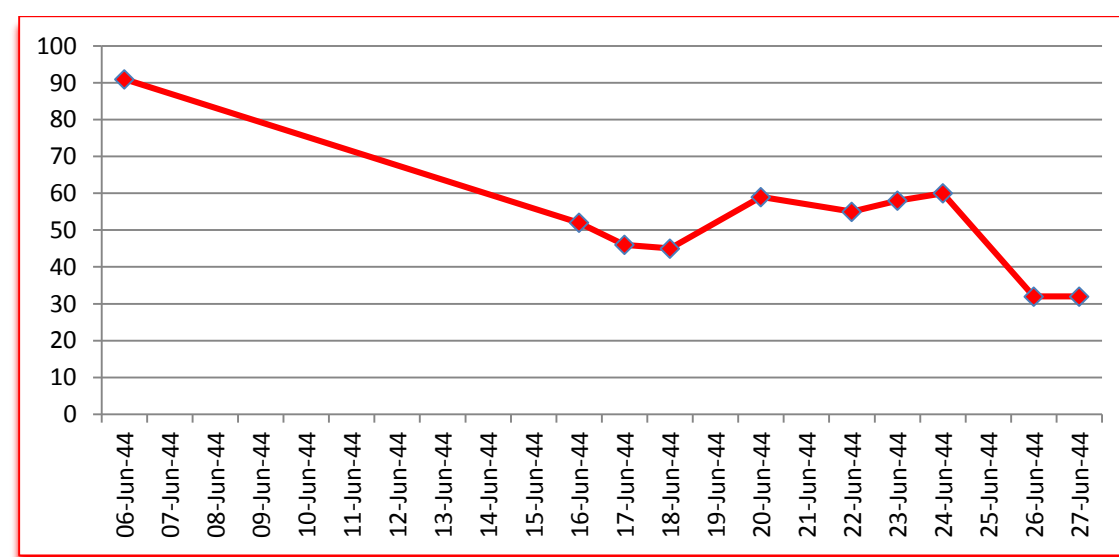
²⁷ Charles Stacey, *The Victory Campaign*, 661. Appendix F. Order of Battle for Canadian Units in NWE.

²⁸ Charles Stacey, *The Victory Campaign*, 661. Appendix F. Order of Battle for Canadian Units in NWE.

**Chart 6.5 Operational tank strength of 6th Canadian Armoured Regiment's M4 Sherman tanks
June 1944. War establishment = 50 M4 Shermans.²⁹**



**Chart 6.6: Operational tank strength of the German II./SS Panzer Regiment 12's Panzer IV tanks,
June 1944. War establishment = 101 Pz IVs.³⁰**



²⁹ Roman Jarymowycz, “The Quest for Operational Maneuver in the Normandy Campaign”, 336. Appendix E. Strength returns for the 2nd Canadian Armoured Brigade in June 1944. Because of the quick practice of back loading tanks with any problems past the abilities of the light aid detachment, all these Shermans must be considered operational.

³⁰ Norbert Szamveber, *Waffen SS Armour in Normandy*, 234. Appendix VII. Tank strength of SS-Panzer Regiment 12 1 June-11 August 1944.

equipment and the number of operational guns and guns under repair was constantly monitored. A gun state of ordnance holdings accompanied by an ammunition usage report was forwarded each day by an artillery regiment's RHQ to higher RCA command. These returns were very important, as their data was used to calculate supply requirements and to gauge ammunition usage.³¹ The returns would make their way up the chain of command, and army level field ordnance parks would then authorize the release of new equipment to make up for combat and mechanical losses. New replacement artillery equipment was held by army group level British Army ordnance field parks. The Canadian army level ordnance park would then receive new equipment from the OMC and move it to the corps level ordnance field parks. Repaired and reconditioned equipment would be also be transported by RCEME personnel to the division field ordnance parks and sub-parks, where it would be taken on strength (TOS).

The divisional ordnance parks would contain everything in the way of new and repaired towed artillery pieces, replacement artillery vehicles and radios. While all artillery equipment and weaponry was very sophisticated, maintaining and operating it was less complicated than an AFV with its motor, running gear, transmission, power turret traverse, sights and radios. Compared to a 17-Pounder anti-tank gun, a Firefly tank was much more challenging from a maintenance and delivery perspective, hence the lack of a 25th CADR type organization exclusively for artillery regiments. The approach to maintaining sophisticated artillery systems in 1944-1945 was very similar to that for an A or B vehicle. The successive "lines" within the RCEME repair system, to be discussed shortly, could handle increasingly difficult artillery repairs. Guns constantly required maintenance, but this could largely be completed at the regimental level by the LAD. If a gun was worn out or damaged, it could be easily replaced. A new one would be picked up at the field ordnance or sub parks by a gun crew with an artillery tractor or tower. New or repaired guns were drawn as needed to replace weapons under repair or that were lost in battle. An example of a mass draw of new equipment occurred in early August 1944. All three RCA field

³¹ LAC, RG 24 Volume 13,661. First Canadian Army A & Q War Diary December 1944. T-7093. Ammunition usage and receipts return. 1st British Corps and 2nd Canadian Corps, 16 December 1944. The guns state was also needed in order to arrange for the supply of the required amount of ammunition that was needed to keep it combat capable. Continuous delivery was needed for regular operations and extra on an irregular basis for larger operations.

regiments within the 3rd Canadian Infantry Division drew an entirely new complement of seventy-two towed 25-Pounder howitzers, turning it their old self-propelled M-7 Priest 105mm howitzers.³²

In NWE during 1944-1945 there were many heavy AFVs operated by non-Canadian Armoured Corps (CAC) regiments within the Canadian Army. These were mainly artillery observation post (OP) tanks, self-propelled artillery, tank destroyers and artillery towers operated by RCA units. These vehicles were delivered by the 25th CADR in exactly the same manner as a Sherman Firefly tank was delivered to an armoured regiment. Universal Carriers, T-16 and M-14 gun tractors were also A vehicles, but the delivery of these smaller vehicles was accomplished via unit drivers due to their low weight, mechanical reliability and high speed.

In contrast to the German Army during 1944-1945, the Canadian Army was totally mechanized in all areas that required soft-skinned B vehicles. This very large motor pool was one of the First Canadian Army's greatest strengths. It allowed Canadian forces to be very mobile and carry out all logistic tasks, increasing their military effectiveness. As opposed to occasional A combat vehicle shortages, there was never a shortage of soft-skinned transport in Canadian units. The 31 August 1944 B vehicle return for the 2nd Canadian Infantry Division shows 125 General Service 3-ton lorries on strength as opposed to its war establishment number of 104, making it significantly over-strength.³³ In comparison, the German 12th SS Panzer Division as of 1 June 1944 had only 65 percent of its authorized number of trucks operational, and only 33 percent of its gun tractors.³⁴

Unsophisticated general service (GS) vehicles could be used in multiple roles by virtually any type of unit. Some examples of GS B vehicles within the Canadian Army were 2½-ton troop transports, 3-ton lorries and jeeps. Many were produced in the U.K. with a right hand drive, while others were of

³² LAC, RG 24 Volume 14,472. 14th Field Regiment, RCA War Diary August 1944. T-16371. 7 August 1944. The British field ordnance park in question for this exchange was designated a "Royal Artillery re-organization centre".

³³ LAC, RG 24 Volume 10,553. 21st AG. A & B Canadian Vehicle Position Report. File 215A21.085 (D1). 31 August 1944 return. B vehicle state for the 2nd Canadian Infantry Division as of 31 August 1944.

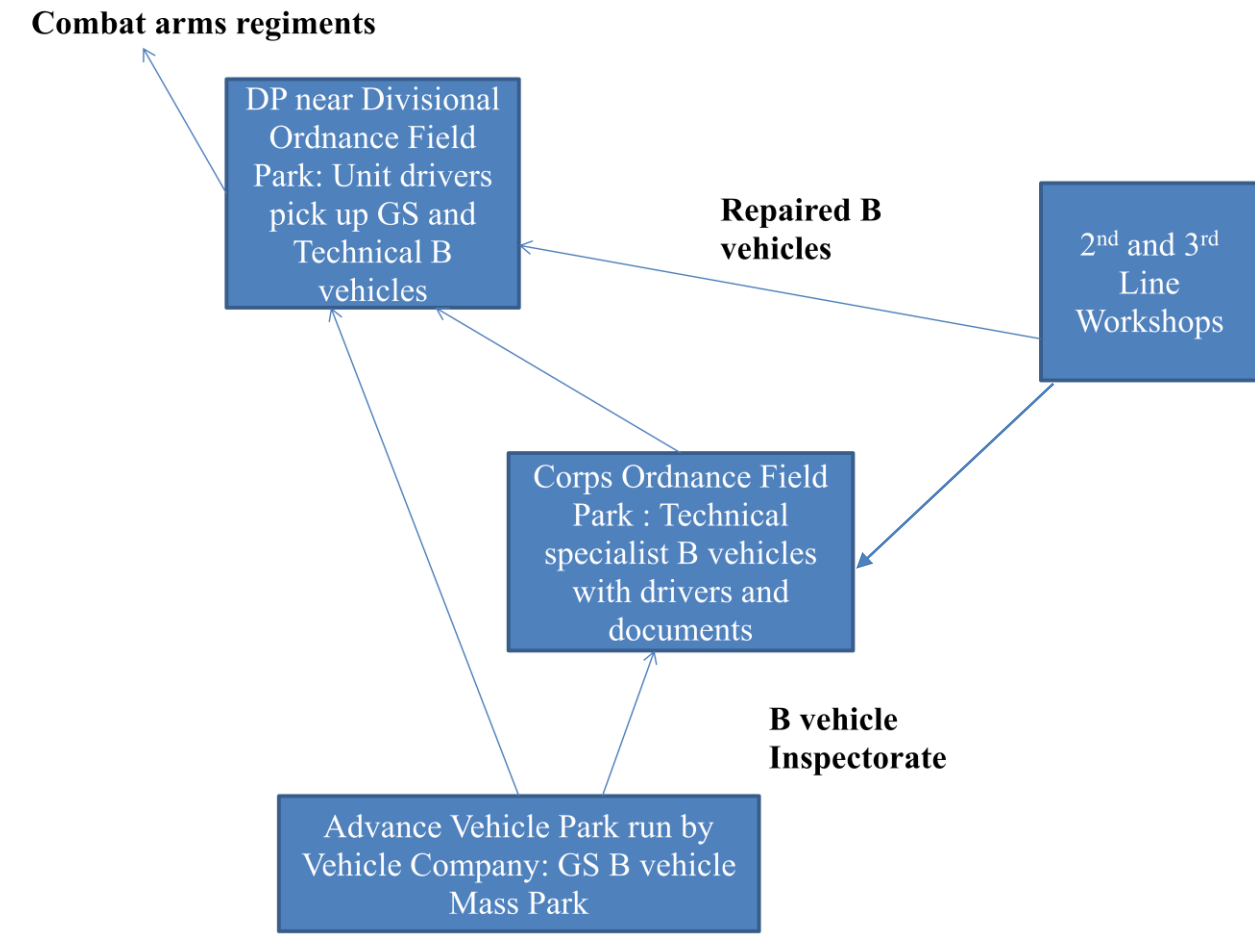
³⁴ Russell Hart, *Clash of Arms*, 225. This state of affairs reduced the mobility of the division and its ability to quickly move to Normandy.

North American manufacture. Not being AFVs, they could only sustain low amounts of damage and had a limited capability to mount weapons. Canadian Army specialist technical B vehicles such as petrol tankers and command caravans were very sophisticated and came with vehicle technicians to operate them. Documentation for these vehicles had to follow the vehicle from point to point, and their employment and status was monitored constantly.

As shown in Chart 6.7, the British 21st Army Group vehicle depots would release B vehicles as authorized by 2nd Canadian Corps and later First Canadian Army headquarters. Released B vehicles would travel directly to either to the Canadian corps level ordnance field park or a delivery point near the division level ordnance field park. Unit drivers would take possession of the new vehicles at the DP near the divisional ordnance field park. GS category B vehicles that were repaired by RCEME maintenance units would also go directly to the DPs near the divisional ordnance field park, where they would also be picked up by unit drivers. New and repaired specialist vehicles such as wreckers, radio vehicles and ambulances would be assembled at the corps-level ordnance field park. From this point these specialist vehicles could be dispersed to unit DPs, but only with the proper documentation and the assigned technician. Only 2.5 percent of the respective corps total unit holdings of various technical vehicles would be held in divisional field ordnance parks and DPs as reinforcements.

The Canadian Army's recovery and repair system for maintaining its inventories of vehicles, weapons and equipment in 1944-1945 was administered by units of RCEME. Its creation and the systems utilized by its units were directly influenced by the introduction of the British Army equivalent, The Corps of Royal Electrical and Mechanical Engineers (REME), which officially came into being in October 1942. In early 1941, the British Beveridge Report had identified the need to properly employ large numbers of skilled tradesmen, engineers and technicians which had hurriedly been put into uniform

Chart 6.7: First Canadian Army vehicle path chart for B vehicle replacement³⁵



in the mobilization of 1939.³⁶ This recruitment had stripped a section of British industry that desperately needed their skills. At the same time these personnel were not being correctly employed within the military to utilize their capabilities. It was deemed necessary to release some of these some personnel for civilian wartime production and re role those still needed within the British Army to utilise their technical expertise for maintenance duties.

³⁵ LAC, RG24 Volume 10,663. First Canadian Army Plans Diagram of B vehicle delivery/replacement. File 215C1.045 (D12). John Grodzinski, *Operational Handbook*, 93. Canadian Army System of Supply of Ordnance Stores in the Field Chart 1944, Appendix D.

³⁶ Murray Johnston, *Canada's Craftsmen at 50: the Story of Electrical and Mechanical Engineering in the Canadian Armed Forces* (Borden, ON: The Guild of the Electrical and Mechanical Engineering Branch Charitable Trust. 2008. Electronic Edition), 267.

The British Sinclair-Seek-Dunkly Report of February 1942 went further to recommend the creation of a new corps of electrical and mechanical engineers. This corps would encompass British Royal Ordnance Corps (ROC) and combat arms personnel then currently responsible for repair, recovery and replacement duties. After Royal Assent, this corps became REME and it was officially incorporated into the British Army as of October 1942.³⁷ New processes came into effect simultaneously to allow the recovery and repair of all British Army vehicles, weapons and equipment in the shortest amount of time. In May 1942, the commander of the Canadian Army Overseas (CAO), Lieutenant-General Andrew McNaughton, pointed out the importance of keeping CAO systems for recovery, repair and maintenance as similar as possible to the British while minimizing organizational change. As a result British REME processes were introduced into Canadian Army operations in Italy during 1943, but personnel remained in the Royal Canadian Ordnance Corps (RCOC) or part of combat units. Despite having still not created a new corps, by January 1944 REME processes had been fully adopted by the CAO. Overflowing divisional workshops were transformed into multiple brigade workshops and light aid detachments (LADs).

Official organizational change that created the Canadian Corps of Electrical and Mechanical Engineers (CEME) finally came into effect on 1 February 1944, one year and six months after the official incorporation of REME into the British Army. With Royal Assent CEME became RCEME on 2 April 1944, just in time for the Normandy invasion.³⁸ With this act, large numbers of RCOC personnel and others were rebadged to become the first members of RCEME. A second reorganizational phase after this initial change claimed the light aid detachment personnel from combat arms units, also rebadging them as RCEME personnel.³⁹ While difficult for the former RCOC and combat arms regiment personnel to accept at the time, this transformation made the CAO much more effective in the field. It was now more capable than ever of keeping a major percentage of its vehicles and major weapons systems operational.

³⁷ Murray Johnston, *Canada's Craftsmen at 50*, 268.

³⁸ Murray Johnston, *Canada's Craftsmen at 50*, 269.

³⁹ Murray Johnston, *Canada's Craftsmen at 50*, 270.

This transformation provides evidence of a learning culture within the CAO. The creation of an entirely new army trade and adoption of new repair and recovery processes were significant mileposts in the evolution of the Canadian Army during the Second World War. Its leadership had displayed a willingness to adapt in order to be more effective in a specific area.

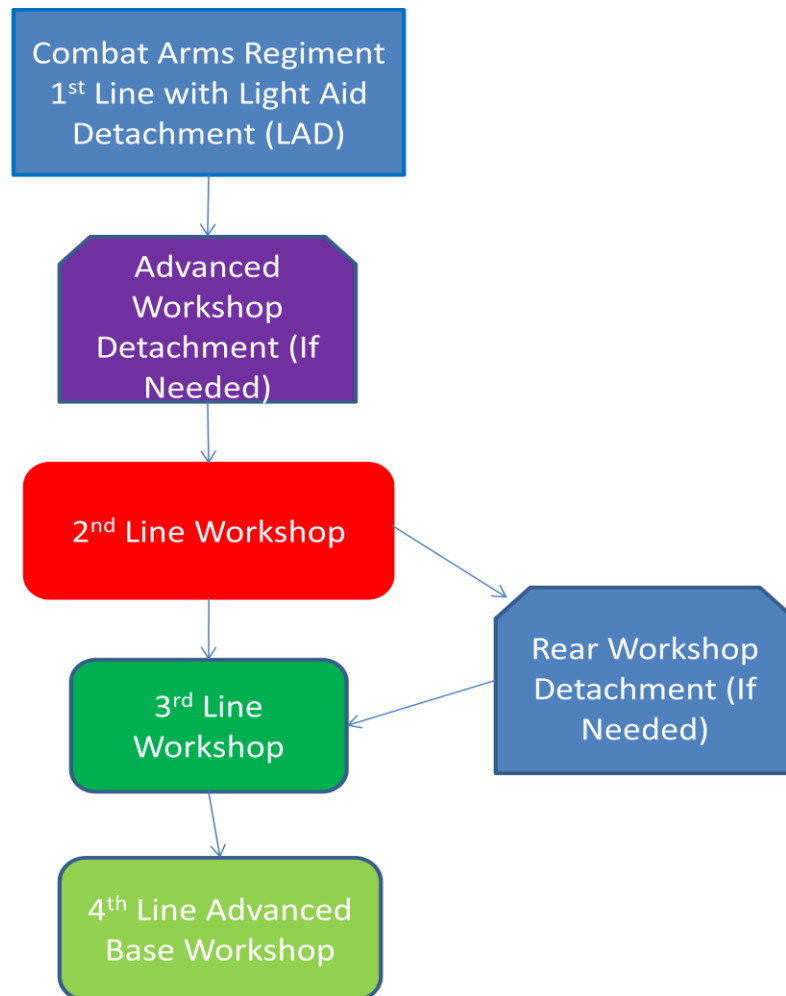
The Canadian Army recovery and repair system was divided into levels so that no one area was overstressed by its workload. If there was an over load at one level, or the task was too complicated, it would be passed to the next successive level. As illustrated in Chart 6.8, RCEME had a total of four lines of maintenance to repair mechanical faults or battle damage. 1st line was the organic repair services attached to the combat arms regiments. Further lines (levels) after this took on successively more difficult and complicated repair and rebuilding assignments. The majority of the work in the RCEME workshops and LADs was done prior to or after combat operations. Enemy action was responsible for only a very small percentage of 2nd line workshop's tasks. Their workload was divided as follows: Over 95 percent of jobs related to mechanical breakdowns, 2 percent stemmed from battle damage and 3 percent involved road accidents.⁴⁰

The Canadian Army RCEME recovery and repair system that evolved from Anglo-Canadian operational experience in the campaigns in North Africa, Sicily and Italy was centered on the concept of the Advanced Workshop Detachment (AWD). This was a sub-unit of the main body of the brigade-level workshop. It could be made as large or small as the tactical situation demanded. This grouping was tasked with providing advanced recovery and repair services in cooperation with RCEME 1st line maintenance LADs at the regimental level. The AWD was the link between the 1st and 2nd lines of maintenance. These two lines took the lion's share of repair, recovery and maintenance duties.⁴¹

⁴⁰ Murray Johnston, *Canada's Craftsmen* at 50, 42.

⁴¹ Murray Johnston, *Canada's Craftsmen* at 50, 42.

Chart 6.8: First Canadian Army lines of maintenance for the repair of A and B vehicles and major weapons systems⁴²



The 1st line maintenance capability within the combat arms regiments consisted of the LAD workshops. One was attached to each RCA and CAC regiment, and infantry LADs were held at the brigade level. For example, the 2nd Canadian Armoured Brigade's three regiments had the following LADs, each manned by RCME troops:⁴³ The 6th Canadian Armoured Regiment contained the No.54 LAD, the 10th Canadian Armoured Regiment was assigned the No.55 LAD and the 27th Canadian Armoured Regiment was issued the No.85 LAD.

⁴² Murray Johnston, *Canada's Craftsmen* at 50,42-44.

⁴³ Murray Johnston, *Canada's Craftsmen* at 50, 327. Appendix 5.

These detachments were designed to be extremely mobile and had a minimum number of personnel, vehicles and equipment. They dealt with easily correctable problems that AFV and gun crews could aid in resolving within a certain time limit. They put maximum effort into these easier problems and “backloaded” (sent to the rear) what could not be handled quickly or was beyond their capabilities. The main duties of the LAD were light welding, mechanical repairs and assisting in maintenance questions. They were spread evenly throughout the A1 (combat), A2 and B (supply and administrative) echelons of the regiment they were assigned to. AFVs, vehicles and ordnance sent back by the LAD for 2nd or 3rd line maintenance would be collected by the AWD’s recovery assets and back loaded to the brigade collection point. This collection point was within the AWD base of operations or very near to it. The AWD of the brigade workshop worked closely with the three regiments of each brigade, but also with divisional troops, such as the field artillery, machine gun and anti-tank regiments. The LAD’s from these divisional units would be designated to feed a certain brigade workshop AWD in exactly the same manner as one of the armoured or infantry brigade’s regimental LADs. There was no major differences in the duties of an armoured or infantry brigade workshop AWD. For an infantry brigade, its brigade workshop AWD would collect, repair or back load all infantry AFVs, vehicles and ordnance in exactly the same manner as the armoured brigade workshop AWD.

Canadian Army 2nd line RCEME repair assets consisted of the main body of the brigade workshop, which in turn oversaw the operations of its AWD. As an example, the 2nd Canadian Armoured Brigade had the 2nd Armoured Brigade Workshop assigned to it. Despite the misnomer, the brigade workshop operated in what was considered a divisional level repair area if the workshop in question was part of an infantry or armoured division. The 2nd line brigade workshop’s main bodies in armoured or infantry divisions were to be located no more than two hours from the location of the LAD. These main bodies were not very mobile, and had trouble keeping up with the rapid advances of the First Canadian Army in August and September 1944. This was especially the case with workshops operating within the 4th Canadian Armoured Division. In response, its brigade workshops from September 1944 onwards were

sited very near the front. These workshops formed Rear Workshop Detachments (RWDs), and these less-mobile elements moved forward when they could. In this case the need for an AWD was removed and the main body of the brigade workshop took on its role, totally reversing the standard procedure. The three infantry brigade workshops in an infantry division post August 1944 continued to have AWDs, but one workshop's entire main body was always placed forward. The other two infantry brigade workshops were located to the rear.⁴⁴ Also within the 2nd line maintenance structure was the 2nd Canadian Corps Troops Workshop. This facility provided repair services for corps level units. The LADs of corps level combat units would feed the corps workshop AWD in exactly the same process as the infantry and armoured LADs fed their brigade workshop AWDs.

If an AFV or other equipment was sent off strength (SOS) as a repair casualty to a 2nd line maintenance unit, it was taken off the strength of its original regiment. It was now on the strength of the respective RCME unit, and all further repair work would be completed by RCME personnel.⁴⁵ The repair process was quite flexible, and there was no rule that a certain squadron's tank had to return to its respective squadron or regiment. As a new or repaired similar tank emerged from the repair and reinforcement pipeline, it would instead take its place and be delivered by the 25th CADR forward squadron.

Despite the infantry and armoured titles, the armoured and infantry brigade workshops also worked on AFVs and other ordnance that was employed by the RCA field artillery and anti-tank units. Artillery OP tanks, self-propelled howitzers, tank destroyers and artillery towers all broke down and suffered battle damage at the same rate as infantry and armoured unit AFVs. If a RCA artillery AFV was finished repairs, the designated 25th CADR squadron would deliver this vehicle to an RCA unit in exactly the same manner as it would to an armoured unit. As part of its role, the corps level "E" Squadron, 25th

⁴⁴ Murray Johnston, *Canada's Craftsmen* at 50, 65.

⁴⁵ LAC, RG 24 Volume 10,553. A & B Canadian Vehicle Position Report. File 215A21.085 (D1). 21st AG 30 November, 1944-31 January 1945 returns. Divisional vehicles strengths in this time period do often go down, but this is not to enemy action but due to mechanical repairs.

CADR was responsible for delivering tracked artillery A vehicles directly to the RCA regiments. The "B", "C", "D" and "G" squadrons of the 25th CADR were responsible for the tank equipped Canadian armoured brigades.⁴⁶

The 3rd line of RCME maintenance was designated to complete the rebuilding and reconditioning of equipment. This was not a service available within the 1st and 2nd lines as shown in Chart 6.9. Rebuilding and reconditioning took a very long period of time and had to be completed in a static factory-like environment. In these locations detailed and complicated work could take place out of the way of the elements and enemy action. This was their designated role, but the majority of their work was overflow from 2nd line maintenance. The corps troops, armoured brigade and infantry brigade workshops could all feed overflow repair cases directly to 3rd line units. The No.2 Tank Troops Workshop was an example of a 3rd line RCME asset in the summer of 1944. This facility was used as an overflow catch point for overworked 2nd line brigade workshops.⁴⁷ The 3rd line maintenance units were not very mobile, but sought to remain at a fixed distance from 2nd line bases. If one was ordered to move forward, others stayed in place as long as they could to remain effective and take on the moving unit's workload. All 3rd line maintenance facilities were under the command of the First Canadian Army Deputy Director of Mechanical Engineering (DDME) as of 1 September 1944.⁴⁸

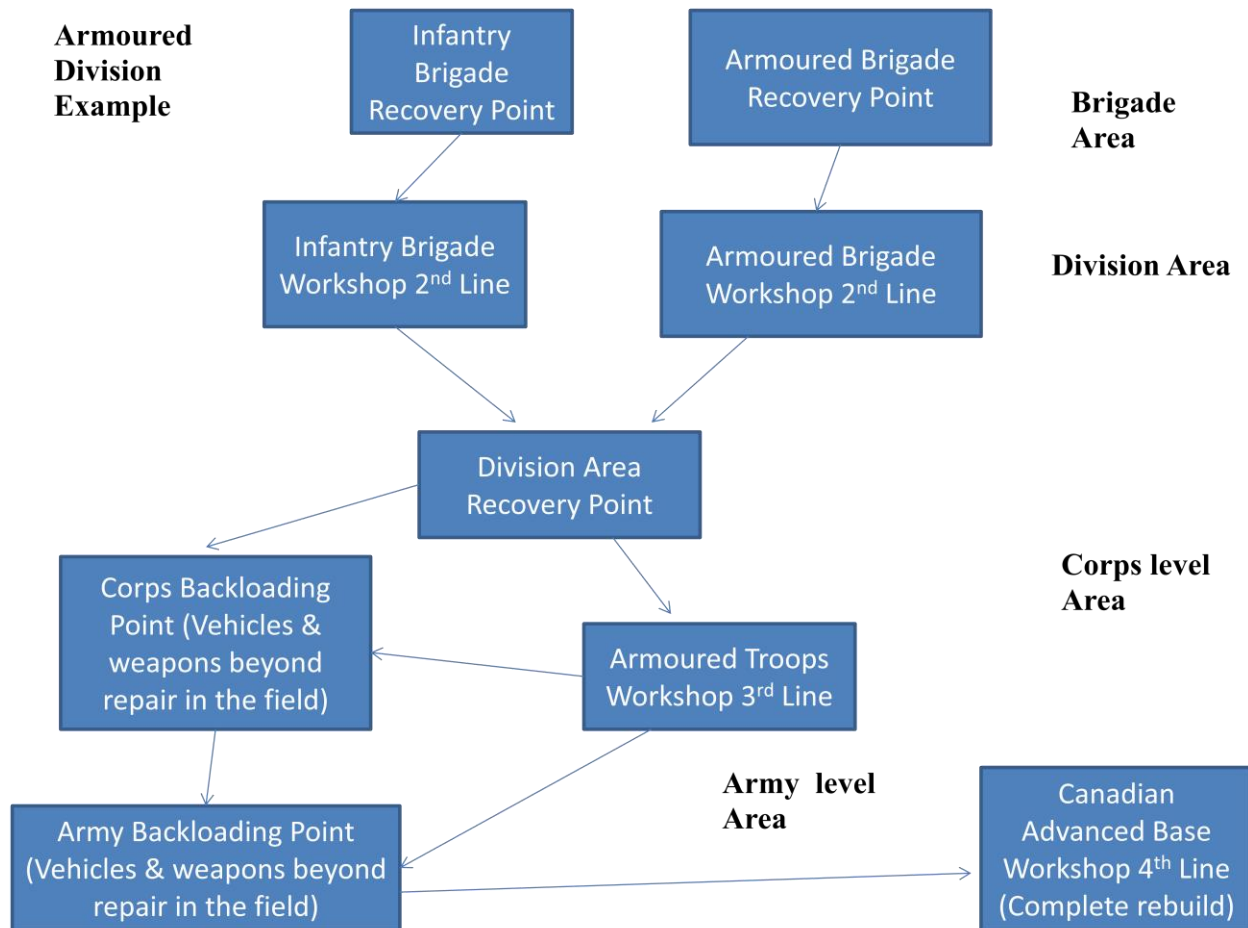
Canadian Army 4th line maintenance was a capability that existed in the form of the No.1 and No.2 Advanced Base Workshops. The No.1 Canadian Base Workshop, as the parent organization of these 4th line facilities, remained in the U.K. These organizations were commanded by the Director of Mechanical Engineering (DME), 21st Army Group. These 4th line assets were designed to be available at the rate of one per Canadian corps. They provided factory-like rebuilding and reconditioning services for

46 LAC, RG 24 Volume 14,278. E Squadron, 25th Canadian Armoured Delivery Regiment War Diary December 1944. Multiple entries regarding the delivery of RCA self-propelled artillery pieces and Ram tracked gun tractors (towers) exist.

47 Murray Johnston, *Canada's Craftsmen at 50*, 70-71.

48 Murray Johnston, *Canada's Craftsmen at 50*, 65.

Chart 6.9: First Canadian Army process for A & B vehicle and major weapons system recovery and repair (Armoured Division example)⁴⁹



vehicles and other major pieces of equipment on a higher level than 3rd line. These groups could also be utilized for special missions in addition to their designated roles. For example, No.1 Advanced Base Workshop inspected and performed maintenance on over 400 guns prior to Operation "Totalize" in early August 1944. It also rebuilt and repaired large numbers of submerged vehicles that had been recovered from the Juno and Sword Beach landing areas in Normandy.⁵⁰ If 3rd line maintenance assets could not handle a job or were overloaded, these two facilities could assist in completing complete rebuilding and

⁴⁹ LAC, RG24 Volume 10,663. First Canadian Army Plans Diagram of AFV A vehicle Recovery, Repair and Replacement. File 215C1.045 (D12).

⁵⁰ Murray Johnston, *Canada's Craftsmen at 50*, 74.

reconditioning tasks.⁵¹ Specialized recovery assets in the army level Line of Communications Area also existed. The RCEME Canadian Army No.2 and later No.1 and No.3 Recovery Companies operated in the strategic route clearing and recovery role past the corps and divisional areas of responsibility. Prior to August 1944, there was little vehicle and equipment back loading above regimental and brigade level due to the small area within the Normandy beachhead. As the breakout from Normandy developed in August 1944, these activities increased as broken down vehicles were littered across northern France.⁵²

Once repairs were completed, the vehicle or piece of ordnance would be sent on its way. Using an AFV as an example, once it was deemed “fit” by a repair line of maintenance it was immediately shipped back to the relevant squadron of the 25th CADR. At that point it would be sent off strength (SOS) of the RCEME unit that had worked on it and was now on the strength with the 25th CADR squadron. Once the 25th CADR squadron delivered it, the AFV would join the strength the armoured or RCA artillery unit, and the circle was complete. The RCEME repair organization at its height in May 1945 was large and extremely capable. A total of 150 RCEME units and sub-units existed, from the LAD detachments within combat arms units to 4th line maintenance facilities located in static locations.

In summary, this chapter has provided a short overview of the repair and replacement procedures for A and B vehicles and major weapons systems within the First Canadian Army during 1944-1945. The Canadian Army during the late war period was very lucky to adopt what were largely British Army practices which had evolved by trial and error during 1939-1943 into a very sophisticated system. During the Italian campaign in 1943-1944, the Canadian Army had opportunity to practice these methods in the field. On its arrival in NWE, familiar practices were put into action with good results. Canadian combat arms regiments were never hindered in their operations due to a shortage of any type of operational A or B vehicle or major weapons systems.

⁵¹ Murray Johnston, *Canada's Craftsmen at 50*, 64.

⁵² Murray Johnston, *Canada's Craftsmen at 50*, 62.

Chapter 7: The 1st Canadian Infantry Division: Major actions, casualties, reinforcements and strength returns for its combat arms regiments in North West Europe, April-May 1945

Formed from both permanent force regiments and militia units, the 1st Canadian Infantry Division was authorized to begin forming soon after hostilities broke out in September 1939. Deployed to the U.K. later in that year, it performed garrison duties and conducted training exercises until mid-1943. From 1943 to early 1945, the division fought in Italy as part of the Eighth British Army, forming part of the 1st Canadian Corps. In January 1945, the entire corps began a planned re-deployment to North West Europe (NWE). The overall aim of Operation “Goldflake” was the uniting of the corps with the First Canadian Army. The 1st Canadian Infantry Division began the move to Belgium in late February 1945 by first travelling by sea from Leghorn, Italy to Marseilles, France.¹ From there it moved north by road through the Rhone Valley through France. It took until late March 1945 to re-organize, re-equip and concentrate the infantry brigades and other divisional units.²

As of April 1945, the division’s commanding officer was Major-General H.W. Foster. Infantry formations within the division comprised of the 1st, 2nd and 3rd Canadian Infantry Brigades. The 1st Canadian Infantry Brigade consisted of The Royal Canadian Regiment, The Hastings and Prince Edward Regiment and The 48th Highlanders of Canada. The 2nd Canadian Infantry Brigade consisted of The Princess Patricia’s Light Infantry, The Seaforth Highlanders of Canada and The Loyal Edmonton Regiment. The 3rd Canadian Infantry Brigade consisted of Le Royal 22e Regiment, The West Nova Scotia Regiment and The Carleton and York Regiment. Divisional troops consisted of the 4th Canadian Reconnaissance Regiment (4th Princess Louise Dragoon Guards) and The Saskatchewan Light Infantry (Machine Gun). The reconnaissance regiment had been converted to an infantry regiment during its service in Italy in 1944. Its parent 12th Canadian Infantry Brigade had been disbanded, and on its arrival

¹ Charles Stacey, *The Victory Campaign*, 529-530.

² "Historical Section, Canadian Military Headquarters, Report No.181. Operation "Goldflake", the move of the 1 Cdn Corps from Italy to North-West Europe, February-March 1945." *Canadian Forces Personnel Headquarters*. Retrieved March 2016 from <http://www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/doc/cmhc/cmhc181.pdf>

in NWE this unit was ordered to re-convert back to a reconnaissance regiment. It would carry out this task throughout April 1945, and not be committed to operations. Divisional artillery units consisted of the 2nd and 3rd Field Regiments, RCA, the 1st Field Regiment Royal Canadian Horse Artillery (RCHA), the 1st Anti-Tank Regiment, RCA and the 2nd Light Anti-Aircraft Regiment, RCA.³

War establishments tables for the personnel and equipment that the division's regiments were authorized to contain are provided in Appendix 1. All data regarding personnel casualties, reinforcements and strengths as well as combat A vehicle and equipment states for all regiments is provided in Appendix 2. Data is provided for April-May 1945, the thirty-five day period in which combat operations occurred.

On 7 April 1945 the division's returns first appeared on the daily Consolidated Casualty and Strength State return within the First Canadian Army Headquarters. On this date the division's strength was 880 officers and 15,819 other ranks, totalling 16,699 personnel.⁴ The transit period from Italy had allowed these regiments to be rested and refitted, and their personnel levels were high. The 48th Highlanders of Canada's strength stood at thirty-eight officers and 830 other ranks, 2 percent over strength.⁵ The Seaforth Highlanders of Canada consisted of thirty-nine officers and 837 other ranks, 4 percent over strength.⁶ The non-infantry regiments within the division were also at satisfactory personnel levels prior to combat operations in mid-April 1945. The strengths of two regiments of divisional troops taken as examples were as follows: As of 7 April 1945, the 4th Canadian Reconnaissance Regiment's strength was forty-two officers and 759 other ranks, 97 percent of its authorized strength.⁷ The Saskatoon Light Infantry's (Machine Gun) strength on the same date was recorded as thirty-seven officers and 693 other ranks, 99 percent of its war establishment.⁸

³ Charles Stacey, *The Victory Campaign*, 657-662. Appendix "F". Canadian Army Units in NWE.

⁴ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 7 April 1945 return.

⁵ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 7 April 1945 return. The war establishment of a Canadian Infantry Corps battalion at the war's conclusion was thirty-eight officers and 812 other ranks, for a total of 850 personnel.

⁶ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 7 April 1945 return.

⁷ LAC, RG 24 Volume 12,649. 4th Canadian Reconnaissance Regiment War Diary April 1945. T-12649. 7 April 1945 return.

⁸ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 7 April 1945 return.

It is only partially possible to assess how successful the First Canadian Army was in re-equipping the division with vehicles and weapons in March 1945. Its data was not included in the 21st Army Group Consolidated Vehicle Position Report return for 31 March 1945. During this time period its A vehicle returns would have been in flux due to the re-equipment process. The division's vehicle return was present for 30 April 1945, but the earlier non-reporting makes it impossible to compare pre and post-combat A vehicle states.⁹ The division's data was present on the 21st Army Group Equipment State return of 30 April 1945, which covered all types of non-vehicle major weapons systems such as artillery pieces, mortars and medium machine guns.¹⁰

Apart from some minor shortages, as of 31 March 1945 the division's inventory levels of authorized major weapons systems was satisfactory.¹¹ On this date the division contained 527 heavy weapons, 93 percent of its war establishment. Some minor challenges in this area were present. There were only thirty-five medium .303 machine guns against the authorized level of forty. Only 252 infantry 2-Inch mortars were on hand against the establishment strength of 283. The division contained only fifty-four 3-Inch mortars against its authorized level of sixty.

While the Canadian Army in NWE during spring 1945 had no major difficulties in equipping its units with weapons and vehicles, opposing enemy formations facing it did. The state of equipment levels, repair services, fuel supplies and replacement capability within the enemy units was far below acceptable levels.¹² The 1st Canadian Infantry Division was lavishly equipped in comparison, and this gave it a large degree of superiority over defending German units with regard to the number of weapons systems it could

⁹ LAC, RG 24 Volume 10, 553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 30 April 1945 report.

¹⁰ LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army. File 215C1.083 (D6). 31 March 1945 report.

¹¹ LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army. File 215C1.083 (D6). 31 March 1945 return.

¹² Martin Block, "Panther Allocations 1945", *Panther1944.de*, retrieved January 2016 from <http://www.panther1944.de/index.php/en/sdkfz-171-pzkwfwg-panther/truppenteile/panther-zuweisungslisten/panther-zuweisungsliste-1945>. 180 Panther tanks were issued to German units in February 1945. A mere twenty were issued to a formation that faced the Canadian Army in that month, the Panzer Lehr panzer division.

deploy and their effect. Against low-quality entrenched German infantry with little access to heavy weapons, this factor was devastating.¹³

Under the temporary command of 2nd Canadian Corps as of 3 April 1945, the division was deployed in an assembly area in the Reichswald Forest.¹⁴ Its first operation was to attack west into the Netherlands as part of the 2nd Canadian Corp's Operation "Cannonshot". The lead elements of the division successfully consolidated a bridgehead over the IJssel River on 11 April 1945.¹⁵ German command and control was disorganized and the quality of enemy forces facing the division was on average low. Rapid progress was made by the attacking infantry regiments with minimal casualties. Further advances resulted in the capture of Apeldoorn and the high ground near Arnhem. At the conclusion of this phase of fighting, the division reverted to the command of 1st Canadian Corps. Subsequent advances in mid April took the division to the vicinities of Amersfoort, Nijkerk and Harderwijk. Attached units in support of the division aided its rapid advance. The most notable example was 33 Battery , 6th Anti-Tank Regiment, RCA. It's M-10 tank destroyers provided mobile fire support throughout the division's April 1945 operations.¹⁶ During its brief period of combat operations the 1st Canadian Infantry Division performed well against an enemy that was disintegrating.

Once these operations were completed by 19 April 1945, the division halted offensive operations in the western Netherlands. This halt at the Grebbe River line was arranged in order for relief supplies to be delivered to the starving Dutch civilians. The German occupation forces would allow these deliveries as long as the Allies advanced no further west. Due to the end of war being imminent, this temporary agreement would halt the starvation of the civilian populace and spare the country further possible flooding and destruction.

¹³ G.W.L. Nicholson, *The Gunners of Canada. The History of the Royal Regiment of Canadian Artillery Volume II: 1919-1967*, (Toronto: McClelland and Stewart Limited.1972), 431. There were no German AFVs present to combat the amphibious assault.

¹⁴ Charles Stacey, *The Victory Campaign*, 529. On 1 April 1945 the division began to deploy to the Reichswald Forest area.

¹⁵ Charles Stacey, *The Victory Campaign*, 551-552.

¹⁶ LAC RG24 Volume 14,556. 1st Anti-Tank Regiment, RCA War Diary April 1945. T-16449. Eighteen Valentine Archer 17-Pounder tank destroyers were delivered on 10 April 1945. All eighteen had defective recoil buffers and saw extremely limited if any action.

Despite the short period of time that the division was in combat and the low strength of the defending German formations, the enemy still managed to inflict battle casualties. Divisional casualties for this period of fighting were largely confined to the infantry regiments, and their losses were much higher than in the other combat arms. While casualties were at an acceptable level, they were still severe on occasion due to German forces being dug in and prepared for a Canadian assault.

For the month of April 1945, the three regiments of the 1st Canadian Infantry Brigade suffered a total of 155 battle casualties. The 2nd Canadian Infantry Brigade suffered 197 and the 3rd Canadian Infantry Brigade suffered a total of 164. The two regiments hardest hit were The Loyal Edmonton Regiment, with ninety-seven battle casualties, and Le Royal 22e Regiment with sixty-seven. Despite the war being nearly over, small pockets of determined German defenders were encountered. These groups would even mount an occasional counterattack on a Canadian objective that had been captured.

Casualties in the April-May, 1945 period were very low amongst the non-infantry regiments. For example, the 1st Anti-tank Regiment, RCA had one battle casualty.¹⁷ This points to a scarcity of enemy armoured fighting vehicles (AFVs) in this sector of the front. The Saskatoon Light Infantry (Machine Gun) suffered only ten battle casualties.¹⁸ While the anti-tank regiment, the machine gun battalion and the reconnaissance regiment were deployed near the infantry positions, the remaining RCA field regiments were deployed to the rear. This grouping encompassed the light anti-aircraft regiment and the three RCA Field regiments. At this stage in the conflict there was almost no enemy air activity and little in the way of sustained counter battery fire on RCA field artillery positions. Accordingly, the 1st Field Regiment, RCHA, suffered only thirteen battle casualties for the months of April and May 1945. The 2nd Light Anti-Aircraft Regiment, RCA, suffered only four. These losses within the RCA regiments were negligible and these units were never impeded from carrying out their missions.

¹⁷ LAC, RG24 Volume 14,556. 1st Anti-Tank Regiment, RCA War Diaries. T-16449. April-May, 1945 entries. This was of course minus the batteries and troops that contained the defective Valentine Archer 17-Pounder tank destroyers. They did not see combat.

¹⁸ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-709-7096 for battle and non-battle.

Like any other formation in the Canadian Army, the 1st Canadian Infantry Division had a constant stream of personnel taken off strength to receive medical care for non-battle related causes. Injuries, illness and battle exhaustion cases were all combined within the category of non-battle casualties. Battle exhaustion cases within the division did occur in the spring of 1945, but were not heavy due to a decreased level of enemy resistance.¹⁹ The highest levels of divisional non-battle casualties were in the infantry regiments. If infantry units were living in outdoor dug-outs the soldiers were very susceptible to disease and physical injuries. The cold, wet conditions of the flooded landscape provided the worst environment possible for keeping personnel healthy.

The following data reveals the constant drain of non-battle casualties on infantry regimental strengths. Taking three infantry regiments as random examples, the following non-battle and battle casualties occurred over the April-May 1945 period. The Princess Patricia's Canadian Light Infantry suffered fifty non-battle casualties against fifty-five battle.²⁰ The Royal 22^e Regiment suffered thirty-one non-battle casualties versus sixty-seven battle.²¹ The 48th Highlanders of Canada suffered sixty-two non-battle casualties in comparison to sixty-two battle.²² Chart 7.1 reflects the constant wastage of non-battle casualties within the 1st Canadian Infantry Division's 2nd Canadian Infantry Brigade that were not the result of direct enemy action. These figures were significant over the long-term.

Rear-deployed RCA units had better living conditions in comparison to the soldiers dug in on the front lines. They were also not subjected to sustained shelling in the way of counter-battery fire in April 1945. The battle and non-battle casualties of two RCA regiments taken as examples are very low: The

¹⁹ See Appendix 3 for 2nd Canadian Infantry Division summer and fall 1944 non-battle casualty statistics. They are higher than 1st Canadian Infantry Division spring 1945 statistics.

²⁰ LAC, RG 24 Volume 13,664-13, 665 First Canadian Army A & Q War Diaries April-May, 1945. T-7095-7096 for battle and non-battle.

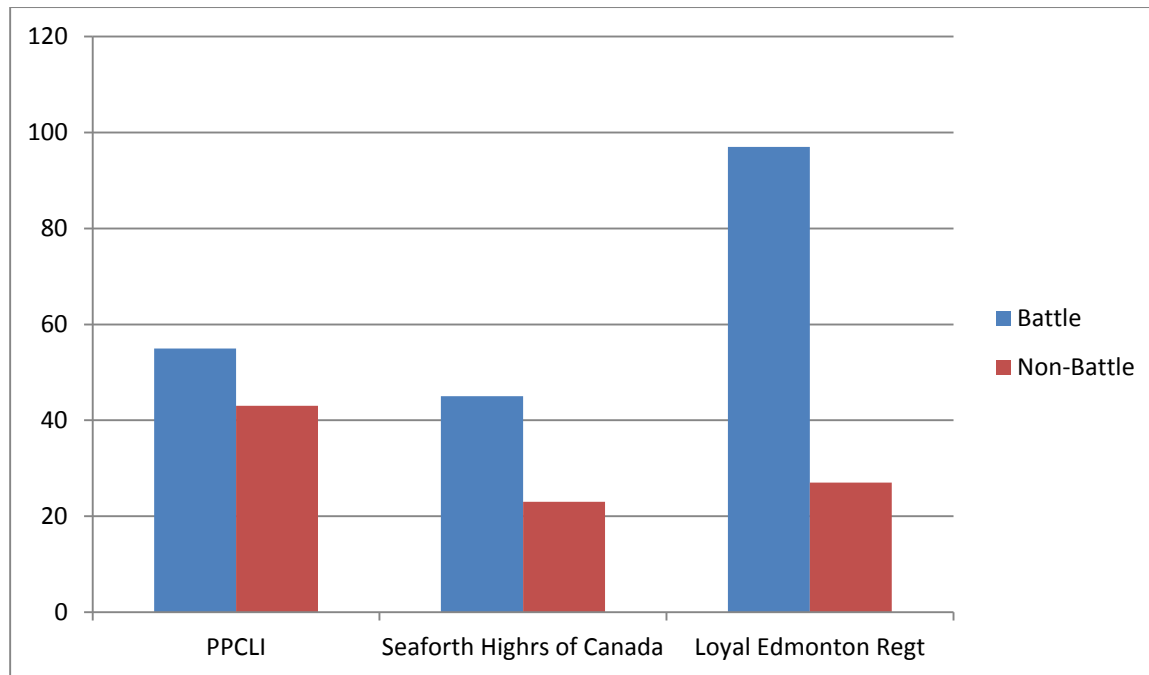
²¹ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096 for battle and non-battle.

²² LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096 for battle and non-battle.

3rd Field Regiment, RCA suffered twenty-eight non-battle and zero battle casualties during that month.²³

The 2nd Light Anti-Aircraft Regiment, RCA suffered zero non-battle casualties compared to four battle.²⁴

Chart 7.1: Battle and non-battle casualties in the 2nd Canadian Infantry Brigade, April 1945²⁵



Non-battle casualty rates could have potentially been higher if the 1st Canadian Infantry Division was an inexperienced formation. It is likely its Italian deployment over 1943-1944 positively affected its non-battle casualty rates, as the experienced and rested personnel knew how to operate in the field. These casualties are a largely unknown or unrecorded cost of war, and were a constant drain on the strength of Canadian regiments in the field. Every month a percentage of personnel would become casualties via battle exhaustion, accidents or illness. These percentages would depend on the combat arms trade of the unit, its proximity to the front-lines, its activities and the intensity of enemy action.

Reinforcements were not a concern for the division in spring 1945. All Canadian formations in March-April 1945 were recipients of newly-available National Resources Mobilization Act (NRMA)

²³ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG24 Volume 14,437. 3rd Field Regiment, RCA War Diary April 1945. T-15956.

²⁴ LAC, RG 24 Volume 13,708-13, 709. 1st Canadian Corps A & Q War Diaries April-May, 1945. T-1862-1863. LAC, RG24 Volume 14,589. 2nd Light Anti-Aircraft Regiment, RCA War Diary April 1945. T-1639.

²⁵ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095.

reinforcement personnel. The fall 1944 political reinforcement crisis in Canada had resulted in large numbers of NRMA personnel being sent overseas to fill the reinforcement pools. These 12,908 new conscripts ensured there was no shortage of personnel in the last stage of the war.²⁶ Due to this bountiful personnel state, regiments were allowed to send soldiers on compassionate leave to Canada and regular leave on the continent and U.K.²⁷ Three infantry regiments within the division taken as examples received the following reinforcements over the April-May 1945 period: The Seaforth Highlanders of Canada received 155 reinforcements against seventy-eight total battle and non-battle casualties.²⁸ Le Royal 22e Regiment received 187 new personnel over the same period against ninety-eight battle and non-battle losses..²⁹ The Royal Canadian Regiment received 118 reinforcements against 127 losses in this time-frame.³⁰ The RCA regiments also received regular reinforcements, but were not the high priority that the infantry regiments were due to their low losses. Replacements for the 1st Anti-Tank Regiment, RCA consisted of forty new personnel against five losses.³¹ The 2nd Field Regiment, RCA took on seventeen reinforcements in April and May 1945 against a loss of five casualties.³²

On the last day of hostilities, the personnel levels within the division's units were satisfactory. Losses had occurred during the period of combat operations 11-19 April 1945, but sufficient reinforcements had been received to fill the gaps. A larger effort had been put into reinforcing the infantry at the expense of other regiments. This was due to the importance of keeping these units up to strength. While not at 100 percent of their war establishment strengths, the non-infantry regiments were at adequate levels. Their strengths had not been drastically affected by the combat operations of April 1945.

²⁶ Charles Stacey, *The Victory Campaign*, 633.

²⁷ LAC, RG 24 Volume 14,206. 4th Canadian Reconnaissance Regiment War Diary April 1945. T-12649. On 1 April 1945 the Officer Commanding of the headquarters squadron and fourteen other ranks left for rotational leave in Canada.

²⁸ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096.

²⁹ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096.

³⁰ LAC, RG 24, Volume 13,664-13,655. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096.

³¹ RG 24 Volume 13,708, 13,709. 1st Canadian Corps A & Q War Diaries April-May, 1945. T-1862-1863. LAC, RG24 Volume 14,556. 1st Anti-Tank Regiment, RCA War Diary April-May 1945. T-16449.

³² RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG 24 Volume 14419. 2nd Field Regiment, RCA War Diary April-May 1945. T-15936

Evaluating three infantry regimental returns for 5 May 1945, it appears that each had been reinforced effectively during April 1945. The Royal Canadian Regiment's strength stood at thirty-five officers and 781 other ranks, 4 percent under strength.³³ The West Nova Scotia Regiment's contained thirty-nine officers and 818 other ranks, 1 percent over strength.³⁴ The Saskatoon Light Infantry's (Machine Gun) personnel levels stood at thirty-seven officers and 666 other ranks, only 4 percent under strength.³⁵

Reviewing the non-infantry regiments, the 4th Canadian Reconnaissance Regiment's strength was thirty-six officers and 758 other ranks, 3 percent under strength.³⁶ The 1st Field Regiment, RCHA, taken as an example of the three field artillery regiments, posted a strength of thirty-seven officers and 596 other ranks. This was 6 percent under its authorized strength.³⁷ The weakest regiment in the division was the 1st Anti-Tank Regiment, RCA. With a strength of thirty-five officers and 549 other ranks, it was 10 percent under strength³⁸. During combat operations in April it had only a minimal role, and parts of some batteries were non-operational.

In reviewing the heavy weapons and combat A vehicle returns for the end of April 1945, the division's inventories of heavy weapons are adequate, but those of combat A vehicles appear low.³⁹ Against an establishment of 627 combat A vehicles, only 427 are listed on strength, 68 percent of the authorized amount. This was largely due to two factors. A total of 120 T-16 tracked gun tractors were listed on the war establishment tables, but not issued, the division making do with wheeled gun tractors. Secondly, the 4th Canadian Reconnaissance Regiment's complete inventory of A vehicles is missing from the returns. This regiment was detached from the division to carry out training during April 1945.

³³ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

³⁴ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

³⁵ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

³⁶ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

³⁷ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

³⁸ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

³⁹ LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army. File 215C1.083 (D6). 30 April 1945 report.. LAC, RG 24 Volume 10, 553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 30 April, 1945 report. The 4th Canadian Reconnaissance Regiment's totals are noted as missing from the division's total vehicle return.

Divisional combat A vehicle strengths are much higher as of 30 April 1945 if these two factors are considered..⁴⁰

The majority of the units involved in combat operations had adequate inventories of equipment at the end of hostilities, but some shortages did exist. All eleven authorized Valentine Charger command tanks had still not been issued to the 1st Anti-Tank Regiment, RCA by 5 May 1945. Present but non-functioning within the same regiment were eighteen Valentine Archer 17-Pounder tank destroyers, whose mechanical issues were never resolved during hostilities. In contrast to these problems, the division did contain some valuable unauthorized tracked A vehicles it should not have had. Twenty-four Wasp II flame-thrower carriers and twelve Windsor tracked carriers were on strength within the division, but not authorized. The division continued to be well-supplied with non-vehicle heavy weapons at the end of hostilities. Inventories at this time were very similar to the 31 March 1945 returns, with 97 percent of authorized heavy weapons being present.

In conclusion, if combat had continued past 5 May 1945, the 1st Canadian Infantry Division would have been capable of any future offensive or defensive operation. Infantry and other reinforcements were plentiful, and the number of heavy weapons and A vehicles were sufficient for the units that were operational. There were some equipment challenges, but these were limited to the area of heavy AFVs within the 1st Anti-Tank Regiment, RCA.

Combat operations by the division in April 1945 were entirely successful. Any missing assets, such as the 4th Canadian Reconnaissance Regiment, had their combat power replaced by attached combat arms units from other formations.⁴¹ The enemy opposition the division faced was on average was weak. While the capability to do so was present, there was no urgent need to address minor shortages present in

⁴⁰ LAC, RG 24 Volume 10, 553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 30 April 1945 report.. The 4th Canadian Reconnaissance Regiment war establishment tables show twenty-eight armoured cars, sixty-three Universal Carriers, six 3-Inch mortar carriers and twelve T-16 anti-tank gun tracked gun tractors as A (combat) vehicles. See Appendix 1 for January 1945 Infantry Division Reconnaissance Regiment tables for equipment and vehicles.

⁴¹ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. LAC, RG 24 Volume 14,205. 4th Canadian Reconnaissance Regiment War Diary April-May 1945. T-12649. Battle and non-battle casualties for the unit in April-May 1945 totalled twenty-three losses.

the division in late April 1945, as the end of the war was imminent. The division finished the war adequately equipped in a majority of equipment categories, and was near its authorized strength in personnel, similar to all Canadian units at this point in the campaign.

Chapter 8: The 2nd Canadian Infantry Division: Major actions, casualties, reinforcements and strength returns for its combat arms regiments in North West Europe, July 1944-May 1945

Formed in May and June of 1940, the 2nd Canadian Infantry Division was organized on regional lines from militia units located in Ontario, Quebec and the Prairie provinces. Prior to 1942, the division had seen limited action, conducting garrison duties in Iceland before being deployed to the U.K. Two of its three brigades had taken part in the disastrous July 1942 raid on Dieppe, France. The regiments involved suffered catastrophic losses, and had to be completely rebuilt.¹ The division trained continuously from 1943 to spring 1944 in preparation for its upcoming role in the Allied invasion of the continent. It did not land on D-Day as part of the initial assault force, arriving during the first week of July 1944. With other Canadian formations, it would form part the 2nd Canadian Corps.

Organizational war establishment tables for the division's combat arms regiments are present in Appendix 1. Monthly personnel strength returns, casualties and reinforcements for all units are listed in Appendix 3. Combat A vehicle and major weapons systems monthly strength returns for all divisional regiments during 1944-1945 are also provided in Appendix 3.

The strength of the division once it was deployed to the front lines as of 16 July 1944, stood at 933 officers and 17,425 other ranks.² It's commanding officer was Major-General Charles Foulkes. The main combat fighting components of the division were the 4th, 5th and 6th Canadian Infantry Brigades. The 4th Canadian Infantry Brigade consisted of The Royal Regiment of Canada, The Royal Hamilton Light Infantry and The Essex Scottish Regiment. The 5th Canadian Infantry Brigade's main components were The Royal Highland Regiment of Canada (The Black Watch), Le Regiment de Maisonneuve and The Calgary Highlanders. The 6th Canadian Infantry Brigade was made up of Les Fusiliers Mont-Royal, The

¹ Terry Copp, *The Brigade: the 5th Canadian Infantry Brigade 1939-1945* (Willowdale: Fortress Publications. 1992), 32. Losses to the division during the Dieppe Raid had totalled 214 officers and 3,153 other ranks. Units in the 4th and 6th Canadian Infantry Brigades had to be completely re-built.

² LAC, RG 24 Volume 13,719. 2nd Canadian Corps A & Q War Diary July 1944. T-1870. Casualties had been taken at this point, but the division still had yet to embark on its first offensive operation.

Queen's Own Cameron Highlanders of Canada and The South Saskatchewan Regiment. Divisional units consisted of the 8th Canadian Reconnaissance Regiment (14th Canadian Hussars) and The Toronto Scottish (Machine Gun) Regiment. Artillery units consisted of the 4th, 5th and 6th Field Regiments, Royal Canadian Artillery (RCA), the 2nd Anti-Tank Regiment, RCA and the 3rd Light Anti-Aircraft Regiment, RCA.³

Despite some minor shortages, all combat arms regiments within the division were at or very close to their authorized personnel strengths in early July 1944. The strengths of two of its infantry regiments taken as examples were as follows: Les Fusiliers Mont-Royal on 1 July 1944 contained thirty-six officers and 809 other ranks, 99 percent of its authorized strength.⁴ The Calgary Highlanders personnel strength on 9 July 1944 was also very high, with thirty-seven officers and 806 other ranks, also 99 percent of its unit war establishment.⁵ All divisional RCA artillery regiments were also strong. The 4th Field Regiment, RCA as of 15 July 1944 contained thirty-eight officers and 633 other ranks, 99 percent of its authorized strength.⁶ The 3rd Light Anti-Aircraft Regiment, RCA consisted of forty-three officers and 802 other ranks on 1 July 1944, 98 percent of its war establishment.⁷

The division was not the equivalent to the 3rd Canadian Infantry Division with regard to vehicles and weaponry. Most noticeably, in July 1944 it did not contain any self-propelled artillery pieces or tank destroyers. The 21st Army Group A & B Consolidated Vehicle Position Report does not contain a return for 30 June 1944, but one exists for 31 May 1944.⁸ At this point the division was entering its final work-up phase before deploying to the continent to join the invasion forces. As of 31 May 1944 the division contained 643 combat A vehicles versus a war establishment of 593, making it 8 percent over strength.

³ Charles Stacey, *The Victory Campaign*, 657. Appendix F. Canadian Army order of battle in NWE 1944-1945.

⁴ LAC, RG 24 Volume 15,065. Les Fusiliers Mont-Royal War Diary July 1944. 1 July 1944 return.

⁵ LAC, RG 24 Volume 15,020. The Calgary Highlanders War Diary July 1944. 9 July 1944 return.

⁶ LAC, RG 24 Volume 14,441. 4th Field Regiment, RCA War Diary July 1944. T-15963. 15 July 1944 return.

⁷ LAC, RG 24 Volume 14,591. 3rd Light Anti-Aircraft Regiment, RCA War Diary July 1944. T-16740-16741. July 1944 would see the regimental war establishment of a light-anti-aircraft regiment drastically reduced.

⁸ LAC, RG 24 Volume 10,553. 21st Army Group Consolidated Vehicle Position Report. File 215A21.085 (D1). Return for 31 May 1944. It is important to note that the war establishment for a division was constantly changing as its regiment's establishments constantly changing.

Some A vehicle shortages did exist at the beginning of June 1944. Only thirty-six of the sixty authorized Medium Machine Gun (MMG) tracked carriers had been issued the machine gun battalion. There were only seventeen Humber armoured cars present against the authorized number of twenty-nine. This shortcoming was offset by the unauthorized presence of the nine Fox armoured cars, but the division was still three short. There were thirty-two tracked 4.2-Inch mortar carriers on the war establishment tables, but none had been issued. Against an authorized number of fifty-four Wasp II tracked flame thrower carriers, none had been issued. This last A vehicle was a very valuable infantry support weapon. Their later employment with other Canadian divisions would prove to be very effective, especially against entrenched infantry. As noted previously, a significant problem within the division was a lack of self-propelled (SP) anti-tank capability. In contrast to the 3rd Canadian Infantry Division, the division was not authorized any SP tank-destroyers.⁹ Taking into consideration its future combat encounters with enemy armour in July 1944, these armoured fighting vehicles (AFVs) presence was very important. In the spring of 1944 it was vital that all divisional units have their full complement of combat A vehicles to conduct exercises. This shortage may have affected the division's training capability pre-Normandy. 21st Army Group monthly non-vehicle equipment state returns for the division do not exist for 31 May or 30 June 1944.¹⁰ The first return with the division's equipment present is for 31 July 1944. This date was after a significant period of combat had occurred. However, in evaluating the war diaries from the division's regiments there is no mention of severe shortages in any major weapons systems.

After its component brigades with all their vehicles and weapons were concentrated on the continent by mid July, the division participated in Operation "Atlantic" between 19-21 July 1944. In its first combat operation since the Dieppe raid of 1942, the division's infantry regiments were badly mauled,

⁹ LAC, RG 24 Volume 10,553. 21st Army Group Consolidated Vehicle Position Report. File 215A21.085 (D1). Return for 31 May 1944.

¹⁰ LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army, 21st A.G. File 215C1.083 (D6). Monthly Equipment States returns. These series of returns state the inventory of all major non-vehicle weapons systems within each Canadian formation.

suffering large losses from German armoured counterattacks.¹¹ Poor execution of combined arms tactics left the battalions highly vulnerable to direct German AFV fire. The dismounted infantry were not adequately supported by other arms during assaults, particularly by armour, and this led to catastrophic losses. Operation “Atlantic” was followed by the division’s participation in 25 July 1944’s Operation “Spring”. During this operation the division again took heavy casualties for very limited gains.¹²

Despite its weakened state, on 8 August 1944 the division successfully supported the initial breakthrough of the armoured advance of Operation “Totalize”. Later in the month the division conducted a successful assault crossing of the Laize River at Bretteville-sur-Laize. It then re-crossed the same river at Clair-Tizon prior to 14 August 1944’s Operation “Tractable”.¹³ Its next large offensive operation was the clearance of the Forêt de la Londe forest on the Seine River by the 4th and 6th Canadian Infantry Brigades. This operation lasted from 27 to 29 August 1944.¹⁴ For the six battalions involved, a total of 577 casualties were recorded in the three days fighting.¹⁵

Though there were significant personnel losses in August, the bulk of the casualties inflicted on the division during the Normandy Campaign occurred in July 1944. As a result of Operations “Atlantic” and “Spring”, by 31 July 1944 the overall strength of the division had fallen by over 1,261 men. To compound the damage, this figure was recorded after all of the month of July’s personnel reinforcements had been accepted.¹⁶ The 5th Canadian Infantry Brigade’s The Royal Highland Regiment of Canada (The Black Watch) suffered 307 battle casualties on 25 July 1944, alone.¹⁷ The extent of the month’s damage

¹¹ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Battle casualties for The Essex Scottish Regiment totalled twenty-two officers and 326 other ranks up to 2 August 1944.

¹² Charles Stacey, *The Victory Campaign*, 188.

¹³ Charles Stacey, *The Victory Campaign*, 234.

¹⁴ Charles Stacey, *The Victory Campaign*, 290.

¹⁵ Charles Stacey, *The Victory Campaign*, 292.

¹⁶ LAC, RG 24 Volume 1870. 2nd Canadian Corps A & Q War Diary July 1944. 31 July 1944 return minus the 16 July 1944 return.

¹⁷ Charles Stacey, *The Victory Campaign*, 194. The Royal Highland Regiment of Canada (The Black Watch) casualties totalled 307 for 25 July 1944: 123 killed, 101 wounded and eighty-three missing. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. The Royal Highland Regiment of Canada totals 29 June-2 August 1944 show 291 battle casualties. This is obviously an error.

to the regiment is reflected in a 27 July 1944 strength return. The regiment on this date contained thirty-two officers and 415 other ranks, 53 percent of its war establishment.¹⁸

Due to the division's back to back participation in two major operations in late July 1944, its infantry brigades had lost a large amount of personnel in a short amount of time. These deficits would not be significantly reduced until the just prior to the Battle of the Scheldt in mid September 1944. The infantry regiments were still combat ready, but they had reduced capabilities. Every time they received reinforcements they were immediately engaged in new combat operations, losing even more personnel. In this manner the strength of the regiments was slowly reduced during late July and August 1944.

In response to these heavy losses, replacements were sent to the division. But not enough were dispatched and they did not arrive quickly enough to mitigate ongoing losses. The main challenge was that personnel losses were occurring in much higher volumes and much more quickly than the reinforcement system could deal with. Immediately following Operation "Atlantic", there were not enough replacement infantry officers and general duty infantrymen allocated for the division to instantly rectify all shortcomings. A 22 July 1944 letter to the 2nd Canadian Corps General Officer Commanding (GOC), Lieutenant-General G. Simonds, from the corps Deputy Adjutant & Quartermaster General (DA & QMG) spells out the main obstacles to rapidly reinforcing the division:¹⁹

"1. GOC 2nd Infantry Division phoned me at approximately 2100 hours that he anticipated the following shortages as a result of operations of the last 24 hours.

Replacements required: Officers 8, Other Ranks 750-1,000.

¹⁸ LAC, RG 24 Volume 15,009. The Royal Highland Regiment of Canada (The Black Watch) War Diary July 1944. 27 July 1944 field return.

¹⁹ LAC, RG 24 Volume 13,719. 2nd Canadian Corps A & Q War Diary July 1944. T-1870. Letter to GOC 2nd Canadian Corps regarding 2nd Canadian Infantry Division reinforcement shortages.

2. The above mention reinforcements are applicable very largely to the infantry of the division, and in particular, to the SSR, the Essex Scottish and the Fusiliers Mont-Royal, but to the latter battalion only to a small degree.
3. The reinforcement situation in the Rft Battalions, according to the latest information given to the DAAG (Deputy Army Adjutant General) on the 21 July, 1944, is, in brief, that there are approximately 26 officers and 150 other ranks available , the ORs being, of course, general duty.
4. In the division forward battalion there are 6 officers and 120 other ranks.²⁰

It also should be noted that the division had just received an allotment of reinforcements on 20 July 1944, depleting the float of available reinforcements set aside for it. General Duty infantry were available, but in mid-July 1944 a large number of them were located in reinforcement organization bases in the U.K.. The personnel shortages could be remedied, but not instantaneously. In the meantime, ongoing losses due to combat conditions continued. In these circumstances the division could not meet the challenge of maintaining its war establishment personnel strength in the months of July and August 1944.

The same letter later states:²¹

“8. It is understood that 550 general duty personnel were to have sailed from the U.K. on 21 July 1944, and that 2,000 are scheduled to sail on the Tuesday next This should make 550 available by Sunday and the balance by the Thursday next – in both cases, provided the sailings and landings are carried out as scheduled.”

From 27 July to 16 August 1944 the Canadian Army in NWE received 3,589 reinforcements.²² This appears to be an impressive number, but it was insufficient to cope with the rapid demands of

²⁰ Charles Stacey, *The Victory Campaign*, 630-631. Each division had a forward battalion which received replacements from the No.2 CBRG advance reinforcement battalion.

²¹ LAC, RG 24 Volume 13,719. 2nd Canadian Corps A & Q War Diary July 1944. T-1870. Letter to GOC 2nd Canadian Corps regarding 2nd Canadian Infantry Division reinforcement shortages.

infantry regiments for new personnel. Not all of these reinforcements were infantry. What was infantry was divided between the needs of two infantry divisions, an armoured division, multiple smaller units and headquarters. Non-battle casualties resulting from battle exhaustion and normal occurrences of accidents, illness and disease increased the flow of evacuees. The 4th Canadian Infantry Brigade's The Royal Regiment of Canada suffered ninety-seven non-battle casualties in August 1944. This was in comparison to 250 battle casualties suffered during the month.²³ A total of 259 non-battle casualties occurred within the three regiments of the brigade for the month of August.²⁴

Combat for non-infantry units within the 2nd Canadian Infantry Division had also been difficult, but they had not suffered similar casualties. While inflicting large losses to enemy armour, the 2nd Anti-Tank Regiment, RCA had suffered only 187 battle casualties during July and August 1944.²⁵ The field artillery units also suffered very low casualty rates due to their rear positions on the battlefield. Battle casualties for the 4th Field Regiment, RCA, totalled twenty-two for August 1944.²⁶

The 2nd Canadian Infantry Division's weapons and vehicles losses from 20 to 23 July 1944 had been considerable. A large effort was made replace these losses, listed in a report of 25 July 1944.²⁷ These items included eleven T-16 tracked gun tractors, twenty-three tracked Universal Carriers, three 3-Inch tracked mortar carriers, twenty-one 6-Pounder anti-tank guns, four 17-Pounder anti-tank guns, three 25-Pounder howitzers, forty-seven 2-Inch mortars and 153 Bren .303 light machine guns.

²² LAC, RG 24 Volume 18,616. Canadian reinforcements dispatched to 21st Army Group 8 June 1944-9 February 1945. Total for 16 August 1944 minus the total as of 27 July 1944.

²³ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Total non-battle and battle for the Royal Regiment of Canada 3-30 August 1944.

²⁴ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties by week. Totals for 4th Canadian Infantry Brigade units for weeks 3-30 August 1944.

²⁵ LAC, RG 24 Volume 14,559. 2nd Anti-Tank Regiment, RCA War Diary July 1944.

²⁶ LAC, RG 24 Volume 14,441. 4th Field Regiment, RCA, War Diary August 1944.

²⁷ LAC, RG 24 Volume 13,718. 2nd Canadian Corps A & Q War Diary July 1944. T-1870. 25 July 1944 report of 2nd and 3rd Canadian Division equipment losses 20-23 July, 1944 during Operation "Atlantic".

The division was successfully re-equipped by the end of the month, as evidenced by its 31 July 1944 returns for both major weapon systems and combat A vehicles.²⁸ At this point it contained 627 combat A vehicles compared to a war establishment level of 616, 2 percent over its authorized strength. There were no serious shortages in non-vehicle weapons at the end of the month. The division at this point possessed 90 percent of its war establishment inventories for these items. This percentage was largely the result of a temporary shortage in the area of 2-Inch infantry mortars. There were only 226 on hand versus an authorized strength of 283.

As the division advanced across France in August and early September 1944, German channel garrisons formed the majority of its enemy opposition. During this period the division continued to carry out operations despite a shortage of infantrymen within its regiments. The worst period for the division lasted from late August to mid-September 1944. All of its infantry regiments were under strength due to their summer losses. The nadir was reached on 3 September 1944, when the division's infantry regiments were short 2,645 other ranks infantry soldiers.²⁹ The division's strength was weaker than that of the 3rd Canadian Infantry Division, despite this division being in combat for an additional fifty days in Normandy.

Apart from the unopposed liberation of Dieppe, France on 1 September 1944 and some minor actions near Dunkirk, the division saw little action during early September. The heavily fortified port of Dunkirk was originally designated to be captured by the division, and some of the surrounding towns were liberated by 9 September 1944. After some deliberation by 21st Army Group Headquarters, this operation was called off and the city was to remain surrounded by other forces. This action freed up the division for future operations north of Antwerp. The majority of the division arrived in its assembly area near the city by 16 September 1944. It had taken a large amount of losses in the period 15 July-30

²⁸ LAC, RG 24 Volume 10, 553. 21st Army Group Consolidated Vehicle Position Report. File 215A21.085 (D1). Return for 31 August 1944. LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army, 21st A.G. File 215C1.083 (D6). Monthly Equipment State return for 31 August 1944.

²⁹ LAC, RG 24 Volume 10,699. Report on Deficiencies and Holdings of Canadian Infantry, Other Ranks: NWE, 27 August 1944-28 April 1945. Entry 3 September 1944.

August 1944 and needed a period of rest in order to receive and train new replacements. This unexpected transit and rest period provided an opportunity to carry out refitting.

During the brief halt in liberated Dieppe, reinforcements equivalent to eight new infantry companies reached the infantry regiments.³⁰ Further transfers continued all month.³¹ Many of these men had been re-mustered from other trades. This compromise solution to the shortage of readily available infantry utilized personnel already in the reinforcement stream. These personnel often did not have a high level of infantry training. The transformation of a RCA anti-aircraft gunner to a infantryman could not be accomplished instantaneously. Luckily for the division, combat operations north of Antwerp did not begin until early October 1944. Thus by the time the Battle of the Scheldt began, reinforcements accepted early in the month had had some time to train and acclimatize themselves.

In Charts 8.1 and 8.2, the 2nd Canadian Infantry Division's strength is compared against a more powerful German formation in the months June-September 1944. The chart illustrates that despite losses from intensive combat, the 2nd Canadian Infantry Division actually gains strength. The amount of reinforcements had been insufficient at times, but their flow to the division had been continuous. Though there were still some shortages in mid-September, the re- building effort launched at Dieppe had helped the division exceed its July 1944 strength. This strength stood at 988 officers and 17,477 other ranks on 30 September 1944, making it very combat capable on the eve of the Battle of the Scheldt.³² As displayed in Chart 8.2, the larger German formation's combat elements dwindled away to nearly nothing by September 1944, leaving only rear-echelon troops.

With its new strength the division plunged into combat operations in eastern Belgium and the southern Netherlands in fall 1944. Initial operations had begun in late September to clear the area west of Antwerp in preparation for a drive north on the left flank of the 4th Canadian Armoured Division. The

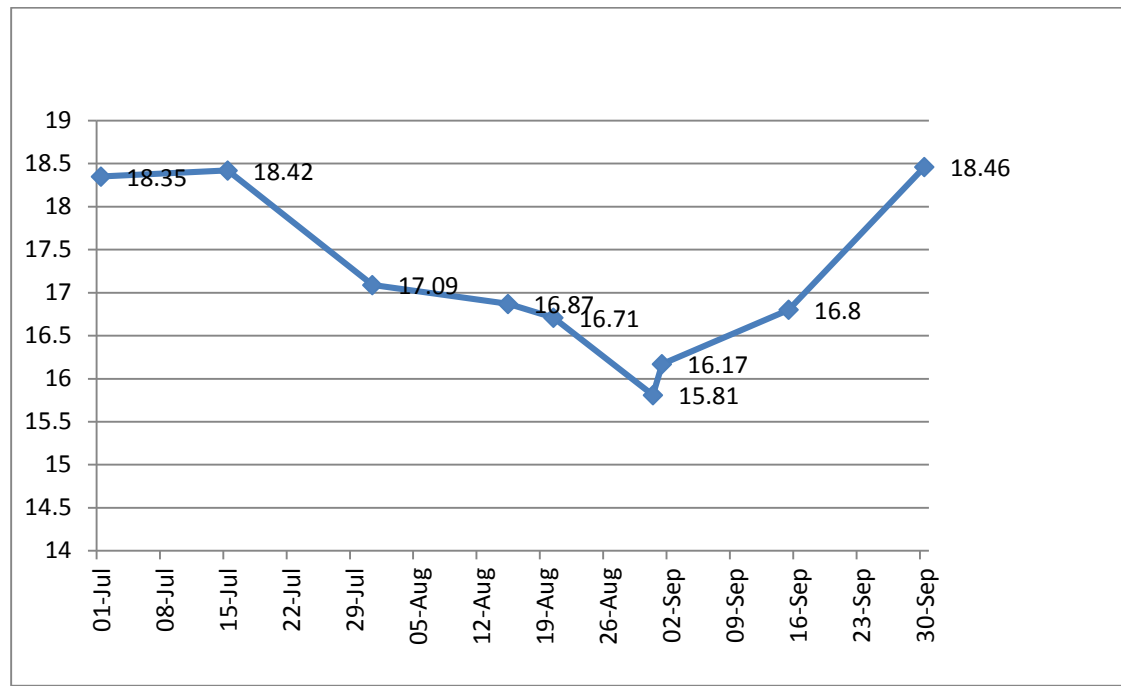
³⁰ Terry Copp, *Cinderella Army*, 55. During the division's halt at Dieppe, France, it received more than 1,000 reinforcements. These were not sufficient and merely a first instalment. See Graph 8.1.

³¹ LAC, RG 24 Volume 13,718. 2nd Canadian Corps A & Q War Diary September 1944. T-1871. Consolidated Strength and Casualty daily returns for September 1944.

³² LAC, RG 24 Volume 13,719. 2nd Canadian Corps A & Q War Diaries September 1944. T-1871.

division crossed the Antwerp-Turnhout Canal on 22 September 1944, and regrouped for an advance north. The eventual aim was the clearing the northern bank of the Scheldt Estuary to free up the

Chart 8.1: 2nd Canadian Infantry Division strengths (thousands) July-September 1944³³



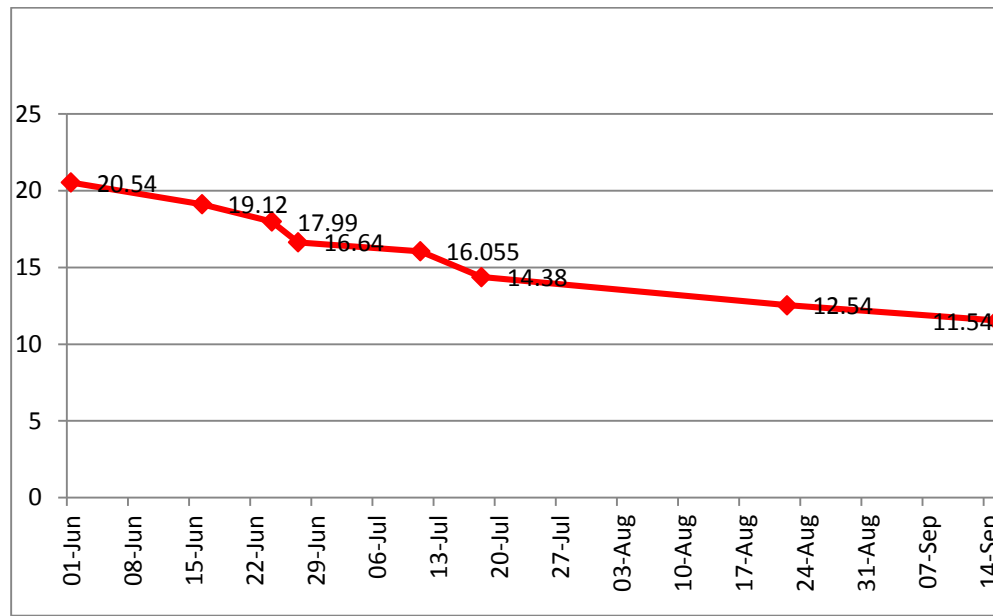
important port of Antwerp. The Battle of the Scheldt Estuary began in earnest for the division on 2 October 1944 when it attacked northward towards the South Beveland isthmus. In subsequent combat the division crossed the isthmus, fought its way west and linked up with elements of the 52nd British Infantry Division. Soon all the progress that had been made in rebuilding the division was partly erased as infantry losses mounted in the difficult Scheldt Estuary fighting.³⁴ Forests, flooded fields, canals, rivers and built up areas proved to be a challenge for attacking Canadian infantry regiments. These difficult

³³ LAC, RG 24 Volume 13,719. 2nd Canadian Corps A & Q War Diaries July-September 1944. T-1870-1871. War Diary consolidated strength reports July-September 1944.

³⁴ Terry Copp, *Cinderella Army*, 140-141. The Royal Highland Regiment of Canada (The Black Watch) suffered 145 casualties on 13 October 1944.

infantry operations in largely flooded terrain ended in early November 1944 with the clearance of the north bank of the Scheldt Estuary.³⁵

Chart 8.2: German 12th SS Panzer Division strengths (thousands) June-September 1944³⁶



Casualties were heavy during the Scheldt Estuary fighting, and infantry strengths in late October, 1944 again became an issue. The fall 1944 casualty totals for three infantry regiments within the division illustrate the extent of the damage: The Essex Scottish Regiment suffered 396 battle and 134 non-battle casualties during the September-November 1944 phase.³⁷ Le Regiment de Maisonneuve took 130 battle and 117 non-battle casualties during the same period.³⁸ Les Fusiliers Mont-Royal sustained 329 battle and eighty-three non-battle casualties.³⁹ Lighter casualties were suffered by non-infantry regiments in the

³⁵ Charles Stacey, *The Victory Campaign*, 424.

³⁶ Niklas Zetterling, *Normandy 1944*, 355. 12. SS Panzer Division *Hitlerjugend*. Hubert Meyer, *12. SS Panzer Division Hitlerjugend*. (Winnipeg: J.J. Fedorowicz Publishing. 1994.), 227.

³⁷ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. The Essex Scottish Regiment returns 31 August-1 November, 1944.

³⁸ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Le Regiment de Maisonneuve 31 August-1 November. 1944.

³⁹ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Les Fusiliers Mont-Royal totals 31 August to 1 November 1944.

division. The 8th Canadian Reconnaissance Regiment suffered only 105 battle and eighty-one non-battle casualties during these three months.⁴⁰

As in Normandy, there was never a shortage of heavy weapons or combat A vehicles in the division, despite the high infantry casualties.⁴¹ The difficult terrain in the Scheldt limited mechanized movement to a large degree and placed the emphasis on dismounted infantry tactics. As of 30 November 1944, the division contained 103 percent of its war establishment strength in combat A vehicles. At the end of the month it was also in a satisfactory state for major weapons systems, possessing 99 percent of the number it was supposed to contain.

Despite high infantry casualties in the time period September to November 1944, the division rapidly re-built itself once again after offensive operations ended. As of 30 November 1944, it had few weaknesses apart from a possible lack of training for new replacement soldiers. The infantry divisions of the German 15th Army opposing the division in the Netherlands were very weak in comparison. During the fighting in the fall of 1944, no German panzer divisions had been deployed against Canadian advances, only weak infantry formations.⁴² This made a tremendous difference with regard to the number and kind of weapons systems that could be brought to bear by the enemy. If there had been any significant weaknesses within the division during the fall of 1944, the Germans would have been hard pressed to exploit them in manner similar to July 1944.

Late November 1944 saw the division holding part of the static northern flank of the Nijmegen salient, a bulge in the line created by British-American Operation "Market Garden" in September 1944. Due to the First Canadian Army temporarily ceasing offensive operations, the division remained in these positions from November 1944 to January 1945. During this phase the infantry regiments were fully

⁴⁰LAC, RG 24 Volume 13,13,659-13,660. First Canadian Army A & Q War Diaries September-October 1944. LAC, RG 24 Volume 14,225. War Diary 8th Canadian Reconnaissance Regiment. T-12689. September 1944.

⁴¹LAC, RG 24 Volume 10, 553. 21st Army Group Consolidated Vehicle Position Report. File 215A21.085 (D1). Return for 31 May 1944. LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army, 21st A.G. File 215C1.083 (D6) Monthly Equipment States return 30 November 1944.

⁴²Die Deutsche Wehrmacht website, "*15. Armee (A.O.K. 15)*" article. Order of battle as of 09.28.44. Retrieved December 2015 from <http://diedeutschewehrmacht.de/15percent20armee.htm>. The German 15th Army consisted of ten infantry divisions on this date, supplemented with self-propelled assault gun and parachute infantry units later.

rebuilt, the reinforcement shortage having ended by this point. An average Canadian infantry regiment within the 4th Canadian Infantry Brigade, The Essex Scottish Regiment, contained thirty-eight officers and 818 other ranks.⁴³ These figures placed it 1 percent over its authorized strength. This regiment, as well as many others, was completely re-built in the period 10-30 November 1944 and were close to their establishment strengths by month's end. The reinforcement system during this time had been allowed to function without the steady outflow of casualties working against it. During the period of 10 November 1944 to 31 January 1945, the infantry regiments had accepted reinforcements, rested and conducted important training and patrolling.⁴⁴

Combat during the winter phase consisted of patrolling activity and indirect fire missions carried out by each side as they faced each other along the Waal and Maas rivers. Weekly casualties were very low. Prior to its February 1945 deployment to Germany and the battles in the Rhineland, the division had no obvious weaknesses. Its strength as of 31 January 1945 stood at 970 officers and 17,092 other ranks, for a total of 18,062 men.⁴⁵ The January 1945 war establishment for a Canadian infantry division was 915 officers and 17,176 other ranks.⁴⁶ These figures placed the division at 99 percent of its authorized strength. The cutting edge of the division, its infantry regiments, were very strong. The South Saskatchewan Regiment had a strength of thirty-four officers and 814 other ranks on 31 January 1945.⁴⁷ The Royal Highland Regiment of Canada (The Black Watch) contained thirty-eight officers and 817 other ranks on the same date.⁴⁸ Divisional artillery units were also up to strength. The 6th Field Regiment, RCA, contained a strength of thirty-eight officers and 629 other ranks on 27 January 1944 against an authorized strength of thirty-eight officers and 638 other ranks.⁴⁹ The 2nd Anti-Tank Regiment, RCA on

⁴³ LAC, RG 24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093.

⁴⁴ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary November 1944-January 1945. T-16144. Troops regularly saw films and took trips to Antwerp.

⁴⁵ LAC, RG 24 Volume 13,719. 2nd Canadian Corps A & Q War Diary January 1945. T-1871. 31 January 1945 field return.

⁴⁶ LAC, RG 24 Volume 13,661. First Canadian Army A & Q War Diary December 1944. T-7093. War Establishment Tables for a January 1945 Canadian Infantry Division.

⁴⁷ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diary January 1945. T-7094.

⁴⁸ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diary January 1945. T-7094.

⁴⁹ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary January 1945. 27 January 1945 field return.

the 27 January 1945 contained a strength of thirty-six officers and 646 other ranks against a war establishment of thirty-five officers and 614 other ranks.⁵⁰

The equipment and combat A vehicle state for the 2nd Canadian Infantry Division on the verge of Operation “Veritable” in February 1945 was satisfactory.⁵¹ The division contained a large inventory of heavy weapons, 1 percent over what it was authorized. Combat A vehicle inventories within the division totalled 745 as of 31 January 1945 versus the 638 it was authorized. The former total placed the division at 117 percent of its authorized A vehicle strength. The vehicle return for the end of January also records the arrival some of the most advanced weapons systems to be operated by the division . As of 31 January 1945 the 2nd Anti-Tank Regiment, RCA had received the first six of its authorized number of Valentine Archer 17-Pounder tank destroyers. With the addition of these tank destroyers, this regiment's anti-tank capability had never been stronger.

Combat resumed on 8 February 1945 with the division's participation in Operation “Veritable”. This operation was a drive to clear the western bank of the Rhine in preparation for a deeper invasion of Germany itself. The division was very active during this offensive and 8-19 February 1945 saw Vyler, Kranenberg and the area near Louisendorf, Germany fall to its infantry brigades.⁵² The period of 16-20 February 1945 saw bitter combat near Louisendorf as German armoured forces counter attacked, battering the division’s infantry regiments and causing some local reverses.⁵³ With armoured support the division eventually turned the tables on these attacks, and the German forces were forced to withdraw due to heavy losses. By 21 February 1945 the operation was complete. During this mid-February fighting the 2nd Canadian Infantry Division had suffered high personnel casualties on several occasions.

⁵⁰ LAC, RG 24 Volume 14,559. 2nd Anti-Tank Regiment, RCA War Diary January 1945. 27 January 1945 field return.

⁵¹ LAC, RG 24 Volume 10,553. 21st Army Group Consolidated Vehicle Position Report. File 215A21.085 (D1). Return for 31 January 1945. LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army, 21st A.G. File 215C1.083 (D6). Monthly Equipment States return 31 January 1945.

⁵² Charles Stacey, *The Victory Campaign*, 490.

⁵³ Charles Stacey, *The Victory Campaign*, 484.

In late February and early March, 1945 the division assaulted the Hochwald Gap in Germany as part of Operation “Blockbuster”.⁵⁴ Severe resistance was encountered in later phases of this fighting. Despite this resistance, the prime objective of Xanten, Germany fell to the division on 10 March 1945. Late March 1945 saw the division redeploy west towards the enemy-occupied Netherlands. It attacked out of bridgeheads over the Rhine River won by the 51st British Highland Division in mid March and advanced northwest. In a rapid advance it liberated the Dutch towns of Silvolde, Terborg, and Doetinchem in quick succession. These operations led to a further advance in early April that ended with the capture of Gronigen, the Netherlands, on 13 April 1945.⁵⁵ In its final operations of the war, the division was moved east into Germany, capturing Grossenkneten, crossing the Hunte River, capturing Oldenburg and finally taking up positions on the Weser River. These were the last combat actions of the 2nd Canadian Infantry Division, the cease fire taking hold on 5 May 1945.

During this last phase of fighting from 1 February to 5 May 1945, the division's infantry units again bore the weight of the division's casualties. Battle casualties for three of the division's infantry regiments relate the extent of the losses. The Essex Scottish Regiment in the period February to May 1945 suffered 619 battle casualties.⁵⁶ Le Regiment de Maisonneuve for the same time frame suffered 367 battle casualties, it enduring less fierce combat.⁵⁷ The Queen’s Own Cameron Highlanders of Canada suffered 300 losses, this unit also being more fortunate than The Essex Scottish Regiment.⁵⁸

Non-battle casualties continued unabated at roughly the same rate that they had occurred in the period July 1944-January 1945. The closer a unit was to the front lines, the more it suffered from these types of casualties. A rear-deployed regiment's personnel had better mess facilities, shelters and access to regimental aid post (RAP) medical care in a relaxed environment. During the February-May 1945 time

⁵⁴ Charles Stacey, *The Victory Campaign*, 496-497.

⁵⁵ Charles Stacey, *The Victory Campaign*, 555.

⁵⁶ LAC, RG 24 Volumes 13,663-13,665. First Canadian Army A & Q War Diary February-May 1945. T-7094-7096.

⁵⁷ LAC, RG 24 Volumes 13,663-13,665. First Canadian Army A & Q War Diary February-May 1945. T-7094-7096.

⁵⁸ LAC, RG 24 Volumes 13,663-13,665. First Canadian Army A & Q War Diary February-May 1945. T-7094-7096.

frame the 4th Field Regiment, RCA suffered fifty-five non-battle casualties according to their war diary.⁵⁹ In the same period The Royal Regiment of Canada infantry regiment suffered 283.⁶⁰

The strength of the 2nd Canadian Infantry Division at the war's conclusion was 974 officers and 16,947 other ranks, for a total strength of 17,921 men.⁶¹ All regiments in the division had very high personnel levels. The 4th Canadian Infantry Brigade's The Royal Regiment of Canada had a strength of forty-one officers and 834 other ranks, 3 percent over strength.⁶² While being very strong, The Royal Hamilton Light Infantry was 2 percent under strength with thirty-six officers and 796 other ranks on 5 May 1945.⁶³ RCA units were less strong, with the 2nd Anti-Tank Regiment, RCA, fielding thirty-four officers and 590 other ranks, it being 4 percent under strength.⁶⁴ The 6th Field Regiment, RCA was 5 percent under strength, it containing thirty-five officers and 608 other ranks.⁶⁵

These totals were the result of a sustained effort at reinforcing the division in the February-May 1945 phase of the campaign in NWE. In this period the 2nd Canadian Infantry Division was the recipient of large numbers of infantry reinforcements. Many were newly-available National Resources Mobilization Act (NRMA) conscript reinforcement personnel from Canada.⁶⁶ While the other combat arms were less of a priority, every effort was made to keep Canadian Army infantry regiments at their full authorized strengths. During this period 417 new personnel were transferred to The South Saskatchewan Regiment.⁶⁷ Total reinforcements in the same period for the Le Regiment de Maisonneuve, a regiment that had been weak post-Normandy, totalled 669 personnel.⁶⁸

⁵⁹LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary February-May 1945.

⁶⁰ LAC, RG 24 Volumes 13,663-13,665. First Canadian Army A & Q War Diary February-May, 1945. T-7094-7096.

⁶¹ LAC, RG 24 Volume 13,719. 2nd Canadian Corps A & Q War Diary. T-1871. 5 May 1945 return.

⁶²LAC, RG 24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096.

⁶³ LAC, RG 24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096.

⁶⁴ LAC, RG 24 Volume 14,559. 2nd Anti-Tank Regiment, RCA War Diary May 1945. T-16452.

⁶⁵LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary May 1945. 5 May 1945 field return.

⁶⁶ Charles Stacey, *The Victory Campaign*, 633. These conscripts were formerly only eligible for service in Canada.

⁶⁷ LAC, RG 24 Volume 13,662-13,665. First Canadian Army A & Q War Diaries February-May 1945. T-7094-7096.

⁶⁸ LAC, RG 24 Volume 13,662-13,665. First Canadian Army A & Q War Diaries February-May 1945. T-7094-7096.

As of 30 April 1945 the division had satisfactory inventories of A vehicles and major weapons systems.⁶⁹ The division contained 542 combat A vehicles against an authorized war establishment of 513, placing the division 6 percent over its war establishment in this category. The returns for the end of April were also satisfactory with regards to the division's non-vehicle major weapons systems.⁷⁰ The division contained 102 percent of its authorized number of heavy weapons, and had no serious shortages.

In summary, the 2nd Canadian Infantry Division would have been capable of any further operations if the war had progressed past 5 May 1945. It had suffered some very difficult reverses at the hands of the Germans in July 1944, but had emerged as a capable and battle-tested formation. The performance of its infantry regiments was critical in clearing the Foret de la Londe Seine River crossing, the Scheldt Estuary and the forests of the Rhineland in 1945. The field artillery regiments of the division were extremely effective. The division's infantry operations utilized this strength, employing large artillery support programs for all their operations. One area in which the division had significant equipment challenges during 1944 was SP tank destroyers and flame thrower carriers.⁷¹ This area of weakness was mitigated throughout 1944 by the support of attached Canadian armoured regiments. Apart from some poor examples of combined arms tactics in July 1944, CAC support from August 1944 onwards was effective.

In order to survive its reverses of July 1944 and the attrition of August and October 1944, the division was rebuilt repeatedly in an efficient manner. The monthly returns from 31 July 1944 onwards for both heavy weapons and combat A vehicles relay a picture of a formation that was adequately resupplied on a regular basis. The shortages it had within its infantry regiments in August and September

⁶⁹LAC, RG 24 Volume 10, 553. 21st Army Group Consolidated Vehicle Position Report. File 215A21.085 (D1). Return for 30 April 1945. LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army, 21st A.G. File 215C1.083 (D6). Monthly Equipment states return for 30 April 1945.

⁷⁰LAC, RG 24 Volume 10,670. Equipment State of Canadian Units in the First Canadian Army, 21st A.G. File 215C1.083 (D6). Monthly Equipment state return for 30 April 1945.

⁷¹LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report (Non-Vehicle/AFV) File 215C1.083 (D6). LAC, RG 24 Volume 10,553. 21st AG. A & B Canadian Vehicle Position Report. File 215A21.085 (D1). Reference 31 July 1944 divisional returns. The 3rd Canadian Infantry Division as of 31 July 1944 contained fifteen of its sixteen authorized M-10 3-Inch tank destroyers, while the 2nd Canadian Infantry Division was authorized none. On 31 July 1944, the division was authorized sixty-six Wasp II flame-thrower carriers, yet had none.

1944 were of a temporary nature. The infantry losses of late July 1944 had occurred quickly and in such large numbers that the reinforcement system could not keep up due to its temporarily limited resources. As of October these personnel shortages were no longer a major concern. While comparable German formations were destroyed by attrition and withdrawn for rebuilding, the 2nd Canadian Infantry Division stayed at the front.

Chapter 9: The 3rd Canadian Infantry Division: Major actions, casualties, reinforcements and strength returns for its combat arms regiments in North West Europe, June 1944-May 1945.

The 3rd Canadian Infantry Division was activated in Canada in the spring of 1940. It spent the following year assembling its component brigades. The regimental units were drawn from the prairie, central and eastern provinces of Canada.¹ During the winter of 1940-41 one of its regiments, the Cameron Highlanders of Ottawa (Machine Gun), formed part of the Allied garrison in Iceland. Transported to the United Kingdom (U.K.) in the fall of 1941, the division embarked upon a three year period of training and further garrison duties. While the 2nd Canadian Infantry Division participated in the 1942 Dieppe Raid and the entire 1st Canadian Corps deployed to Italy in 1943-1944, the 3rd Canadian Infantry Division remained in Britain. In July 1943 the division was designated as one of the amphibious assault formations for Operation “Overlord”, the Normandy invasion, which was planned for June 1944.² As a result, its training revolved around the role of successfully assaulting the beaches and defending the initial lodgement. This specialized training for a temporary role was conducted arguably at the expense of offensive combined arms training to defeat German armoured formations post-invasion.³

As of 31 May 1944, the 3rd Canadian Infantry Division’s commanding officer was Major-General Rodney Keller. It’s main infantry formations were the 7th, 8th and 9th Canadian Infantry Brigades.⁴ The regiments of 7th Canadian Infantry Brigade were The Royal Winnipeg Rifles, The Regina Rifle Regiment and The Canadian Scottish Regiment. The 8th Canadian Infantry Brigade consisted of The Queen’s Own Rifles of Canada, Le Regiment de la Chaudière and The North Shore Regiment. The 9th Canadian Infantry Brigade’s was made up of The North Nova Scotia Highlanders, The Stormont, Dundas and Glengarry Highlanders and The Highland Light Infantry of Canada. Divisional field artillery units consisted of the 12th, 13th and 14th Field Regiments, Royal Canadian Artillery (RCA). An additional field

¹ Charles Stacey, *The Victory Campaign*, 657-662. Appendix F. Canadian Army units in NWE.

² John English, *The Canadian Army and the Normandy Campaign*, 104.

³ Russell Hart, *Clash of Arms*, 182. The 3rd Canadian Infantry Division and the 2nd Canadian Armoured Brigade began to train together in April 1944.

⁴ Charles Stacey, *The Victory Campaign*, 657-662. Appendix F. Canadian Army units in NWE.

artillery regiment, the army level 2nd Canadian Army Group Royal Artillery's (2nd Canadian AGRA) 19th Army Field Regiment, RCA was temporarily attached. This addition gave the division a total of four field artillery regiments.⁵ Anti-tank and anti-aircraft units consisted of the 4th Light Anti Aircraft Regiment, RCA and the 3rd Anti-Tank Regiment, RCA. Non-artillery divisional units comprised of the 7th Canadian Reconnaissance Regiment (The 17th Duke of York's Royal Canadian Hussars) and The Cameron Highlanders of Ottawa (Machine Gun).

On the eve of the invasion every unit in the division was fully equipped in accordance with its war establishment tables for personnel and equipment.⁶ The division was significantly better equipped in personnel, vehicles and weaponry than the other two Canadian infantry divisions overseas at this point, and thus had a greater level of combat power. The major difference in manpower and weaponry stemmed from the attachment of the 19th Army Field Regiment, RCA. In addition, all four field artillery regiments were equipped with M7 105mm "Priest" self-propelled (SP) artillery pieces rather than towed variants.⁷ Within the RCA anti-tank regiment, an authorized battery of M-10 3-Inch self-propelled tank destroyers was present.⁸ These additions gave the division an extensive mobile SP artillery and anti-tank component that could rapidly support an armoured advance if required.

Organizational war establishment tables for the division's combat arms regiments are present in Appendix 1. Detailed statistics on the division's unit personnel strengths, casualties, reinforcements as well as equipment and vehicle strength returns are provided in Appendix 4. This information is provided for each of the divisional regiments with some exceptions. There is a lack of surviving data for the RCA artillery regiments. Casualties for RCA regiments were very low in comparison to the monthly totals in

⁵ LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 31 May 1944 divisional returns. The divisional RCA field artillery regiments had an authorized level of ninety-six M7 105mm Priest self-propelled howitzers in accordance with the war establishment tables.

⁶ LAC, RG 24 Volume 10,533. 3rd Canadian Infantry Division A & Q War Diary July 1944. As of 1 July 1944, when the division had fully assembled and had received reinforcements to replace those lost in the June 1944 fighting, its strength stood at 20,213 men. The divisional A & Q War Diary for May 1944 is recorded as lost.

⁷ Charles Stacey, *The Victory Campaign*, 37.

⁸ LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 31 May, 1944 divisional returns. The division had fifteen M-10 3-Inch tank destroyers on charge.

the infantry and some armoured regiments. To save space within reports, the division and corps level Adjutant and Quartermaster (A & Q) war diaries recorded only consolidated figures for all RCA units within the division. These consolidated records are the only reliable source of data for RCA battle and non-battle casualties as well as reinforcements for the months June 1944-May 1945. As a result, only consolidated divisional RCA monthly casualty and reinforcement figures are provided within this study's Appendix 4. For individual RCA regiments, only monthly strength returns are provided.

On D-Day, 6 June 1944, four infantry regiments of the 3rd Canadian Infantry Division successfully assaulted Juno Beach. They conducted their landing with significant armoured, air, naval and engineer support. In difficult fighting, the parts of the division engaged in combat cleared the beaches of German defenders. The regiments involved suffered a large number of battle casualties. The two regiments with the highest figures were The Regina Rifle Regiment with forty-five personnel lost and The Queens own Rifles of Canada with sixty-one.⁹ The division immediately pushed inland, consolidating its area of the beachhead and landing the remainder of the division in the next few days.

The fighting of 7-11 June 1944 resulted in a consolidated, static front for the Canadian invasion force. An important defensive success had been achieved in this period, and all German armoured counter attacks against the beachhead had been defeated.¹⁰ However, Canadian infantry and armoured forays to the south against Le Mesnil-Patry and Carpiquet had failed with heavy losses as the enemy also had its defensive successes. Attempting to take Carpiquet airfield on 7 June 1944, a 9th Canadian Infantry Brigade task force had initially made good progress. However, a sharp reverse occurred when a powerful German armoured counter attack was unleashed in the afternoon.¹¹ The ensuing Canadian defensive effort brought the Germans to a halt, but heavy infantry and armoured losses were sustained. The 8th Canadian Infantry Brigade's operations to the east during 8-9 June 1944 had better results. The villages of Bretteville L'Orgueilleuse and Putot were captured and held against frequent armoured and infantry

⁹ Charles Stacey, *The Victory Campaign*, 650. Appendix B. Canadian Army casualties, Normandy D-Day 6 June, 1944.

¹⁰ Charles Stacey, *The Victory Campaign*, 130-140.

¹¹ Russell Hart, *Clash of Arms*, 344.

attacks. These series of see-saw battles saw the 8th Canadian Infantry Brigade prevail due to excellent defensive combined arms tactics and effective artillery support. These successes were tempered by the 11 June 1944 reverse that saw The Queen's Own Rifles of Canada take heavy losses while supporting a failed 2nd Canadian Armoured Brigade armoured attack against Le-Mensil Patry.¹²

Following these initial battles and the successful defence of the beachhead, the fighting turned static for the remainder of the month. During this time the division accepted reinforcements to bring its regiments back up to strength. In early July 1944 the division's infantry brigades again assaulted Carpiquet and the German defences north of Caen. Operation "Windsor", the 4 July 1944 renewed assault on Carpiquet village and airfield, was only partially successful. Operation "Charnwood", the 8 July 1944 operation against German forces north of Caen, met all its objectives.¹³ Significant infantry casualties were sustained in each operation. Moving south to support the British Operation "Goodwood" on 18 July 1944, the division took the southern industrial portion of Caen in its part of the Canadian Operation "Atlantic". Following this initial success, the 2nd Canadian Infantry Division took over the advance and attacked southward towards Verrieres Ridge. Its assaults were repulsed with heavy casualties in return for very limited gains. Following the mixed results of Operation "Atlantic", the division participated in 25 July 1944's Operation "Spring". During this operation the 9th Canadian Infantry Brigade took severe casualties attempting to take the village of Tilly-La-Campagne. All these reverses on or near Verrieres Ridge had stemmed from the aggressive use of German armour against assaulting Canadian infantry. The opposition against the Canadian forces was too strong in armour for any breakthroughs to take place or significant objectives to be taken.¹⁴

These costly battles in July 1944 were followed by the division's participation in 8-13 August 1944's Operation "Totalize". The removal of some German formations from the front and a massive airstrike by strategic bombers allowed for a successful night attack by Anglo-Canadian divisions on 7-8

¹² Charles Stacey, *The Victory Campaign*, 139.

¹³ Charles Stacey, *The Victory Campaign*, 152-164.

¹⁴ Terry Copp, *Fields of Fire*, 180.

August 1944. After this night attack a further large bomber airstrike occurred that saw some regiments of the division take losses from inaccurate Allied bombing runs.¹⁵ Making contact with the enemy on 10 August 1944, the 8th Canadian Infantry Brigade advanced towards its objective of Quesnay Wood. Two regiments of the brigade attacked on the left flank of the 4th Canadian Armoured Division, but failed to capture the wooded area in difficult fighting. Further participation in 13-21 August 1944's Operation "Tractable" saw the division reach the outskirts of Falaise on 16 August.¹⁶ The final Falaise Gap fighting up to 22 August 1944 witnessed large German personnel and equipment losses as the encirclement closed around them. Intense combat with German forces seeking to break out resulted in more casualties for the division as all remaining escape routes were cut off.¹⁷

Battle casualties up to 26 July 1944, had been very high within the division. Killed, wounded and missing personnel losses had totalled 6,481.¹⁸ Despite these losses and others in August 1944, the reinforcement capability of the Canadian Army had prevailed in keeping the infantry regiments of the division combat-ready. The 30 August 1944 strength returns of two infantry regiments give an indication of the infantry strength within the division. The North Nova Scotia Highlanders strength stood at forty officers and 757 other ranks, 93 percent of its war establishment.¹⁹ The regiment had suffered considerably, with a total of 881 battle and 241 non-battle casualties occurring during the campaign.²⁰ Estimated reinforcements issued to the regiment had numbered 1,069. This was an amount sufficient for roughly eight complete new infantry companies.²¹ The North Shore Regiment in late August was also reasonably strong, with thirty-five officers and 725 other ranks on strength, 89 percent of its authorized

¹⁵ Charles Stacey, *The Victory Campaign*, 223. The North Shore Regiment suffered heavy casualties in one infantry company.

¹⁶ Charles Stacey, *The Victory Campaign*, 242.

¹⁷ Charles Stacey, *The Victory Campaign*, 256-265.

¹⁸ LAC, RG 24 Volume 13,776. 3rd Canadian Infantry Division A & Q War Diary July, 1944. T-10533. Divisional report on casualties to D+49.

¹⁹ LAC, RG24, Volume 13,658 First Canadian Army, A & Q War Diary August 1944. T-7091. 30 August 1944 return.

²⁰ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Total battle and non-battle casualties 1 June-30 August, 1944.

²¹ *Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

strength. This regiment had sustained 821 battle and 233 non-battle casualties to this point.²² It had been very well reinforced by approximately 964 replacements during the June-August 1944 fighting.²³ Both of these regiments had suffered 100 percent losses during this period and had been completely re-built back up to near their authorized strengths.

Battle casualties for the RCA units in the division during the period July-August 1944 had been light. Total RCA battle casualties for all five regiments in the division totalled 561 personnel killed, wounded or missing.²⁴ On a day to day basis it was very rare for any one regiment to suffer a large number of casualties. As an example, the war diary for the 12th Field Regiment, RCA reported only light casualties during its involvement in 8-13 August 1944's Operation "Totalize", despite some German shelling.²⁵

Personnel reinforcements for the division dispatched up to 4 August 1944's Operation "Totalize", revealed that the cost of battle was being borne by the infantry to a large degree. Total Canadian Infantry Corps (CIC) reinforcements sent to the division numbered 269 officers and 5,618 other ranks. This was an astounding total that was the equivalent of forty-nine new infantry companies. Other arms within the division received to 4 August 1944 a total of fifty-two officers and 1,045 other ranks.²⁶ Not only was the 3rd Canadian Infantry Division exceptionally outfitted for battle in Normandy, it was also exceptionally reinforced while in the field.

²² LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Total battle and non-battle casualties 1 June-30 August, 1944. LAC, RG24 Volume 13,658 First Canadian Army A & Q War Diaries August 1944. T-7091. 30 August, 1944 return.

²³ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

²⁴ LAC, RG 24 Volume 13, 176. 3rd Canadian Infantry Division A & Q War Diaries June-August, 1944. T- 10533.

²⁵ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary August 1944. 8-12 August 1944 entries. There was one battle casualty.

²⁶ LAC, RG 24 Volume 13,776. 3rd Canadian Infantry Division A & Q War Diary August 1944. Report of reinforcements despatched to the division to 6 June-4 August 1944.

Major weapons systems and armoured fighting vehicle (AFV) losses suffered by the division had continually been made good during the course of the campaign²⁷ On 31 August 1944 the division was in a satisfactory state with regard to its combat A vehicles and weaponry. However, it was in a state of transition with regard to the number of combat A vehicles within its RCA field artillery regiments. The three field regiments had exchanged their SP artillery vehicles for towed artillery, which was superior for indirect fire tasks.²⁸ The fourth army level field artillery regiment that was temporarily attached to the division in June 1944 was removed by July 1944. This move immediately subtracted its vehicles and weapons from the division's totals.

As of 31 August 1944, the inventory levels of combat A vehicles operated by the division was satisfactory.²⁹ A total of 737 A vehicles were present within the division versus its authorized war establishment level of 707, making it 4 percent over strength. The division was significantly over strength in some A vehicles categories, but this was to compensate for shortages in other types. For example, of the 120 T-16 gun tractors carriers authorized as anti-tank gun towers and ammunition carriers, only thirteen were present. As of 31 August 1944, the non-vehicle weapons state of the division was also satisfactory.³⁰ The division contained 569 major weapons systems versus an authorized level of 563, making it slightly over strength in this category. The only significant shortage was in the area of anti-tank guns. The division was authorized sixteen of the very effective 17-Pounder towed anti-tank guns, but none had been issued. In their place eighteen extra 6-Pounders were on strength.

The division was in good shape in comparison to average German infantry formations post-Normandy. As displayed in Chart 9.1, German infantry divisions had very low strength compared to their

²⁷ LAC, RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 31 August 1944 divisional returns for both weapons systems and A vehicles.

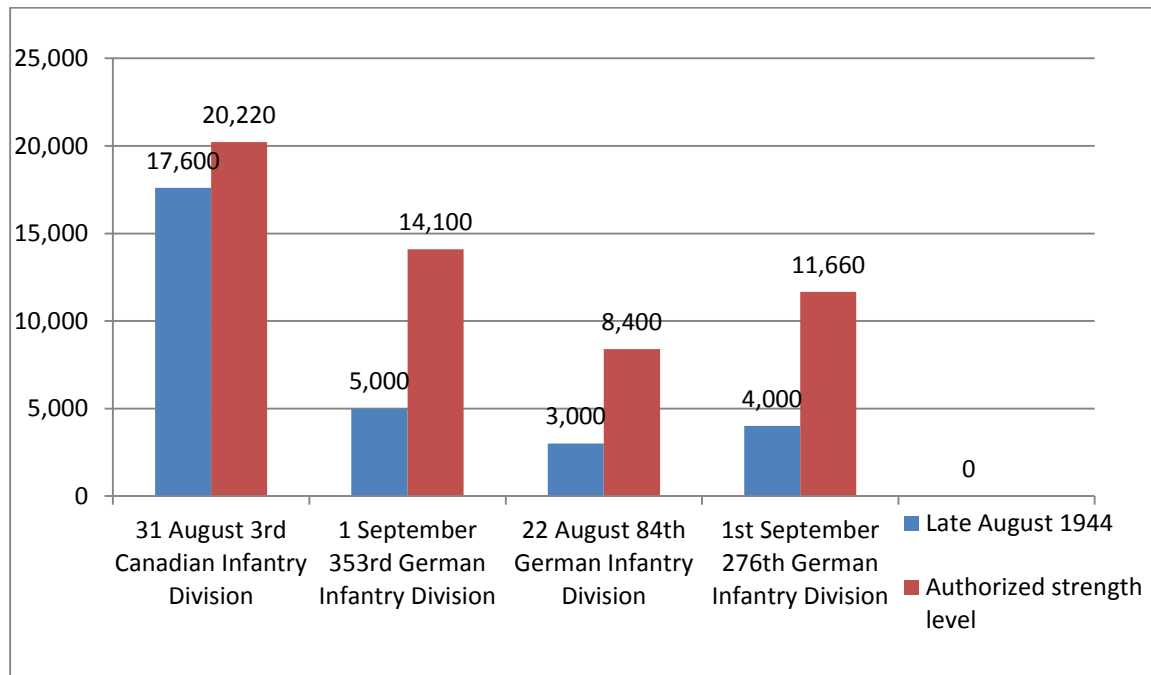
²⁸ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 31 July and 31 August 1944 returns. LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary August 1944. T-16360. Entries 1-2 August 1944 relate that all self-propelled equipment and observation post tanks had been turned in by the regiment for 25-Pounders and Quad towing vehicles.

²⁹ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1).

³⁰ LAC, RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6).

wartime establishment post-Normandy. These German formations were burnt-out shells due to non-reinforcement. The Canadian Army's competent reinforcement and replacement systems for

Chart 9.1: 3rd Canadian Infantry Division versus German infantry divisions, post Normandy. Strength returns versus authorized strengths.³¹



personnel, vehicles and weaponry had performed to a satisfactory degree. While a complete British infantry division had to be broken up to re-equip and refurbish others in August 1944, this never occurred within the Canadian Army post-Normandy.³² This is not to say the 3rd Canadian Infantry Division had not taken severe losses. Following some further fighting in the pursuit of the enemy across France, the state of two of its infantry brigades was adequate, and the third was rather weak. Returns for the 8 September 1944, reflect a division that was still combat capable, but required some reinforcements for its infantry companies.

³¹LAC, RG 24 Volume 13,775. 3rd Canadian Infantry Division A & Q War Diary August 1944. T-10533. 31 August 1944 return of 17,661 versus the near authorized strength of 20,226 on 30 June 1944. One full self-propelled field artillery regiment had been detached in the summer. Niklas Zetterling, *Normandy 1944*, 283, 233, 261. Figures are for the 353rd Infantry Division on 1 September 1944, the 84th Infantry Division on 22 August 1944 and the 276th Infantry Division on 1 September 1944.

³²Terry Copp, *Fields of Fire*, 154. The 59th British Infantry Division was broken up to re-furbish other weakened British divisions.

The average strength of the three infantry regiments within the 9th Canadian Infantry Brigade was thirty-six officers and 763 other ranks, 94 percent of the authorized strength of an infantry battalion. The 8th Canadian Infantry Brigade's average battalion strength was even better, standing at thirty-six officers and 769 other ranks, 95 percent of its authorized strength. The 7th Canadian Infantry Brigade, composed of the of The Royal Winnipeg Rifles, The Regina Rifle Regiment and The Canadian Scottish Regiment, was the weakest of the three. It had an average battalion strength of thirty-seven officers and 653 other ranks, 81 percent of its war establishment. This meant that three regiments in this brigade were missing an average of roughly 160 personnel each, one and one-third of a complete infantry company.³³

Following the Falaise Gap battles the division crossed the Seine River at Elbeuf , operating with parts of the 4th Canadian Armoured Division. On 3 September 1944, the division crossed the Somme River and moved north-east towards the channel ports up to the Belgian border. After advancing to the vicinity of Boulogne, France by 5-6 September 1944, the division embarked on a series of siege operations to capture enemy-held channel ports. Its objectives were the isolated garrisons of Boulogne and Calais.³⁴ These were not militarily dangerous operations as these ports posed no offensive threat. The biggest challenge to Anglo-Canadian forces at this stage were logistical concerns due to the rapid pace of their advance.

The division managed to take these ports with support from naval and air assets. The period 17-22 September 1944 saw 8th and 9th Canadian Infantry Brigades seize Boulogne and the surrounding areas. In co-operation with British forces, the port was taken after a short siege. Due to the concrete fortifications and heavy artillery available to the surrounded German units, some infantry regiments suffered casualties in these operations. The period of 25 September to 1 October 1944 saw the division move onto its next objective, Calais. The division successfully forced the surrender of the German garrison after briefly assaulting some of its fortified defences. Allied aircraft again conducted multiple air

³³ LAC, RG 24 Volume 13,659. First Canadian Army A & Q War Diary September, 1944. T-7092. 8 September 1944 brigade return.

³⁴ Charles Stacey, *The Victory Campaign*, 326.

strikes, which aided in compelling the Germans to surrender the port and the outlying German batteries at Cape Gris Nez by 1 October 1944.³⁵

As part of 2nd Canadian Corps, the 3rd Canadian Infantry Division was then ordered to move east to the vicinity of Antwerp, Belgium. From late September 1944 onward the division was to take part in operations to clear the Scheldt Estuary. This clearance was necessary for the vital port to be opened for Allied shipping. The strength returns of the infantry regiments during early October reflect the fact that a significant reinforcement of the division had taken place in late September 1944. The 7th Canadian Infantry Brigades' average battalion strength as of 5 October 1944 was thirty-nine officers and 754 other ranks, for a total of 793 personnel. The 8th Canadian Infantry Brigade's average was the strongest at thirty-seven officers and 774 other ranks for average total of 811 personnel. The 9th Canadian Infantry Brigade's average unit strength was the weakest, but still adequate, at thirty-eight officers and 746 other ranks.³⁶

The division's task for October 1944 was the liquidation of the Breskens Pocket, an area surrounded by the Leopold Canal forming the south bank of the Scheldt Estuary. The surrounded Germans in the pocket were defending the area from prepared positions and well stocked with supplies. On 6 October 1944, the division launched Operation "Switchback", which consisted of amphibious assaults across the Leopold Canal to begin clearing the pocket. During land and amphibious assaults throughout October 1944, it liberated Hoofplaat, Biervliet, Schoondijke, Groede, Retranchement and Knocke-sur-Mer. This last town was one of the last areas of Belgium to be liberated.³⁷ Due to the infantry-centric nature of these operations, infantry casualties were high and the brigades needed

³⁵ Charles Stacey, *The Victory Campaign*, 352.

³⁶ LAC, RG 24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 3rd Canadian Infantry Division regimental returns.

³⁷ Charles Stacey. *The Victory Campaign*, 424-425 battle map.

considerable reinforcements. The fighting was very difficult due to the flooded terrain, dikes and entrenched enemy.³⁸ The final German positions fell on 3 November 1944.

How well the division's infantry regiments had been re-supplied with new personnel during the Battle of the Scheldt can be ascertained from their 31 October 1944 strength and casualty returns. The Regina Rifle Regiment of the 7th Canadian Infantry Brigade had suffered 384 battle and seventy-four non-battle casualties during the course of the month.³⁹ It had received 387 reinforcements, the equivalent to three complete new rifle companies. Its strength as of 31 October 1944, was thirty-six officers and 766 other ranks, 94 percent of its authorized personnel strength. The 8th Canadian Infantry Brigade's Queen's Own Rifles of Canada was not as strong. It had suffered 146 battle and twenty-nine non-battle casualties during the course of the fighting.⁴⁰ It had received 222 reinforcements, bringing its strength at month's end to thirty-four officers and 721 other ranks, 88 percent of its war establishment.

Casualties among divisional troops and RCA regiments continued to be much lighter compared to the infantry regiments which bore the brunt of German defensive fire during the Battle of the Scheldt. The Cameron Highlanders of Ottawa (Machine Gun) suffered thirty battle and thirty-three non-battle casualties during October 1944. It received 231 reinforcements during the course for the month, rebuilding its machine gun and mortar companies.⁴¹ The 7th Canadian Reconnaissance Regiment suffered thirty-nine battle and thirty-three non-battle casualties during October 1944.⁴² It received eighty-three reinforcements during the course of the month, bringing its strength up to forty-two officers and 742 other ranks. RCA casualties within the division were very low due to the enemy having a difficult time attacking their gun positions. Massive retaliation occurred if the Germans made any attempts at sustained counter battery fire. Due to these conditions the number of non-battle casualties in the RCA regiments

³⁸ Terry Copp. *Cinderella Army*, 113.

³⁹ LAC, RG24, Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Consolidates strength and casualty returns for October 1944.

⁴⁰ LAC, RG24, Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Consolidates strength and casualty returns for October 1944.

⁴¹ LAC, RG24, Volume 13,659. First Canadian Army A & Q War Diary October 1944. Consolidated strength and casualty returns for October 1944.

⁴² LAC, RG24, Volume 13,659. First Canadian Army A & Q War Diary October 1944. Consolidated strength and casualty returns for October 1944.

during October exceeded the number of battle losses. Total October casualties for all RCA regiments in the division numbered forty-eight battle and sixty non-battle. A total 127 reinforcements were dispatched to the RCA regiments, maintaining their strength during the month.⁴³

Divisional inventories of combat A vehicles and heavy weapons had remained high due to operations being focused on infantry led-attacks, some of which were amphibious. Also, there were a very limited number of routes and non-flooded terrain that could be used for mechanized warfare in the Breskens Pocket area. Also missing were a viable number of German AFVs or anti-tank weapons which could be used to destroy carriers, anti-tank guns and tank-destroyers within the division.

Combat A vehicle losses had been light during the October 1944 fighting.⁴⁴ As of 31 October 1944 a total of 674 vehicles were on strength versus the division's war establishment figure of 612. It was 10 percent over strength in this category. Unauthorized extra A vehicles within the division included four of the valuable Wasp II flamethrower carriers. As always, there were some shortages. Against an authorized level of twenty-eight Daimler armoured cars, only twenty-two were present. Of the seventeen M-10 17-Pounder SP tank destroyers that the division was authorized, none had been issued. The 3rd Anti-Tank Regiment, RCA, was still making do with the older M-10 3-Inch variants. Of the 120 T-16 tracked gun tractor carriers on the war establishment tables, only twenty-four were on strength. Extra Universal Carriers within the division were assuming their role. Non-vehicle major weapons systems inventories within the division were also at high levels as of 31 October 1944.⁴⁵ The division contained 96 percent of its heavy weapons, with 536 heavy weapons present compared to its war establishment of 561. Shortages included a total lack of towed 40mm anti-aircraft (AA) guns, an increased number of 40mm AA self-propelled variants doing their job.

⁴³ LAC, RG 24 Volume 13,776. 3rd Canadian Infantry Division A & Q War Diary October 1944. Consolidated strength and casualty returns October 1944.

⁴⁴ LAC, RG 24 Volume 10,553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 31 August 1944 divisional returns for both weapons systems and A vehicles.

⁴⁵ LAC, RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6).

Following the conclusion of Operation “Switchback”, the clearance of the Breskens Pocket, the 3rd Canadian Infantry Division ceased offensive operations. It assumed a static position on the Maas River as part of the 2nd Canadian Corps defensive line within the Nijmegen salient. During this time the division’s activities consisted of manning defensive positions, training and sending out regular combat patrols.⁴⁶ Few battle casualties were suffered by the division during the period of November 1944-January 1945 as there was limited contact with the enemy. The opposing German forces in the Netherlands were weak, lacking the capability to launch sustained offensive operations. The main German focus on the Western Front during this time was its offensive operations in Belgium and Luxembourg, where the largest percentage of its divisions and resources were being utilized.

Prior to combat operations in the Netherlands and Germany in the spring of 1945, the division had very few personnel deficiencies. Its strength as of 31 January 1945 stood at 990 officers and 18,346 other ranks.⁴⁷ The program of re-mustering general duty reinforcements had been successful from September onward in generating an increased number of infantry reinforcements.⁴⁸ Immediately prior to combat operations in February 1945, there was no lack of combat capability within the division’s three infantry brigades and divisional units.

The division’s infantry regiments had suffered few battle casualties and received adequate reinforcements to cover non-battle losses in the November 1944-January 1945 period.⁴⁹ The number of non-battle casualties for all combat arms units had increased in the winter months due to the personnel living in dugouts or ruined buildings. The Royal Winnipeg Rifles lost forty-three personnel to battle and 254 to non-battle causes in the three months. During this time it received 323 reinforcements, bringing its strength up to thirty-eight officers and 837 other ranks as of 31 January 1945. Le Regiment de la Chaudière suffered forty-nine battle and 176 non-battle casualties during the winter period. Over 410

⁴⁶ Terry Copp, *Cinderella Army*, 178.

⁴⁷ LAC, RG 24 Volume 13,778. 3rd Canadian Infantry Division A & Q War Diary January 1944. T-10536. 31 January 1945 consolidated strength and casualty return.

⁴⁸ Terry Copp, *Cinderella Army*, 178.

⁴⁹ LAC, RG24, Volume 13,660-13,662. First Canadian Army A & Q War Diaries. November, 1944-January 1945. T-7093-7094. Daily consolidated casualty and strength returns.

soldiers rejoined the regiment or were posted as reinforcements, bringing its strength up to forty-three officers and 795 other ranks as of 31 January 1945.

The RCA regiments also contained high levels of personnel at the end of January 1945. The 3rd Anti-Tank Regiment, RCA's strength stood at thirty-six officers and 632 other ranks as of 26 January 1945.⁵⁰ This figure put it 3 percent over its authorized strength. Casualties were low among the RCA regiments due to the limited capability of the enemy and their battlefield position to the rear of friendly infantry regiments. The artillery regiments were active in supporting infantry patrolling activities and engaging targets of opportunity. RCA anti-aircraft and anti-tank crews were also involved in the engagement of enemy positions and occasionally took small infantry roles. Total casualties for all RCA regiments within the 3rd Canadian Infantry Division in January 1945 were three battle and 156 non-battle. The RCA regiments received a total of 146 replacements during the month.⁵¹

The equipment and weaponry inventories of the division as of 31 January 1945 were very similar to the numbers on strength in October 1944. Little had changed apart from the acquisition of more potent combat A vehicles and heavy weapons.⁵² New weapons systems on hand included twelve towed 17-Pounder anti-tank guns, acquired at the expense of a similar number of 6-Pounders. New combat A vehicles as of 31 January 1945 included twelve new Valentine Archer 17-Pounder SP tank destroyers, the M-10 3-Inch tank destroyers being exchanged. Unauthorized vehicles held by the division at this point included nineteen of the valuable Wasp II flame thrower carriers and fourteen Humber Scout cars.

Combat commenced for the 3rd Canadian Infantry Division in mid-February 1945 with involvement in the Anglo-Canadian Operation "Veritable". The time period of 8-14 February 1945 saw the division clear the southern banks of the Waal and Rhine rivers. These areas were flooded and the

⁵⁰ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary January 1945. T-16455. 26 January 1945 return.

⁵¹ LAC, RG 24 Volume 13,778. 3rd Canadian Infantry Division A & Q War Diary. T-10536. January 1945 consolidated strength and casualty return.

⁵² LAC RG24 Volume 10,670 File 215C1.083 (D6). Equipment State Canadian Army Monthly Report. LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 31 January, 1945 divisional returns for both major weapons systems and A vehicles.

operations were largely amphibious. Advancing south east, the assaulting infantry brigades reached the Rhine at Emmerich by 14 February 1945. Between 16 and 17 February 1945 the lead regiments of the division assaulted Moyland Wood in their part of the Hochwald Gap battle. This forest fighting against dug in enemy positions was difficult and progress was slow. Follow on forces then assaulted west past the German town of Louisendorf, taking heavy casualties when subsequently counterattacked by German armoured forces.⁵³

At the conclusion of these operations, the division was redeployed back to the Netherlands in mid March 1945 to prepare to conduct offensive operations there in early April 1945. Combat re-commenced on 5 April 1945 and the following week saw the division capture of the Dutch towns of Wehl and Zutphen. It attacked again on 14 April 1945, rapidly liberating the northern Dutch towns of Meppel, Steenwijk, Akkrum and Leeuwarden. Elements of the division reached the sea at Harlingen during the same period. The division then switched its advance to the east, relieving the 2nd Canadian Infantry Division and advancing from Gronigen to Delfzijl. In what was the division's last significant battle, The Canadian Scottish Regiment of the 7th Canadian Infantry Brigade took the village of Wagenborgen in a two-day battle with armoured support.⁵⁴ Crossing into Germany for the last weeks of the war, the division captured the German city of Leer and advanced north to the vicinities of Emden and Aurich against disintegrating opposition. It was in these positions that the war ended for the 3rd Canadian Infantry Division.

The limited capabilities of the German forces in the last months of the war had allowed the divisional RCA regiments to operate with a reduced level of danger from enemy action. The RCA field artillery regiments continued to use their full offensive capability to bombard enemy positions with little danger of counter-battery fire occurring. Apart from mined routes and the dangers of infantry combat for their forward observation parties, the enemy had little capacity to retaliate. RCA anti-tank and anti-

⁵³ Terry Copp, *Cinderella Army*, 221.

⁵⁴ Charles Stacey, *The Victory Campaign*, 561-562.

aircraft crews utilized their weapons systems on ground targets from long range, also significantly limiting the danger to themselves.

The number of battle and non-battle casualties within the division's five RCA regiments in the spring of 1945 had changed little from those suffered in the fall and winter. Total casualties in these five regiments during February 1945 totalled forty-four battle and 108 non-battle. A total of 116 reinforcements had been dispatched, combating ongoing attrition.⁵⁵ The artillery-based doctrine of the Canadian Army ensured a constant level of damage was done to the enemy by the division's three field regiments. This was achieved at very low cost of artillery personnel casualties. The German forces were bombarded constantly by an unseen enemy, the RCA, whom they could do very little about.⁵⁶

The infantry brigades of the division had borne the brunt of the fighting in the months of February to April 1945. Two infantry regiments taken as examples relay that casualties in the spring of 1945, while heavy, were lighter than those of the summer of 1944. The Canadian Scottish Regiment of the 7th Canadian Infantry Brigade sustained a total of 443 battle casualties during these three months, matched with 234 non-battle casualties. Reinforcements to keep this regiment up to strength totalled 705.⁵⁷ Despite receiving reinforcements totalling five and a half complete infantry companies, the regiment could only muster thirty-four officers and 761 other ranks as of 30 April 1945. Le Regiment de la Chaudière, part of the 8th Canadian Infantry Brigade, suffered 239 battle and 159 non-battle casualties in the same period. Total reinforcements dispatched to offset losses totalled 416. The strength of the regiment as of 30 April 1945 was forty-three officers and 806 other ranks.⁵⁸

⁵⁵ LAC, RG 24 Volume 13,779-13,779. 3rd Canadian Infantry Division A & Q War Diary February 1945. February 1945 consolidated strength and casualty returns for all RCA regiments. T-10536-10537.

⁵⁶ Terry Copp, *Cinderella Army*, 210. The 13th Field Regiment, RCA subdued the village of Zandpol with a five minute bombardment, which allowed it to be taken without a fight on 8 February, 1945.

⁵⁷ LAC, RG24 Volume 13,662-13,664. First Canadian Army A & Q War Diaries. February-April 1945. T-7094-7095. February, March and April 1945 consolidated strength and casualty daily returns.

⁵⁸ LAC, RG24 Volume 13,662-13,664. First Canadian Army A & Q War Diaries. February-April 1945. T-7094-7095. February, March and April 1945 consolidated strength and casualty daily returns.

Both regiments mentioned here received reinforcement personnel from the newly available pool of National Resource Mobilization Act (NMRA) conscripts.⁵⁹ Reinforcements for all Army trades at this stage of the war were plentiful, and leave was regularly approved on a rotational basis for soldiers to take leave in the U.K., the Netherlands and other locations. Deserving long service members were also eligible for leave to Canada, a welcome respite for some soldiers that had been overseas since 1940 or 1941.⁶⁰

In summary, the 3rd Canadian Infantry Division had a satisfactory performance level in all the operations it participated in during 1944-1945. This was due in large part to it being well supplied with reinforcement personnel and equipment over the majority of its service in NWE. The division was reinforced for part of the Normandy Campaign with an extra artillery regiment and had SP tank destroyers attached to its anti-tank regiment. This provided it with more combat power than a regular Canadian infantry division throughout June and July 1944. For the duration of its operations in NWE, the division never lacked for a sufficient number of combat A vehicles or heavy weapons.⁶¹ It utilized these items extensively in virtually every operation, thus arguably reducing battle casualties within its infantry regiments. Shortages in personnel did occur, but these were of a temporary nature. Prior to high intensity offensive operations the infantry regiments were always above 80 percent of their authorized strengths. Chart 9.2 illustrates that the effective strength of the division never dipped below 17,600 personnel.⁶²

This division did lose some of its strength in August 1944, but this was largely due to factors

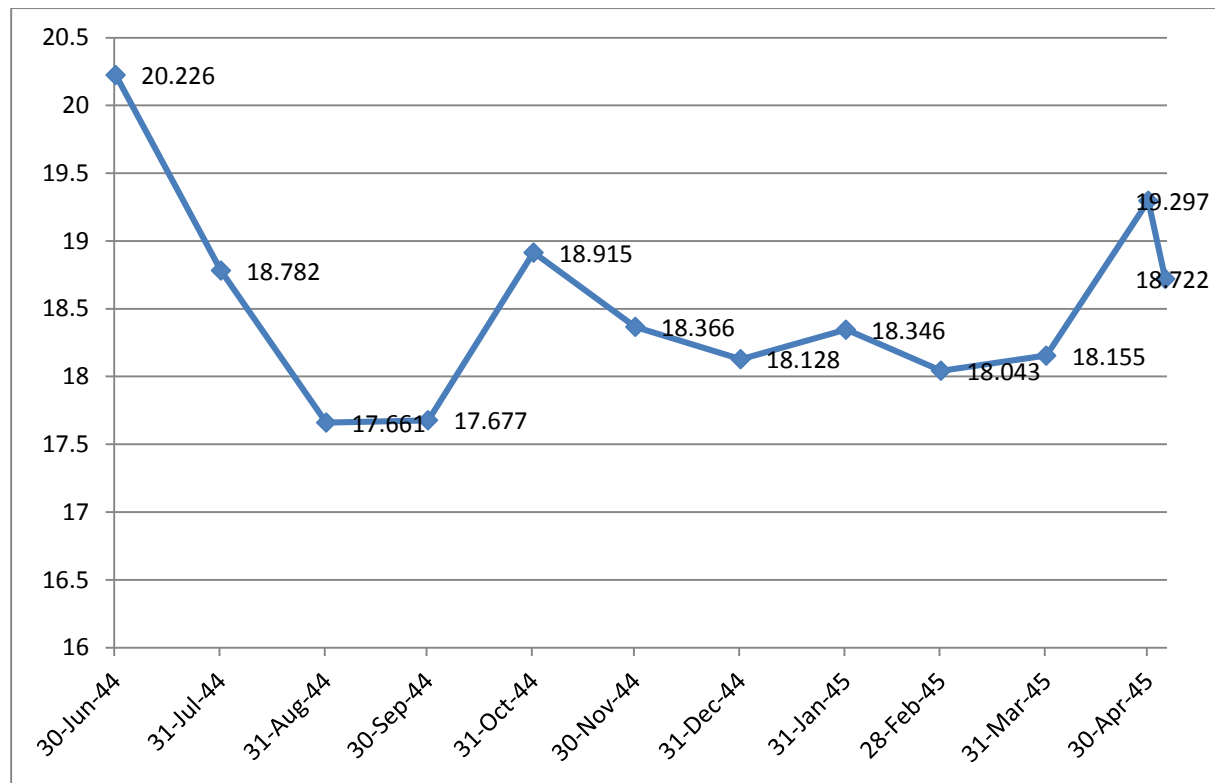
⁵⁹ Charles Stacey. *Arms, Men and Governments*, 479. Following the fall 1944 political parliamentary conscription crisis in Ottawa, a small amount of NRMA conscripts had been sent overseas to serve as reinforcements.

⁶⁰ LAC, RG 24 Volume 14,562. War Diary 3rd Anti-Tank Regiment, RCA January-April 1945. T-16455. The entries are filled with information on personnel going on leave to the U.K., the continent and Canada.

⁶¹ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 30 April 1945 returns for A vehicles. The 4th Canadian Armoured Division possessed a battery of the M-10 17-Pounder tank-destroyers as of 31 August 1944.

⁶² LAC, Volume 13,776. 3rd Canadian Infantry Division A & Q War Diary August 1944. T- 10533. Letter to General officer Commanding (GOC) 3rd Canadian Infantry Division. The Stormont, Dundas and Glengarry Highlanders had taken a up to 7 July 1944 a total of 470 battle casualties. This equalled a loss of 55 percent of the division's effective strength and did not include non-battle casualties.

Chart 9.2: 3rd Canadian Infantry Division strengths (thousands) 31 July 1944-30 April 1945⁶³



other than casualties. The division's authorized strength in the summer of 1944 was 18,374 personnel.⁶⁴ When additional units attached to it during June and July, it was significantly over strength. In July 1944 the temporarily attached 647 personnel strong 19th Army Field Regiment, RCA was detached from the division.⁶⁵ The 4th Light Anti-Aircraft Regiment, RCA was also re-organized in the summer of 1944, reducing its establishment strength from over 866 personnel to 585.⁶⁶ As shown in Chart 9.1, comparable

⁶³ LAC, RG 24 Volume 13,775. 3rd Canadian Infantry Division A & Q War Diary June 1944. T-10533. LAC, RG 24 Volumes 13,719-13,720. 2nd Canadian Corps A & Q War Diaries July-September 1944, March-May 1945. T-1870-1871. LAC, RG 24 Volume 13,660-16,663. First Canadian Army A & Q War Diaries October-December 1944, January-February 1945. T-7092-7094. The detachment of the 19th Army Field Regiment, RCA by August 1944 is very evident in this graph, and should not be indicative to the reader of a increased level of casualties.

⁶⁴ Russell Hart, *Clash of Arms*, 343. PRO War Office 179/2574, "Composition of the CAO" WD GD Canadian GHQ, November 1944. Authorized levels of personnel in all Canadian formations in Normandy during summer 1944 are listed.

⁶⁵ LAC, Volume 13,662. First Canadian Army A & Q War Diaries. January 1944. Armoured Division War Establishment Staff Tables for a Field Artillery Regiment, (self-propelled) RCA. War Establishment II/190A/22 effective January 1945. T-7093.

⁶⁶ LAC, RG 24 volume 14,591. 3rd Light Anti-Aircraft Regiment, RCA War Diary July 1944. T-16740. This 2nd Canadian Infantry Division unit's war establishment was identical to that of the 4th Light Anti-Aircraft Regiment, RCA. It was reduced to 585 by September 1944.

German infantry formations wasted away to nothing after a short exposure to combat. Chart 9.2 illustrates that the exact opposite occurred with the 3rd Canadian Infantry Division. Though the division did suffer significant casualties, it did not lose as many personnel as quickly as the 2nd Canadian Infantry Division did. As a result of this, the division was not put in a major personnel deficit situation that the reinforcement system had to rectify while casualties were continuing to mount.

Chapter 10: The 4th Canadian Armoured Division: Major actions, casualties, reinforcements and strength returns for its combat arms regiments in North West Europe, August 1944-May 1945

The 4th Canadian Infantry Division was ordered to begin forming in spring of 1940. It was established from units located in central and western Canada. In early 1942 it was re-organized as an armoured division. Prior to its deployment overseas, its development had been slowed by the diversion of some units to what would become the 5th Canadian Armoured Division. In the fall of that same year the division was deployed to the U.K, arriving in several convoys. Like the 3rd Canadian Infantry Division, it did not take part in combat operations prior to its 1944 deployment to Normandy. Administrative and supply problems during the winter of 1942-1943 caused some delays in equipping the division with armoured fighting vehicles and other pieces of equipment. This interrupted its training schedule and the division did not conduct battalion-level exercises until the fall of the latter year.¹

The main combat formations within the division as of spring 1944 were the 4th Canadian Armoured Brigade and the 10th Canadian Infantry Brigade.² The armoured brigade was composed of the 28th Canadian Armoured Regiment (The British Columbia Regiment), the 21st Canadian Armoured Regiment (The Governor General's Foot Guards) and the 22nd Canadian Armoured Regiment (The Canadian Grenadier Guards). Its infantry component was The Lake Superior (Motor) Regiment. This last regiment was mechanized in order for it to keep up with the tanks as motorized infantry.

The 10th Canadian Infantry Brigade was the dismounted infantry force of the division, and identical in composition to an infantry brigade within an infantry division.³ While the armoured brigade was designed to make armoured breakthroughs through the enemy's main line of resistance, the infantry brigade could hold these gains as well as launch attacks of their own. It consisted of three infantry regiments and an independent machine gun company. The three regiments within the brigade were The

¹ John English, *The Canadian Army in the Normandy Campaign*, 98, 104. The spring 1943 exercise "Spartan" in the U.K. did not include the 4th Canadian Armoured Division due to its lack of advanced training.

² John English, *The Canadian Army in the Normandy Campaign*, 177. Figure 9.2: 2nd Canadian Corps order of battle.

³ Charles Stacey, *The Victory Campaign*, 661. Appendix F. Canadian Army order of battle for units in NWE 1944-1945.

Lincoln and Welland Regiment, The Argyll and Sutherland Highlanders of Canada and The Algonquin Regiment. An independent machine gun company, rather than a full battalion as in an infantry division, was present for support. This unit was the 10th Independent Machine Gun Company (The New Brunswick Rangers). The role of reconnaissance within the division was taken by a fourth armoured regiment, the 29th Canadian Armoured Reconnaissance Regiment (The South Alberta Regiment). Divisional anti-tank and anti-aircraft assets consisted of the 5th Anti-Tank Regiment, Royal Canadian Artillery (RCA), and the 5th Light Anti-Aircraft Regiment, RCA. The RCA divisional field artillery was made up of two regiments, the 15th Field Regiment (self-propelled), RCA, and the 23rd Field Regiment, RCA, which operated towed 25-Pounder howitzers.

Organizational war establishment tables for the division's combat arms regiments are present in Appendix 1. All monthly data on personnel strengths, casualties and reinforcements for the combat arms regiments within the division during its service in North West Europe (NWE) are found in Appendix 5. These are followed by combat A vehicle and heavy weapons monthly strength returns and records of delivery for heavy armoured fighting vehicles (AFVs). While the division did land in France in mid-July 1944 it did not begin offensive operations until 1 August 1944. As a result, the month of July is excluded from the statistical totals and the divisional records within this study.

As of 1 August 1944, total divisional strength stood at 829 officers and 14,757 other ranks.⁴ At this point all the regiments within the division were at or very close to their war establishment personnel strengths. The three armoured regiments within the armoured brigade had very high personnel levels. The 21st Canadian Armoured Regiment, taken as an example, contained thirty-seven officers and 654 other ranks as of 29 July 1944, 1 percent over strength.⁵ The other two armoured regiments had similar returns. The Lake Superior (Motor) Regiment also contained satisfactory personnel levels. Its strength

⁴ Russell Hart, *Clash of Arms*, 343. PRO War Office 179/2574. "Composition of the CAO", War Diary General Staff Canadian Army GHQ, November 1944. Comparing this figure to the division total war establishment figures given for November 1944 of 750 officers and 14,069 other ranks, we can see the division was very powerful.

⁵ LAC, RG 24 Volume 14,255. 21st Canadian Armoured Regiment War Diary July 1944. T-12722. 29 July 1944 return. War establishment strengths are provided in Appendix 1's war establishment tables.

stood at thirty-six officers and 811 other ranks as of 29 July 1944, 98 percent of its war establishment.⁶ The 10th Canadian Infantry Brigade's three regiments were also very close to their establishment numbers in late July 1944. Taking two regiments as examples, The Lincoln and Welland Regiment as of 29 July 1944 contained thirty-seven officers and 810 other ranks, 99 percent of its authorized strength.⁷ The Algonquin Regiment was just as strong, with thirty-seven officers and 803 other ranks present as of 29 July 1944, 98 percent of its war establishment.⁸ The personnel levels within all four RCA regiments was adequate, with a combined strength of 187 officers and 3,181 other ranks.⁹ Some shortages were present, however. The strength of the 5th Anti-Tank Regiment, RCA, as of 29 July 1944 stood at thirty-seven officers and 692 other ranks, 93 percent of its authorized strength.¹⁰

A Canadian armoured division did not contain nearly as much personnel as an infantry division due to its reduced infantry component. However, it possessed a large number of heavy weapons and armoured fighting vehicles (AFVs), giving it increased combat power. There were adequate inventories of combat A vehicle within the division as of 31 July 1944.¹¹ As of this date the division contained 830 combat A vehicles versus its authorized strength of 783. Of this number 333 were Sherman medium or Stuart light tanks. A shortage of 17-Pounder equipped Sherman Firefly tanks did exist. Against an authorized strength of forty-five Sherman Vc Fireflies, only eight had been issued as of 31 July 1944. Of the forty-eight Wasp II flame thrower carriers that were authorized, none had been issued to the division as of 31 July 1944. With regard to heavy weapons, the division's inventories were satisfactory as of 31 July 1944.¹² It contained 315 heavy weapons, exactly the number it was authorized. Due to it being an armoured division and much of its strength being combat A vehicles, the division had less heavy weapons

⁶ LAC, RG 24 Volume 15,098. The Lake Superior (Motor) Regiment War Diary July 1944. 29 July 1944 return.

⁷ LAC, RG 24 Volume 15,104. The Lincoln and Welland Regiment War Diary July 1944. 29 July 1944 return.

⁸ LAC, RG 24 Volume 15,000. The Algonquin Regiment War Diary July 1944. 29 July 1944 return.

⁹ LAC, RG 24 Volume 13,793. 4th Canadian Armoured Division A & Q War Diary August 1944. T-10550. 1 August 1944 return.

¹⁰ LAC, RG 24 Volume 14,567. 5th Anti-Tank Regiment, RCA War Diary July 1944. T-16717. 29 July 1944 return.

¹¹ LAC, RG 24 Volume 10,553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1.) Reference 31 July 1944, divisional return for A vehicles.

¹² LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). Report for 31 July 1944.

than an infantry division. This was more than compensated for by the large number of AFVs, many of which were self-propelled (SP) artillery pieces.

Designated as one of the follow on divisions which would form the 2nd Canadian Corps, the division's first elements landed in Normandy in mid July 1944. It concentrated its formations in the area near Caen, France, over the next several days. Placed under the command of the 2nd Canadian Corps, the division's infantry units relieved those of 3rd Canadian Infantry Division on 31 July 1944.¹³ Once it took its place in the line, the 10th Canadian Infantry Brigade continued a chain of costly infantry attacks on the tactically important Verrieres Ridge. Two operations by the brigade to capture the village of Tilly La Campagne on 1 and 5 August 1944 were failures, the attacks bogging down.¹⁴

Following these minor actions in early August 1944, the division prepared itself for further offensive operations. This month would witness the most difficult fighting of the war for division, ironically at a time when it was lacking combat experience. The First Canadian Army's aim was to exert pressure on the German's right flank at the same time as the enemy's left flank was collapsing due to the First U.S. Army's "Cobra" and the British Second Army's "Bluecoat" operations. To help realise this goal, the division played a major role in 8-10 August 1944's Operation "Totalize". This armoured assault to break the main line of German resistance, capture Verrieres Ridge and exploit to the south towards Falaise was only partially successful. The 4th Canadian Armoured Division did not capture its objectives on 9 August 1944 as part of the second phase of the operational plan. Its advance was halted by traffic jams and strong German opposition which inflicted a significant amount of personnel and equipment losses. The heaviest of these occurred within the 28th Canadian Armoured Regiment battle group, the majority of the regiment being annihilated with parts of The Algonquin Regiment by counterattacking German armoured forces.

¹³ Charles Stacey, *The Victory Campaign*, 206.

¹⁴ Charles Stacey, *The Victory Campaign*, 206.

Despite these challenges during ‘Totalize’, the division re-grouped for a further push on Falaise. The operational plan for 14 August 1944’s Operation “Tractable ” called for the division to attack from Soignolles, cross the Laizon River and capture the three objectives of Rouvres, Perrieres and Versainville. In the actual attack, Perrieres and Rouvres were captured, but Versainville was not reached. This last town would not be liberated on 16 August 1944 due to difficulty crossing the Laizon River and continued German resistance. At this point the German forces were weakened and conducting a fighting withdrawal, moving east in large columns to escape the encirclement near Falaise that was being created.

The 4th Canadian Armoured Division would continue its drive on 15 August 1944. On this date the 10th Canadian Infantry Brigade captured Epaney.¹⁵ The 4th Canadian Armoured Brigade reached the vicinity of Point 159 near Versainville on the same day, but was driven back by strong German opposition. On the morning of the 16 August 1944, the division was ordered to cross the Ante River and then advance east to Trun to meet units of the Third U.S. Army. Attempting to cross the Ante River at Damblainville on 17 August 1944, elements of the 10th Canadian Infantry Brigade were forced back with heavy losses.¹⁶ Diverted to a bridgehead on the Dives River at Couliboeuf on the same day, the 4th Canadian Armoured Brigade successfully crossed the river. It then attacked east, capturing Les Moutiers en Auge and Louvieres en Auge with assistance from other units of the 10th Canadian Infantry Brigade.¹⁷

During the period 18-21 August 1944 the division would attempt to block escape routes out of the Falaise Pocket, suffering losses as the German forces tried to fight their way out. Operating with Polish and U.S. forces, the plan for the division was for it to help secure the line Chambois-St Lambert-Trun along the river Dives, blocking German movement east. In chaotic fighting, lead elements of the division captured Trun on 18 August 1944 and established a blocking position. Due to heavy Allied air attacks and the sheer number of escaping enemy, the division slowly lost contact with the neighbouring 1st Polish

¹⁵ Charles Stacey, *The Victory Campaign*, 248.

¹⁶ Charles Stacey, *The Victory Campaign*, 252.

¹⁷ Terry Copp, *Fields of Fire*, 236-237.

Armoured Division.¹⁸ In the meantime, this division had captured Points 252 and 262 to the east, establishing a hilltop blocking position against fleeing German forces and relief attacks. The morning of 19 August 1944 saw the 29th Canadian Armoured Reconnaissance Regiment battle group attack and capture part of St Lambert, creating another blocking position there. Due to increasing enemy pressure, the often outnumbered Polish and Canadian forces could not maintain a solid defensive perimeter. A large number of German units escaped the pocket on 20 August 1944, despite the efforts of the defenders. The nearly encircled German forces fought very hard in their attempts to keep viable escape routes open at this stage. These actions inflicted considerable Canadian and Polish casualties.¹⁹ Elements of the isolated 1st Polish Armoured Division were relieved by the 4th Canadian Armoured Brigade on 21 August 1944 after fierce fighting.²⁰ On this date the pocket was finally firmly closed and no further German forces escaped.

The effects of combat on the division from 1 August 1944 onward had taken a considerable toll. From the outset it had been assigned demanding operational tasks that had perhaps been excessive for an inexperienced formation. The 10th Canadian Infantry Brigade suffered considerable casualties in August 1944. The Argyll and Sutherland Highlanders of Canada had taken 218 total battle casualties between 27 July and 30 August 1944. In this period The Algonquin Regiment had taken 244 and The Lincoln and Welland regiment had taken 258.²¹ Non-battle casualties were less of an issue, with The Algonquin Regiment taking twenty, The Lincoln and Welland Regiment losing seventy-one and The Argyll and Sutherland Highlanders of Canada having sixty-one evacuees.²² Though these personnel were not killed, wounded or missing, they were subtracted from the infantry companies just as effectively as combat casualties.

¹⁸ Charles Stacey, *The Victory Campaign*, 259.

¹⁹ Russell Hart, *Clash of Arms*, 357.

²⁰ Terry Copp, *Fields of Fire*, 250.

²¹ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Total battle and non-battle casualties 27 July-30 August 1944.

²² ²² LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Total battle and non-battle casualties 1 June-30 August 1944.

The number of reinforcements dispatched to the infantry regiments had been insufficient to cope with the speed at which losses mounted during August 1944. During June 1944 the Canadian reinforcement pool of trained infantrymen had not been strained due to only one infantry division, the 3rd, being in action in Normandy. As of 1 August 1944, the infantry components of both the 2nd Canadian Infantry Division and 4th Canadian Armoured Division had joined in combat operations. Faulty planning on casualty rates by Canadian Military Headquarters (CMHQ) staff in London had led to an insufficient pool of infantry replacements being established. This error was compounded by the performance of a bureaucratic personnel supply system whose starting point was in the U.K. As a result a large percentage of the available infantry replacements which could have been posted to Canadian formations were located in the U.K. during crisis points and not immediately available. The challenge of providing rapid infantry other ranks reinforcements for all three Canadian divisions, at the rate they were demanding them, proved to be impossible. A crash program of re-mustering was taking place during the summer and early fall of 1944, but it could not occur fast enough to solve the problem instantly.

This shortage of infantry replacements for the 4th Canadian Armoured Division occurred at a most inopportune moment. During the critical August 1944 battles to secure the Falaise Pocket the division was asked to advance in a dynamic fashion using its armoured and infantry forces. For these operations to succeed it was important that the division's infantry strength be maintained. The exact opposite occurred and temporary shortages existed. The Argyll and Sutherland Highlanders of Canada received twenty-four personnel reinforcements during August.²³ By 30 August 1944 their strength had shrunk to twenty-four officers and 528 other ranks.²⁴ The Algonquin Regiment recorded thirty-six new personnel

²³ LAC, RG 24 Volume 15,005. The Argyll and Sutherland Highlanders of Canada War Diary August 1944. Pt I orders detailing new personnel posting details.

²⁴ LAC, RG 24 volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

joining the regiment during the same month. Its strength was reduced to thirty-six officers and 571 other ranks by the end of August.²⁵

The divisional RCA regiments had suffered considerably fewer casualties and their personnel levels were still at acceptable levels at the end of the summer. Total consolidated battle casualties for all RCA regiments within the division for the month of August totalled 257.²⁶ Most of these were concentrated in the front-line 5th Anti-Tank Regiment, RCA. Its strength had shrunk to thirty-four officers and other 634 other ranks as of 26 August 1944, 86 percent of its war establishment. Some regiments were largely unaffected by the fighting. The 8th Light Anti-Aircraft Regiment, RCA's strength on the same date was forty officers and 821 other ranks, 99 percent of its authorized strength.²⁷

The divisions inventories of combat A vehicles had been reduced by heavy losses in August, but were still very large at the end of the month.²⁸ The division fielded 809 combat A vehicles as of 31 August 1944 against a war establishment of 840, 96 percent of its authorized strength. Despite a constant repair and replacement effort, some vehicles missing due to mechanical failure or enemy action had not been replaced. The number of Sherman Vc and Ic 17-Pounder Firefly tanks had increased to twenty-eight by month's end. This was a marked increase from the 31 July 1944 totals, but the armoured regiments were still short thirty-two. There was also a shortage of armoured recovery vehicle (ARV) tanks, with only eight Sherman III ARVs on hand versus the authorized strength of fourteen. There were also shortages of AFVs in the RCA regiments as of 31 August 1944. The RCA field regiments were short

²⁵ LAC, RG 24 Volume 15,000. The Algonquin Regiment War Diary August 1944. Estimated figure for reinforcements taking strength returns and subtracting casualties. LAC, RG 24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

²⁶ LAC, RG 24 Volume 13,793. 4th Canadian Armoured Division A & Q War Diary August 1944. T-10550. Consolidated divisional strength and casualty return.

²⁷ LAC, RG 24 Volume 14,609. 8th Light Anti-Aircraft Regiment, RCA War Diary August 1944. T-16761. This regiment, along with all of its type, were re-structured to a thirty-four officer s and 551 other ranks personnel establishment as of September 1944.

²⁸ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report.. File 215A21.085 (D1). Reference 31 August 1944 divisional return for combat A vehicles.

artillery observation post (OP) tanks, having only eighteen Ram II OP tanks instead of the twenty-seven Sherman III OP variants that were authorized.²⁹

While some ongoing shortages did exist, the division had been extensively resupplied with replacement AFVs and heavy weapons to cover the losses of August 1944. D Squadron of the 25th Canadian Armoured Delivery Regiment (25th CADR) delivered 123 Sherman, Firefly and Stuart tanks to the division during the month of August 1944. This supply kept the armoured regiments operational in the face of severe losses due to anti-tank fire and mechanical failures.³⁰ This figure was enough to nearly re-equip two Canadian armoured regiments, and reflects the high rate of losses during this period.

Losses inflicted by enemy action or mechanical failure on non-vehicle weaponry were not severe and the division contained no shortages in this area as of 31 August 1944. Any weapons systems that had been lost or broken during this period had been replaced. The infantry and artillery regiments continued to contain near perfect levels of all of their authorized non-vehicle heavy weapons. Unauthorized overages in anti-tank guns included one extra 6-Pounder and one extra 17-Pounder.³¹

Despite the heavy infantry losses of the breakthrough battles in early August 1944 and the Falaise Pocket battles in mid-month, operations continued for the division without a break. The division swept across northern France as part of the 21st Army Group's pursuit of the retreating Germans. Advancing towards the Seine River as part of the 2nd Canadian Corps, the 4th Canadian Armoured Division crossed the river at Elbeuf on 26 August 1944. Operating on the right flank of the 2nd Canadian Infantry Division, it liberated St Omer, France on 5 September 1944. By 8 September 1944 it had reached Bruges, Belgium and arrived at the Ghent Canal. The 10th Canadian Infantry Brigade captured a bridgehead over the canal at Moerbrugge between 13-14 September 1944, but was forced to relinquish it after heavy German

²⁹ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 31 August 1944 divisional return for combat A vehicles.

³⁰ LAC, RG 24 Volume 14,277. D Squadron, 25th Canadian Armoured Regiment War Diary August 1944. T-12748.

³¹ LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). Report for 31 August 1944.

counterattacks.³² Further operations led to the liberation of Moerkerke and Eecloo. Subsequent tasks during September included patrolling the Leopold Canal perimeter of the German Breskens Pocket before being redeployed in October 1944 to take part in fighting to the north of Antwerp.³³

The three infantry regiments of the 10th Canadian Infantry Brigade had been significantly reinforced throughout September 1944.³⁴ As of 30 September, the strength of the Argyll and Sutherland Highlanders of Canada stood at thirty-seven officers and 834 other ranks. It had received an estimated 579 new personnel, placing it 2 percent over its authorized strength. The Lincoln and Welland Regiment was not as strong, containing thirty-seven officers and 785 other ranks. It had received an estimated 408 replacements, bringing it to 97 percent of its war establishment.

The three regiments of the armoured brigade also received new personnel in September 1944, but not as many as the infantry regiments. As of 30 September 1944, the 21st Canadian Armoured Regiment contained thirty-six officers and 563 other ranks. It had received sixty-three reinforcements in September 1944, bringing it to 91 percent of its authorized strength.³⁵ The 22nd Canadian Armoured Regiment's strength as of 30 September 1944 was thirty-four officers and 511 other ranks. This was 79 percent of its authorized strength. It had received only seventy-four new personnel during the month.³⁶

Operating under command of the 1st British Corps, the division moved to the vicinity of Antwerp in early October in preparation for combat operations north of the city. On 9 October 1944 its armoured reconnaissance regiment and a company of infantry began operations to support the 2nd Canadian Infantry Division. From 17 October 1944 onward the majority of the division's combat strength was concentrated against the German forces confronting the Canadian Army's right flank in this area. While the 2nd

³² Mark Zuehlke, *Terrible Victory*, 7, 12-27.

³³ Charles Stacey, *The Victory Campaign*, 367.

³⁴ LAC, RG 24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. Strength returns 30 September 1944. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties by week. Totals for 10th Canadian Infantry Brigade units for weeks 31 August-4 October 1944. Reinforcements were estimated by subtracting casualty figures from strength returns at the end of August and September.

³⁵ LAC, Volumes 13,659. First Canadian Army A & Q War Diary September 1944. 30 September 1944 return. LAC, RG24 Volume 14,255. 21st Canadian Armoured Regiment War Diary September 1944. Part I orders for September 1944.

³⁶ LAC, Volumes 13,659. First Canadian Army A & Q War Diary September 1944. 30 September 1944 return. LAC, RG24 Volume 14,261. 22nd Canadian Armoured Regiment War Diary September 1944. T-12727. Part I Orders.

Canadian Infantry Division moved west to attack the South Beveland peninsula, the 4th Canadian Armoured Division guarded its flank and pushed north. Advancing on the left flank of the 49th British West Riding Division, the division liberated Essen on 22 October and Bergen Op Zoom on 27 October 1944. Steenberg and Hollandschdiep were both liberated on 4 November 1944.

The division's four infantry regiments took heavy losses during the Scheldt fighting.³⁷ The strength returns at the end of October give an appreciation of each regiment's condition during the mid-point of their combat operations, rather than at their start or conclusion. In contrast to August, all infantry units had received constant reinforcements throughout the month. These reinforcements allowed the regiments to retain a higher level of combat effectiveness than in Normandy. The Argyll and Sutherland Highlanders of Canada suffered 186 battle and sixty-four non-battle casualties during October, and received 118 reinforcements to make up these losses. At the end of the month this regiment consisted of twenty-nine officers and 649 other ranks, 79 percent of its authorized strength. The Algonquin Regiment took a total of 180 battle and fifty-eight non-battle losses during the same month. These losses reduced it to thirty-three officers and 670 other ranks. It had received 164 reinforcements during this period, enough to keep it at 82 percent of its war establishment.

The division had faced determined opposition in the Scheldt in the way of German airborne Fallschirmjager regiments, but these light infantry formations were poorly equipped in comparison to panzer divisions. As evidence of this, total enemy equipment destroyed by the 29th Canadian Armoured Reconnaissance Regiment in October 1944 was one 8.8 cm anti-aircraft gun, one 81mm mortar, one 75mm anti-tank gun, one 75mm Sturmgeschutz assault gun and one obsolete Panzer III medium tank.³⁸ While the infantry combat was intense, the enemy did not have the same capability to inflict high losses on the non-infantry units. As an example, the 22nd Canadian Armoured Regiment suffered twenty-two battle and thirty-nine non-battle casualties during the month of October 1944. It received 129

³⁷ LAC, Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Daily consolidated casualty and strength returns. These are difficult to calculate since they took place over the course of parts of two months.

³⁸ LAC, RG 24 Volume 14,295. 29th Canadian Armoured Reconnaissance Regiment War Diary October 1944. T-12767. 31 October end of month entry.

reinforcements during this time, raising its strength to thirty-seven officers and 577 other ranks. This total was 89 percent of its war establishment.³⁹ In reviewing documents on reinforcements allocated to armoured regiments, the totals are often large without a corresponding increase in regimental strength returns. This was due to the practice of dispatching personnel belonging to the regiment to the armoured delivery squadron for further training or to pick up new tanks. The personnel would then return to the regiment as reinforcements when they had already been part of the regiment previously.⁴⁰

The four RCA regiments combined casualty totals for October 1944 illustrate a reduced casualty rate. All four regiments recorded thirty-six battle and forty-nine non-battle casualties during this month. Against these losses, 102 reinforcements had been dispatched, maintaining the strength of these units.⁴¹ The 8th Light Anti-Aircraft Regiment, RCA's strength at the end of the month stood at thirty-five officers and 559 other ranks, 1 percent above its new September 1944 war establishment of thirty-four officers and 551 other ranks.⁴² Compared to Normandy, enemy AFV, artillery and aerial activity on the Canadian front had dropped off considerably during October and early November 1944. This change had resulted in far fewer battle casualties in the RCA regiments.

On 1 November 1944, midway through its Scheldt combat operations, the division reported a total "fit" AFV strength of 247 medium and light tanks.⁴³ Returns for 31 October 1944 show the division to be over strength in combat A vehicles.⁴⁴ On this date 839 combat vehicles were on strength against an authorized total of 777, placing the division 8 percent over its war establishment. Any shortages in certain vehicles types had been made up by extras in others. Some shortages in the armoured and RCA regiments continued to persist. Against a war establishment figure of sixty Sherman Vc 17-Pounder

³⁹ LAC, Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Daily consolidated casualty and strength returns.

⁴⁰ LAC, RG 24 Volume 14,292. 28th Canadian Armoured Regiment War Diary September 1944. T-12764.

⁴¹ LAC, RG LAC, Volume 13,793. 4th Canadian Armoured Division A & Q War Diary October 1944. T-10533. Daily consolidated casualty and strength returns.

⁴² LAC, RG 24 Volume 14,609. 8th Light Anti-Aircraft Regiment, RCA War Diary October 1944. T-16761. 31 October 1944 return.

⁴³ LAC, RG 24 Volume 13,793. 4th Canadian Armoured Division A & Q War Diary November, 1944. T-10550. AFV state for 1 November 1944.

⁴⁴ LAC, RG 24 Volume 10,553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1) 21st AG. Reference 31 October 1944 divisional return for both A and B vehicles.

Firefly tanks, only eighteen were on strength. Seventeen unauthorized Sherman Ic variants, which also had the 17-Pounder gun, had been issued to partially fill this shortage. This addition gave the division a total of thirty-nine 17-Pounder equipped tanks, 65 percent of its authorized strength. A shortage of ARV recovery tanks was still present at the end of the month. Against the war establishment of twelve Sherman V ARVs, only eight were on hand. None of the twenty-seven authorized Sherman V OP tanks had been delivered to the RCA field regiments as of 31 October 1944. Fortunately, seventeen unauthorized Ram OP variants had been issued to cover this shortage. As of the end of the month the twenty-four Crusader gun tractor towers that were allocated for the anti-tank regiment still had not been issued. The division had also not received a sizeable quantity of Wasp II flame thrower carriers at this point, having only one on strength.

With the division constantly advancing and rarely suffering reverses, very few heavy weapons were lost in the period of October to early November 1944. Midway through the Scheldt fighting, the division had excessive inventories of heavy weaponry.⁴⁵ Against an authorized level of 198 heavy weapons, 308 were on strength as of 31 October 1944. These totals indicated a possible change over of equipment for the division or an administrative reporting error. For example, against an authorized total of eighty 2-Inch mortars, the infantry regiments contained 142. Against its authorized war establishment of eighteen 6-Pounder anti-tank guns, fifty-one were on strength.

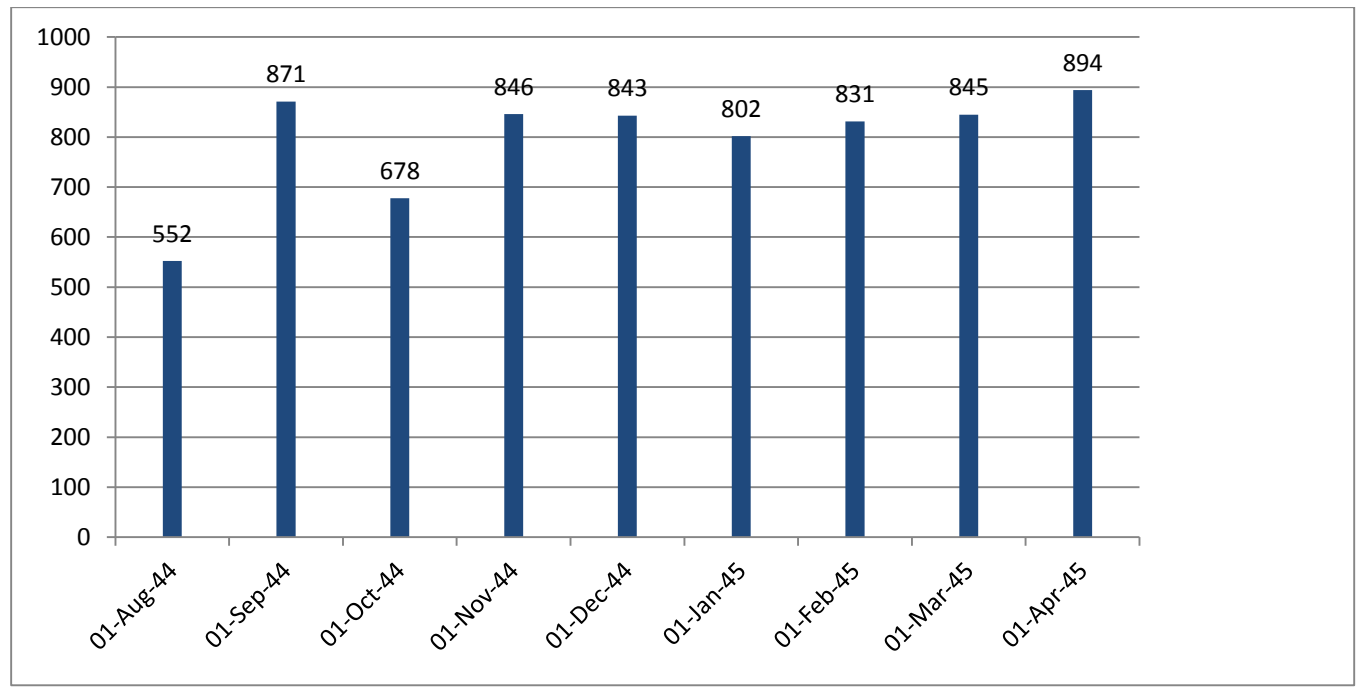
All three regiments of the 10th Canadian Infantry Brigade were re-built following the conclusion of the Scheldt fighting, as reflected in their 30 November 1944 strength returns.⁴⁶ The Algonquin Regiment, as an example, contained thirty-eight officers and 787 other ranks at the end of the month. It had received 278 reinforcements during November, raising it to 97 percent of its authorized strength. The other two regiments within the brigade received even more reinforcements, placing them very close to their war establishments. In chart 10.1, the strength returns of the Argyll and Sutherland Highlanders of

⁴⁵ LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). Report for 31 October 1944.

⁴⁶ LAC, RG 24 Volume 13,659. First Canadian Army A & Q War Diary November 1944. T-7092. October 1944 consolidated casualty & strength returns.

Canada in August and October 1944 reflect the cost of high-intensity offensive operations in these months. Large losses occurred very quickly, often stripping a regiment of a complete company within the space of day.

Chart 10.1: Strength returns for The Argyll & Sutherland Highlanders of Canada (January 1945 war establishment of 850 total personnel).⁴⁷



Like all formations in the First Canadian Army, the 4th Canadian Armoured Division spent the winter of 1944-1945 located in near-static positions. It held part of the western sector of the Nijmegen salient and was subordinated to 1st British Corps. As of 25 December 1944, it was designated army reserve for First Canadian Army and garrisoned at Breda, the Netherlands. On 26 January 1945 the 10th Canadian Infantry Brigade attacked the German harbour bridgehead of Kapelsche Veer on the southern bank of the Maas River.⁴⁸ This limited operation was completed by 30 January 1945 after significant infantry casualties due to some temporary reverses. After this difficult operation, combat for the division consisted of patrols and raids, often with armoured and artillery support.

⁴⁷ LAC, RG 24 Volume 13,658-13,665. First Canadian Army A & Q War Diaries August 1944-May 1945. T-7091-7096. Consolidated daily casualty and strength returns.

⁴⁸ Charles Stacey, *The Victory Campaign*, 450-454.

Combat A vehicle inventories within the division prior to offensive operations in spring 1945 were satisfactory.⁴⁹ As of 31 January 1945, the division was over strength in some categories, had shortages in others and contained a considerable contingent of unauthorized vehicles. Returns for this date show 741 combat A vehicles on strength, 95 percent of its January 1945 war establishment of 781. The non-vehicle weaponry inventories of the division was also satisfactory at this time, the totals changing little from their fall 1944 levels.⁵⁰ During January 1945, the 4th Canadian Armoured Division received a combined total of forty-seven new and repaired M4 75mm Shermans, Firefly 17-Pounders and M3 Stuart light tanks.⁵¹ This number was more than adequate considering the division had been inactive operationally from November 1944 to late January 1945.

From August to December 1944, the division had been adequately reinforced with new and repaired AFVs via D Squadron of the 25th CADR. As illustrated in Chart 10.2, the deliveries of new and repaired tanks for the division were often equal to a third of new German Panzer IV medium tank production. The Panzer IV was the backbone of Germany's armoured force in 1944, equipping one out of every two battalion panzer regiment in the Germany Army and Waffen SS. This chart illustrates the massive superiority of the Allies in their ability to supply large quantities of new and repaired AFVs to front-line units.

During the winter the division had received an adequate number of personnel reinforcements.⁵² While the armoured and RCA regiments remained near their October 1944 strengths, the infantry regiments were at much higher levels as of 31 January 1945. The reinforcements dispatched not only replaced battle losses, but mitigated the ongoing drain of non-battle casualties. The Lake Superior Regiment, taken as an example, lost 146 personnel to non-battle causes in the months November 1944 to

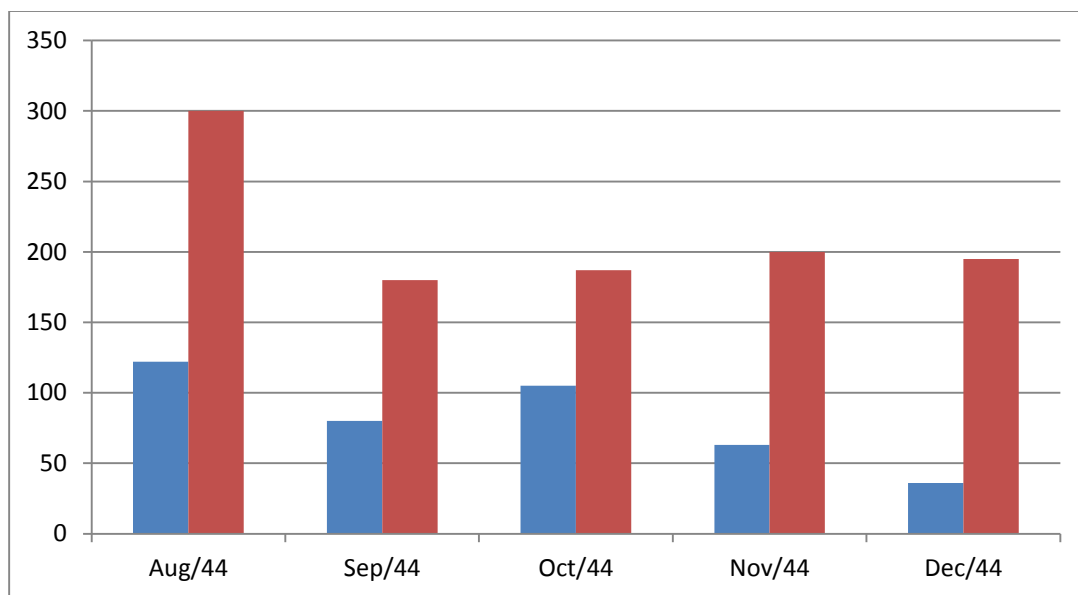
⁴⁹ LAC, RG 24 Volume 10,553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 31 January 1945 divisional return for A vehicles.

⁵⁰ LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). Report for 31 January 1945.

⁵¹ LAC, RG 24 Volume 14,277. D Squadron, 25th Canadian Armoured Delivery Regiment War Diary January 1945. T-12748.

⁵² LAC, RG 24 Volume 13,660-13,662. First Canadian Army A & Q War Diaries November 1944-January 1945. T-7093-7094. Consolidated strength and casualty returns November 1944-January 1945.

Chart 10.2: Canadian Army new & repaired tank (Sherman, Firefly and Stuart) deliveries to the 4th Canadian Armoured Division (Blue) versus total new monthly industrial production of the German Panzer IV medium tank (Red), August-December 1944⁵³



January 1945. The same regiment received 351 reinforcements in this period, bringing its strength up to thirty-six officers and 801 other ranks as of 31 January 1945. The Algonquin Regiment had received 500 replacements over the winter, giving it a strength of thirty-seven officers and 812 other ranks on the eve of combat operations. The Lincoln and Welland Regiment was also significantly reinforced, receiving a total of 672 new and returning personnel. Despite this total it was still weak at month's end, consisting of twenty eight officers and 764 other ranks. This was the result of recent heavy casualties in the operation to clear the port village of Kapelsche Veer in late January 1945.

Combat operations for the First Canadian Army in spring 1945 began with participation in Operation "Veritable", which was launched on 8 February 1945. The 4th Canadian Armoured Division had no involvement in this operation apart from providing support from its divisional artillery. This advance through the Reichswald Forest between the Maas and Rhine rivers brought the 2nd Canadian Corps to the vicinity of the German city of Goch. Preparations for a continued drive east in 22 February-

⁵³ LAC, RG 24 Volume 14,277. D Squadron, 25th Canadian Armoured Delivery Regiment War Diaries August-November 1944. T-12748. Thomas Jentz, *Panzertruppen Volume 2: The Complete Guide to the Creation & Combat Employment of Germany's Tank Force: 1943-1945* (Atglen, PA: Schiffer Publishing, 1996), 283. Appendix B4: Panzer IV Inventory, Gains and Reported Losses August-December, 1944.

10 March 1945's Operation "Blockbuster" saw the division assemble in Cleve, Germany during mid-February 1945.⁵⁴ On 26 February 1945 the division attacked east from the town of Wemmershof between the lines of the 2nd and 3rd Canadian Infantry Divisions. Divided into five battle groups, the division successfully attacked the Calcar-Udem ridgeline.⁵⁵ On 27 February 1945 a further assault to push through the Tuschen and Balberger Wald forest areas, south of the larger Hochwald Forest was begun. The 10th Canadian Infantry Brigade was relieved on 1 March 1945 after some limited gains. Going back into action the next day, it continued its drive east. Only after bitter fighting and slow progress did the division reach the Sonsbeck-Xanten Road by 3 March 1945.⁵⁶ A further advance towards the German city of Veen on 6 March 1945 was halted by stiff German resistance. The division was re-grouped and then mounted further assaults which encountered additional resistance. On 9 March 1945 the town finally fell when German forces withdrew. The following day the infantry of the 10th Canadian Infantry Brigade assaulted Winnenthal, successfully capturing the town.

The next operational phase for the division was its role as an exploitation force after the success of Operation "Plunder", the 23 March 1945 Anglo-American assault crossing of the Rhine River. Operations began on 24 March 1945 with the divisional artillery supporting Canadian forces advancing north of the river. Redeploying north into the British bridgehead over the Rhine at Rees, the division prepared to advance into enemy-occupied Netherlands. This assault began with some elements advancing north from Terborg on 1 April 1945. Further advances from Zelhem, the Netherlands, as the right flank of 2nd Canadian Corps resulted in the capture of a bridgehead over the Twente Canal at Delden by 4 April 1945.⁵⁷ The Dutch town of Almelo was subsequently liberated by the division the next day after a brief period of fighting.

⁵⁴ Charles Stacey, *The Victory Campaign*, 494.

⁵⁵ Charles Stacey, *The Victory Campaign*, 500.

⁵⁶ Terry Copp, *Cinderella Army*, 241-242.

⁵⁷ Terry Copp, *Cinderella Army*, 262.

Other parts of the division then advanced north and crossed back into Germany, capturing Emlichheim on 5 April 1945.⁵⁸ German resistance at this point was becoming disorganized. Meppen and a bridgehead over the Ems River was subsequently captured by the division on 6 April 1945. Attacking from the vicinity of Sogel, the town of Friesoythe fell to the division on 14 April 1945. German resistance at Edewechterdamm between 15-17 April 1945 delayed the division's crossing of the Kusten Canal. A bridgehead was eventually secured at the cost of heavy infantry casualties.⁵⁹ This fighting was followed by further serious resistance north of the canal. Despite this bitter resistance at the end of the war, the division continued to achieve its objectives and successfully crossed of the Aue River on 21 April 1945. The cease fire on 5 May 1945 found the 4th Canadian Armoured Division sixteen kilometers north of Oldenburg, Germany.

The losses suffered by the infantry regiments for the period February to April 1945 were not as high as in the summer of 1944, but were still considerable.⁶⁰ The Argyll and Sutherland Highlanders of Canada suffered 398 battle and 205 non-battle casualties during these three months. The Lincoln and Welland Regiment had 512 battle and 222 non-battle casualties during the same period. The strength of each regiment at the end of April reflected that an effective reinforcement system was in place. With newly available stocks of National Resources Mobilization Act (NRMA) Canadian conscript soldiers reaching the division, there were no shortages of personnel.⁶¹ The Argyll and Sutherland Highlanders of Canada's strength as of 30 April 1945 was forty officers and 854 other ranks, 5 percent over its authorized strength. It had received a total of 707 replacements over the last three months. The Lincoln and Welland Regiment had received 808 replacement personnel during this period. This brought its unit strength to thirty-eight officers and 816 other ranks, 100 percent of its war establishment.

⁵⁸ Charles Stacey, *The Victory Campaign*, 557.

⁵⁹ Charles Stacey, *The Victory Campaign*, 560.

⁶⁰ LAC, RG 24 Volumes 13,663-13,664. First Canadian Army A & Q War Diaries February-April 1945. T-7094-7095. Consolidated casualty and strength returns.

⁶¹ E.L.M. Burns, *Manpower in the Canadian Army*, 125.

The RCA regiments suffered very few casualties between February and April.⁶² Total losses in the four regiments within the division were 112 battle and 382 non-battle casualties. A total of 630 replacements were dispatched to these regiments during this time. The field personnel returns of two RCA regiments as of 30 April 1945 reflect that each had received an adequate number of reinforcements. The 23rd Field Regiment, RCA, fielded thirty-seven officers and 601 other ranks, 98 percent of its authorized strength. The 5th Anti-Tank Regiment, RCA contained thirty-three officers and 680 other ranks, 92 percent of its effective strength.

The regiments of the armoured brigade and the armoured reconnaissance regiment also suffered low levels of casualties in the last three months of war.⁶³ Between February and April 1945, the 28th Canadian Armoured Regiment suffered a total of 132 battle and twenty-one non-battle casualties. The 29th Canadian Armoured Reconnaissance Regiment had sixty battle and 102 non-battle losses during the same period. These low losses indicate evidence of a reduced enemy anti-tank defence capability. Also, an increased number of Canadian tank crews at this stage were equipped with more effective AFVs than had been available in Normandy. This gave the crews a fighting chance during tank versus tank engagements and lowered the number of battle casualties.

The strength of the division as of 5 May 1945 was 977 officers and 17,619 other ranks.⁶⁴ Its infantry regiments were all near their authorized strengths.⁶⁵ During the last three months of the war no lack of reinforcements were spared in maintaining these units. At the end of hostilities The Lake Superior (Motor) Regiment contained thirty-four officers and 830 other ranks, 1 percent over its establishment strength. The armoured and RCA regiments personnel strength returns were also very high. The 21st Canadian Armoured Regiment contained thirty-seven officers and 648 other ranks, 100 percent of its authorized establishment. The 5th Anti-tank Regiment, RCA was the weakest of the divisional RCA

⁶² LAC, RG 24 Volume 13,793. 4th Canadian Armoured Division A & Q War Diary February-April 1945. T-10551, Consolidated casualty and strength states February-April 1945.

⁶³ LAC, RG 24 Volume 13,793. 4th Canadian Armoured Division A & Q War Diary February-April 1945. T-10551, Consolidated casualty and strength states February-April 1945.

⁶⁴ LAC, RG 24 Volume 13,793. 4th Canadian Armoured Division

⁶⁵ LAC, RG 24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

regiments. This unit was not a high priority for reinforcements and suffered far lower casualties than the infantry regiments. At the war's conclusion its strength was thirty-eight officers and 741 other ranks, 92 percent of its war establishment.

The division contained a large number of combat A vehicles on 30 April 1945.⁶⁶ On this date it had 909 combat A vehicles on strength versus its authorized number of 845. The division was 8 percent over strength in this category. Despite the excessive total number of vehicles, some shortages persisted. The number of 17-Pounder Firefly tanks within the division had increased, but still did not match the war establishment figures. Against an authorized strength of ninety-six tanks, only eighty Sherman Ic and Vc Fireflies were present. Unauthorized vehicles on strength included thirteen of the very valuable Wasp II tracked flamethrower carriers. The number of non-vehicle weapons systems within the division was also high as of 30 April 1945.⁶⁷ A total of 277 heavy weapons were on strength versus an authorized total of 283, 98 percent of the war establishment figure in this category.

In summary, the 4th Canadian Armoured Division was adequately re-supplied with both personnel and equipment during the majority of its service in NWE, 1944-1945. The exception to this record with regard to personnel were the months of August and September 1944. The division's losses shortly after its combat debut were heavy and occurred with such speed that a reinforcement effort proved insufficient with the resources that were available. Poor planning by CMHQ London prevented an adequate number replacement infantry being set aside to deal with high losses. These temporary shortages seriously weakened the infantry component of the division at a time when it needed all of its combat capability.

A successful rebuilding effort coupled with a secondary role during the first two weeks of Scheldt Estuary fighting allowed the division to regain its strength. During this period the division took on reinforcements and conducted training to incorporate them in the division. Adequate numbers of new A

⁶⁶ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). Reference 30 April 1945 divisional return for A vehicles.

⁶⁷ LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). Report for 30 April 1944.

vehicles and heavy weapons were also received, bringing the inventory levels considerably closer to their authorized levels.

From mid-October to the beginning of November 1944, improved combined arms tactics and the growing weakness of the enemy allowed the division to be continuously successful in its operations. The CAO's effective personnel and equipment reinforcement processes allowed the division to maintain its strength during this period. When major operations resumed in February 1945, the division had a high level of combat capability due to it being well-equipped, well trained, rested and experienced. During its advances in the last two months of the war it captured a very large amount of enemy territory. While excellent training, tactics and operational planning all contributed to success of the division, its military effectiveness was dependent on more than these factors. Its adequate number of personnel and sufficient inventories of vehicles and weaponry provided it the tools to defeat the enemy consistently during its operations in NWE.

Chapter 11: The 5th Canadian Armoured Division: Major actions, casualties, reinforcements and strength returns for its combat arms regiments in North West Europe, March-May 1945.

Raised in February 1941 and initially named the 1st Canadian Armoured Division, this formation was comprised of units from across Canada. During the summer of the same year it was renamed the 5th Canadian Armoured Division. After building up its strength by incorporating units of the then still forming 4th Canadian Infantry Division, the division deployed to the U.K in the fall of 1941. It was initially organized with two armoured brigades in accordance with the 1941 British armoured division organizational structure. In January 1943 it was re-organized with one infantry brigade and one armoured brigade. The division saw action in Italy as part of the 1st Canadian Corps from January 1944 to early January 1945. Operating with an additional infantry brigade from July 1944 onward, the division in Italy had a much different structure than armoured divisions fighting in North West Europe (NWE) at the same time. Ordered to NWE as part of Operation "Goldflake", the division moved by road to Livorno, Italy in early February 1945. It then was transported by ship to Marseille, France and then moved by road and rail to Belgium. The division began to arrive in Belgium in the last days of February 1945. After re-organizing itself and being re-equipped as necessary, the division took part in combat operation in NWE from 31 March 1945 until the end of hostilities.¹

The two main fighting components of the division were the 11th Canadian Infantry Brigade and the 5th Canadian Armoured Brigade. The armoured brigade consisted of the 2nd Canadian Armoured Regiment (Lord Strathcona's Horse, (Royal Canadians)), the 5th Canadian Armoured Regiment (The 8th Princess Louise' (New Brunswick) Hussars), and the 9th Canadian Armoured Regiment (The British Columbia Dragoons). The mechanized infantry component of the brigade was The Westminster Regiment (Motor).

¹ "Historical Section, Canadian Military Headquarters, Report No.181. Operation "Goldflake", the move of the 1 Cdn Corps from Italy to North-West Europe, February-March 1945.", *Canadian Forces Personnel Headquarters*. Retrieved 2 March 2016 from <http://www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/doc/cmhcq/cmhcq181.pdf>

The 11th Canadian Infantry Brigade contained The Perth Regiment, The Irish Regiment of Canada and The Cape Breton Highlanders. The 11th Independent Machine Gun Company (The Princess Louise Fusiliers) was available to provide support of the infantry regiments. Unlike an infantry division, the 5th Canadian Armoured Division did not possess a Machine Gun battalion. Divisional reconnaissance was provided by a fourth armoured regiment, the 3rd Canadian Armoured Reconnaissance Regiment (The Governor General's Horse Guards). The two Royal Canadian Artillery (RCA) field artillery regiments within the division were the 17th Field Regiment, RCA and the 8th Field Regiment (Self-Propelled), RCA. Anti-tank and anti-aircraft assets were provided by the 5th Light Anti-Aircraft Regiment, RCA and the 4th Anti-Tank Regiment, RCA.

Organizational war establishment tables for the division's combat arms regiments are present in Appendix 1. Detailed tables on regimental strengths, casualties, reinforcements as well as divisional equipment and vehicle strengths for units discussed in this chapter are provided in Appendix 6. This information is provided for each of the divisional regiments during the April-May 1945 period with some exceptions. There is a significant lack daily data for the divisional RCA regiments in the period of 22 April to 5 May 1945. Weekly strength returns are present for the period 22 April to 5 May, but data on reinforcements and daily casualties per regiment is incomplete. Daily records are available for each RCA unit in the period 1 to 21 April 1945.

On arrival in NWE in the last days of February 1945, the division was ordered to conform to 21st Army Group staff tables of organization for a Canadian armoured division. These staff tables only allowed for one infantry brigade, and the division had been allocated two during its service in Italy. As a result, the division's 12th Canadian Infantry Brigade was disbanded and its units were re-distributed.² The Lanark & Renfrew Scottish Regiment reverted to its original role and title as a 1st Canadian Corps level asset, the 1st Light-Anti-Aircraft Regiment, RCA. The Westminster Regiment (Motor) re-joined the 5th

² "5th Canadian Armoured Division", *Canadiansoldiers.com*, retrieved on 20 February 2016 from <http://www.canadiansoldiers.com/organization/fieldforces/casf/5thdivision.htm>.

Canadian Armoured Brigade as its motor battalion. The 4th Princess Louise's Dragoon Guards reverted back to its original title, the 4th Canadian Reconnaissance Regiment (The 4th Princess Louise's Dragoon Guards). This unit then rejoined its original formation, the 1st Canadian Infantry Division. Like the 1st Light Anti-Aircraft Regiment, RCA, it had to conduct training and be re-equipped to resume its previous role. While this re-organization was taking place with these units, the remainder of the division continued the process of re-equipping and accepting new personnel reinforcements.

As of 4 April 1945, the division's personnel strength on its third day of combat operations in the Netherlands was 750 officers and 19,659 other ranks.³ At this point the division had additional units temporarily attached and it was 40 percent over the establishment strength of a January 1945 Canadian armoured division.⁴ At the end of March 1945 all combat arms regiments within the division had high personnel levels. The 2nd Canadian Armoured Regiment's strength stood at thirty-eight officers and 679 other ranks, 99 percent of its wartime establishment. The 3rd Canadian Armoured Reconnaissance Regiment on the same date had a strength of thirty-eight officers and 644 other ranks, 99 percent of its authorized strength.⁵ Units in the infantry brigades also had satisfactory strength levels, and had benefitted from an influx of available National Resource Mobilization Act (NRMA) conscript reinforcements. The Perth Regiment contained thirty-eight officers and 821 other ranks as of 31 March 1945, and was 1 percent over strength.⁶ On the same date The Irish Regiment of Canada had a similar return of thirty-seven officers and 822 other ranks, making it also 1 percent over strength. The RCA field artillery regiments of the division were both very strong. As of 31 March 1945, the 17th Field Regiment, RCA contained thirty-eight officers and 625 other ranks, 98 percent of its authorized strength.⁷ The other three RCA regiments had similar returns which were close to their authorized strengths.

³ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary March 1945. T-1862. Divisional strength return 4 April 1945. The division at this point had the 7th Anti-Tank Regiment, RCA and 15 Anti-Tank Battery, RCA under command.

⁴ LAC, RG 24 Volume 13,661. First Canadian Army A & Q War Diary December 1944. T-7093. Staff Tables organization for a standard Canadian Armoured Division in January 1945.

⁵ LAC, RG Volume 13,708. 1st Canadian Corps War Diary March 1945. T-1862. 30 March 1945 return.

⁶ LAC, RG 24 Volume 13,663. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁷ LAC, RG24, Volume 13,708. 1st Canadian Corps A & Q War Diary March 1945. T-1862. 31 March 1945 RCA return.

The re-equipment process of the division was still only just complete as of 31 March 1945, and the Canadian Army's A and B vehicles situation report at the end of the month did not contain the division's returns. However, the non-AFV equipment report of 31 March 1945 did contain the division's returns, and the totals reflect adequate inventory levels of heavy weapons, these being 5 percent over the authorized amounts.⁸ As part of its re-equipment, the division received deliveries of new and repaired AFVs through the months of March, April and May 1945. Chart 11.1 displays the number of battle tanks that were delivered to the division in this period versus corresponding Panther tank deliveries to the entire German military. The disparity in figures within the chart is not large, illustrating the superiority of Allied vehicle replacement system. It also should be noted that the division was not committed against any sizeable formation of German armour during its time in NWE, and never suffered heavy AFV losses.

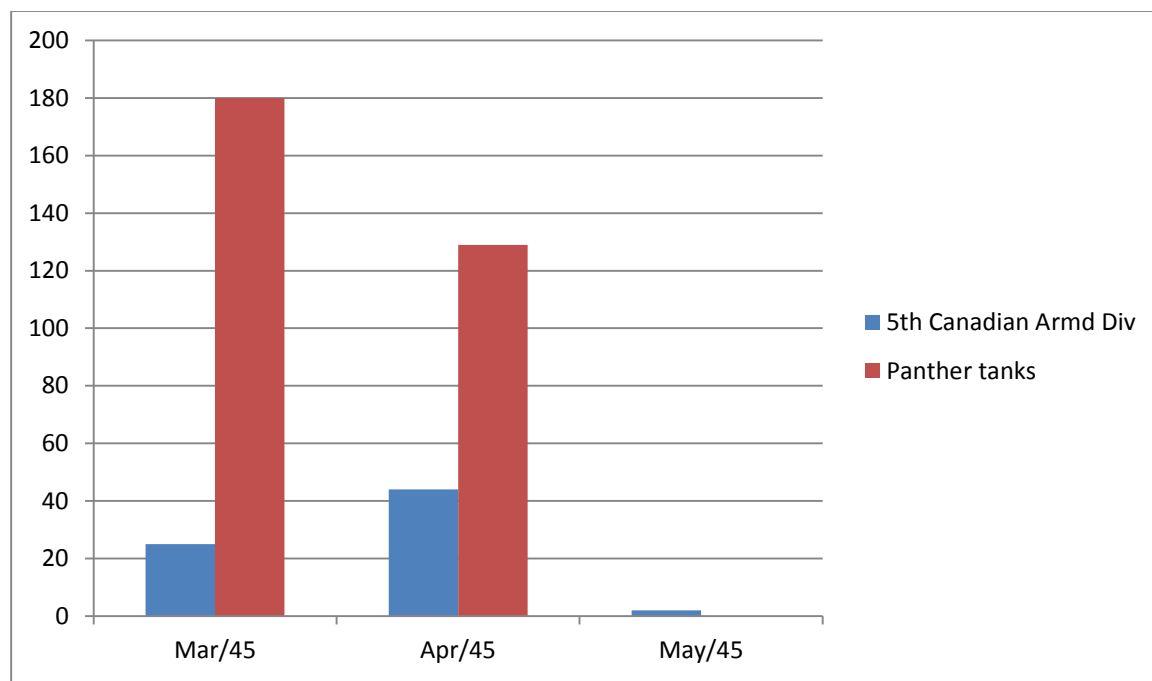
The first operational task of the 5th Canadian Armoured Division on 31 March 1945 was to relieve the 49th British Infantry Division in its positions in the Oosterhout bridgehead over the Waal River. This bridgehead over the Waal was within a rectangle of land south of the Neder Rijn River. Enclosed by waterways and flooded areas, it formed an "Island". Beginning offensive operations on 2 April 1945, the division pushed north in cooperation with the British to clear the "Island" area and reach the Neder Rijn River. By 3 April 1945, the area was cleared with relatively low casualties.⁹ On 15 April 1945 the division advanced from the British bridgehead over the Neder Rijn at Arnhem and attacked west on the left flank of the 1st Canadian Infantry Division. In quick succession the towns of Deelen and Otterloo were liberated by the division on the same day. These victories were followed by the liberation of Voorthuizen, Putten and Ermelo by 18 April 1945.

Casualties in these operations over the 1-21 April 1945 period were light and mainly concentrated in the infantry and armoured regiments. Adequate reinforcements were dispatched to replace any losses that had occurred. The 22 April 1945 strength return for The Irish Regiment of Canada reported

⁸ LAC RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6). 31 March 1945 return.

⁹ Charles Stacey, *The Victory Campaign*, 567-568.

Chart 11.1: Delivery of heavy AFVs by G Squadron, 25th Canadian Armoured Delivery Regiment to the 5th Canadian Armoured Division versus total monthly delivery of new Panther tanks to all German armoured units, March-May 1945¹⁰



thirty-six officers and 824 other ranks within the regiment, 1 percent over its establishment strength. The RCA regiments had also suffered little in this phase of operations. RCA casualties had totalled four battle and eighty-eight non-battle during the division's drive into the central Netherlands. Reinforcements dispatched to RCA units in this period totalled 129.¹¹

Operations by 1st Canadian Corps to continue liberating the area west of Utrecht, the Netherlands, ceased on 19 April 1945. A negotiated agreement with the German occupation forces had allowed for food supplies to be delivered to the starving Dutch population. The German occupation forces allowed these shipments on the condition the Allied advance cease at the Grebbe River line. The 1st Canadian Infantry Division relieved the 5th Canadian Armoured Division on this demarcation line and the latter prepared for redeployment east to the Gronigen area of the Netherlands.

¹⁰ LAC, RG 24 Volume 14,280. G Squadron, 25th Canadian Armoured Delivery Regiment War Diary March-May 1945. T-1275. Martin Block, "Panther allocation sorted by date of allotment", *Panther1944.de*. Retrieved February 2016 from <http://www.panther1944.de/index.php/en/>

¹¹ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Entries for the 5th Canadian Armoured Division abruptly stop as of 21 April 1945.

On 21 April 1945 the division began its move to the eastern part of the Netherlands. On its arrival near the German border it relieved the 3rd Canadian Infantry Division outside the German occupied port of Delfzijl. The division's assigned task was to clear the port in cooperation with 3rd Canadian Infantry Division operations across the border against Emden, Germany. From 23 April to 2 May 1945, elements of the 5th Canadian Armoured Brigade and the 11th Canadian Infantry Brigade assaulted the port from the north and south, encountering stiff resistance.¹² With the surrender of German forces in the port area on 2 May 1945, combat operations for the division ended and the cease fire came into effect three days later.

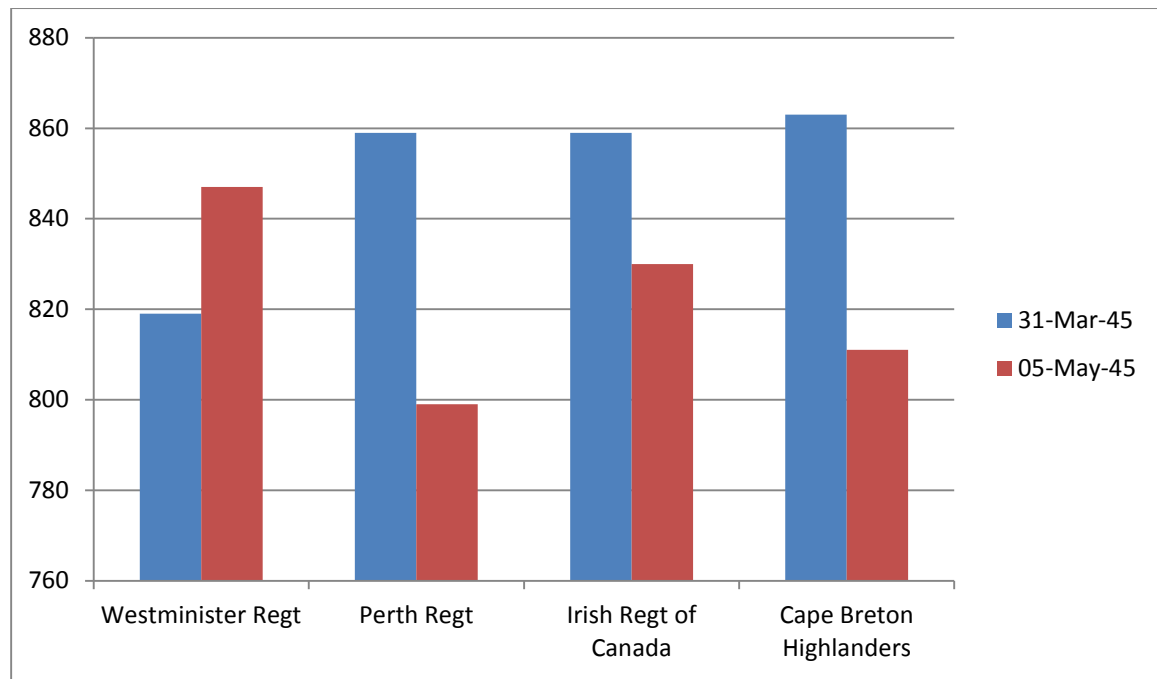
The 5th Canadian Armoured Division's regiments had adequate personnel levels at the end of hostilities. Its strength return for 5 May 1945 was 784 officers and 14,188 other ranks.¹³ During its short phase of combat it was sufficiently resupplied with personnel to keep the majority of its combat arms regiments above 90 percent of their war establishments. During the March-May 1945 period an adequate number of reinforcements were available due to large numbers of NRMA personnel arriving in Europe. As illustrated in Chart 11.2, the four infantry regiments were slightly weakened by combat but remained over or very close to 800 personnel mark. This was a satisfactory figure for an infantry battalion engaged in operations.

The infantry had suffered the brunt of battle and non-battle casualties for the period of time the division was in combat. The regiment that suffered the highest losses within the infantry brigade was The Perth Regiment, with eighty-five battle and fifty-three non-battle casualties for a total of 138. It had received sixty-five replacements during April and May 1945, bringing its strength up to thirty-two officers and 767 other ranks. This figure was 6 percent under its authorized strength. The regiments of the armoured brigade and the armoured reconnaissance regiment had suffered considerably less losses in

¹² Terry Copp, *Cinderella Army*, 282.

¹³ LAC, RG 24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. Consolidated casualty and strength return 5 May 1945. LAC, RG 24 Volume 13,661. First Canadian Army A & Q War Diary December 1944. T-7093. The January 1945 war establishment of a Canadian Armoured Division was 744 officers and 13,879 other ranks..

Chart 11.2: 5th Canadian Armoured Division's infantry regiment strengths pre and post combat operations, 31 March 1945 versus 5 May 1945.¹⁴



the same period. The 9th Canadian Armoured Regiment had twenty-two battle and twenty-six non-battle casualties, for a total of forty-eight personnel. In this period it received forty-seven replacements to bring its strength up to thirty-six officers and 635 other ranks as of 5 May 1945, 97 percent of its war establishment. RCA casualties had been very low for the period of combat operations. The 8th Field Regiment (SP), RCA's return on 5 May 1945 shows thirty-nine officers and 584 other ranks on strength. In the period of operations from 1 to 21 April 1945 the regiment suffered seven battle and twenty-seven non-battle casualties.

The 5th Canadian Armoured Division's returns are present on the A vehicle returns of the First Canadian Army for 30 April 1945. It contained 849 combat A vehicles versus its authorized level of 927, 91 percent of its establishment strength in this category. A majority of this shortage was due to eighty-three T-16 gun tractors and Universal tracked carriers that had not been issued. The infantry and anti-tank regiments were making do with trucks instead and suffered no lack of combat capability during their

¹⁴ LAC RG 24 Volumes 13,663-13-665. First Canadian Army A & Q War Diaries March-May 1945. T-7094-7096. 31 March and 5 May 1945 returns.

dismounted operations. The division did contain 289 Sherman, Firefly and M5 Stuart battle tanks against a war establishment figure of 261, placing it 11 percent over strength in this category.¹⁵ Unauthorized combat A vehicles held by the division at the end of April included two types of powerful flamethrower AFVs. These were six Ram Badger flame throwing tanks and twelve Wasp II tracked flame thrower carriers.¹⁶ Non-vehicle heavy weapon returns for the division as of 30 April 1945 were just as strong as the previous 31 March 1945 returns. The only shortage present was in the category of .303 Vickers Medium Machine Guns, which were thirteen short of their authorized number.¹⁷

In conclusion, the 5th Canadian Infantry Division was well supplied with both personnel and equipment during its brief phase of combat operations in NWE. The division did face a challenging re-organization and re-equipment process on arrival in the Netherlands, but carried these tasks out in a reasonable amount of time. All its regiments had satisfactory personnel levels, and reinforcements were rapidly fed into its regiments to counter any shortage due to battle or non-battle losses. Once it was deemed operational, the division performed well in combat operations against an enemy that was disintegrating. During its combat deployment in April and May 1945, the division liberated large portions of territory throughout the eastern Netherlands.

¹⁵ LAC RG24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 30 April 1945 report..

¹⁶ LAC RG24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 30 April 1945 report..

¹⁷ LAC RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6). 5th Canadian Armoured Division 30 April 1945 return.

Chapter 12: The 1st & 2nd Canadian Armoured Brigades: Major actions, casualties, reinforcements and strength returns for its combat arms regiments in North West Europe, June 1944-May 1945

The 1st and 2nd Canadian Armoured Brigades were independent armoured formations consisting of three armoured regiments each. While the 1st Canadian Armoured Brigade served only briefly in North West Europe (NWE), units of the 2nd Canadian Armoured Brigade landed on D-Day and fought until the end of hostilities. The latter brigade continuously supported the 2nd and 3rd Canadian Infantry Divisions as well as British Army formations in operations stretching from Normandy to Germany. With supporting infantry and artillery units attached to it, the 1st Canadian Armoured Brigade carried out successful operations during its brief operational period in the Netherlands during April 1945.

Organizational war establishment tables for the brigade's armoured regiments are present in Appendix 1. All statistics on the six armoured regiments studied within this chapter are found in Appendix 7. These include monthly battle and non-battle casualties, reinforcements and monthly field returns of officers and other ranks. Following these tables, detailed vehicle and equipment charts report monthly armoured fighting vehicle (AFV) strength returns and delivery records for new and repaired AFVs.

Raised in 1941, the 1st Canadian Army Tank Brigade was originally one of two armoured brigades that formed part of the 1st Canadian Armoured Division. This division was subsequently renamed the 5th Canadian Armoured Division and deployed to the U.K. in the fall of 1941. One of its three armoured regiments, The Calgary Regiment, participated in the disastrous Dieppe Raid of August 1942. Following a re-organization of the division in early 1943, the brigade became an independent formation. In its new role its regiments were to provide support to infantry brigades in battle. Following a further training period in the U.K., the brigade took part in the Sicilian campaign of July and August 1943. Near the conclusion of this campaign the brigade was renamed the 1st Canadian Armoured Brigade.

Further service in Italy continued until January 1945, with the brigade successfully supporting several different Allied formations in multiple operations.¹

When the brigade was given its new title in August 1943, its regiments were renamed the 11th, 12th and 14th Canadian Armoured Regiments on top of the regimental titles already present. At this point the brigade consisted of a headquarters squadron, the 11th Canadian Armoured Regiment (The Three Rivers Regiment), the 12th Canadian Armoured Regiment (The Ontario Regiment) and the 14th Canadian Armoured Regiment (The Calgary Regiment). Like all Canadian armoured brigades, it had also had a Corps of Royal Canadian Mechanical and Electrical Engineer (RCEME) 2nd line armoured brigade workshop attached.²

In mid February 1945 the brigade was redeployed to Belgium with the rest of the 1st Canadian Corps as part of Operation "Goldflake". Utilizing a route similar to the one used by the 1st Canadian Infantry Division and the 5th Canadian Armoured Division, the brigade arrived in Belgium during mid March 1945.³ Throughout the month of March and early April 1945, its regiments were re-equipped with new vehicles and reinforced with new personnel. The brigade's return was not included in the 31 March 1945 A & B vehicle position report for the First Canadian Army as its re-fitting process was still incomplete.⁴ Regimental personnel field returns were recorded in the war diaries however, and these reflected adequate strengths on the eve of combat operations. As an example, the 11th Canadian Armoured Regiment on 31 March 1945 contained thirty-nine officers and 644 other ranks, 99 percent of its authorized strength.⁵

¹ "1st Canadian Armoured Brigade" article. *Canadiansoldiers.com*. Retrieved on 5 February 2016 from <http://www.canadiansoldiers.com/organization/1stcanadianarmouredbrigade.htm>

² Charles Stacey, *The Victory Campaign*, 657. Appendix F Canadian Army in NWE order of battle. Supporting the 1st Canadian Armoured Brigade in its operations was the RCEME 1st Armoured Brigade workshop. Supporting the 1st Canadian Armoured Brigade in the tank delivery role was A Squadron, 25th Canadian Armoured Delivery Regiment..

³ Charles Stacey, *The Victory Campaign*, 529. "Historical Section, Canadian Military Headquarters, Report No.181. Operation "Goldflake", the move of the 1 Cdn Corps from Italy to North-West Europe, February-March 1945." *Canadian Forces Personnel Headquarters*. Retrieved 2 March 2016 from <http://www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/doc/cmhq/cmhq181.pdf>

⁴ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 31 March 1945 return.

⁵ LAC, RG 24 Volume 14,240. 11th Canadian Armoured Regiment War Diary March 1945. T-12705. 31 March 1945 return.

Once the 1st Canadian Armoured Brigade was declared operational in early April 1945, it was deployed along the Waal River.⁶ With Belgian and British units attached to it, the brigade held this line while other 1st Canadian Corps units cleared the water enclosed "Island" area south of the Neder Rijn River during Operation "Destroyer", which took place on 2-3 April 1945. Once this area was cleared, attacking Anglo-Canadian units captured a bridgehead at Arnhem and pushed north of the city. The 11th Canadian Armoured Regiment participated in these operations by supporting units of the 49th British Infantry Division. To facilitate the 5th Canadian Armoured Division's movement to the north of the Neder Rijn River, the brigade took over its positions in the "Island" in mid April. During this phase it also conducted some successful minor operations with Belgian forces. Hostilities would end with the brigade continuing to hold positions on the Waal River and north of it near Opheusden.

Casualties and equipment losses to the 1st Canadian Armoured Brigade during its period of operations from 1 to 19 April 1945 had been extremely light. In April and May 1945, total personnel losses within the regiments were eleven battle and thirty-seven non-battle casualties.⁷ These figures are small compared to the losses within some armoured regiments during the summer of 1944. In accordance with the artillery based doctrine, the regiment's squadrons were parcelled off to support British and Belgian infantry operations. In this supporting role AFV losses were light and any missing vehicles and equipment were quickly replaced. In its brief period of operations the brigade's regiments performed well against light opposition.

Though the regiments had begun operations in early April 1945, they were still receiving new combat A vehicles to bring them up to strength at the end of the month. The three regiments in the brigade received a total of sixty new Firefly 17-Pounder variants in March 1945 and a further thirty-six battle tanks of various types in April.⁸ The brigade did not operate any non A vehicle heavy weapons due

⁶ Charles Stacey, *The Victory Campaign*, 529.

⁷ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diaries April 1945. T-7095. Consolidated daily casualty & strength returns.

⁸ LAC, RG 24 Volume 14,269. A Squadron, 25th Canadian Armoured Delivery Regiment War Diary March-April 1945. T-12737.

to all three of its regiments being armoured. As of 30 April 1945, the brigade contained 200 battle tanks against its war establishment total of 226, 88 percent of its authorized strength.⁹ During its time in NWE, the brigade had not been required to fight any major tank battles, nor did its regiments regularly face a well-equipped enemy offering stiff resistance.

Any casualties that occurred within the brigade during April and May 1945 were quickly replaced. During the course of the April and May 1945, eighty-three reinforcement personnel joined the three regiments.¹⁰ These regiments were all over strength in personnel at the end of hostilities. As an example, the 12th Canadian Armoured Regiment contained forty-five officers and 686 other ranks as of 5 May 1945, 6 percent over strength.¹¹

Landing on D-Day, the 2nd Canadian Armoured Brigade faced some of the most difficult fighting of the war during the Normandy Campaign. Raised in January 1942, the 2nd Canadian Army Tank Brigade was established with units that were formerly part of the 4th Canadian Infantry Division. At this point this division was then re-organizing itself as an armoured division, and had to shed excess units. Deployed to the U.K. in July 1943, it was re-named the 2nd Canadian Armoured Brigade shortly after its arrival. Already present in the U.K. was the 3rd Canadian Army Tank Brigade, also an independent formation. Concerned about the Canadian Army Overseas' (CAO) ability to sustain a third independent armoured brigade, Canadian Military Headquarters (CMHQ) London broke up the original three regiments of the 2nd Canadian Army tank Brigade for reinforcements. The more experienced three regiments from the former 3rd Canadian Army Tank Brigade took their place. From the fall of 1943 to spring 1944, the brigade would conduct training exercises for its upcoming amphibious role in Operation "Overlord".

⁹ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 30 April 1945 return.

¹⁰ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diary April-May 1945. T-7095-7096.

¹¹ LAC, RG 24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

As of spring 1944, the brigade consisted of a headquarters squadron and three armoured regiments. These were the 6th Canadian Armoured Regiment (The 1st Hussars), the 10th Canadian Armoured Regiment (The Fort Garry Horse) and the 27th Canadian Armoured Regiment (The Sherbrooke Fusiliers). Structured similarly to the 1st Canadian Armoured Brigade, the brigade also had its own armoured brigade workshop.¹²

AFV and personnel strengths within the brigade were satisfactory on the eve of Operation "Overlord". The brigade was 23 percent over strength in AFVs, with 245 tanks on hand versus its authorized number of 199.¹³ Personnel returns for the regiments were also adequate prior to the invasion of the continent. The 10th Canadian Armoured Regiment's field return of 3 June 1944 reported a strength of thirty-six officers and 665 other ranks, 2 percent over strength..¹⁴

On 6 June 1944, D-Day, elements of the brigade successfully assaulted Juno beach and drove inland. Further bridgehead battles with German armoured battle groups led to heavy casualties in the month of June. From 6 to 30 June 1944, battle casualties totalled 331 personnel.¹⁵ During this phase the brigade's three regiments were instrumental in providing armoured support to defend the bridgehead. This success was tempered by two significant reverses on 7 and 11 June 1944, when the regiments attempted to take a more forward role in offensive operations. An operational pause in late June and early July 1944 allowed the regiments to receive new tanks, train and to take on reinforcements.

The month of July 1944 was a period of intense operations in Normandy for the brigade. During this time its regiments supported both Canadian infantry divisions in their offensive operations against German positions. Operations "Windsor" and "Charnwood" saw the armoured regiments support the eventual capture of Carpiquet airfield and the city of Caen. Late July's Operations "Atlantic" and

¹² Charles Stacey, *The Victory Campaign*, 657. Appendix F Canadian Army in NWE order of battle. Supporting the 2nd Canadian Armoured Brigade in its operations was the RCEME 2nd Armoured Brigade Workshop.

¹³ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 31 May 1944 return.

¹⁴ LAC, RG 254 Volume 14,233. 10th Canadian Armoured Regiment War Diary June 1944. T-12697. 3 June 1944 return.

¹⁵ LAC, RG 24 Volume 10,517. Canadian Army Casualties. File 215A21.009. (D167). Battle casualties 2nd Canadian Armoured Brigade 6-30 June 1944.

"Spring" were only partial successes as the armoured regiments struggled against strong German positions on Verrieres Ridge. All these operations involved costly tank engagements that resulted in large Canadian tank and crew losses. As the 31 July 1944, all three regiments had been brought back up to strength in battle tanks, but were short of personnel.

The 25th Canadian Armoured Delivery Regiment's (25th CADR) C Squadron effectively carried out its role of re-supplying the brigade with new and repaired AFVs during the summer of 1944. During June and July, the brigade received a total of 129 new and repaired battle tanks from this squadron.¹⁶ Returns for 31 July 1944 show 295 battle tanks on strength versus its authorized total of 199, the brigade being 48 percent over strength in this category.¹⁷ As shown in Charts 12.1 and 12.2, the brigade's AFV strength remained high while a comparable German unit's strength dwindled, it being starved of new panzers and forced to repair damaged ones near the front lines. It is important to note that Chart 12.1 reflects only operational Canadian tanks. There were others on strength that were repairable within one to two days by the light aid detachment in each regiment.

Due the intensity of combat, personnel losses had occurred very rapidly in July 1944. The regiments were still combat effective, but not near their establishment strengths in personnel. For example, the 6th Canadian Armoured Regiment had been reduced to thirty-eight officers and 522 other ranks, 81 percent of its authorized strength. The 25th CADR reinforcement organization would rectify these losses, but this process would take time. Due to the losses sustained in ongoing operations, it was difficult to bring the regiments up to strength. These personnel deficits would only be rectified in the fall of 1944 when the number of the armoured engagements receded.

Operation "Totalize", launched by the First Canadian Army in early August 1944, sought to break through German positions and advance south to Falaise. It was only partially successful in achieving these goals. This was followed by Operation "Tractable" in mid-August 1944, which sought to finally

¹⁶ LAC, RG 24 Volume 14,276. C Squadron, 25th Canadian Armoured Delivery Regiment War Diary June 1944. T-12747.

¹⁷ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 31 July 1944 return.

Chart 12.1: 2nd Canadian Armoured Brigade operational Sherman, Firefly and Stuart tank strength in its three regiments, June-August 1944¹⁸

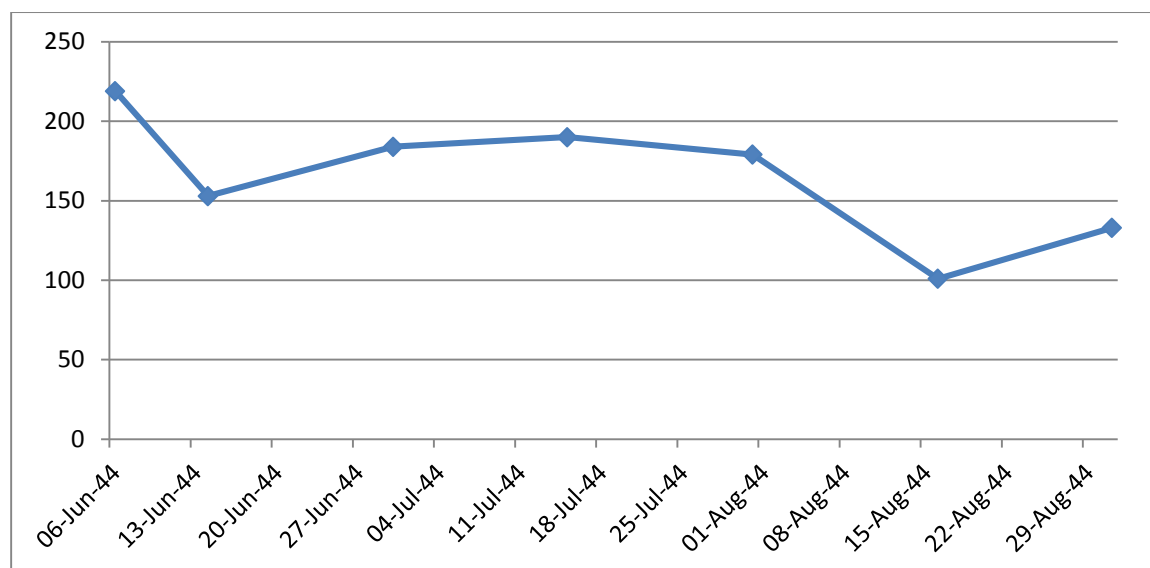
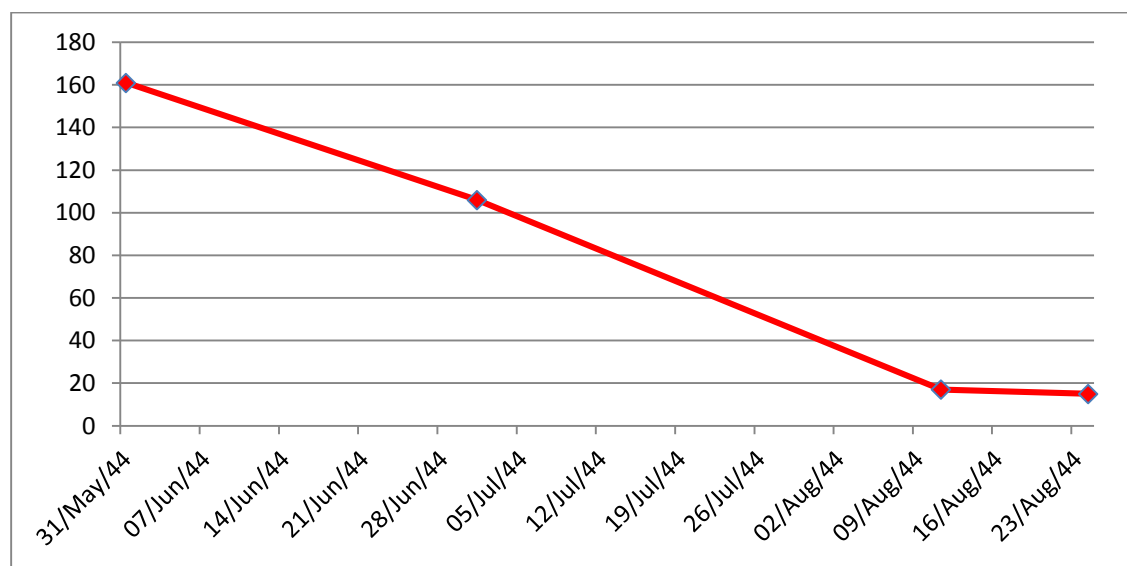


Chart 12.2: German operational Panther and Panzer IV tank strength returns for the two battalions of Panzer Regiment 3 in June-August 1944¹⁹



reach these objectives. In each of these operations the brigade supported the dismounted infantry units of the 2nd and 3rd Canadian Infantry Divisions. Following these operations the regiments took an active role in the eventual capture of Falaise and the encirclement of the trapped German forces. Large tank losses

¹⁸ Roman Jarymowycz, “The Quest for Operational Maneuver in the Normandy Campaign”, 336-338. Appendix E, 2nd Canadian Armoured Brigade tank states June-August 1944.

¹⁹ Niklas Zetterling, *Normandy 1944*, 315.

occurred within the brigade during these final operations of the Normandy Campaign. Due to a successful repair and replacement program, adequate tank strengths within the regiments were maintained. As of 31 August 1944, the 2nd Canadian Armoured Brigade contained 265 tanks on strength in comparison to its war establishment figure of 199. This return placed the brigade 33 percent over its authorized strength in this category. As reflected by the smaller figures in Chart 12.1, not all of these tanks were operational, and many were being repaired by the light aid detachments or part of the armoured brigade headquarters squadron. Many tanks were lost to mechanical breakdown in late August 1944 during the rapid advances across northern France. During this month the brigade received seventy-three new and repaired AFVs to maintain its strength.

Following the conclusion of the Falaise Gap battles in late August, the 2nd Canadian Armoured Brigade rapidly advanced towards the Belgian border. Operating with the 3rd Canadian Infantry Division, its regiments crossed the Seine River and continued to pursue the enemy along the coast. In early September this rapid advance brought Canadian forces into contact with German garrisons in French channel ports. During these operations individual armoured squadrons supported infantry regiments as they steadily reduced these challenging fortifications. September 1944 was not a period of intense armoured warfare, and the brigade's regiments accepted personnel reinforcements and new tanks without offsetting losses. The three regiments took receipt of forty-four replacement battle tanks during this month to bring them back up to near their war establishment figures.²⁰

The 2nd Canadian Armoured Brigade had a limited role in the Scheldt fighting of October 1944 due to the terrain being flooded and criss-crossed with canals and dikes. An armoured squadron would be parcelled off to support a battalion for a limited amount of time, then be assigned to another. Tank and crew casualties were considerably lighter in this period as operations were infantry orientated. The regiments lost a total of ninety-five personnel as battle casualties during this month. A total of seventy-

²⁰ LAC, RG 24 Volume 14,276-14,277. C Squadron, 25th Canadian Armoured Delivery Regiment War Diary September 1944. T-12747-12748

two non-battle casualties were suffered in the same time period, illustrating the constant drain on the regiments even when they were not involved in combat operations.²¹

The inventories of Sherman, Firefly and Stuart tanks within the brigade were slightly weaker as of 31 October 1944. The brigade had not lost many tanks during this month, but a number may have been in workshops due to the wear and tear involved in crossing northern France and parts of Belgium. Sherman, Firefly and Stuart holdings at this point stood at 161 compared to a new October war establishment figure of 226. This was 71 percent of the authorized establishment. More Firefly 17-Pounders were to be available to the Commonwealth armies in fall 1944, and the total number within the brigade had grown to thirty-five by month's end.²²

In the fall and winter period of 1944-1945 the regiments accepted personnel reinforcements as well as more advanced armoured vehicles. As a result all three regiments had satisfactory personnel levels and sufficient quantities of new and repaired battle tanks at the end of January 1945. The 27th Canadian Armoured Regiment during the three month period of November 1944 to January 1945 received 350 personnel reinforcements.²³ During the same time period the three regiments of the brigade received 136 new and repaired Sherman, Firefly and Stuart tanks.²⁴

In the spring of 1945 the brigade played a large role in supporting infantry operations during Operation "Veritable", the advance through the Rhineland. This fighting was followed up by participation in late February and early March's Operation "Blockbuster". In these battles the armoured regiments drove east through the forested areas between the Rhine and Maas Rivers, supporting battalion-level infantry operations. This fighting was challenging as the armoured squadrons had little room to maneuver. These engagements brought some of the last armoured encounters of the war for the brigade,

²¹ LAC, RG 24 Volume 13,659. First Canadian Army War Diary October 1944. T-7092. Consolidated daily casualty and strength returns.

²² LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 31 October 1944 return.

²³ LAC, RG 24 Volume 13,660-13,662. First Canadian Army War Diary November 1944-January 1945. T-7093-7094.

²⁴ LAC, RG 24 Volume 14,277. C Squadron, 25th Canadian Armoured Delivery Regiment War Diary November 1944-January 1945. T-12748

and it managed to inflict heavy losses on German armour. A large number of Firefly 17-Pounder tanks were in action during this fighting, and this well-armed tank was effective against German armour. The regiments suffered a total of 121 battle and 230 non-battle personnel casualties in the months of February and March 1945.²⁵

Following these difficult battles in the Rhineland, during April and May 1945 the brigade supported units of the 2nd Canadian Corps as they drove northward across the Rhine into northern Holland and Germany. These final operations of the war were mounted against disintegrating German opposition and casualties were lower than in previous operations. The combined personnel losses of all three armoured regiments during this thirty-five day period totalled eighty-six battle casualties and 102 non-battle losses.²⁶ The regiments were reinforced with 282 replacements during this period, allowing them to remain very close to their war establishment strengths. As an example, the 27th Canadian Armoured Regiment's strength on 5 May 1945 was thirty-five officers and 630 other ranks.²⁷ These figures placed it at 97 percent of its authorized strength at the end of hostilities.

Sherman, Firefly and Stuart strength within the brigade as of 30 April 1945 amounted to 227 vehicles against a war establishment total of 226. This total placed the brigade at just over 100 percent of its authorized strength.²⁸ These returns illustrate the constant effort that had gone into reinforcing the brigade in order to offset the constant drain of AFVs lost to enemy action and mechanical failure. The 2nd Canadian Armoured Brigade's three regiments ended the war in Northern Germany, supporting the 2nd Canadian Corps' last infantry operations of the war.

All six armoured regiments of the 1st and 2nd Canadian Armoured Brigades adequately supported infantry operations in NWE during their service within this theatre. During this time Canadian armoured

²⁵ LAC, RG 24 Volume 13,664. First Canadian Army A & Q War Diary February-March 1945. T-7094. Consolidated daily casualty & strength returns.

²⁶ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diary April-May 1945. T-7095-7096.

²⁷ LAC, RG 24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

²⁸ LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). 30 April 1945 return.

tactics evolved. The armour squadron became an integral part of the combined arms team rather than the foremost echelon of the attack. Battalion level infantry attacks were adequately supported by tank firepower. In this way vehicle and tank crew losses were reduced, the infantry was adequately supported and the squadrons preserved their strength to fight off the inevitable German counter attack.

Both independent armoured brigades were constantly reinforced with new and repaired AFVs while they were in the field. Sufficient reserves of replacement tanks and adequate recovery, repair and delivery systems allowed the regiments to maintain adequate tank strengths. Personnel levels in the armoured units were rarely an issue. Unlike the infantry, there was never a serious deficiency in the number of Canadian Armoured Corps reinforcement personnel.

Chapter 13: First Canadian Army, 1st and 2nd Canadian Corps troops: Major actions, casualties, reinforcements and strength returns for these combat arms regiments in North West Europe, June 1944-May 1945

The First Canadian Army headquarters was formed in April 1942 due to the number of Canadian divisions in the U.K. reaching the strength of two corps. It became operational in Normandy on 31 July 1944 and the army's commander for the duration of the campaign in North West Europe (NWE) was General H.D.G. Crerar. The 2nd Canadian Corps headquarters was established in the U.K. in January 1943 in order to command excess Canadian formations not controlled by 1st Canadian Corps, then destined for the Mediterranean. On becoming active in Normandy during the first week of July 1944, its commander for the balance of the campaign in NWE was Lieutenant-General Guy Simonds. The 1st Canadian Corps headquarters was transferred back to NWE from the Italian front in early 1945. It was operational for the final April-May 1945 phase of fighting and the corps commander was Lieutenant-General Charles Foulkes.¹

Corps and army level combat arms units under the command of the headquarters of the First Canadian Army and the 1st and 2nd Canadian Corps were independent from Canadian divisions and independent brigades. These units were made available to corps and divisional commanders so that commanders at those levels could have additional assets available to use at their discretion. These units could increase the combat power of a division during offensive operations or could strengthen its defensive front. The vast majority of these units were part of the Royal Canadian Artillery (RCA), and their indirect firepower was utilized to help implement the artillery based doctrine of the Canadian Army in the late war period.

Organizational war establishment tables for army level and corps level combat arms regiments are present in Appendix 1. All statistics on the sixteen regiments featured in this chapter are found in Appendix 8. Regimental data tables feature monthly battle and non-battle casualties, reinforcements and field returns for officers and other ranks. Due to some casualty and reinforcement data for the RCA

¹ Charles Stacey, *The Victory Campaign*, 663. Appendix G. Officers holding principal appointments.

regiments being incomplete, full data tables are present for only some regiments. Following these tables, detailed vehicle and equipment charts present combat A vehicle and heavy weapons strength returns and delivery records for new and repaired heavy armoured fighting vehicles (AFVs).

The First Canadian Army in the last month of hostilities employed multiple battalion sized army level and corps level units. As of April 1945, both the 1st and 2nd Canadian Corps contained one each of the of the following corps level units: One light anti-aircraft (LAA) regiment, one anti-tank regiment, one artillery survey regiment and an armoured car regiment.² Army level units were allocated to corps commanders as needed, but these commanders did not have the luxury of controlling them permanently. These army level units consisted of six medium and two army field artillery regiments, divided evenly into two Army Group Royal Artillery (AGRA) formations. These AGRAs were numbered the 1st and 2nd Canadian AGRA respectively. The 2nd Canadian AGRA was placed in support of 2nd Canadian Corps operations in NWE from July 1944 onward.³ The 1st Canadian AGRA units spent the majority of their existence in support of 1st Canadian Corps operations in Italy. Redeployed to NWE with the 1st Canadian Corps, the 1st Canadian AGRA units participated in operations during April and May 1945.

The four corps-level units belonging to the 1st Canadian Corps were the 1st Canadian Armoured Car Regiment (The Royal Canadian Dragoons), the 7th Anti-Tank Regiment, RCA, the 1st Light Anti-Aircraft Regiment, RCA and the 1st Survey Regiment, RCA. These units had all arrived in NWE between February and March 1945 as part of Operation “Goldflake”. Their travel route to Belgium was exactly the same as the other regiments of the 1st Canadian Corps. On their arrival in Belgium they had began the process of re-equipping, integrating new replacements and re-organizing their regimental structures to fit 21st Army Group standards. They were for the most part combat ready at the beginning of April 1945. The one exception to this was the 1st Canadian Light Anti-Aircraft Regiment, RCA, which had been re-organized during its time in Italy as an infantry unit, The Lanark and Renfrew Scottish Regiment of the

² Charles Stacey, *The Victory Campaign*, 657. Appendix F Canadian Army in NWE order of battle.

³ Charles Stacey, *The Victory Campaign*, 657. Appendix F Canadian Army in NWE order of battle. G.W.L. Nicholson, *The Gunners of Canada Volume II*, 647 Appendix C.. RCA order of battle.

12th Canadian Infantry Brigade.⁴ It was not needed in this role on its arrival in Belgium, and began a re-organization and re-training program to turn it back into a LAA unit. It spent the months of April and May 1945 involved in this process, and would not see action in NWE.

All four 1st Canadian Corps level units as of 1 April 1945 contained adequate personnel levels on the eve of operations in the Netherlands and Germany. As an example, the 1st Canadian Survey Regiment, RCA contained thirty-one officers and 546 other ranks, 92 percent of its war establishment. The inventories of heavy weapons and combat A vehicles for these four units were satisfactory. The 7th Anti-Tank Regiment, RCA contained 100 percent of its war establishment of 17-Pounder anti-tank guns and M-10 17-Pounder self-propelled (SP) tank destroyers as of 31 March 1945.⁵

Two of the four corps units went on to be involved in 1st Canadian Corps operations on the IJssel River area near Arnhem in April 1945. The 7th Anti-Tank Regiment, RCA supported 1st Canadian Armoured Brigade operations south of the Neder Rijn River, south of Arnhem. Some of its batteries took on an infantry role while its self-propelled elements supported the advance of various Canadian units to the north and west.⁶ The 1st Survey Regiment, RCA, in its artillery surveying, flash-spotting, calibration and sound ranging role supported all RCA regiments within the IJssel River area of operations.⁷ Operations for these two units came to a halt on 19 April 1945 with the temporary truce between German and Anglo-Canadian forces on the Grebbe Line. This cease fire agreement allowed relief supplies to reach the Dutch civilians.

The 1st Canadian Armoured Car Regiment, in its role as a reconnaissance spearhead during April and May 1945, was placed under command of the 2nd Canadian Corps. In its advance from the Rhine River to the Friesland region in the northern Netherlands, it covered large distances in a short amount of time against disintegrating opposition. Operating in late April and early May 1945 with units of the 2nd

⁴ G.W.L. Nicholson, *The Gunners of Canada Volume II*, 214-215.

⁵ LAC RG24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). LAC, RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6).

⁶ G.W.L. Nicholson, *The Gunners of Canada Volume II*, 430.

⁷ LAC, RG 24 Volume 14,646. 1st Survey Regiment, RCA War Diary April 1945. T-17262.

Canadian Armoured Brigade and 4th Canadian Armoured Division, it advanced from the Kusten Canal north to Westerstede, Germany by the end of hostilities.⁸ During their period of operations, all three 1st Canadian Corps regiments performed to a satisfactory standard in their battlefield roles.

At the end of hostiles the 1st Canadian Corps level regiments continued to contain adequate personnel levels. All three operational regiments had received enough replacements to keep them combat effective during this final phase of fighting in the Netherlands and northern Germany. On 5 May 1945, the 1st Canadian Armoured Car Regiment contained eighty-one officers and 823 other ranks, making it 5 percent over strength.⁹ During the month of April 1945 this regiment had received nineteen replacements and had recorded fourteen battle and thirteen non-battle casualties.¹⁰

Authorized equipment and vehicle levels were satisfactory for all 1st Canadian Corps level units near the end of hostilities. Even the 1st Light Anti-Aircraft Regiment, RCA which was in the process of re-training and re-equipping, recorded 100 percent of its war establishment of 40mm anti-aircraft guns being on strength as of 30 April 1945.¹¹ On their arrival in Belgium and the Netherlands in the spring of 1945, all four corps units had been adequately equipped and had no major shortages that would impair their combat capability.

Units held at the 2nd Canadian Corps level landed in Normandy during mid July 1944 and became operational shortly afterward. These units consisted of the 6th Anti-tank Regiment, RCA, the 18th Canadian Armoured Car Regiment (The Manitoba Dragoons), the 6th Light Anti-Aircraft Regiment, RCA,

⁸ Charles Stacey, *The Victory Campaign*, 600.

⁹ LAC, RG 24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

¹⁰ LAC, RG 24 Volume 13,665. First Canadian Army A & Q War Diary April 1945. T-7095. April 1945 consolidated casualty and strength returns.

¹¹ LAC RG24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). LAC RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6). 30 April 1945 reports.

and the 2nd Survey Regiment, RCA.¹² All were up to strength as of mid July 1944 and contained their full war establishments of combat A vehicles and equipment.¹³

All four units were committed to operations shortly after their arrival in Normandy. The 6th Anti-Tank Regiment, RCA was involved in combat immediately, supporting Canadian forces attacking Verrieres Ridge in late July 1944. Given the static nature of the fighting in July, the 18th Canadian Armoured Car Regiment was assigned limited mounted and dismounted reconnaissance duties, and suffered continuous losses. The 6th Light Anti-Aircraft Regiment was immediately engaged in combating a very active Luftwaffe. The 2nd Survey Regiment, RCA supported all RCA units within the beachhead as well as British Army Royal Artillery (RA) units in its artillery survey, flash-spotting, calibration and sound-ranging role.

Casualties from the summer 1944 battles were light for the majority of the 2nd Canadian Corps units in comparison to those within the Canadian infantry brigades. An unfortunate side-effect of the use of strategic air power as a tactical tool in Normandy were incidences of friendly fire due to inaccurate bombing runs. This friendly fire caused many unnecessary losses among rear deployed 2nd Canadian Corps troops during operations in mid August 1944. A type of unit which usually had very low battlefield casualties, the 2nd Survey Regiment, RCA suffered forty-eight battle and twenty-four non-battle casualties during August 1944.¹⁴ The majority of these were from inaccurate Allied aerial bombing runs. The 6th Light Anti-Aircraft Regiment suffered twenty-one battle casualties in July 1944, mainly due to German air attack and indirect fire.¹⁵ In comparison to the low average monthly casualties in the LAA regiments during the September 1944 to May 1945 period, these figures are high.

¹² Charles Stacey, *The Victory Campaign*, 657. Appendix F Canadian Army in NWE order of battle.

¹³ LAC RG24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). LAC, RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6).

¹⁴ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary August 1944. T-17265. August 1944 war diary entries.

¹⁵ LAC, RG 24 Volume 14,601. 6th Light Anti-Aircraft Regiment, RCA War Diary July 1944. T-16753.

Despite casualty rates in the summer of 1944 being the heaviest of the war for the Canadian Army, all four 2nd Canadian Corps level units were at adequate personnel levels as of 31 August 1944. As an example, the 18th Canadian Armoured Car Regiment's strength was fifty-seven officers and 786 other ranks on 30 August 1944, 98 percent of its war establishment.¹⁶ These personnel totals were taken after its prominent role in pursuing the defeated German Army and Waffen SS formations across France in late summer. The relatively intact personnel levels of this unit indicate that the German ground forces in late August 1944 were involved in an urgent withdrawal, not a fighting retreat. The strength of the 6th Anti-Tank Regiment, RCA, was much weaker. It totalled thirty-seven officers and 690 other ranks present as of 26 August 1944.¹⁷ This regiment saw far heavier combat than the other three corps level units, and was reduced to 91 percent of its personnel war establishment. This figure was still far better than the average 2nd Canadian Corps infantry regiment in the same period during late summer 1944.

Following the Normandy Campaign, battle casualties within all 2nd Canadian Corps level regiments dropped significantly. While these regiments had roles in the conquest of the channel ports and the Battle of the Scheldt in fall 1944, they did not experience the same levels of combat as they had previously. Due to the opponent often being entrenched and surrounded German infantry, the operations of Canadian anti-tank, anti-aircraft and long-range reconnaissance forces was limited. As shown in Chart 13.1, the 6th Light Anti-Aircraft Regiment, RCA's role had significantly changed due to a lack of enemy aircraft to shoot down. In the fall of 1944 it was available for non-anti-aircraft tasks such as engaging ground targets and security sweeps for enemy stragglers. With the enemy's ability to attack its positions on the battlefield significantly reduced, the 2nd Survey Regiment, RCA suffered only seven battle casualties in the period September to November 1944.¹⁸

Personnel levels for the four 2nd Canadian Corps regiments were satisfactory at the end of November 1944, indicating that sufficient reinforcements had been received. As an example, the 6th Light

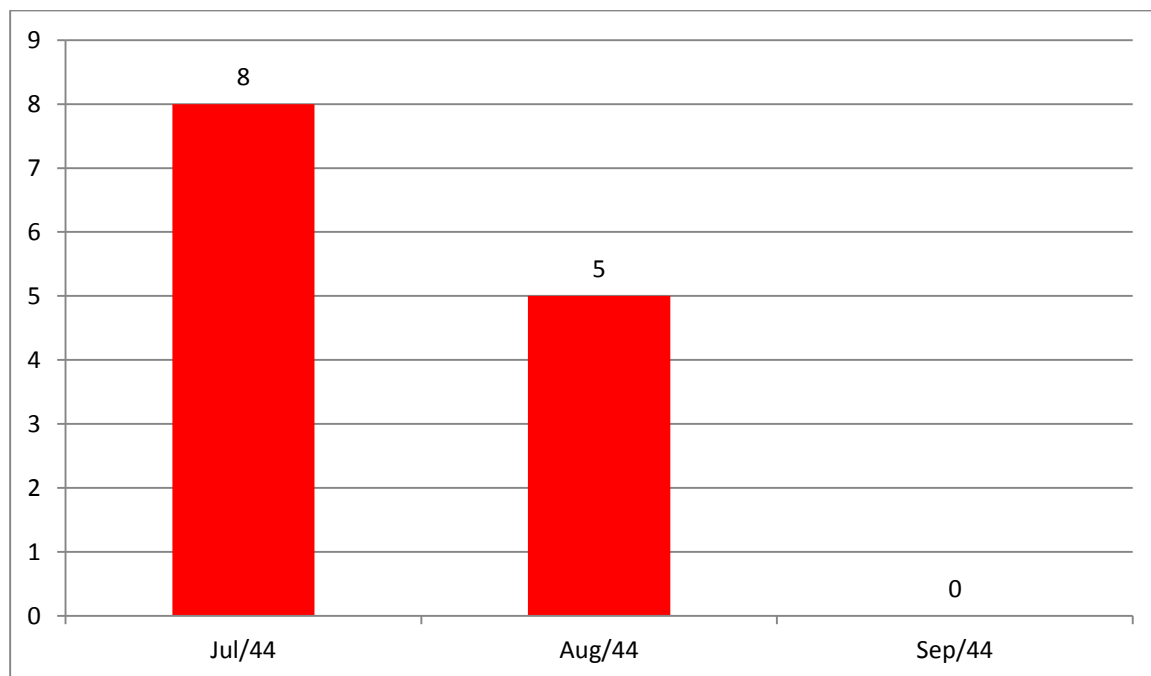
¹⁶ LAC, RG 24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁷ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary August 1944. T-16719. 26 August 1944 return.

¹⁸ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary September-November 1944. T-17266.

Anti-Aircraft Regiment, RCA's strength stood at thirty-eight officers and 746 other ranks on 25 November 1944, 97 percent of its war establishment. Heavy weapons and combat A vehicle inventories were also satisfactory. 2nd Canadian Corps troops possessed 271 out an authorized level of 278 combat A vehicles on 30 November 1944. This placed the four regiments at 97 percent of their A vehicle war establishments. Non-vehicle equipment levels were also satisfactory. Eighty heavy weapons systems were on strength against the war establishment level of seventy-two on 30 November 1944.

Chart 13.1: 6th Light Anti-Aircraft Regiment, RCA war diary recorded days with enemy aircraft activity summer-early fall 1944¹⁹



The winter months of December 1944 and January 1945 were a relatively quiet time for the corps level units of the 2nd Canadian Corps. In this period they had sufficient time to absorb replacements, conduct training and support patrolling and artillery activity. On the eve of the February 1945 Operation "Veritable" offensive into the Rhineland, all four regiments contained high personnel levels. The 6th Anti-Tank Regiment, RCA possessed thirty-seven officers and 724 other ranks, 95 percent of its war establishment. Combat A vehicle and equipment returns for 2nd Canadian Corps troops as of 31 January

¹⁹ LAC, RG 24 Volumes 14,601-14,602. 6th Light Anti-Aircraft Regiment, RCA. T-16753. War diary entries July-September 1944.

1945 reported satisfactory inventories. The units contained 267 combat A vehicles against their authorized level of 286, 93 percent of their war establishment. The units were over strength in their non-A vehicle weapons inventories. A total of eighty four 40mm AA guns, 17-Pounder anti-tank guns and 2-Inch mortars were on strength versus a war establishment total of seventy-two.

The 1945 fighting in the Rhineland, the Netherlands and northern Germany was often intense due to the German Army occasionally making a determined defensive effort. The four corps units during this period were just as involved in operations as units within Canadian divisions and independent brigades. Casualties were heavy, but not as heavy as the fighting in Normandy. The supply of reinforcements reaching the four regiments during this stage was adequate enough to keep their personnel strengths high. In the months February through May 1945, the 18th Canadian Armoured Car Regiment accepted a total of 120 reinforcements to cover thirty-eight battle and 129 non-battle casualties.²⁰ Reflecting the low casualty levels that went with its battlefield role, the 2nd Survey Regiment, RCA, received 111 replacements against sixty non-battle and four battle casualties.²¹

The conclusion of hostilities in May 1945 found the four corps level regiments of the 2nd Canadian Corps in various location in northern Germany. During April 1945 all four units had been involved in supporting Canadian and British forces that crossed the Rhine River and advanced through the northern Netherlands and Germany. The 6th Anti-Tank Regiment, RCA played a significant role in the fighting to capture Leer, Germany in late April 1945.²² The 18th Canadian Armoured Car Regiment also took a leading role in the final stages of the fighting, advancing with the regiments of the 4th Canadian Armoured Division. This regiment captured Mollberg, Germany, one the farthest points reached by the 2nd Canadian Corps in its advances.

The first army level unit to land in Normandy was the 19th Army Field Regiment, RCA. This artillery unit was attached to the 3rd Canadian Infantry Division as a fourth self-propelled (SP) field

²⁰ LAC, RG 24 Volumes 13,662-13,665. First Canadian Army A & Q War Diaries February-May 1945. T-7094-7096.

²¹ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary February-May 1945. T-17266-17267.

²² Charles Stacey, *The Victory Campaign*, 593-594.

artillery regiment from June 1944 onwards. When the three army level RCA medium regiments forming the 2nd AGRA landed in mid-July 1944, the 19th Army Field Regiment, RCA was detached to join them. All the medium regiments were initially equipped with 5.5-Inch medium guns and the Army Field Regiment was equipped with M7 Priest 105mm SP artillery pieces. These units contained a total of seventy-two artillery pieces, which was an equivalent amount of artillery to that contained within an infantry division. The only difference being was that two thirds of those pieces in the AGRA grouping were the heavier medium 5.5-Inch guns. Due to the lack of any super heavy Canadian artillery units, the three 5.5-Inch medium regiments were the most powerful artillery regiments in the Canadian Army.

The 2nd Canadian AGRA immediately became involved in the artillery programs supporting Anglo-Canadian offensive operations in July 1944. Their heavy firepower was instrumental in reducing German defensive positions continuously until the end of the Normandy Campaign. In the final two weeks of the campaign the regiments moved continuously to keep their guns in range. During the final Falaise Gap battles, a large amount of damage was done to retreating German units by artillery forward observers directing the AGRA's heavy guns.

During combat operations in Normandy the four AGRA regiments suffered casualties from continuous German indirect fire, air strikes and friendly fire in the form of inaccurate Allied aerial bombing. This changed during mid August 1944 as the German military began their withdrawal from France. At this point the German ground forces and Luftwaffe's ability to attack rear deployed Allied heavy artillery positions was greatly reduced. The German artillery units at this stage did not have the resources or the capability to engage in sustained counter battery fire. The Allied air forces had simultaneously achieved such a level of air superiority that the Luftwaffe had difficulty launching ground attack operations.

As a result of this situation, the 2nd Canadian AGRA continued to be effective in the period September 1944 to May 1945, but with far fewer casualties. Losses in the AGRA units during the

summer of 1944 had also been increased significantly by friendly fire in the way of inaccurate aerial bombing. These types of operations by Allied four-engined bombers were largely concluded by September 1944. Total battle casualties for all three medium regiments in NWE from 13 July to 4 October 1944 had been 250. Non-battle casualties totalled 115.²³ Recorded monthly battle casualties for the remainder of the war for the three medium regiments totalled 190. Non-battle casualties that required hospitalization for the same three regiments over the same October 1944 to May 1945 period was an astounding total of 960.

Personnel replacement data for AGRA units in the period June to September 1944 is inconsistent, but the strength returns for these regiments indicate that they were adequately resupplied with personnel. Due to the Canadian Army's artillery doctrine revolving around these units to a degree, it was impossible to allow these units to become weak due to non-reinforcement. As of 26 August 1944, the 7th Medium Regiment, RCA, contained twenty-eight officers and 507 other ranks, 94 percent of its war establishment.²⁴

The neutralization of the fortified German ports on the English Channel with their coastal gun emplacements was an important task for the 2nd AGRA, and it was fully engaged in these operations throughout late August and September 1944. During the Battle of the Scheldt in October and early November 1944, the 2nd Canadian AGRA delivered effective indirect fire against entrenched German infantry. The static winter period of December 1944 to January 1945 was spent accepting replacements, training and conducting fire missions against German positions along the Waal River.

Equipment challenges were not an issue for 2nd Canadian AGRA during its campaign in NWE. As shown in Chart 13.2, the operational equipment levels of the three 2nd Canadian AGRA medium regiments were always near 100 percent. If they were to keep delivering effective indirect fire support that Canadian Army operations revolved around, it was necessary that this was always the case. These

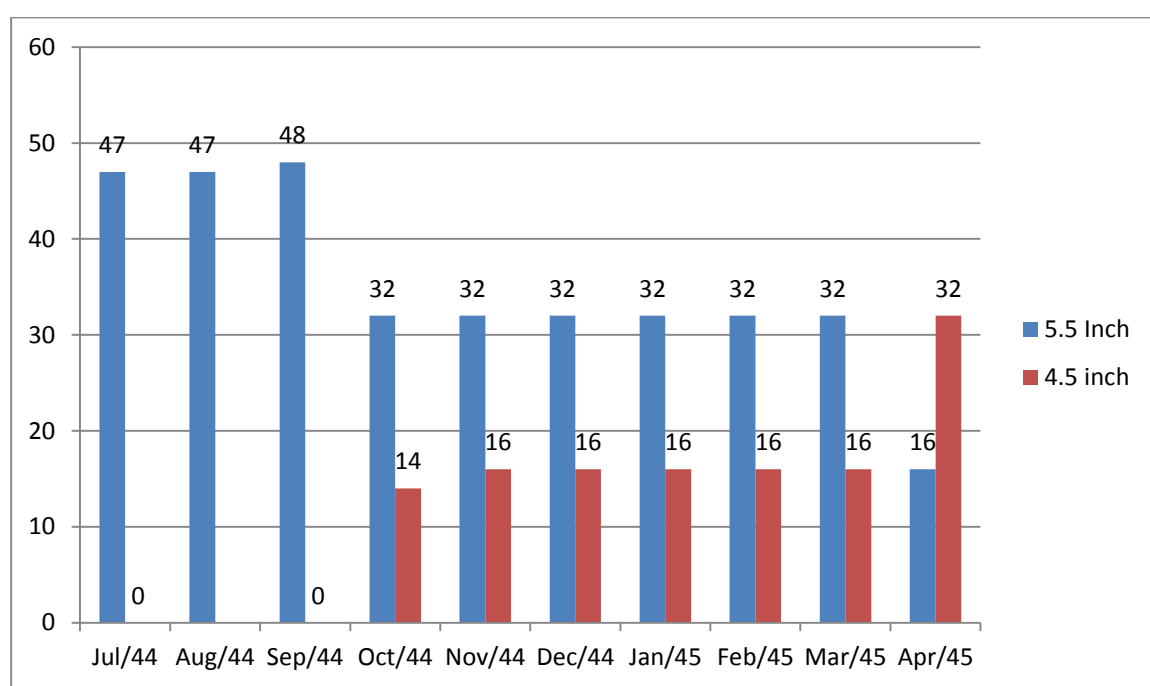
²³ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties.

²⁴ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary August 1944. T-15917. 26 August 1944 return.

units were continuously in action virtually every day in contrast to infantry, armoured, anti-tank and anti-aircraft units. In a manner that was very similar to the divisional RCA field regiments, the only time they were not in action was when they were in transit to their next gun positions.

Strength returns for 2nd Canadian AGRA units on the eve of the February 1945 Rhineland battles illustrate that they had been constantly reinforced during the winter months. The 7th Medium Regiment,

Chart 13.2: Number of operational 4.5 and 5.5-inch guns within the three 2nd Canadian AGRA RCA medium regiments July 1944-April 1945. War establishment for three medium regiments=48 guns²⁵



RCA contained twenty-eight officers and 532 other ranks on 27 January 1945, 99 percent of its war establishment.²⁶ The 3rd Medium Regiment, RCA was also strong, consisting of twenty-nine officers and 516 other ranks as of 27 January 1945. It was only 4 percent under strength compared to its war establishment.²⁷

²⁵ LAC RG24 Volume 10,553. Canadian Army A & B vehicle positions. File 215A21.085 (D1). LAC, RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6). July 1944-April 1945 reports.

²⁶ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary January 1945. T-15918. 27 January 1945 return.

²⁷ LAC, RG 24 Volume 14,389. 3rd Medium Regiment, RCA War Diary January 1945. 27 January 1945 return.

The First Canadian Army encountered heavy resistance during the 1945 Rhineland fighting which occurred during Operations "Veritable" and "Blockbuster". Both operations were supported by significant artillery programs that were designed to reduce German defences and inflict a large amount of casualties. The 2nd Canadian AGRA along with other British AGRA formations played a central role in these programs. The fire of these regiments along with the divisional 25-Pounder field regiments was crucial in destroying German positions and repulsing their counter attacks. Casualty totals for the February and March 1945 fighting totalled sixty-seven battle and 312 non-battle among the four 2nd Canadian AGRA regiments.²⁸ The fact that the non-battle casualties outweighed the battle casualties illustrates the reduced German ability in spring 1945 to attack or destroy Canadian artillery positions.

In the final phase of the spring 1945 fighting, the four regiments of the 2nd Canadian AGRA followed the advancing 2nd Canadian Corps into the northern Netherlands and Germany. Constantly moving from position to position, they struggled to keep up with the advances. At this stage German resistance was so weak that by the time the AGRA regiments had reached a firing position, the enemy had been overcome. One of the farthest advancing AGRA medium regiments was the 7th Medium Regiment, RCA which ended the war in Hesel, Germany, near Leer.

The 1st Canadian AGRA arrived in Belgium in February and March 1945. This formation consisted of the 1st, 2nd and 5th Medium Regiments, RCA and the 11th Army Field Artillery Regiment, RCA. These medium regiments were not equipped in the same manner as those in the 2nd Canadian AGRA medium regiments due to some units fielding 4.5 Inch guns. The 11th Army Field Regiment, RCA was self-propelled, being equipped with the Sexton 25-Pounder SP howitzer. The three RCA regiments were deployed to support 1st Canadian Corps operations in the Netherlands during the 2 to 19 April 1945 phase of fighting.

²⁸ LAC, RG 24 Volume 13,663. First Canadian Army A & Q War Diaries February-March 1945. T-7094.

In their battlefield role 1st Canadian AGRA units supported the Allied crossing of the IJssel River in April 1945 and the advance to the Grebbe River line where offensive operations ceased. Due to the limited combat capability of the enemy forces at this time, the 1st Canadian AGRA suffered very few losses during its operations with the 1st Canadian Corps. While the 1st Canadian AGRA medium regiments were combat capable, they had not been reinforced to 100 percent of their war establishments for personnel. As an example, the 1st Medium Regiment, RCA, contained a strength of twenty-nine officers and 493 other ranks as of 5 May 1945, only 92 percent of its war establishment. The 5th Medium Regiment, RCA possessed a strength of twenty-nine officers and 501 other ranks at the end of hostilities, 93 percent of its authorized personnel. It appears neither of these regiments were a high priority for reinforcements due to the end of hostilities being imminent and the cease fire in the Netherlands taking hold on 19 April 1945. All four 1st Canadian AGRA regiments had adequate inventories of major weapons systems in order to complete their missions. The three RCA medium regiments contained all forty-eight of their authorized number of 4.5 and 5.5-Inch guns, and the 11th Army Field Regiment, RCA contained all twenty-four of its war establishment number of Sexton 25-Pounder SP artillery pieces.²⁹

In conclusion, the army and corps level units of the Canadian Army in NWE were utilized in operations to the same degree as similar units held at the divisional level. Since none of the units were infantry, and several were usually deployed to the rear, these units had on average lower levels of casualties. But the casualties they did suffer were on par with other regiments of their type. The 6th Anti-Tank Regiment, RCA saw continuous combat in Normandy and experienced the full force of German armoured counterattacks on Verrieres Ridge. Its casualties were similar to other anti-tank regiments held at the division level. Though the armoured car regiments did not have prominent roles in some of the most difficult battles, they did lead the pursuit of the German Army across France and kept continuous contact with the retreating enemy. In April and May 1945, these units again advanced over large areas of enemy held territory following the German disintegration in the last weeks of the war. The firepower of

²⁹ LAC, RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6). April 1945 reports.

the medium regiments of the AGRA were instrumental in gaining victory in the attritional Normandy Campaign and successfully supported operations to the war's conclusion. Not being part of the divisions' order of battle, corps and army level units were shuffled around between divisions to where the fighting was the most demanding. Their continuous reinforcement with new personnel, combat A vehicles and heavy weapons kept them operating at a high level that ensured the successful completion of any mission given to them.

Chapter 14: Final thoughts on the Canadian Army's ability to replace personnel and equipment during the campaign in North West Europe, 1944-1945

The ability of the Canadian Army to reconstitute itself was one of its greatest strengths during the campaign in North West Europe (NWE). While German units became steadily weaker, Canadian combat arms units were continually reinforced in order to retain their combat capability. In the event that a regiment suffered heavy personnel losses, it would be out of action for half a week at the most.¹ Vehicle and equipment losses could be replaced within days.² Though it took some time to rebuild the combat effectiveness of a unit's personnel, actually having the replacement soldiers quickly in place was the crucial first building block. This Canadian capability could not be matched by the enemy, and was one of the principle reasons behind their defeat in May 1945. German defences were continuously ground down by a force whose overwhelming resources were matched with an effective artillery based operational doctrine. This doctrine focused on minimizing Canadian losses while maximizing the ongoing attrition of the enemy, a "compassionate attritionist" approach to warfare. Without replacement resources, German units simply melted away.

While not always efficient, the Canadian Army Overseas (CAO) approach to the maintenance of its personnel and equipment inventories speaks of a military culture that did not view these items as disposable assets, but valuable tools to be maintained. Sophisticated organizations used large amounts of resources to see that equipment remained operational and personnel levels remained satisfactory. This was very much in contrast to the late war attitude of the German military, who ruthlessly fought complete formations to destruction in order to achieve dubious objectives, then replaced them with others when their usefulness was expended.

¹ David O'Keefe, "'Pushing Their Necks Out': Ultra, The Black Watch, and Command Relations, May-sur-Orne, Normandy, 5 August 1944," *Canadian Military History*: Vol. 15: Iss. 1, Article 3. Retrieved 20 February 2016 from <http://scholars.wlu.ca/cmh/vol15/iss1/3>. The Royal Highland Regiment of Canada returned to the front lines on 4 August 1944, ten days after the battle on Verrieres Ridge which destroyed its infantry companies.

² LAC, RG 24 Volume 14,277. C Squadron, 25th Canadian Armoured Delivery Regiment War Diary April 1945. T-12748. This squadron delivered fifty-six new and repaired AFVs to 2nd Canadian Armoured Brigade units in April 1945. This equalled an average of 1.86 AFVs delivered per day to the three armoured regiments.

Two organizations stood at the forefront of the CAO's effort to constantly maintain its equipment inventories. The Corps of Royal Canadian Electrical and Mechanical Engineers (RCEME) recovery and repair processes were very effective at recovering and repairing unserviceable equipment, and the 25th Canadian Armoured Delivery Regiment (25th CADR) was extremely competent at delivering replacement armoured vehicles rapidly. This second organization's whole purpose was to maintain the heavy armoured vehicle strength of all Canadian units, and nothing comparable existed in the German Army or Waffen SS. The creation of RCEME in 1944 and the earlier adoption of British Army recovery and repair methods in 1943 illustrates the constant doctrinal evolution present in the CAO during the late war period. The effective practice of using four staggered maintenance lines produced the maximum number of repaired vehicles and weapons possible in the shortest period of time. Severely damaged or broken down vehicles and weapons were stripped from combat units quickly, leaving the light aid detachments to concentrate on small repairs. This allowed Canadian combat arms units to retain their combat effectiveness due to their possessing close to totally serviceable inventories of weapons and vehicles. As an example, by 30 April 1945 the CAO contained a total of 4,588 combat A vehicles on strength within its combat arms units, very close to all of which could be assessed as operational.³ On the same date the number of Canadian 5.5-Inch, 4.5-Inch and 25-Pounder artillery pieces in service totalled 510.⁴ Any shortages that did occur within the First Canadian Army in NWE were of a temporary nature.⁵

Though the vast majority of units contained their complete war establishment of equipment by war's end, it is important to note that it was of varying quality within some combat arms units. Though not the responsibility of the repair and replacement organizations, a challenge that faced the CAO in NWE was the acquisition of effective types of weapons and armoured vehicle technology for its infantry and armoured units. It is difficult to quantify the limitations inferior technology imposed on successful

³ LAC RG24 Volume 10,553. 21st AG. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). This did not include vehicles in the repair or delivery systems, but only those within combat arms units.

⁴ LAC RG24 Volume 10,553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). LAC, RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6). July 1944-April 1945 reports.

⁵ LAC RG24 Volume 10,553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). LAC, RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6). July 1944-April 1945 reports.

infantry and armoured offensive tactics, but the widespread use of this equipment certainly did not aid the Canadian Army's performance, nor did it do much to limit casualties within the infantry.

This was an issue that confronted all British and Commonwealth forces, and there was very little the CAO could have done to improve this situation. While the Royal Canadian Artillery's (RCA) 25-Pounder artillery piece was a war winning piece of ordnance, the 75mm gunned Sherman tank and the Sten sub machine gun were average weapons systems compared to others in the Allied and German arsenals. They did the job, but not as effectively as it could be done. As was the case within all British and Canadian units, excellent weapons systems such as the Ram armoured personnel carrier and the Wasp II flame thrower carrier were rare items at the end of hostilities.⁶ During June and July 1944, no more than twenty-three Firefly 17-Pounders were available to the 2nd Canadian Armoured Brigade, this at a time when they were needed the most.⁷

Having adequate personnel levels within all Canadian combat arms units was a major factor in the successful achievement of their missions. For the majority of the time the First Canadian Army conducted combat operations in NWE, units never lacked for adequate reinforcements to replace battle and non-battle casualties. Personnel strength was never a problem for artillery and armoured units, and this allowed them to continuously operate their large inventories of weapons and vehicles. Throughout the spring of 1945, infantry regiments could take high losses one day, be rebuilt, and then be strong enough to conduct operations a short time later.⁸ But unlike the reinforcement records of the RCA and Canadian Armoured Corps (CAC), the history of personnel reinforcement in the Canadian Infantry Corps (CIC) during 1944 was not without blemish.

⁶ LAC RG24 Volume 10,553. 21st A.G. Canadian A & B Vehicle Position Report. File 215A21.085 (D1). As of 30 April 1945 there were 104 Ram Kangaroo armoured personnel carriers on strength within the entire CAO.

⁷ Roman Jarymowycz, "The Quest for Operational Maneuver in the Normandy Campaign", 275.

⁸ LAC, RG 24 Volume 15,009. The Royal Highland Regiment (The Black Watch) War Diaries July-August 1944. After the complete destruction of its infantry companies on 25 August 1944, the entire battalion conducted a heavy attack on May-sur-Orne on 5 August 1944.

During August and September 1944 there were challenges in supplying infantry units with other ranks (non-officer) replacements. In this two month period a shortage of infantry personnel existed within the reinforcement organization's holding units.⁹ This was only one trade out of the three combat arms trades, but the infantry was the spearhead of Canadian offensive operations. The shortage lasted only two months out of an eleven month campaign, but for two weeks of this period it was important for the Canadian Army to be operating at its highest performance level. During this time the most critical phase of the Normandy Campaign occurred, and each infantry company had large demands placed upon it.

While some infantry regiments during August-September 1944 were still reasonably strong, others faced serious shortages that reduced them to two infantry companies rather than four. As an example, Les Fusiliers Mont-Royal on 21 August 1944 contained a strength of thirty-seven officers and 516 other ranks, only 65 percent of its war establishment.¹⁰ The lack of a sufficient number of infantrymen at this point in the Normandy Campaign arguably led to a reduction in the Canadian Army's military effectiveness. It is impossible to answer to the question of whether stronger Canadian infantry companies could have closed the Falaise Gap sooner or broken through German defences in August more effectively. What is certain is that an increased infantry capability would not have harmed the Canadian Army's performance.

A large program to re-muster excess personnel in other trades was in effect by August 1944, but the transformation of these personnel into other ranks infantry could not occur instantaneously. Significant results were not apparent in formations like the 2nd Canadian Infantry Division until late September.¹¹ The majority of all deficits were made good by early October, and replacements were not an issue for the remainder of the campaign in NWE. By 30 September 1944 one of the most depleted

⁹ LAC, RG 24 Volume 10,669. Report: "Deficiencies and holdings of Canadian Infantry, Other Ranks; Northwest Europe, 27 August, 1944-28 April 1945."

¹⁰ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹¹ LAC, RG 24 Volume 10,669. Report: "Deficiencies and holdings of Canadian Infantry, Other Ranks; Northwest Europe, 27 August, 1944-28 April 1945."

units, The South Saskatchewan Regiment, contained thirty-two officers and 703 other ranks, 86 percent of its war establishment.¹² This number would improve further before it commenced combat operations in the Scheldt in early October.

RCA units had the least problems in maintaining their units personnel strengths. In addition to having the most advanced artillery technology, RCA artillery units suffered consistently lower personnel casualties than armoured and infantry units. The failure of the German Army to effectively use artillery counter battery fire and the inability of the German Luftwaffe to conduct regular airstrikes meant that RCA operations went largely unhindered. Due to the First Canadian Army consistently holding the initiative, large amounts of RCA personnel were never lost due to a sudden German advance reaching field artillery and light anti-aircraft units. There were instances of batteries losing guns to occasional German counter-battery fire, but their loss was not an everyday occurrence.¹³ RCA anti-tank regiments, with their direct fire anti-tank guns and tank destroyers, did suffer significantly higher losses than rear-deployed field artillery regiments who were somewhat immune to direct fire. A greater effort had to be made to keep these unit's personnel levels and equipment inventories up to strength.¹⁴

For nine months of the eleven month campaign in NWE, the personnel reinforcement system operated smoothly for all trades. In June and early July 1944 it had responded effectively to the limited needs of the 3rd Canadian Infantry Division 2nd Canadian Armoured Brigade without difficulty. During this time both units were involved in challenging combat operations against powerful German units. From October 1944 to May 1945 combat arms units were consistently reinforced, giving them the strength to overpower enemy opposition. The introduction of NRMA conscripts in the spring of 1945 erased any remaining shortages within the reinforcement system in NWE. The events of August and September 1944 were a temporary blip on a otherwise effective record.

¹² LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹³ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary August 1944. T-16360.

¹⁴ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG24 Volume 14,556. 1st Anti-Tank Regiment, RCA War Diaries April-May 1945. T-16449. The regiment had forty recorded personnel reinforcements during April 1945.

In conclusion, this study has shown that during the majority of its campaign in NWE 1944-1945, the Canadian Army operated effective, if not efficient systems to maintain its unit equipment inventories and personnel levels. These twin systems allowed the Canadian Army to continuously maintain its combat effectiveness in comparison to an opponent whose units were ground down by attrition. The battlefield impact of the First Canadian Army having all its combat arms units constantly at full strength was tremendous. Consistently possessing a superior amount of resources gave Canadian units an undeniable edge before any operation began. When this strength was matched with a superior artillery based doctrine that caused extreme attrition of the enemy while preserving the strength of Canadian forces, the First Canadian Army became unstoppable.

Senior leadership within the CAO in NWE always understood that there was a direct correlation between adequate personnel levels and combat power. As a result CAO reinforcement organizations made determined efforts to constantly maintain these levels. What temporary personnel challenges did occur in the late summer of 1944 were due to poor planning to accurately predict what infantry reinforcements were required and re-muster surplus non-infantry personnel. In the spring of 1944 there was no overall shortage of reinforcement personnel, just excess numbers in the wrong army trades. Once these problems were ironed out by late September 1944, infantry regiments were consistently kept at high personnel levels for the remainder of the war.

Canadian units in NWE were very well equipped with sufficient numbers of combat A vehicles and heavy weapons. Only small amounts of time were needed to replace or repair what losses occurred, and whatever challenges were present in repair turnaround times were miniscule compared to those within the German military. While these vehicles and weapons systems were effective enough to allow the Canadian Army to accomplish its missions, some were more effective than others. Infantry and armoured forces faced challenges in this area, and the inability of the CAO to obtain quantities of the most effective equipment possibly influenced casualty levels and performance. These weaknesses were more than

adequately compensated for by the superiority of the Canadian artillery arm. The battlefield dominance of the RCA units allowed the First Canadian Army to relentlessly advance.

Due to the massive combat power contained within the First Canadian Army, it could only be slowed down or delayed, but never stopped, during 1944-1945. In battle after battle, victory after victory was achieved. Though minor tactical reverses did occur, this field army never suffered a major defeat in NWE. What the enemy encountered in the last year of the war in was an invincible army, an army of never ending strength.

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Appendices:

Appendix 1: War establishments of Canadian combat arms regiments in late 1944 and early 1945

Within Canadian regimental war diaries, official histories and operational narratives, there are accounts of units or sub-units being “destroyed” or “suffering large losses” in combat. These accounts will often mention the total number of casualties or quantity of equipment lost in a day’s fighting.¹ What is not presented is the actual fighting strength of the unit, allowing the reader to understand the level of damage done to its fighting capability and establishment. If so many tanks or men were lost, could the unit continue on operations before reinforcements arrived? To understand how these losses related to the unit's ability to carry out future missions, it is important to comprehend its size and organization. The purpose of this first appendix is to briefly outline the structure and size of Canadian combat arms regiments of battalion strength. The second half of this study is largely dedicated to the statistical records of these regiments, what losses they incurred and reinforcements they received. Once these organizations are outlined, the reader can comprehend the significance of losses suffered, and how this damage could have affected its performance.

Each type of combat arms regiment within the Canadian Army had a different role, and was staffed and equipped accordingly. These regiments were structured as battalion-sized units, with their role (infantry, armoured, artillery) influencing how their companies (squadrons, batteries) were titled. The scope of this study encompasses nineteen different types of combat arms regiments which served in North West Europe (NWE) during 1944-1945. Some armour, artillery, anti-tank and anti-aircraft regiments had up to three different variants at the army, corps and divisional level. Each was individual due to its role, equipment establishment or parent organization. Due to these differences, I have included the organizations of all variants as separate tables, the exception being if the war establishments of two variants were identical, but they were given different titles. As noted in Chapter 1, Canadian units serving within British divisions in NWE will be excluded from the study. Prominent examples of this are the 1st

¹ Terry Copp, *Cinderella Army*, 216-217. In his description of the Moyland Wood fighting near Louisendorf in February 1945, Copp lists the casualties to the 7th Canadian Infantry Brigade’s Royal Winnipeg Rifles as 100 casualties with twenty-six killed.

Canadian Armoured Personnel Carrier Regiment and the 1st Canadian Parachute Battalion, both of these units serving within British Divisions. Certain Canadian regiments within this study were very rare, with only one or two examples being raised for overseas service. Others, such as infantry regiments, were plentiful. For example, in May 1945 there were thirty-three lorried Canadian infantry regiments of battalion strength within the First Canadian Army.

The tables that follow are a basic introduction into the subject of Second World War Canadian unit war establishments. The war establishment was organizational chart or table outlining exactly what the unit was supposed to contain in the way of personnel, vehicles and equipment in order for it complete its missions. War establishment personnel and equipment tables depended on economic production levels, troop availability, levels of technology and fiscal policy. How these amounts of war material and personnel were then organized tactically was driven by Army doctrine.² Establishments for regiments changed regularly as units were re-organized to remedy a deficiency or meet new demands. The regimental war establishment tables that follow are for late 1944 and early 1945, roughly the mid-point of the campaign in NWE. After this point there were very little in the way of drastic organizational changes. Within the tables provided, the personnel, main weapons systems and armoured fighting vehicles (AFVs) of the unit are listed. Not included due to space constraints are how the B vehicles (A vehicles for combat, B for non-combat) were dispersed within the A1 (fighting), A2 and B (supply and administrative) echelons of each of the regiments. These vehicles were numerous and vital for the logistic, administrative, maintenance and liaison needs of a combat arms regiment in the field. They consisted of everything from jeeps to command caravans to 6 x 4 drive wheeled recovery vehicles. Also not included are the total number of small arms and how these weapons were distributed. Of note regarding the following tables is that they include Royal Canadian Corps of Signals Corps (RCSS), Royal Canadian Army Service Corps (RCASC), Royal Canadian Pay Corps (RCPC), Royal Canadian Ordnance Corps (RCOC), Royal Canadian Medical Service (RCMS) personnel and others. These personnel were integral

² John Grodzinski, *Operational Handbook*, 8.

to the medical and administrative performance of the unit and the maintenance of its equipment, and are categorized as attached in the official war establishment tables. Not included in the regimental establishment personnel totals are the light aid detachment (LAD) Corps of Royal Canadian Electrical & Mechanical Engineers (RCEME) personnel. They were also vital to the maintenance of unit vehicles and AFVs, and were with the unit constantly. Their personnel totals are listed at the end of each regiment's description since they were administratively separate.

The 1944 Canadian Armoured Regiment was a battalion sized Canadian Armoured Corps (CAC) unit. Its battlefield role was to use its armoured fighting vehicles (AFVs) to defeat the enemy through firepower and maneuver. Each armoured division's armoured brigade and independent armoured brigade was authorized three regiments. There were a total of twelve in NWE by spring 1945. These regiments usually acted independently from one another as part of combined arms teams. Each regiment had three

Table A.1: CAC Armoured Regiment (Armoured Brigade or Division) as of January 19453

<u>Tactical Grouping</u>	<u>Sub units</u> <u>Strength Officers & Other Ranks</u>	<u>Total heavy weapons & AFVs</u>
Regimental HQ	5-16	4 x M4 Sherman command tanks
Headquarters Squadron	Recce troop Intercommunication troop Admin troop RCEME LAD (C) 9-172	11 x M3 Stuart Light tanks, 9 x Scout Cars, 1 x armoured ammunition carrier
A Squadron	1 x HQ troop 5 x tank troops 8-153	19 x Sherman Firefly/M4 Sherman M4 tanks, 1 x ARV tank, 2 x armoured ammo carriers
B Squadron	As Above	As above
C Squadron	As Above	As above
Totals	38-647	61 x M4 Sherman/Sherman Firefly tanks, 9 x Scout cars, 11 x M3 Stuart tanks, 3 x ARVs tanks, 7 x armoured ammunition carriers

armoured squadrons and a headquarters (HQ) squadron. These squadrons fielded the Sherman 17-

³ LAC, RG24, Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Armoured Division War Establishment Staff Tables WWE II/151/4 CAC Armoured Regiment and Armoured Reconnaissance Regiment January 1945.

Pounder Firefly tank, the M4 Sherman 75mm tank and the M3 Stuart 37mm light tank in the reconnaissance role. In early 1945 there was an equal mix of M4 Sherman 75mm tanks and Sherman Firefly 17-Pounders, totalling sixty-one cruiser tanks in all. This total was supplemented by eleven M3 Stuart light tanks in the reconnaissance troop and three armoured recovery vehicle (ARV) tanks. B vehicles totalled twenty cars, seventy-three trucks and specialist vehicles, eight motorcycles and twelve trailers. The anti-aircraft troop was deleted as of November 1944. The RCEME type "C" LAD consisted of one officer and fifteen other ranks. Identically equipped, the January 1945 Canadian armoured reconnaissance regiment had the role of aggressive armoured reconnaissance in force as the vanguard of the armoured division. As divisional troops, there was one armoured reconnaissance regiment in each of the two Canadian armoured divisions.

The 1944 Canadian Armoured Car Regiment was a CAC unit employed at the corps level as a reconnaissance unit. It was placed under the command of armoured and infantry divisions and utilized in this role. As corps troops, there were only two such regiments employed in NWE by the spring of 1945, one for each Canadian corps. This regiment was designed to carry out deep reconnaissance on a wide front during fluid operations, using the mobility of its squadrons to carry out this role. Its organization consisted of four squadrons and a regimental headquarters (RHQ). Each of the squadrons was equipped with a large number of armoured wheeled vehicles of various types. Due to its large pool of vehicles, this regiment could cover a wide area. Armoured vehicles within the regiment consisted of Daimler and Humber Scout Cars, Daimler, AEC and Staghound Armoured Cars. B vehicles within the regiment consisted of eight cars, twenty-eight trucks, seventeen M3 White Scout cars, thirty-seven specialist vehicles and twenty-three motorcycles. The attached type "C" LAD consisted of one officer and fifteen other ranks.

The January 1945 Canadian Reconnaissance Regiment was a CAC divisional reconnaissance asset operating within Canadian infantry divisions. Its organization consisted of a HQ squadron and three

Table A.2: CAC Armoured Car Regiment (Corps Troops) October 1944⁴

Tactical Grouping	Sub units	Total heavy weapons & AFVs
	Strength Officers & Other Ranks	
Regimental HQ	Signals troop RCEME LAD (C)	13 x Scout Cars, 4 x Armoured Cars, 1 x Command Caravan
A Squadron	Sqn HQ troop Heavy troop Support troop 5 x Recce troops	13 x Scout Cars, 17 x Armoured Cars
B Squadron	As Above	As above
C Squadron	As Above	As above
D Squadron	As Above	As above
Totals	57-803	72 x Armoured Cars, 65 x Scout Cars, 1 x Command Caravan

reconnaissance squadrons. The reconnaissance regiment was different from an armoured reconnaissance or armoured car regiment due to its combination of infantry heavy weapons and light wheeled armoured vehicles. If need be, it could act as an additional infantry unit while at the same time conducting its primary role as the divisional mobile reconnaissance force. Its AFVs and major weapons systems consisted of the Humber Armoured Car, the Humber Scout Car, the Universal Carrier, the T-16 (gun tractor) Carrier, the Universal Mortar Carrier, the 6-Pounder anti-tank gun and the 3-Inch mortar. There were three such regiments raised for the Canadian Army overseas, one for each infantry division. B vehicles consisted of thirty six cars, of which twenty-four were light reconnaissance vehicles and seventy-one trucks in general service (GS) and specialist roles. These totals were supplemented by a further fifty-five motorcycles and ten trailers. The type "A" LAD attached to the regiment consisted of one officer and fifteen other ranks.

The 1945 Canadian Infantry Regiment was a battalion-sized Canadian Infantry Corps (CIC) unit made up of a battalion headquarters and six companies as of January 1945. These six consisted of a headquarters company, a support company and four rifle companies. Three infantry regiments made up an infantry brigade. Its role was to close with and destroy the enemy. Apart from the carrier platoon, its

⁴ LAC, RG 24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Corps Troops War Establishment Staff Tables III/236/2 CAC Armoured Car Regiment October 1944.

Table A.3: CAC Reconnaissance Regiment (Infantry Division) January 1945⁵

<u>Tactical Grouping</u>	<u>Sub units</u> <u>Strength Officers & Other Ranks</u>	<u>Total heavy weapons & AFVs</u>
<u>Regimental HQ Squadron</u>	Carrier troop Anti-Tank troop Mortar troop RCEME LAD (A)	1 x Armoured Cars, 9 x Universal Carriers, 6 x towed 6-Pounder A/T guns, 6 x 3-Inch mortars, 12 x T-16 (gun tractor) Carriers, 6 x Universal Mortar Carriers
<u>Reconnaissance A Squadron</u>	Squadron HQ Signal troop Assault troop 3 x Scout troops	9 x Armoured Cars, 18 x Universal Carriers
<u>Reconnaissance B Squadron</u>	As Above	As above
<u>Reconnaissance C Squadron</u>	As Above	As above
Totals	43-777	6 x 3-Inch mortars, 6 x towed 6-Pdr A/T guns, 28 x Armoured Cars, 63 x Universal Carriers, 6 x Universal Mortar Carriers, 12 x T-16 (gun tractor) Carriers

infantry companies were lorried and went into battle dismounted.⁶ Major weapons systems and AFVs consisted of the T-16 (gun tractor) Carrier, the Universal Carrier, the Universal 3-Inch Mortar Carrier, the 6-Pounder anti-tank gun and 3-Inch and 2-Inch mortars. B vehicles consisted of fourteen cars and forty-three trucks of various types designed for GS and specialist use. These totals were supplemented by twenty-seven motorcycles, fourteen trailers and thirty-three bicycles. RCEME support for the three infantry regiments was held at the brigade level with a single brigade electrical & mechanical engineer type LAD.⁷

The 1945 Canadian Motor Infantry Battalion was a CIC regiment that was mechanized. It was set up with one less company than a regular lorried infantry battalion. In January 1945 it was equipped

⁵ LAC, RG 24, Volume 13,662. First Canadian Army A & Q War Diaries December 1944. T-7093. Infantry Division War Establishment Staff Tables Reconnaissance Regiment WE II/251/2 January 1945.

⁶ As noted earlier in this study, the 1st Canadian Armoured Personnel Carrier Regiment could only support a regiment or certain elements of a brigade at one time. During its existence it supported as the British Army as much as the Canadian Army.

⁷ Data on its composition was not found.

Table A.4: CIC Infantry Regiment January 1945⁸

<u>Tactical Grouping</u>	<u>Sub units</u>	<u>Total heavy weapons & AFVs</u>
	Strength Officers & Other Ranks	
Regimental HQ	Scout Platoon Stretcher Bearer Group 6-84	1 x Universal Carrier
HQ Company	Company HQ Signals platoon Administration platoon 5-94	–
Support Company	Company HQ 3-Inch Mortar platoon Universal Carrier platoon Anti-Tank platoon Pioneer platoon 7-184	6 x 3-Inch mortars, 7x 3-Inch Mortar Carriers, 14 x Universal Carriers, 6 x towed 6-Pdr A/T guns, 12 x T-16 (gun tractor) Carriers, 10 x 2-Inch mortars
A Rifle Company	Company HQ, 3 x Rifle Platoon s and 1x Light Mortar Section 5-120	1 x Universal Carrier, 4 x 2-Inch mortars
B Rifle Company	As above	As above
C Rifle Company	As above	As above
D Rifle Company	As above	As above
Totals	38-812	6 x 3-Inch mortars, 6 x towed 6-Pdr A/T guns, 26 x 2-Inch mortars, 19 x Universal Carriers, 7 x 3-Inch Mortar Carriers, 12 x T-16 (gun tractor) Carriers

with armoured trucks to form a mechanized infantry force that would accompany a rapid armoured advance. It consisted of three motor companies, a support company, a HQ company and a RHQ. Its main role was also to close with and destroy the enemy, but use mechanized infantry tactics to do so. Initially the motor companies were equipped with M3 White half-tracks, but these were replaced in mid 1944 with armoured trucks. Two of these regiments were formed to serve in each of the armoured brigades within

⁸ LAC, RG 24, Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Infantry Division War Establishment Staff Tables Infantry Battalion (Regiment) WE II/233/4 January 1945.

Table A.5: CIC Motor Battalion (Armoured Division) January 1945⁹

<u>Tactical Grouping</u>	<u>Sub units</u> <u>Strength Officers & Other Ranks</u>	<u>Total heavy weapons & AFVs</u>
Regimental HQ	5-28	–
HQ Company	Company HQ Signals platoon Administration platoon RCEME LAD (B) 6-96	–
Support Company	Company HQ 3 x Anti-Tank platoons 2 x Medium MG platoons 1 x Mortar platoon 7-190	1 x Scout Car, 12 x towed 6-Pdr A/T guns, 24 x T-16 (gun tractor) Carriers, 16 x MMG (medium machine gun) Carriers, 6 x 3-Inch Mortars, 6 x Universal 3-Inch Mortar Carriers
A Motor Company	Company HQ, Motor platoons 1-3 Scout carrier platoon 7-168	2 x Scout Cars, 12 x Universal Carriers
B Motor Company	As above	As above
C Motor Company	As above	As above
Totals	39-818	30 x 2-Inch Mortars, 6 x 3-Inch Mortars, 6 x Universal 3-Inch Mortar Carriers, 12 x towed 6-Pdr A/T guns, 36 x Universal Carriers, 16 x MMG (medium machine gun) Carriers, 24 x T-16 (gun tractor) Carriers

the two Canadian armoured divisions. Motor battalions were not present in Canadian independent armoured brigades. Its major weapons systems and AFVs consisted of the Daimler Scout Car, the 6-Pounder anti-tank gun, 3-Inch and 2-inch mortars, the Universal Carrier, the Universal 3-inch Mortar

⁹ LAC, RG 24, Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Armoured Division War Establishment Staff Tables Motor Battalion (Regiment) WE II/231/3 January 1945.

Carrier, the T-16 (gun tractor) Carrier and the MMG (machine gun) Carrier. B vehicles consisted of eleven cars and ninety-one trucks that were armoured, GS or specialist types. This vehicle pool was supplemented by forty-nine motorcycles and ten trailers. Unlike non-mechanized infantry regiments, they did have an RCME LAD attached. The attached LAD type “B” totalled one officer and thirteen other ranks.

The Canadian Machine Gun Battalion as of January 1945 was an independent battalion-sized CIC support regiment. There was one raised for each of the three overseas infantry divisions. As a divisional unit, this regiment could be split up to support individual infantry regiments within a brigade.¹⁰ The battalion consisted of a regimental headquarters, three medium machine gun companies and a mortar company. The Machine Gun Battalion’s battlefield role was that of a combat force multiplier for an

Table A.6: CIC Machine Gun Battalion January 1945¹¹

<u>Tactical Grouping</u>	<u>Sub units</u> <u>Strength Officers & Other Ranks</u>	<u>Total heavy weapons & AFVs</u>
Regimental HQ	Administration platoon Signals platoon RCME LAD (B)	–
Mortar Company	Company HQ 2 x Mortar platoons	14 x 4.2-Inch mortars, 32 x T-16 4.2-Inch Mortar Carriers
Medium Machine Gun Company	Company HQ Carrier platoon 3 x MMG (medium machine gun) Platoons	12 x Universal Carriers, 12 x MMG (medium machine gun) Carriers, 12 x .303 Medium Machine Guns
Medium Machine Gun	As above	As above
Medium Machine Gun Company	As above	As above
Totals:	37-701	14 x 4.2-Inch mortars, 32 x T-16 4.2-Inch Mortar Carriers, 36 x Universal Carriers, 36 x MMG (medium machine gun) Carriers, 36 x .303 Medium Machine Guns

¹⁰ Charles Stacey, *The Victory Campaign*, 657. Appendix F. Canadian Army Order of Battle in NWE 1944-1945. The Canadian armoured division overseas had an independent machine gun company, but because of its non-battalion strength status it will not be included in this study.

¹¹ LAC, RG 24, Volume 13,662. First Canadian Army A & Q War Diary December 1945. Infantry Division War Establishment Staff Tables Machine Gun Battalion (Regiment) WE II/240/1 January 1945.

infantry brigade or regiment in attack or defence. Major weapons systems apart from its 303 medium machine guns were 4.2-Inch mortars, Universal Carriers, MMG (machine gun) Carriers and T-16 Carriers modified to carry the 4.2-Inch Mortar and also act as ammunition carriers. B Vehicles consisted of eleven cars and seventy-two trucks of various types in the GS and specialist role. This vehicle pool was supplemented by fifty-two motorcycles and nine trailers. The attached RCME LAD type “B” had the strength of one officer and thirteen other ranks.

The January 1945 Canadian towed RCA Field Regiment infantry division variant was a divisional artillery asset. It consisted of three batteries and a RHQ. Its batteries were equipped with the towed 25-Pounder howitzers rather than self-propelled variants. There were three field regiments within each infantry division for a total of nine infantry division variants in NWE by spring 1945. This regiment contained a different war establishment than the self-propelled and towed field regiments within armoured divisions or held at the army level. The most notable difference was the lack of artillery observation post (OP) tanks. The Forward Observation Officers (FOOs) of a towed regiment went forward with infantry battalion HQs and were equipped with Universal Carriers. The primary role of the towed field regiment was to provide powerful indirect fire support at the divisional level. It could also provide direct fire support against infantry or armoured targets by firing over open sights. The regiment also had a troop of 20mm anti-aircraft (AA) guns. B vehicles as of January 1945 were twenty-one cars and 103 trucks of GS and specialist designs, including thirty-six artillery tractors. Supplementing this pool were twenty-six motorcycles and twenty-two trailers. The RCME LAD type “B” had a total strength of one officer and thirteen other ranks.

The Canadian self-propelled (SP) RCA Field Regiment armoured division variant as of January 1945 contained a very different war establishment from a towed field regiment in an armoured or infantry division. The main differences were that all of its 25-Pounder howitzers were self-propelled and it

Table A.7: Towed RCA Field Artillery Regiment, (Infantry Division variant) January 1945¹²

<u>Company or Platoon</u>	<u>Sub units</u> <u>Strength Officers & Other Ranks</u>	<u>Total heavy weapons & AFVs</u>
RHQ	Anti-Aircraft troop RCEME LAD (B) 8-62	8 x towed 20mm anti-aircraft guns
A Battery	2 x Field Artillery troops 10-192	8 x towed 25-Pdr howitzers 3 x Universal Carriers
B Battery	As above	As above
C Battery	As above	As above
Totals	38-638	24 x towed 25-Pdr howitzers, 8 x towed 20mm anti-aircraft guns, 9 x Universal Carriers

operated a large number of artillery observation post (OP) tanks. The regiment had a total of thirteen OP tanks and also a troop of 20mm anti-aircraft guns. The OP tanks allowed the FOOs to keep up with the armoured squadrons. This type of regiment consisted of three batteries and a RHQ. It was a divisional artillery asset, whose role was to provide mobile powerful indirect fire support. It could also provide mobile direct fire support against infantry or armoured targets by firing over open sights. The two SP RCA Field Regiment's held at the army level Army Group Royal Artillery (AGRA) groupings had identical war establishment tables to the SP armoured division variant. In late 1944 there was one within each Canadian armoured division and one per each army level AGRA grouping, for a total of four self-propelled regiments. B vehicles as of late 1944 were thirteen cars and ninety-two trucks of GS and specialist types, including thirty-six artillery tractors and thirty-four M-14 half-tracks. Supplementing this pool was thirty-two motorcycles and twenty-four trailers. The attached RCEME LAD type "D" strength was one officer and thirty-seven other ranks.

The 1944 armoured division variant of the towed Canadian RCA Field Regiment was a divisional artillery asset. Like other field regiments, it consisted of three batteries and a RHQ. The regiment's primary role was providing indirect fire support at the divisional level. It could also provide direct fire

¹² LAC, RG 24, Volume 13,662. First Canadian Army A & Q War Diaries. January 1944. Infantry Division War Establishment Staff Tables Field Artillery Regiment, towed WE II/190B/1 Effective 30. 11.44. T-7093.

Table A.8: Self Propelled (SP) RCA Field Artillery Regiment, (Armoured Division) January 1945¹³

<u>Company or Platoon</u>	<u>Sub units</u> <u>Strength Officers & Other Ranks</u>	<u>Total heavy weapons & AFVs</u>
RHQ	Anti-Aircraft troop RCEME LAD (D) 9-60	1 x RCA Observation Post (OP) tank, 8 x towed 20mm AA guns
A Battery	2 x SP Field Artillery troops 10-183	8 x SP 25-Pdr Sexton howitzers 4 x Observation Post (OP) tanks
B Battery	As above	As above
C Battery	As above	As above
Totals	38-609	24 x SP 25-Pdr Sexton howitzers, 8 x towed 20mm anti-aircraft guns, 13 x Observation Post (OP) tanks

support against infantry or armoured targets by firing over open sights. There was one regiment of this type established for each Canadian armoured division, for a total of two. These operated in conjunction with the SP RCA field regiments within armoured divisions. The towed field regiment within an armoured division contained a different war establishment than that of a towed field regiment in an infantry division. The most notable difference was a limited allocation of OP tanks, as its FOOs were required to go forward with the armoured squadrons. It only had six OP tanks on its establishment versus the thirteen of the SP field regiment. It also had a limited number of Universal tracked carriers, having only three. Like all field regiments, its batteries were equipped with a total of twenty-four 25-Pounder towed howitzers and the RHQ contained a troop of towed 20mm anti-aircraft guns. B vehicles as of January 1945 consisted of twenty-one cars and 103 trucks of GS and specialist design, including thirty-six artillery tractors. The regiment also contained twenty-six motorcycles and twenty-two trailers. The RCEME LAD type “B” was one officer and thirteen other ranks.

The Canadian Army Group Royal Artillery (AGRA) towed RCA Medium Regiment as of October 1944 was an army level artillery asset. It consisted of two batteries of eight 4.5 or 5.5-Inch towed guns each for a total of sixteen guns per regiment. Each battery was divided into two troops of

¹³ LAC, RG 24 Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Armoured Division War Establishment Staff Tables Field Artillery Regiment, self-propelled WE II/190A/2 January 1945.

Table A.9: Towed RCA Field Artillery Regiment, (Armoured Division) January 1945¹⁴

<u>Company or Platoon</u>	<u>Sub units</u> <u>Strength Officers & Other Ranks</u>	<u>Total heavy weapons & AFVs</u>
RHQ	Anti-Aircraft troop RCEME LAD (B) 8-62	8 x towed 20mm anti-aircraft (AA) guns towed
A Battery	2 x towed Field Artillery troops 10-192	8 x towed 25-Pdrs howitzers 2 x Observation Post (OP) tanks. 1 x Universal Carrier
B Battery	As above	As above
C Battery	As above	As above
Totals	38-638	24 x towed 25-Pdr howitzers, 8 x towed 20mm anti-aircraft guns, 6 x Observation Post (OP) tanks, 3 x Universal Carriers

four guns each. The medium regiments were held at the AGRA level and controlled by the army level AGRA artillery command structure. The primary role of these regiments were to provide flexible heavy indirect fire support wherever it was needed, working in close cooperation with field artillery regiments at the divisional level. The Canadian Army in NWE had no super-heavy artillery regiments, and these regiments were the most powerful indirect assets the First Canadian Army possessed.

A total of six RCA medium regiments were raised to establish both the 1st and 2nd Army Group Royal Canadian Artillery (AGRA) formations. These regiments served in both Italy and NWE, three to an AGRA. All six were to come together in spring 1945 due to the redeployment of the 1st Canadian Corps to NWE. Three were equipped with 5.5-Inch guns, and the other three with 4.5-Inch variants due to a shortage of 5.5-Inch artillery pieces. These regiments did not have an anti-aircraft troop. B vehicles consisted of eleven cars and eighty-four trucks of various types, including eighteen artillery tractors. This vehicle pool was supplemented by sixteen trailers and nineteen motorcycles. The RCEME light aid detachment type “B” consisted of one officer and thirteen other ranks. As noted previously, there was also one self-propelled field regiment allocated to each of the 1st and 2nd Canadian AGRA organizations. These regiments, designated Army Field Artillery Regiments, worked in conjunction with the medium

¹⁴ LAC, RG 24, Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Armoured Division War Establishment Staff Tables Field Artillery Regiment, towed WE II/190B/1 January 1945.

regiments to supplement divisional artillery assets. The self-propelled AGRA field regiments were equipped identically to that of the self-propelled regiments attached to the armoured divisions.¹⁵

Table A.10: AGRA RCA Medium Regiment (Army Troops) October 1944¹⁶

Company or Platoon	Sub units	Total heavy weapons & AFVs
	Strength Officers & Men	
RHQ	RCEME LAD (B)	-
A Battery	2 x towed Medium Artillery troops	8 x towed 5.5 or 4.5-Inch howitzers
B Battery	As above	As above
Totals:	28-540	16 x towed 5.5 or 4.5-Inch howitzers, 6 x Universal Carriers.

At the corps level as of October 1944 there were two RCA Survey Regiments of battalion strength, each consisting of two batteries. The battlefield roles of these units were artillery flash-spotting, sound ranging and survey duties. They worked closely with army level AGRA and divisional artillery assets to allow indirect fire to be as accurate as possible. In this role they operated close to the front lines within armoured and infantry division's areas of operation. These regiments did not have any major weapons systems past small arms, and operated sophisticated non-gun artillery equipment to accomplish their tasks. B vehicles consisted of thirty-nine cars and 117 trucks, of which twelve were M-14 half tracks. Additional vehicles and trailers consisted of forty-five motorcycles and thirty-four trailers. The attached LAD type "A" consisted of one officer and fifteen other ranks.

Table A.11: RCA Survey Regiment (Corps Troops) October 1944¹⁷

Company or Platoon	Sub units Strength Officers & Men	Total heavy weapons & AFVs
RHQ	RHQ Airburst ranging troop	-
	RCEME LAD (A)	
A Battery	Flash spotting troop	-
	Sound ranging troop	
	Survey troop	
B Battery	As above	-
Totals:	34-589	-

The corps level RCA Anti-Tank Regiment as of October 1944 was an anti-tank unit whose primary role was to compliment divisional anti-tank units. It could be deployed at the divisional level

¹⁵ LAC, RG 24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. AGRA War Establishment Staff Tables AGRA RCA Field Artillery Regiment, self-propelled WE II/190A/2 October 1944.

¹⁶ LAC, RG 24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. AGRA War Establishment Staff Tables AGRA RCA Medium Artillery Regiment, towed WE II/10/3 October 1944.

¹⁷ LAC, RG 24, Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Corps Troops War Establishment Staff Tables RCA Survey Regiment, WE III/13/5 October 1944.

where needed. It contained four batteries in late 1944. Two batteries operated towed 17-Pounder anti-tanks guns and two batteries were self-propelled, operating M-10 3-Inch gunned tank destroyers. In the spring of 1945 these were exchanged for Valentine Archer 17-Pounder tank destroyers. It was a very rare unit in that it also operated turret less tank chassis artillery towers, Universal Carriers and Valentine Charger artillery command tanks. It also did not have any anti-aircraft guns attached to it. B vehicles consisted of twenty-two cars and ninety-four trucks. Of this latter number twenty-four were artillery tractors and four were M-14 half tracks. This vehicle total was supplemented by twenty-five trailers and twenty motorcycles. The RCME LAD type “D” strength was one officer and forty-two other ranks. This high number of personnel in this LAD was due to the large number of specialist vehicles and weapons systems present within the regiment.

Table A.12: RCA Anti-Tank Regiment (Corps Troops) October 1944¹⁸

<u>Tactical Grouping</u>	<u>Sub units Strength Officers & Men</u>	<u>Total heavy weapons & AFVs</u>
RHQ	RCME LAD (D)	-
A Battery	3 x SP A/T troops	12 x M-10 3-Inch Tank Destroyers, 6 x 2-Inch mortars, 3 x Universal Carriers, 4 x Valentine Charger Command tanks
B Battery	As above	As above
C Battery	3x towed A/T troops	12 x towed 17-Pdr A/T guns, 6 x 2-Inch mortars, 3 x Universal Carriers, 14 x armoured towers
D Battery	As above	As above
Totals:	38-765	24 x M-10 3-Inch Tank Destroyers, 24 x towed 17-Pdr A/T guns, 24 x 2-Inch mortars, 12 x Universal Carriers, 8 x Valentine Charger Command tanks, 28 x artillery towers

The armoured division variant of the RCA Anti-Tank Regiment as of January 1945 was a divisional anti-tank asset. It could be deployed where needed to bolster an infantry or armour brigade’s anti-tank capability. It contained four batteries in early 1945. Two batteries operated towed 17-Pounder anti-tanks guns and two batteries were self-propelled, operating the M-10 17-Pounder tank destroyers. It also operational Universal Carriers, 20mm anti-aircraft guns and 2-Inch mortars. B vehicles consisted of twenty-eight cars and 103 trucks. Of this latter number twenty-six were artillery tractors. This vehicle total was supplemented by twenty-six trailers and twenty motorcycles. The RCME LAD type “D” strength was one officer and forty-two other ranks.

¹⁸ LAC, RG 24, Volume 13,659. First Canadian Army A & Q War Diaries. October 1944. Corps Troops War Establishment Staff Tables RCA Anti-Tank Regiment, WE III/308/1, III/309/1, III/310/10 Effective 23.10.44. T-7092.

Table A.13: RCA Anti-Tank Regiment (Armoured Division) January 1945¹⁹

<u>Tactical Grouping</u>	<u>Sub units Strength Officers & Men</u>	<u>Total heavy weapons & AFVs</u>
RHQ	RCME LAD (D) Anti-Aircraft troop 9-57	5 x towed 20mm anti-aircraft guns
A Battery	3 x SP A/T troops 7-169	12 x M-10 Achilles 17-Pdr Tank Destroyers
B Battery	As above	As above
C Battery	3x towed A/T troops 7-173	12 x towed 17-Pdr A/T guns, 3 x 2-Inch mortars, 9 x Universal Carriers
D Battery	As above	As above
Totals:	37-741	24 x M-10 17-Pdr Tank Destroyers, 24 x towed 17-Pdr A/T guns, 12 x 2-Inch mortars, 18 x Universal Carriers, 5 x towed 20mm AA guns

The infantry division variant of the RCA anti-tank regiment as of January 1945 was a divisional anti-tank asset that was deployed to support the infantry brigades. As a divisional unit, this regiment was designed to work in conjunction with the anti-tank platoons at the infantry regiment level. Unlike other anti-tank regiments, it contained only three batteries in early 1945, the first being equipped with towed 17-Pounder anti-tank guns. The second battery operated self-propelled Valentine Archer 17-Pounder tank

Table A.14: RCA Anti-Tank Regiment (Infantry Division) January 1945²⁰

<u>Tactical Grouping</u>	<u>Sub units Strength Officers & Other Ranks</u>	<u>Total heavy weapons & AFVs</u>
RHQ	RCME LAD (D)	1 x towed 20 mm anti-aircraft gun
A Battery	3 x SP A/T troops	12 x Valentine Archer 17-Pdr Tank Destroyers
B Battery	3 x towed A/T troops	12 x towed 17-Pdr A/T guns, 24 x T-16 (gun tractor) Carriers
C Battery	4 x towed A/T troops	16 x towed 6- Pdr A/T guns towed, 3 x 2-Inch mortars, 16 x Universal Carriers
Totals:	35-614	12 x Valentine Archer 17-Pdr Tank Destroyers, 12 x towed 17-Pdr A/T guns, 16 x towed 6- Pdr A/T guns, 24 x 2-Inch mortars, 16 x Universal Carriers, 24 x T-16 (gun tractor) Carriers, 1 x 20mm AA gun towed

anti-tank regiment variant was unique as it contained the only heavy AFVs within a 1945 Canadian destroyers. The third battery contained four troops equipped with 6-Pounder towed anti-tank guns. This infantry division. The regiment also operated Universal Carriers, T-16 (gun tractor) Carriers, 2-Inch

¹⁹ LAC, RG 24, Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Armoured Division War Establishment Staff Tables RCA Anti-Tank Regiment (Armoured Division) WE II/181/186/188/2 Effective January 1945.

²⁰ LAC, RG 24 Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Infantry Division War Establishment Staff Tables RCA Anti-Tank Regiment (Infantry Division) WE II/181/186D/1 January 1945.

mortars and a single 20mm anti-aircraft gun. B vehicles consisted of twenty-six cars and ninety-one trucks of GS and specialist types, sixteen of which were artillery tractors. This vehicle count was supplemented by four trailers and twenty motorcycles. The attached RCME LAD type “D” consisted of one officer and forty-six other ranks.

The Canadian corps level light anti-aircraft (LAA) role was filled by the October 1944 RCA LAA Regiment corps troops variant. There were two of these regiments established, one in each Canadian corps overseas. This regiment could have its assets deployed at critical points on the battlefield to bolster the anti-aircraft defences of any front line unit. It could also be deployed to protect line of communication rear area units, headquarters, supply dumps, bridges and other vital points. As of October 1944 this regiment contained three batteries, each with two troops. One troop was equipped with SP truck-mounted 40mm anti-aircraft guns and the other was towed. B vehicles consisted of twenty-six cars and ninety-five trucks, of which eighteen were the self-propelled mounts for 40mm anti-aircraft guns and eighteen were light artillery tractors. This vehicle pool was supplemented by twenty-six trailers and thirty-eight motorcycles. The RCME LAA type “A” workshop personnel consisted of one officer and seventeen other ranks.

Table A.15: RCA Light Anti-Aircraft Regiment (Corps Troops) October 1944²¹

<u>Tactical Grouping</u>	<u>Sub units</u>	<u>Total heavy weapons & AFVs</u>
	<u>Strength Officers & Other Ranks</u>	
RHQ	RCME Light Anti-Aircraft Workshop (A)	-
A Battery	1 x SP anti-aircraft troop, 1 x towed anti-aircraft troop	6 x SP 40 mm AA guns, 6 x towed 40mm AA guns
B Battery	As above	As above
C Battery	As above	As above
Totals:	34-551	18 x SP 40mm anti-aircraft guns, 18 x towed 40mm anti-aircraft guns

The LAA role within a Canadian infantry division as of January 1945 was filled by the RCA LAA Regiment infantry division variant. This type of light anti-aircraft regiment contained three batteries, each with two troops. Both were equipped with 40mm anti-aircraft guns. One troop was SP with their AA guns mounted on trucks and the other was towed. There were three of these regiments

²¹ LAC, RG 24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Corps Troops War Establishment Staff Tables RCA Light Anti-Aircraft Regiment, WE III/12C/3 III/12A/3 October 1944.

established, one for each Canadian infantry division. This regiment could have its assets deployed at critical points on the battlefield to provide effective anti-aircraft defence. It could also be deployed to protect headquarters, assembly areas and other areas of importance. B vehicles consisted of twenty-nine cars and 110 trucks, of which eighteen were 3-ton self-propelled mounts for 40mm AA guns and twenty-four were light artillery tractors. Also attached were thirty trailers and thirty-eight motorcycles. The RCEME LAA workshop type “A” consisted of one officer and seventeen other ranks.

Table A.16: RCA Light Anti-Aircraft Regiment (Infantry Division) January 1945²²

<u>Tactical Grouping</u>	<u>Sub units</u>	<u>Total heavy weapons & AFVs</u>
	<u>Strength Officers & Men</u>	
RHQ	RCEME Light Anti-Aircraft Workshop (A)	
A Battery	1 x SP troop of anti-aircraft guns, 1 x troop of towed anti-aircraft guns	6 x SP 40 mm anti-aircraft guns, 6 x towed 40mm anti-aircraft guns
B Battery	As above	As above
C Battery	As above	As above
Totals:	34-551	18 x SP 40mm anti-aircraft guns, 18 x towed 40mm anti-aircraft guns.

Anti-aircraft assets at the armoured division level were provided by the late 1944 RCA LAA Regiment armoured division variant. There were two of these regiments established, one for each Canadian armoured division. This regiment was entirely self-propelled and consisted of three batteries mounted on 3-ton trucks. Each battery had two troops, both equipped with SP 40mm AA guns. This regiment would be deployed to provide effective light-anti aircraft defence for the divisional area of operations. It could also be deployed to protect headquarters, assembly areas and other points of importance. B vehicles consisted of twenty-nine cars and 128 trucks, of which thirty-six were the self-propelled mounts for 40mm AA guns and twelve were light artillery tractors. This total was supplemented by thirty trailers and thirty-eight motorcycles. The attached LAA workshop type "A" consisted of one officer and twenty-eight other ranks.

In conclusion, the tables supplied in this appendix illustrate how Canadian combat arms regiments appeared on paper as of October 1944 at the corps level and January 1945 at the divisional and independent brigade level. These war establishment organizational tables set out what they were

²² LAC, RG 24 Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Infantry Division War Establishment Staff Tables RCA Light Anti-Aircraft Regiment (Infantry Division) WE II/179/180A/1 January 1945.

Table A.17: RCA Light Anti-Aircraft Regiment (Armoured Division) January 1945²³

<u>Tactical Grouping</u>	<u>Sub units</u>	<u>Total heavy weapons & AFVs</u>
	<u>Strength Officers & Men</u>	
RHQ	RCEME Light Anti-Aircraft Workshop (A)	
A Battery	2 x SP Troop of anti-aircraft guns	12 x SP 40 mm anti-aircraft guns,
B Battery	As above	as above
C Battery	As above	as above
Totals:	34-551	36x SP 40mm anti-aircraft guns

authorized to contain under 21st Army Group regulations. Reality in the field could be different, but for the majority of cases the organization tables were adhered to. Combat losses often caused temporary organizational changes, such as the reduction of a squadron to three troops or the disbandment of an infantry company. Also, command decisions to replace unit's vehicles and equipment in the field were often taken before war establishment tables could be amended. This practice often left units with items that they were not officially authorized. By reviewing the above war establishment tables, the reader can appreciate the significance or lack thereof of unit losses presented within later appendices.

²³ LAC, RG 24 Volume 13,662. First Canadian Army A & Q War Diary December 1944. T-7093. Armoured Division War Establishment Staff Tables RCA Light Anti-Aircraft Regiment (Armoured Division) WE II/179/3 & 180/2 January 1945.

Appendix 2: The 1st Canadian Infantry Division statistics March-May 1945

Table B.1: The 1st Canadian Infantry Brigade: The Royal Canadian Regiment

<u>Date</u>	<u>Battle and non-battle casualties for given month¹</u>	<u>Personnel reinforcements²</u>	<u>Strength O-ORs end of month</u>
<u>WE</u> <u>01.45</u>	-	-	<u>38-812</u>
30.04.45	43-81	109	35-778³
05.05.45	0-3	9	35-781⁴
<u>Totals</u>	<u>43-84 (127)</u>	<u>118</u>	-

Table B.2: The 1st Canadian Infantry Brigade: The Hastings and Prince Edward Regiment

<u>Date</u>	<u>Battle and non-battle casualties for given month⁵</u>	<u>Personnel reinforcements⁶</u>	<u>Strength O-ORs end of month</u>
<u>WE</u> <u>01.45</u>	-	-	<u>38-812</u>
30.04.45	50-19	144	39-776⁷
05.05.45	0-7	32	38-831⁸
<u>Totals</u>	<u>50-26 (76)</u>	<u>176</u>	-

¹LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

² LAC, RG 24 Volume 13,664-13,655. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁴ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

⁵LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

⁶ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

⁷ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁸ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table B.3: The 1st Canadian Infantry Brigade: The 48th Highlanders of Canada

<u>Date</u>	<u>Battle and non-battle casualties for given month ⁹</u>	<u>Personnel reinforcements¹⁰</u>	<u>Strength O-ORs end of month</u>
<u>WE</u> <u>01.45</u>	–	–	<u>38-812</u>
30.04.45	62-61	103	38-786 ¹¹
05.05.45	0-1	25	38-793 ¹²
<u>Totals</u>	<u>62-62 (124)</u>	<u>128</u>	–

Table B.4: The 2nd Canadian Infantry Brigade: The Princess Patricia's Canadian Light Infantry

<u>Date</u>	<u>Battle and non-battle casualties for given month ¹³</u>	<u>Personnel reinforcements¹⁴</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	<u>38-812</u>
30.04.45	55-43	126	38-827 ¹⁵
05.05.45	0-7	6	38-788 ¹⁶
<u>Totals</u>	<u>55-50 (105)</u>	<u>132</u>	–

⁹ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

¹⁰ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

¹¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

¹³ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

¹⁴ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

¹⁵ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁶ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table B.5: The 2nd Canadian Infantry Brigade: The Seaforth Highlanders of Canada

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ¹⁷	<u>Personnel</u> <u>reinforcements</u> ¹⁸	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-	-	<u>38-812</u>
<u>30.04.45</u>	<u>45-23</u>	<u>154</u>	<u>39-853</u> ¹⁹
<u>05.05.45</u>	<u>0-10</u>	<u>1</u>	<u>39-796</u> ²⁰
<u>Totals</u>	<u>45- 33 (78)</u>	<u>155</u>	-

Table B.6: The 2nd Canadian Infantry Brigade: The Loyal Edmonton Regiment:

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ²¹	<u>Personnel</u> <u>reinforcements</u> ²²	<u>Strength O-ORS end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-	-	<u>38-812</u>
<u>30.04.45</u>	<u>97-27</u>	<u>160</u>	<u>36-825</u> ²³
<u>05.05.45</u>	<u>0-7</u>	<u>20</u>	<u>41-807</u> ²⁴
<u>Totals</u>	<u>97-34 (131)</u>	<u>180</u>	-

¹⁷ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

¹⁸ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

¹⁹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²⁰ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

²¹ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

²² LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

²³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²⁴ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table B.7: The 3rd Canadian Infantry Brigade: Le Royal 22e Regiment

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ²⁵	<u>Personnel</u> <u>reinforcements</u> ²⁶	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-	-	<u>38-812</u>
<u>30.04.45</u>	<u>67-25</u>	<u>153</u>	<u>37-807</u> ²⁷
<u>05.05.45</u>	<u>0-6</u>	<u>34</u>	<u>36-802</u> ²⁸
<u>Totals</u>	<u>67- 31 (98)</u>	<u>187</u>	-

Table B.8: The 3rd Canadian Infantry Brigade: The Carlton and York Regiment:

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ²⁹	<u>Personnel</u> <u>reinforcements</u> ³⁰	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-	-	<u>38-812</u>
<u>30.04.45</u>	<u>63-27</u>	<u>101</u>	<u>36-815</u> ³¹
<u>05.05.45</u>	<u>0-6</u>	<u>26</u>	<u>37-790</u> ³²
<u>Totals</u>	<u>63-33 (96)</u>	<u>127</u>	-

²⁵ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

²⁶ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

²⁷ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²⁸ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

²⁹ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

³⁰ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

³¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April, 1945. T-7095. 30 April 1945 return.

³² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table B.9: The 3rd Canadian Infantry Brigade: The West Nova Scotia Regiment

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ³³	<u>Personnel</u> <u>reinforcements</u> ³⁴	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-	-	<u>38-812</u>
<u>30.04.45</u>	33-25	93	37-801 ³⁵
<u>05.05.45</u>	1-7	35	39-818 ³⁶
<u>Totals</u>	<u>34- 32 (66)</u>	<u>128</u>	-

Table B.10: 1st Canadian Infantry Division: The Saskatoon Light Infantry (Machine Gun)

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ³⁷	<u>Personnel</u> <u>reinforcements</u> ³⁸	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-	-	<u>37-701</u>
<u>30.04.45</u>	10-32	14	37-692 ³⁹
<u>05.05.45</u>	0-1	4	37-666 ⁴⁰
<u>Totals</u>	<u>10- 33 (43)</u>	<u>18</u>	-

³³ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

³⁴ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

³⁵ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

³⁶ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

³⁷ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

³⁸ LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

³⁹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁴⁰ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table B.11: 1st Canadian Infantry Division: The 4th Canadian Reconnaissance Regiment (4th Princess Louise Dragoon Guards)

<u>Date</u>	<u>Battle and non-battle casualties for given month⁴¹</u>	<u>Personnel reinforcements⁴²</u>	<u>Strength O-ORs end of month</u>
WE 01.45	–	–	43-777
30.04.45	2-19	10	40-761 ⁴³
05.05.45	0-2	0	36-758 ⁴⁴
<u>Totals</u>	<u>2-21 (23)</u>	<u>10</u>	–

Table B.12: 1st Canadian Infantry Division: 1st Anti-Tank Regiment, RCA

<u>Date</u>	<u>Battle and non-battle casualties for given month⁴⁵</u>	<u>Personnel reinforcements⁴⁶</u>	<u>Strength O-ORs end of month</u>
WE 01.45	–	–	35-614
30.04.45	1- 3	40	35-578 ⁴⁷
05.05.45	0-1	0	35-549 ⁴⁸
<u>Totals</u>	<u>1-4 (5)</u>	<u>40</u>	–

⁴¹ LAC, RG 24 Volume 13,664-13, 665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. LAC, RG 24 Volume 14,205. 4th Canadian Reconnaissance Regiment War Diaries April-May 1945. T-12649. Battle and non-battle casualties.

⁴² LAC, RG 24 Volume 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. LAC, RG 24 Volume 14,205. 4th Canadian Reconnaissance Regiment War Diaries April-May 1945. T-12649. Reinforcements.

⁴³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁴⁴ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

⁴⁵ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-18,863. LAC, RG24 Volume 14,556. 1st Anti-Tank Regiment, RCA War Diaries April-May 1945. T-16449. Battle and non-battle casualties.

⁴⁶ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG24 Volume 14,556. 1st Anti-Tank Regiment, RCA War Diaries April-May 1945. T-16449. Reinforcements.

⁴⁷ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁴⁸ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

Table B.13: 1st Canadian Infantry Division: 1st Field Regiment, RCHA

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ⁴⁹	<u>Personnel</u> <u>reinforcements</u> ⁵⁰	<u>Strength O-ORs end of</u> <u>month</u>
WE 01.45	–	–	38-638
30.04.45	10-10	13	38-613 ⁵¹
05.05.45	0-3	13	37-596 ⁵²
<u>Totals</u>	<u>10-13 (23)</u>	<u>26</u>	–

Table B.14: 1st Canadian Infantry Division: 2nd Field Regiment, RCA

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ⁵³	<u>Personnel</u> <u>reinforcements</u> ⁵⁴	<u>Strength O-ORs end of</u> <u>month</u>
WE 01.45	–	–	38-638
30.04.45	2-3	17	37-618 ⁵⁵
05.05.45	0-0	0	39-599 ⁵⁶
<u>Totals</u>	<u>2-3 (5)</u>	<u>17</u>	–

⁴⁹ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG24 Volume 14,412. 1st Field Regiment, RCHA, War Diaries April-May 1945 T-15928. Battle and non-battle casualties.

⁵⁰ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG 24 Volume 14,412. 1st RCHA Field Regiment War Diary April-May 1945. T-15928. Reinforcements.

⁵¹ LAC, RG 24, Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁵² LAC, RG 24, Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

⁵³ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May, 1945. T-1862-1863. LAC, RG 24 Volume 14,419. 2nd Field Regiment, RCA, War Diary April-May 1945. T-15936. Battle and non-battle casualties.

⁵⁴ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG 24 Volume 14,419. 2nd Field Regiment RCA, War Diary April-May 1945. T-15936. Reinforcements.

⁵⁵ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁵⁶ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

Table B.15: The 1st Canadian Infantry Division: 3rd Field Regiment, RCA

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ⁵⁷	<u>Personnel</u> <u>reinforcements</u> ⁵⁸	<u>Strength O-ORs end of</u> <u>month</u>
WE 01.45	–	–	38-638
30.04.45	0-11	13	35-607 ⁵⁹
05.05.45	0-17	12	34-607 ⁶⁰
<u>Totals</u>	<u>0-28 (28)</u>	<u>25</u>	–

Table B.16: 1st Canadian Infantry Division: 2nd Light Anti-Aircraft Regiment, RCA

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ⁶¹	<u>Personnel</u> <u>reinforcements</u> ⁶²	<u>Strength O-ORs end of</u> <u>month</u>
WE 01.45	–	–	34-551
30.04.45	4-0	14	33-542 ⁶³
05.05.45	0-0	0	28-519 ⁶⁴
<u>Totals</u>	<u>4-0 (4)</u>	<u>14</u>	–

⁵⁷ LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG24 Volume 14,437. 3rd Field Regiment, RCA, War Diary April-May 1945. T-15956. Battle and non-battle casualties.

⁵⁸ LAC, RG 24 Volumes 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG24 Volume 14,437. 3rd Field Regiment, RCA, War Diaries April-May 1945. T-15956. Reinforcements.

⁵⁹ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁶⁰ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

⁶¹ LAC, RG 24 Volume 13,708, 13, 709. 1st Canadian Corps A & Q War Diaries April-May, 1945. T-1862-1863. LAC, RG24 Volume 14,589. 2nd Light Anti-Aircraft Regiment, RCA War Diaries April-May 1945. T-1639. Battle and non-battle casualties

⁶² LAC, RG 24 Volume 13,708-13,709. 1st Canadian Corps A & Q War Diaries April-May 1945. T-1862-1863. LAC, RG24 Volume 14,589. 2nd Light Anti-Aircraft Regiment, RCA, War Diaries April-May 1945. T-1639. Reinforcements.

⁶³ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁶⁴ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

Table B.17: A vehicle/weapons state: 1st Canadian Infantry Division March-April 1945⁶⁵

<u>A Vehicle/weapons system</u>	<u>17-Pdr Valentine Archer SP</u>	<u>Valentine Charger</u>	<u>6-Pdr A/T guns</u>	<u>17-Pdr A/T guns</u>	<u>25-Pdr towed</u>
<u>WE 30.04.45</u>	<u>18</u>	<u>11</u>	<u>62</u>	<u>18</u>	<u>72</u>
<u>31.03.45</u>	<u>18</u>	No data	<u>62</u>	<u>17</u>	<u>0</u>
<u>30.04.45</u>	<u>18</u>	<u>0</u>	<u>57</u>	<u>19</u>	<u>71</u>
<u>Monthly averages</u>	<u>18</u>	<u>0</u>	<u>60</u>	<u>18</u>	<u>36</u>

A vehicle/weapons state part 2:

<u>A Vehicle/weapons system</u>	<u>20 mm AA Quad</u>	<u>40 mm AA towed</u>	<u>40 mm AA SP</u>	<u>4.2-Inch mortar</u>	<u>2-Inch mortar</u>	<u>3-Inch mortar</u>	<u>.303 Vickers MMG</u>
<u>WE 30.04.45</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>16</u>	<u>283</u>	<u>60</u>	<u>40</u>
<u>31.03.45</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>16</u>	<u>252</u>	<u>54</u>	<u>35</u>
<u>30.04.45</u>	<u>0</u>	<u>12</u>	<u>18</u>	<u>16</u>	<u>279</u>	<u>60</u>	<u>39</u>
<u>Monthly averages</u>	<u>0</u>	<u>15</u>	<u>18</u>	<u>16</u>	<u>266</u>	<u>57</u>	<u>37</u>

A vehicle/weapons state part 3:

<u>A Vehicle/weapons system</u>	<u>Universal Carriers</u>	<u>T-16 (gun tractor) Carriers</u>	<u>Wasp II Carriers</u>	<u>MMG (Medium Machine Gun) Carriers</u>	<u>4.2 & 3-Inch Mortar Carrier</u>
<u>WE 30.04.45</u>	<u>277</u>	<u>120</u>	<u>0</u>	<u>36</u>	<u>69</u>
<u>31.03.45</u>	No data	No data	No data	No data	No data
<u>30.04.45</u>	<u>255</u>	<u>0</u>	<u>24</u>	<u>23</u>	<u>56</u>
<u>Monthly averages</u>	<u>255</u>	<u>0</u>	<u>24</u>	<u>23</u>	<u>56</u>

A vehicle/weapons state part 4:

<u>A Vehicle/weapons system</u>	<u>4.2-Inch Mortar Carrier</u>	<u>Windsor Carrier</u>	<u>AOP Carriers</u>	<u>Scout Cars all makes</u>	<u>Armd Cars all makes</u>
<u>WE 30.04.45</u>	<u>32</u>	<u>0</u>	<u>9</u>	<u>24</u>	<u>31</u>
<u>31.03.45</u>	No data	No data	No data	No data	No data
<u>30.04.45</u>	<u>0</u>	<u>12</u>	<u>0</u>	<u>13</u>	<u>24</u>
<u>Monthly averages</u>	<u>0</u>	<u>12</u>	<u>0</u>	<u>13</u>	<u>24</u>

Table B.18: 1st Canadian Infantry Division heavy AFV deliveries by the 25th Canadian Armoured Delivery Regiment, March-April 1945

<u>Month</u>	<u>17-Pdr Valentine Archer SP deliveries</u>	<u>Valentine Charger deliveries</u>
<u>03.45</u>	<u>0</u>	<u>0</u>
<u>04.45</u>	<u>18⁶⁶</u>	<u>0</u>
<u>Totals</u>	<u>18</u>	<u>0</u>

⁶⁵ LAC, RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Canadian Vehicle Position. File 215A21.085 (D1). 1st Canadian Corps were not included in the 31 March 1945 Equipment State report. The 4th Canadian Reconnaissance Regiment did not report A vehicle data for the 30 April 1945 A and B Vehicle Position Report. This regiment was training and re-equipping in the March-May 1945 period, and saw limited if any action.

⁶⁶ LAC, RG24 Volume 14,556. 1st Anti-Tank Regiment, RCA War Diary April, 1945. T-16449. Eighteen 17-Pounder Valentine Archer tank destroyers were delivered by 10 April 1945.

Appendix 3: The 2nd Canadian Infantry Division statistics July 1944-May 1945

Table C.1: The 4th Canadian Infantry Brigade: The Royal Regiment of Canada

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u>¹	<u>Personnel</u> <u>reinforcements</u>²	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	38-812
<u>29.07.44</u>	387-58 ³	334	35-622 ⁴
<u>30.08.44</u>	250-97 ⁵	199	26-523 ⁶
<u>30.09.44</u>	144-84 ⁷	102	37-704 ⁸
<u>31.10.44</u>	150-41 ⁹	323	35-772 ¹⁰
<u>30.11.44</u>	16-65	104	35-769 ¹¹
<u>31.12.44</u>	26-55	130	40-795 ¹²
<u>31.01.45</u>	7-71	100	39-807 ¹³
<u>28.02.45</u>	144-73	198	38-774 ¹⁴
<u>31.03.45</u>	142-113	274	40-798 ¹⁵
<u>30.04.45</u>	123-88	140	40-775 ¹⁶
<u>05.05.45</u>	0-9	69	41-834 ¹⁷
<u>Totals</u>	<u>1,389-754 (2,143)</u>	<u>1,973</u>	–

¹ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Battle and non-battle. Months July-September 1944. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non battle in NWE. June-September 1944 by week.

² LAC, RG24 Volumes 7091-7096. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG24 Volume 15,226. Royal Regiment of Canada War Diaries July-September 1944.

³ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non battle NWE June-September 1944 by week. Totals 29 June-2 August 1944.

⁴ LAC, RG 24 Volume 15,226. The Royal Regiment of Canada War Diary July 1944. 29 July 1944 return.

⁵ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non battle NWE June-September 1944 by week. 3- 30 August 1944 total.

⁶ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁷ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non battle NWE June-September 1944 by week. 31 August-4 October 1944 total.

⁸ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October, 1944. T-7092. Minus totals 1-4 October, 1944. 16 battle, 6 non-battle.

¹⁰ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹¹ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹² LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹³ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁴ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁵ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁶ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁷ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.2: The 4th Canadian Infantry Brigade: The Royal Hamilton Light Infantry

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ¹⁸	<u>Personnel</u> <u>reinforcements</u> ¹⁹	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	38-812
<u>29.07.44</u>	219-26 ²⁰	298	32-770 ²¹
<u>30.08.44</u>	285-76 ²²	83	35-620 ²³
<u>31.09.44</u>	112-78 ²⁴	87	31-587 ²⁵
<u>31.10.44</u>	310-13 ²⁶	427	27-756 ²⁷
<u>30.11.44</u>	45-58	102	37-783 ²⁸
<u>31.12.44</u>	35-61	133	36-813 ²⁹
<u>31.01.45</u>	1-63	107	39-818 ³⁰
<u>28.02.45</u>	191-66	267	35-837 ³¹
<u>31.03.45</u>	217-109	281	38-804 ³²
<u>30.04.45</u>	112-133	210	36-777 ³³
<u>05.05.45</u>	10-17	46	36-796 ³⁴
<u>Totals</u>	<u>1,537-700 (2,237)</u>	<u>2,041</u>	–

¹⁸ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Battle and non-battle. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties in NWE. June-September 1944 totals by week.

¹⁹ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volumes 15,216. The Royal Hamilton Light Infantry War Diaries July-September 1944.

²⁰ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

²¹ LAC, RG 24 Volume 15,216. The Royal Hamilton Light Infantry War Diary July 1944. Field return 29 July 1944.

²² LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

²³ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

²⁴ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009.(D203). Return showing battle and non-battle casualties. Totals 31 August -4 October 1944.

²⁵ LAC, RG24 Volume 15,216. The Royal Hamilton Light Infantry War Diary September 1944. 30 September 1944 return.

²⁶ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus totals 1-4 October 1944. 58 battle, 5 non-battle.

²⁷ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

²⁸ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

²⁹ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

³⁰ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

³¹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

³² LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

³³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

³⁴ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.3: The 4th Canadian Infantry Brigade: The Essex Scottish Regiment

<u>Date</u>	<u>Battle and non-battle casualties for given month</u> ³⁵	<u>Personnel reinforcements</u> ³⁶	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>28.07.44</u>	348-34 ³⁷	215	39-735 ³⁸
<u>30.08.44</u>	265-86 ³⁹	340	30-546 ⁴⁰
<u>30.09.44</u>	169-53 ⁴¹	320	35-705 ⁴²
<u>31.10.44</u>	216-48 ⁴³	240	29-757 ⁴⁴
<u>30.11.44</u>	41-33	114	38-818 ⁴⁵
<u>31.12.44</u>	7-52	98	39-818 ⁴⁶
<u>31.01.45</u>	22-68	78	39-801 ⁴⁷
<u>28.02.45</u>	288-53	360	38-826 ⁴⁸
<u>31.03.45</u>	249-86	322	38-815 ⁴⁹
<u>30.04.45</u>	74-99	159	34-809 ⁵⁰
<u>05.05.45</u>	8-5	11	31-811 ⁵¹
<u>Totals</u>	<u>1,687-617 (2,304)</u>	<u>2,257</u>	–

³⁵ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Battle and non-battle. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009(D203). Return showing battle and non-battle casualties. June-September 1944 totals by week.

³⁶ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volumes 15,061. The Essex Scottish War Diaries July-September 1944 for reinforcement data.

³⁷ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

³⁸ LAC, RG 24 Volume 15,061. The Essex Scottish Regiment War Diary July 1944. 28 July 1944 return.

³⁹ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

⁴⁰ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁴¹ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.

⁴² LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁴³ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus totals 1-4 October 1944. 13 battle, 6 non-battle.

⁴⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October, 1944. T-7092 31 October 1944 return.

⁴⁵ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁴⁶ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁴⁷ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁴⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁴⁹ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁵⁰ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁵¹ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.4: The 5th Canadian Infantry Brigade: The Royal Highland Regiment of Canada (The Black Watch)

<u>Date</u>	<u>Total battle and non-battle casualties for given month</u> ⁵²	<u>Personnel reinforcements</u> ⁵³	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>27.07.44</u>	291-65 ⁵⁴	251	32-415 ⁵⁵
<u>30.08.44</u>	406-85 ⁵⁶	473	35-619 ⁵⁷
<u>30.09.44</u>	236-97 ⁵⁸	400	29-718 ⁵⁹
<u>31.10.44</u>	280-89 ⁶⁰	480	32-780 ⁶¹
<u>30.11.44</u>	52-41	112	39-808 ⁶²
<u>31.12.44</u>	65-32	115	39-817 ⁶³
<u>31.01.45</u>	16-50	79	38-817 ⁶⁴
<u>28.02.45</u>	81-31	119	36-776 ⁶⁵
<u>31.03.45</u>	191-34	211	43-817 ⁶⁶
<u>30.04.45</u>	143-44	217	37-753 ⁶⁷
<u>05.05.45</u>	0-6	84	38-828 ⁶⁸
<u>Totals</u>	<u>1,761-574 (2,335)</u>	<u>2,541</u>	–

⁵²LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Battle and non-battle. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. June-September 1944 totals by week.

⁵³LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volume 15,009. The Royal Highland Regiment of Canada (The Black Watch) War Diaries July-September 1944. Pt I orders.

⁵⁴LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

⁵⁵LAC, RG 24 Volume 15,009. The Royal Highland Regiment of Canada (The Black Watch) War Diary July 1944. 27 July 1944 return.

⁵⁶LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

⁵⁷LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁵⁸LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.

⁵⁹LAC, RG24, Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁶⁰LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle 1-4 October 1944. 71 battle and 11 non-battle.

⁶¹LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁶²LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁶³LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁶⁴LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁶⁵LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁶⁶LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁶⁷LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁶⁸LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.5: The 5th Canadian Infantry Brigade: Le Regiment de Maisonneuve

<u>Date</u>	<u>Battle and non-battle casualties for given month⁶⁹</u>	<u>Personnel reinforcements⁷⁰</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>29.07.44</u>	192-55 ⁷¹	137	36-690 ⁷²
<u>30.08.44</u>	259-120 ⁷³	248	30-530 ⁷⁴
<u>30.09.44</u>	93-55 ⁷⁵	226	38-631 ⁷⁶
<u>31.10.44</u>	25-50 ⁷⁷	146	38-674 ⁷⁸
<u>30.11.44</u>	1-38	124	38-730 ⁷⁹
<u>31.12.44</u>	13-41	115	43-769 ⁸⁰
<u>31.01.45</u>	2-31	102	45-808 ⁸¹
<u>28.02.45</u>	95-50	114	39-769 ⁸²
<u>31.03.45</u>	102-84	246	42-807 ⁸³
<u>30.04.45</u>	168-49	197	37-775 ⁸⁴
<u>05.05.45</u>	2-10	112	37-850 ⁸⁵
<u>Totals</u>	<u>952-583 (1,535)</u>	<u>1,767</u>	–

⁶⁹ LAC, RG 24 Volume 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945 for battle and non-battle. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. June-September 1944 totals by week.

⁷⁰ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volume 15,188. Le Regiment de Maisonneuve War Diaries July-September 1944. July-September figures are estimates calculated by comparing losses against strength reports. Pt I orders are missing.

⁷¹ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

⁷² LAC, RG 24 Volume 15,188. Le Regiment de Maisonneuve War Diary July 1944. 29 July 1944 return.

⁷³ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

⁷⁴ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁷⁵ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 31 August-4 October, 1944.

⁷⁶ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁷⁷ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle 1-4 October 1944. 17 battle and 1 non-battle.

⁷⁸ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁷⁹ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁸⁰ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁸¹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁸² LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁸³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁸⁴ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁸⁵ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.6: The 5th Canadian Infantry Brigade: The Calgary Highlanders

<u>Date</u>	<u>Battle and non-battle casualties for given month⁸⁶</u>	<u>Personnel reinforcements⁸⁷</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>25.07.44</u>	230-33 ⁸⁸	163	41-746 ⁸⁹
<u>30.08.44</u>	458-145 ⁹⁰	499	29-483 ⁹¹
<u>30.09.44</u>	319-116 ⁹²	617	38-703 ⁹³
<u>31.10.44</u>	269-33 ⁹⁴	213	30-724 ⁹⁵
<u>30.11.44</u>	23-36 ⁹⁶	162	39-814 ⁹⁷
<u>31.12.44</u>	36-75	108	36-799 ⁹⁸
<u>31.01.45</u>	21-74	139	39-812 ⁹⁹
<u>02.28.45</u>	123-110	242	35-784 ¹⁰⁰
<u>31.03.45</u>	94-104	226	39-805 ¹⁰¹
<u>30.04.45</u>	57-52	152	39-783 ¹⁰²
<u>05.05.45</u>	3-1	50	39-834 ¹⁰³
<u>Totals</u>	<u>1,633-779 (2,412)</u>	<u>2,571</u>	–

⁸⁶ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945 for battle and non-battle. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. June-September 1944 totals by week.

⁸⁷ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volume 15,020. The Calgary Highlanders War Diaries July-September 1944. These are estimates as Pt I orders are missing.

⁸⁸ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August, 1944.

⁸⁹ LAC, RG 24 Volume 15,020. The Calgary Highlanders Regiment War Diary July 1944. 25 July 1944 return.

⁹⁰ LAC, RG 24 Volume 10,527. The Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

⁹¹ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁹² LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.

⁹³ LAC RG24 Volume 13,659. First Canadian Army A & Q War Diaries. September-October, 1944. T-7092. 30 September 1944 return.

⁹⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October, 1944. T-7092. Minus battle and non-battle 1-4 October 1944. 20 battle and 8 non-battle.

⁹⁵ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁹⁶ LAC, RG 24 Volume 10516. 2nd Canadian Infantry Division Daily Casualty Log. File 215A21.009 (D146). Battle casualties. LAC, RG 24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. Non-battle losses.

⁹⁷ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁹⁸ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁹⁹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁰⁰ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁰¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁰² LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁰³ LAC, RG24 Volume 13,665. Canadian First Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.7: The 6th Canadian Infantry Brigade: Les Fusiliers Mont-Royal

<u>Date</u>	<u>Battle and non-battle casualties for given month</u> ¹⁰⁴	<u>Personnel reinforcements</u> ¹⁰⁵	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>15.07.44</u>	273-27 ¹⁰⁶	232	36-791 ¹⁰⁷
<u>30.08.44</u>	271-80 ¹⁰⁸	105	37-485 ¹⁰⁹
<u>30.09.44</u>	101-35 ¹¹⁰	292	37-534 ¹¹¹
<u>31.10.44</u>	127-40 ¹¹²	248	37-638 ¹¹³
<u>30.11.44</u>	47-60	186	36-696 ¹¹⁴
<u>31.12.44</u>	28-67	127	37-707 ¹¹⁵
<u>31.01.45</u>	31-64	149	38-735 ¹¹⁶
<u>28.02.45</u>	63-46	126	37-763 ¹¹⁷
<u>31.03.45</u>	79-69	187	42-816 ¹¹⁸
<u>30.04.45</u>	112-63	83	40-786 ¹¹⁹
<u>05.05.45</u>	16-9	45	38-808 ¹²⁰
<u>Totals</u>	<u>1,148-560 (1,708)</u>	<u>1,780</u>	–

¹⁰⁴ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Battle and non-battle.

¹⁰⁵ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volume 15,065. Les Fusilier Mont Royal War Diaries July-September 1944. Pt I orders for reinforcement data.

¹⁰⁶ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

¹⁰⁷ LAC, RG 24 Volume 15,065. Les Fusilier Mont Royal War Diary July 1944. 15 July 1944 return.. 29 July 1944 is missing.

¹⁰⁸ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

¹⁰⁹ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹¹⁰ LAC, RG 24 Volume 10527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.

¹¹¹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹¹² LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October, 1944. T-7092. Minus battle and non-battle 1-4 October 1944. 6 battle and 2 non-battle. 15 missing personnel rejoined the regiment.

¹¹³ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹¹⁴ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹¹⁵ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December, 1944. T-7093. 31 December 1944 return.

¹¹⁶ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹¹⁷ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹¹⁸ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹¹⁹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹²⁰ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.8: The 6th Canadian Infantry Brigade: The Queens Own Cameron Highlanders of Canada

<u>Date</u>	<u>Battle and non-battle casualties for given month¹²¹</u>	<u>Personnel reinforcements¹²²</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>31.07.44</u>	251-13¹²³	226	35-778¹²⁴
<u>30.08.44</u>	335-75¹²⁵	336	34-535¹²⁶
<u>30.09.44</u>	255-117¹²⁷	421	38-631¹²⁸
<u>31.10.44</u>	133-72¹²⁹	235	25-793¹³⁰
<u>30.11.44</u>	32-89	132	36-771¹³¹
<u>31.12.44</u>	37-71	172	39-823¹³²
<u>31.01.45</u>	22-54	79	38-819¹³³
<u>28.02.45</u>	72-53	101	34-797¹³⁴
<u>31.03.45</u>	118-55	191	36-806¹³⁵
<u>30.04.45</u>	104-26	84	37-828¹³⁶
<u>05.05.45</u>	6-1	21	40-828¹³⁷
<u>Totals</u>	<u>1,365-626 (1,991)</u>	<u>1,998</u>	–

¹²¹LAC, RG 24, Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Battle and non-battle. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. June-September 1944 totals by week.

¹²²LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries September 1944-May 1945. LAC, RG 24 Volume 15,162. The Queen's Own Cameron Highlanders of Canada War Diaries July-September, 1944. These are estimates calculated by comparing given unit strength returns and casualty figures on certain dates. Pt I orders are missing.

¹²³LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

¹²⁴LAC, RG 24 Volume 15,065. The Queens Own Cameron Highlanders Regiment War Diary July 1944. 29 July 1944 return..

¹²⁵LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

¹²⁶LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹²⁷LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.

¹²⁸LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹²⁹LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle 1-4 October. 74 battle.

¹³⁰LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹³¹LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹³²LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹³³LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹³⁴LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹³⁵LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹³⁶LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹³⁷LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.9: The 6th Canadian Infantry Brigade: The South Saskatchewan Regiment

<u>Date</u>	<u>Battle and non-battle casualties for given month¹³⁸</u>	<u>Personnel reinforcements¹³⁹</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
31.07.44	300-17¹⁴⁰	252	34-741¹⁴¹
30.08.44	282-110¹⁴²	270	25-488¹⁴³
30.09.44	345-77¹⁴⁴	752	32-703¹⁴⁵
31.10.44	157-102¹⁴⁶	235	31-734¹⁴⁷
30.11.44	53-53	74	39-791¹⁴⁸
31.12.44	38-42	131	39-817¹⁴⁹
31.01.45	24-52	92	34-814¹⁵⁰
28.02.45	40-63	118	38-821¹⁵¹
31.03.45	74-49	134	38-807¹⁵²
30.04.45	94-40	109	43-786¹⁵³
05.05.45	9-5	56	41-801¹⁵⁴
<u>Totals</u>	<u>1,416-610 (2,026)</u>	<u>2,223</u>	–

¹³⁸LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Battle and non-battle. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. June-September 1944 totals by week.

¹³⁹LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volume 15,262-15,263. The South Saskatchewan Regiment War Diaries July-September, 1944. These are estimates calculated by comparing given unit strength returns and casualty figures on certain dates. Part I orders are missing.

¹⁴⁰LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

¹⁴¹LAC, RG 24 Volume 15,262. The South Saskatchewan Regiment War Diary July 1944. 29 July 1944 return.

¹⁴²LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

¹⁴³LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁴⁴LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.

¹⁴⁵LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁴⁶LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle 1-4 October, 1944. 29 battle and 10 non-battle.

¹⁴⁷LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹⁴⁸LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁴⁹LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December, 1944. T-7093. 31 December 1944 return.

¹⁵⁰LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁵¹LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁵²LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁵³LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁵⁴LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.10: 2nd Canadian Infantry Division: Toronto Scottish Regiment (Machine Gun)

<u>Date</u>	<u>Battle and non-battle casualties for given month¹⁵⁵</u>	<u>Personnel reinforcements¹⁵⁶</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	36-711
<u>28.07.44</u>	117-25 ¹⁵⁷	33	34-635 ¹⁵⁸
<u>30.08.44</u>	73-57 ¹⁵⁹	115	37-679 ¹⁶⁰
<u>30.09.44</u>	54-33 ¹⁶¹	36	36-640 ¹⁶²
<u>31.10.44</u>	39-24 ¹⁶³	168	37-724 ¹⁶⁴
<u>30.11.44</u>	8-38	35	37-677 ¹⁶⁵
<u>31.12.44</u>	2-33	66	36-701 ¹⁶⁶
<u>31.01.45</u>	0-32	89	38-719 ¹⁶⁷
<u>28.02.45</u>	23-33	61	36-718 ¹⁶⁸
<u>31.03.45</u>	11-44	108	44-720 ¹⁶⁹
<u>30.04.45</u>	19-53	77	40-698 ¹⁷⁰
<u>05.05.45</u>	0-4	18	43-704 ¹⁷¹
<u>Totals</u>	<u>346-376 (722)</u>	<u>806</u>	–

¹⁵⁵ LAC, RG 24, Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Battle and non-battle. LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. June-September 1944 totals by week.

¹⁵⁶ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volume 15,277. The Toronto Scottish Regiment (MG) War Diaries July-September 1944. Part I orders.

¹⁵⁷ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 29 June-2 August 1944.

¹⁵⁸ LAC, RG 24 Volume 15,277. The Toronto Scottish Regiment (MG) War Diary July 1944. 28 July 1944 return.

¹⁵⁹ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 3-30 August 1944.

¹⁶⁰ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁶¹ LAC, RG 24 Volume 10,527. Canadian Section GHQ 2 Echelon. File 215.921.009 (D203). Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.

¹⁶² LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁶³ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle 1-4 October 1944. 10 battle and 4 non-battle.

¹⁶⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October, 1944. T-7092. 31 October 1944 return.

¹⁶⁵ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁶⁶ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁶⁷ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁶⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁶⁹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁷⁰ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁷¹ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.11: 2nd Canadian Infantry Division: The 8th Canadian Reconnaissance Regiment (14th Canadian Hussars)

<u>Date</u>	<u>Battle and non-battle casualties for given</u> <u>month</u> ¹⁷²	<u>Personnel</u> <u>reinforcements</u> ¹⁷³	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	41-755
<u>28.07.44</u>	39-17 ¹⁷⁴	46	44-757 ¹⁷⁵
<u>30.08.44</u>	68-No data ¹⁷⁶	No data	35-695 ¹⁷⁷
<u>30.09.44</u>	32-8 ¹⁷⁸	34	37-695 ¹⁷⁹
<u>31.10.44</u>	62-36	114	40-726 ¹⁸⁰
<u>30.11.44</u>	11-37	81	42-752 ¹⁸¹
<u>31.12.44</u>	4-15	10	42-739 ¹⁸²
<u>31.01.45</u>	18-32	65	40-742 ¹⁸³
<u>28.02.45</u>	5-29	69	46-779 ¹⁸⁴
<u>31.03.45</u>	25-47	50	49-773 ¹⁸⁵
<u>30.04.45</u>	40-30	79	47-751 ¹⁸⁶
<u>05.05.45</u>	5-11	12	40-740 ¹⁸⁷
<u>Totals</u>	<u>Incomplete</u>	<u>Incomplete</u>	–

¹⁷² LAC, RG 24, Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945 for battle and non-battle. LAC, RG 24, Volume 14,225. 8th Canadian Reconnaissance Regiment War Diary July 1944. T-12688-12689. Pt I orders battle and non-battle. Complete War Diary for August 1944 is missing.

¹⁷³ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. LAC, RG 24 Volume 14,225. 8th Canadian Reconnaissance Regiment War Diary July and September 1944. T-12688-12689. Pt I Orders.

¹⁷⁴ LAC, RG 24 Volume 14,225. 8th Canadian Reconnaissance Regiment War Diary July 1944. Part I Orders for battle and non-battle.

¹⁷⁵ LAC RG 24, Volume 14,225. 8th Canadian Reconnaissance Regiment War Diary July 1944. T-12688. 28 July 1944 return.

¹⁷⁶ LAC, RG 24, Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 12 August 1944 onward only for battle casualties only.

¹⁷⁷ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁷⁸ LAC, RG 24 Volume 14,225. 8th Canadian Reconnaissance Regiment War Diary September 1944. T-12689. Pt I Orders for battle and non-battle.

¹⁷⁹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁸⁰ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹⁸¹ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁸² LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁸³ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁸⁴ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁸⁵ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁸⁶ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁸⁷ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table C.12: 2nd Canadian Infantry Division: 2nd Anti-Tank Regiment, RCA

<u>Date</u>	<u>Battle and non-battle casualties for given month</u> ¹⁸⁸	<u>Personnel reinforcements</u> ¹⁸⁹	<u>Strength O-ORs date given</u>
<u>WE 01.45</u>	–	–	35-614
<u>29.07.44</u>	117-26	52	33-585 ¹⁹⁰
<u>26.08.44</u>	70-19	157	33-664 ¹⁹¹
<u>30.09.44</u>	6-1	21	32-672 ¹⁹²
<u>28.10.44</u>	48-11	17	35-639 ¹⁹³
<u>25.11.44</u>	2-6	5	34-657 ¹⁹⁴
<u>30.12.44</u>	5-2	12	35-654 ¹⁹⁵
<u>27.01.45</u>	0-5	3	36-646 ¹⁹⁶
<u>24.02.45</u>	8-4	0	36-620 ¹⁹⁷
<u>31.03.45</u>	7-0	7	36-605 ¹⁹⁸
<u>28.04.45</u>	6-3	No data	37-600 ¹⁹⁹
<u>05.05.45</u>	3-1	0	34-590 ²⁰⁰
<u>Totals</u>	<u>272-78 (350)</u>	<u>Incomplete</u>	–

¹⁸⁸ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment, RCA War Diaries July 1944-May 1945. T-16452. Pt I orders do not contain SOS strength lists. All data is from war diary entries.

¹⁸⁹ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diaries July 1944-May 1945. T-16452. Pt I orders do not contain TOS strength lists. All data is from war diary entries.

¹⁹⁰ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary July 1944. T-16452. 29 July 1944 return.

¹⁹¹ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary August 1944. T-16452. 26 August 1944 return.

¹⁹² LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary September 1944. T-16452. 30 September 1944 return.

¹⁹³ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary October 1944. T-16452. 28 October 1944 return.

¹⁹⁴ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary November 1944. T-16452. 25 November 1944 return..

¹⁹⁵ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary December 1944. T-16452. 30 December 1944 return

¹⁹⁶ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary January 1945. T-16452. 27 January 1945 return..

¹⁹⁷ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary February 1945. T-16452. 24 February 1945 return.

¹⁹⁸ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary March 1945. T-16452. 31 March 1945 return.

¹⁹⁹ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary April 1945. T-16452. 28 April 1945 return.

²⁰⁰ LAC, RG24 Volume 14,559. 2nd Anti-Tank Regiment RCA War Diary May 1945. T-16452. 5 May 1945 return.

Table C.13: 2nd Canadian Infantry Division: 4th Field Regiment, RCA

<u>Date</u>	<u>Strength O-ORs End of</u> <u>Month</u>
<u>WE 01.45</u>	38-638
<u>15.07.44</u>	38-633²⁰¹
<u>26.08.44</u>	38-615²⁰²
<u>30.09.44</u>	36-626²⁰³
<u>28.10.44</u>	38-626²⁰⁴
<u>25.11.44</u>	37-616²⁰⁵
<u>30.12.44</u>	38-622²⁰⁶
<u>27.01.45</u>	35-621²⁰⁷
<u>24.02.45</u>	35-603²⁰⁸
<u>31.03.45</u>	38-612²⁰⁹
<u>28.04.45</u>	37-603²¹⁰
<u>05.05.45</u>	38-612²¹¹

²⁰¹ LAC, RG 24 Volume 14,441. 4th Field Regiment, RCA War Diary July 1944. 15 July 1944 return.

²⁰² LAC, RG 24 Volume 14,441. 4th Field Regiment, RCA War Diary August 1944. 26 August 1944 return.

²⁰³ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary September 1944. 30 September 1944 return.

²⁰⁴ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary October 1944. 28 October 1944 return.

²⁰⁵ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary November 1944. 25 November 1944 return.

²⁰⁶ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary December 1944. 30 December 1944 return.

²⁰⁷ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary January 1945. 27 January 1945 return.

²⁰⁸ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary February 1945. 24 February 1945 return.

²⁰⁹ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary March 1945. 31 March 1945 return.

²¹⁰ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary April 1945. 28 April 1945 return.

²¹¹ LAC, RG 24 Volume 14,442. 4th Field Regiment, RCA War Diary May 1945. 5 May 1945 return.

Table C.14: 2nd Canadian Infantry Division: 5th Field Regiment, RCA

<u>Date</u>	<u>Strength O-ORs end of</u> <u>month</u>
<u>WE 01.45</u>	38-638
<u>29.07.44</u>	37-609²¹²
<u>26.08.44</u>	37-631²¹³
<u>30.09.44</u>	39-626²¹⁴
<u>28.10.44</u>	37-639²¹⁵
<u>25.11.44</u>	38-625²¹⁶
<u>30.12.44</u>	37-615²¹⁷
<u>27.01.45</u>	37-623²¹⁸
<u>24.02.45</u>	38-602²¹⁹
<u>30.03.45</u>	37-610²²⁰
<u>27.04.45</u>	37-601²²¹
<u>04.05.45</u>	38-585²²²

²¹² LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary July 1944. 29 July 1944 return.

²¹³ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary August 1944. 26 August 1944 return.

²¹⁴ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary September 1944. 30 September 1944 return.

²¹⁵ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary October 1944. 28 October 1944. Return.

²¹⁶ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary November 1944. 25 November 1944 return.

²¹⁷ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary December 1944. 30 December 1944 return.

²¹⁸ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary January 1945. 27 January 1945 return.

²¹⁹ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary February 1945. 24 February 1945 return.

²²⁰ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary March 1945. 30 March 1945 return.

²²¹ LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary April 1945. 27 April 1945 return.

²²² LAC, RG 24 Volume 14,445. 5th Field Regiment, RCA War Diary May 1945. 4 May 1945 return.

Table C.15: 2nd Canadian Infantry Division: 6th Field Regiment, RCA

<u>Date</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	38-638
<u>29.07.44</u>	36-609²²³
<u>26.08.44</u>	35-600²²⁴
<u>30.09.44</u>	38-623²²⁵
<u>28.10.44</u>	38-619^{226?}
<u>25.11.44</u>	36-624²²⁷
<u>30.12.44</u>	38-625²²⁸
<u>27.01.45</u>	38-629²²⁹
<u>24.02.45</u>	37-620²³⁰
<u>31.03.45</u>	35-620²³¹
<u>28.04.45</u>	37-612²³²
<u>05.05.45</u>	35-608²³³

²²³ LAC, RG 24 Volume 14, 448. 6th Field Regiment, RCA War Diary July 1944. T-16144. 29 July 1944 return.

²²⁴ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary August 1944. T-16144. 26 August 1944 return.

²²⁵ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary September 1944. T-16144. 30 September 1945 return.

²²⁶ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary October 1944. T-16144. 28 October 1944 return.

²²⁷ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary November 1944. T-16144. 25 November 1944 return.

²²⁸ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary December 1944. T-16144. 30 December 1944 return.

²²⁹ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary January 1945. T-16144. 27 January 1945 return.

²³⁰ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary February 1945. T-16144. 24 February 1945 return.

²³¹ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary March 1945. T-16144. 31 March 1945 return.

²³² LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary April 1945. T-16144. 28 April 1945 return. .

²³³ LAC, RG 24 Volume 14,448. 6th Field Regiment, RCA War Diary May 1945. T-16144. 5 May 1945 return.

Table C.16: 2nd Canadian Infantry Division: 3rd Light Anti-Aircraft Regiment, RCA

<u>Date</u>	<u>Battle and non-battle casualties for given month²³⁴</u>	<u>Personnel reinforcements²³⁵</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	34-551
<u>29.07.44</u>	14-5	28	41-799²³⁶
<u>26.08.44</u>	13-6	No data	43-825²³⁷
<u>30.09.44</u>	3-5	2	37-535²³⁸
<u>28.10.44</u>	4-6	1	38-516²³⁹
<u>25.11.44</u>	0-6	12	34-578²⁴⁰
<u>30.12.44</u>	7-3	9	34-527²⁴¹
<u>24.01.45</u>	0-20	26	34-533²⁴²
<u>24.02.45</u>	11-9	9	30-516²⁴³
<u>24.03.45</u>	0-10	30	34-544²⁴⁴
<u>28.04.45</u>	3-19	13	32-547²⁴⁵
<u>05.05.45</u>	2-3	3	30-537²⁴⁶
<u>Totals</u>	<u>57-92 (149)</u>	<u>133</u>	–

²³⁴ LAC, RG 24 Volume 14,591. 16, 17 and 38 Batteries 3rd Light-Anti-Aircraft Regiment, RCA War Diaries July 1944-May 1945. T-16741. Battle and non-battle. 38 Battery war diary reports rarely mention battle or non-battle casualties July-August 1944. This data is incomplete.

²³⁵ LAC, RG 24 Volume 14,591. 16,17 and 38 Batteries 3rd Light-Anti-Aircraft Regiment, RCA War Diaries July 1944-May 1945. T-16741. Reinforcement data.

²³⁶ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary July 1944. T-16741. 29 July 1944 return.

²³⁷ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary August 1944. T-16741. 26 August 1944 return.

²³⁸ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary September 1944. T-1674130. 30 September 1944 return.

²³⁹ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary October 1944. T-16741. 28 October 1944 return.

²⁴⁰ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary November 1944. T-16741. 25 November 1944 return.

²⁴¹ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary December 1944. T-16741. 30 December 1944 return.

²⁴² LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary January 1945. T-16741. 27 January 1945 return.

²⁴³ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary February 1945. T-16741. 24 February 1945 return.

²⁴⁴ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary March 1945. T-16741. 24 March 1945 return.

²⁴⁵ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary April 1945. T-16741. 28 April 1945 return.

²⁴⁶ LAC, RG 24 Volume 14,591. 3rd Light-Anti-Aircraft Regiment, RCA War Diary May 1945. T-16741. 5 May 1945 return.

Table C.17: A vehicle/weapons state 2nd Canadian Infantry Division July 1944-April 1945²⁴⁷

<u>Vehicle/Weapons System</u>	<u>Valentine - Archer 17-Pdr SP</u>	<u>Valentine Charger</u>	<u>6-Pdr A/T Guns</u>	<u>17-Pdr A/T Guns</u>	<u>25-Pdr towed</u>
<u>WE 30.04.45</u>	<u>18</u>	<u>11</u>	<u>62</u>	<u>18</u>	<u>72</u>
<u>31.07.44</u>	<u>0</u>	<u>0</u>	<u>80</u>	<u>35</u>	<u>72</u>
<u>31.08.44</u>	<u>0</u>	<u>0</u>	<u>77</u>	<u>32</u>	<u>72</u>
<u>30.09.44</u>	<u>0</u>	No data	<u>78</u>	<u>32</u>	<u>72</u>
<u>31.10.44</u>	<u>0</u>	<u>0</u>	<u>78</u>	<u>33</u>	<u>71</u>
<u>31.11.44</u>	<u>0</u>	<u>0</u>	<u>78</u>	<u>32</u>	<u>72</u>
<u>31.12.44</u>	<u>0</u>	<u>0</u>	<u>78</u>	<u>32</u>	<u>72</u>
<u>31.01.45</u>	<u>6</u>	<u>0</u>	<u>78</u>	<u>12</u>	<u>72</u>
<u>28.02.045</u>	<u>11</u>	No data	<u>78</u>	<u>12</u>	<u>72</u>
<u>31.03.45</u>	<u>20</u>	<u>7</u>	<u>62</u>	<u>18</u>	<u>72</u>
<u>30.04.45</u>	<u>19</u>	<u>6</u>	<u>62</u>	<u>19</u>	<u>72</u>
<u>Monthly Averages</u>	<u>6</u>	<u>2</u>	<u>75</u>	<u>26</u>	<u>72</u>

A vehicle/weapons state part 2.

<u>Vehicle/Weapons System</u>	<u>20mm AA Quad</u>	<u>40mm AA towed</u>	<u>40mm AA SP</u>	<u>4.2-Inch mortar</u>	<u>2-Inch mortar</u>	<u>3-Inch mortar</u>	<u>.303 Vickers MMG</u>
<u>WE 30.04.45</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>16</u>	<u>283</u>	<u>60</u>	<u>40</u>
<u>31.07.44</u>	<u>0</u>	<u>36</u>	<u>18</u>	<u>16</u>	<u>226</u>	<u>55</u>	No data
<u>31.08.44</u>	<u>0</u>	<u>36</u>	<u>18</u>	<u>14</u>	<u>259</u>	<u>60</u>	No data
<u>30.09.44</u>	<u>0</u>	<u>18</u>	<u>17</u>	<u>17</u>	<u>271</u>	<u>59</u>	No data
<u>31.10.44</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>17</u>	<u>259</u>	<u>60</u>	No data
<u>31.11.44</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>17</u>	<u>277</u>	<u>61</u>	No data
<u>31.12.44</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>17</u>	<u>277</u>	<u>61</u>	No data
<u>31.01.45</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>18</u>	<u>283</u>	<u>60</u>	<u>45</u>
<u>28.02.045</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>18</u>	<u>294</u>	<u>61</u>	<u>43</u>
<u>31.03.45</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>19</u>	<u>291</u>	<u>57</u>	<u>44</u>
<u>30.04.45</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>19</u>	<u>288</u>	<u>61</u>	<u>44</u>
<u>Averages</u>	<u>0</u>	<u>22</u>	<u>18</u>	<u>17</u>	<u>273</u>	<u>60</u>	<u>44</u>

²⁴⁷ LAC RG24 Volume 10,670. Equipment State Canadian Army Monthly Report . File 215C1.083 (D6). LAC, RG 24 Volume 10,553. 21st AG. Canadian A & B Canadian Vehicle Position. File 215A21.085 (D1)

A vehicle/weapons state part 3.

<u>Vehicle/Weapons System</u>	<u>Universal Carriers</u>	<u>T-16 (gun tractor) Carriers</u>	<u>MMG Carriers</u>	<u>Mortar 3-Inch & 4.2-Inch Carriers combined</u>
<u>WE 30.04.45</u>	<u>241</u>	<u>120</u>	<u>0</u>	<u>69</u>
<u>31.07.44</u>	<u>383</u>	<u>102</u>	<u>44</u>	<u>101</u>
<u>31.08.44</u>	<u>319</u>	<u>124</u>	<u>40</u>	<u>61</u>
<u>30.09.44</u>	<u>No data</u>	<u>No data</u>	<u>No data</u>	<u>No data</u>
<u>31.10.44</u>	<u>278</u>	<u>138</u>	<u>3</u>	<u>69</u>
<u>30.11.44</u>	<u>304</u>	<u>163</u>	<u>40</u>	<u>86</u>
<u>31.12.44</u>	<u>303</u>	<u>170</u>	<u>46</u>	<u>91</u>
<u>31.01.45</u>	<u>312</u>	<u>185</u>	<u>108</u>	<u>95</u>
<u>28.02.45</u>	<u>No data</u>	<u>No data</u>	<u>No data</u>	<u>No data</u>
<u>31.03.45</u>	<u>297</u>	<u>185</u>	<u>26</u>	<u>88</u>
<u>30.04.45</u>	<u>255</u>	<u>149</u>	<u>0</u>	<u>67</u>
<u>Monthly Averages</u>	<u>306</u>	<u>152</u>	<u>38</u>	<u>82</u>

A vehicle/weapons state part 4.

<u>Vehicle/Weapons System</u>	<u>AOP Carriers</u>	<u>Scout Cars all makes</u>	<u>Armd Cars all makes</u>
<u>WE 30.04.45</u>	<u>9</u>	<u>23</u>	<u>31</u>
<u>31.07.44</u>	<u>0</u>	<u>0</u>	<u>28</u>
<u>31.08.44</u>	<u>0</u>	<u>0</u>	<u>25</u>
<u>30.09.44</u>	<u>No data</u>	<u>No data</u>	<u>No data</u>
<u>31.10.44</u>	<u>0</u>	<u>4</u>	<u>37</u>
<u>30.11.44</u>	<u>0</u>	<u>3</u>	<u>40</u>
<u>31.12.44</u>	<u>0</u>	<u>3</u>	<u>40</u>
<u>31.01.45</u>	<u>0</u>	<u>8</u>	<u>30</u>
<u>28.02.45</u>	<u>No data</u>	<u>No data</u>	<u>No data</u>
<u>31.03.45</u>	<u>0</u>	<u>6</u>	<u>29</u>
<u>30.04.45</u>	<u>0</u>	<u>20</u>	<u>25</u>
<u>Monthly Averages</u>	<u>0</u>	<u>6</u>	<u>32</u>

Table C.18: 2nd Canadian Infantry Division heavy AFV deliveries²⁴⁸

<u>Month</u>	<u>Valentine Archer 17-Pdr SP Deliveries</u>	<u>Valentine Charger Deliveries</u>
<u>07.44</u>	<u>0</u>	<u>0</u>
<u>08.44</u>	<u>0</u>	<u>0</u>
<u>09.44</u>	<u>0</u>	<u>0</u>
<u>10.44</u>	<u>0</u>	<u>0</u>
<u>11.44</u>	<u>0</u>	<u>0</u>
<u>12.44</u>	<u>0</u>	<u>0</u>
<u>01.45</u>	<u>6</u>	<u>0</u>
<u>02.45</u>	<u>5</u>	<u>0</u>
<u>03.45</u>	<u>10</u>	<u>7</u>
<u>04.45</u>	<u>0</u>	<u>0</u>
<u>Totals</u>	<u>21</u>	<u>7</u>

²⁴⁸ LAC RG 24 Volume 14,560. 2nd Anti-Tank Regiment, RCA War Diary. T-16453. January-April 1945.

Appendix 4: The 3rd Canadian Infantry Division Statistics June 1944-May 1945

Table D.1: The 7th Canadian Infantry Brigade: The Royal Winnipeg Rifles

<u>Date</u>	<u>Battle and non-battle casualties for given month¹</u>	<u>Personnel reinforcements²</u>	<u>Strength O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>30.06.44</u>	436-35³	449*	37-790⁴
<u>29.07.44</u>	244-50⁵	301*	29-805⁶
<u>30.08.44</u>	137-77⁷	22*	33-609⁸
<u>30.09.44</u>	161-107⁹	300*	34-640¹⁰
<u>31.10.44</u>	254-96	360	33-725¹¹
<u>30.11.44</u>	28-92	156	38-818¹²
<u>31.12.44</u>	4-78	40	36-798¹³
<u>31.01.45</u>	11-84	127	38-837¹⁴
<u>28.02.45</u>	182-54	182	36-805¹⁵
<u>31.03.45</u>	46-64	81	34-780¹⁶
<u>30.04.45</u>	189-65	246	34-776¹⁷
<u>05.05.45</u>	6-7	49	36-793¹⁸
<u>Totals</u>	<u>1,698-809 (2,507)</u>	<u>2,313</u>	–

¹LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week (to 4 October). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle. 1-4 October figures subtracted from October 1944 total battle and non-battle.

²LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944 – May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

³LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

⁴LAC, RG 24 Volume 15,233. The Royal Winnipeg Rifles War Diary June 1944. 30 June 1944 strength return.

⁵LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

⁶LAC, RG 24 Volume 15,233. The Royal Winnipeg Rifles War Diary July 1944. 29 July 1944 strength return.

⁷LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3 August-30 August 1944.

⁸LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁹LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

¹⁰LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹¹LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹²LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹³LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁴LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁵LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁶LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁷LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁸LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.2: The 7th Canadian Infantry Brigade: The Regina Rifle Regiment

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ¹⁹	<u>Personnel</u> <u>reinforcements</u> ²⁰	<u>Strength: O-ORS end of</u> <u>month:</u>
<u>WE 01.45</u>	–	–	38-812
<u>24.06.44</u>	348-33 ²¹	347*	38-778 ²²
<u>29.07.44</u>	267-66 ²³	301*	36-748 ²⁴
<u>30.08.44</u>	175-33 ²⁵	88*	37-627 ²⁶
<u>30.09.44</u>	137-49 ²⁷	231*	39-670 ²⁸
<u>31.10.44</u>	384-74	387	36-766 ²⁹
<u>30.11.44</u>	74-103	169	40-820 ³⁰
<u>31.12.44</u>	13-88	119	38-792 ³¹
<u>31.01.45</u>	7-73	101	40-815 ³²
<u>28.02.45</u>	171-29	245	39-809 ³³
<u>31.03.45</u>	57-111	20	36-767 ³⁴
<u>30.04.45</u>	106-45	158	40-790 ³⁵
<u>05.05.45</u>	8-3	300	38-809 ³⁶
<u>Totals</u>	<u>1,747-707 (2,454)</u>	<u>2,466</u>	–

¹⁹ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week (to 4 October). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944 – May 1945. T-7092-7096. Battle and non-battle. 1-4 October figures subtracted from October 1944 total battle and non-battle.

²⁰ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944 – May 1945. T-7092-7096. Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

²¹ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

²² LAC, RG 24 Volume 15,198. The Regina Rifle Regiment War Diary June 1944. 24 June 1944 return.

²³ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

²⁴ LAC, RG 24 Volume 15,199. The Regina Rifle Regiment War Diary July 1944. 29 July 1944 return.

²⁵ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3 August-30 August 1944.

²⁶ LAC, RG24, Volume 13,658. First Canadian Army A and Q War Diary August 1944. T-7091. 30 August 1944 return.

²⁷ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

²⁸ LAC, RG24, Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

²⁹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

³⁰ LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

³¹ LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

³² LAC, RG24, Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

³³ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

³⁴ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

³⁵ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

³⁶ LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.3: The 7th Canadian Infantry Brigade: The Canadian Scottish Regiment

Date	Battle and non-battle casualties for month given ³⁷	Personnel reinforcements³⁸	Strength: O-ORs end of month:
<u>WE 01.45</u>	–	–	38-812
<u>24.06.44</u>	294-52³⁹	341*	33-812⁴⁰
<u>29.07.44</u>	160-80⁴¹	253*	39-819⁴²
<u>30.08.44</u>	192-100⁴³	113*	36-643⁴⁴
<u>30.09.44</u>	37-98⁴⁵	242*	37-749⁴⁶
<u>31.10.44</u>	217-70	216	34-724⁴⁷
<u>30.11.44</u>	35-76	148	40-805⁴⁸
<u>31.12.44</u>	3-129	141	39-805⁴⁹
<u>31.01.45</u>	5-81	97	41-811⁵⁰
<u>28.02.45</u>	196-85	309	36-799⁵¹
<u>31.03.45</u>	65-88	131	36-764⁵²
<u>30.04.45</u>	182-61	265	34-761⁵³
<u>05.05.45</u>	8-10	42	35-781⁵⁴
<u>Totals</u>	<u>1,394-930 (2,3240)</u>	<u>2,298</u>	–

³⁷ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week (to 4 October). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944 – May 1945. T-7092-7096. Battle and non-battle 1-4 October figures subtracted from October 1944 total battle and non-battle.

³⁸ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944 – May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

³⁹ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

⁴⁰ LAC, RG 24 Volume 15,036. The Canadian Scottish Regiment War Diary June 1944. 24 June 1944 return.

⁴¹ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

⁴² LAC, RG 24 Volume 15,036. The Canadian Scottish Regiment War Diary July 1944. 29 July 1944 return.

⁴³ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3 August-30 August 1944.

⁴⁴ LAC, RG24, Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁴⁵ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

⁴⁶ LAC, RG24, Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁴⁷ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁴⁸ LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁴⁹ LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁵⁰ LAC, RG24, Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁵¹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁵² LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return

⁵³ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return

⁵⁴ LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return

Table D.4: The 8th Canadian Infantry Brigade: The Queens Own Regiment of Canada

Date	Battle and non-battle casualties for month given ⁵⁵	Personnel reinforcements ⁵⁶	Strength: O-ORs end of month:
<u>WE 01.45</u>	—	—	38-812
<u>24.06.44</u>	257-26⁵⁷	254*	37-784⁵⁸
<u>31.07.44</u>	240-76⁵⁹	248*	35-718⁶⁰
<u>30.08.44</u>	167-49⁶¹	299*	35-801⁶²
<u>30.09.44</u>	122-48⁶³	123*	37-752⁶⁴
<u>31.10.44</u>	146-29	222	34-721⁶⁵
<u>30.11.44</u>	20-27	79	38-810⁶⁶
<u>31.12.44</u>	48-52	63	31-766⁶⁷
<u>31.01.45</u>	6-75	173	40-803⁶⁸
<u>28.02.45</u>	103-49	66	35-738⁶⁹
<u>30.03.45</u>	58-69	214	36-820⁷⁰
<u>30.04.45</u>	110-36	104	39-797⁷¹
<u>05.05.45</u>	7-6	33	41-814⁷²
<u>Totals</u>	<u>1,284-542 (1,826)</u>	<u>1,878</u>	—

⁵⁵ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week (to 4 October). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

⁵⁶ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

⁵⁷ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

⁵⁸ LAC, RG 24 Volume 15,168. The Queens Own Rifle Regiment of Canada War Diary June 1944. 24 June 1944 return.

⁵⁹ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

⁶⁰ LAC, RG 24 Volume 15,169. The Queen's Own Rifle Regiment of Canada War Diary July 1944. 29 July 1944 return.

⁶¹ LAC, RG 24 Volume 10527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3-30 August 1944.

⁶² LAC, RG24, Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁶³ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

⁶⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁶⁵ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁶⁶ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁶⁷ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁶⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁶⁹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁷⁰ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁷¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁷² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.5: The 8th Canadian Infantry Brigade: Le Regiment de la Chaudière

<u>Date</u>	<u>Battle and non-battle casualties for month given</u> ⁷³	<u>Personnel reinforcements</u> ⁷⁴	<u>Strength: O-ORs end of month</u>
<u>WE 01.45</u>	—	—	38-812
<u>24.06.44</u>	154-55 ⁷⁵	139*	35-745 ⁷⁶
<u>29.07.44</u>	307-181 ⁷⁷	509*	35-766 ⁷⁸
<u>30.08.44</u>	94-79 ⁷⁹	181*	36-773 ⁸⁰
<u>30.09.44</u>	71-87 ⁸¹	167*	38-780 ⁸²
<u>31.10.44</u>	152-45	69	37-648 ⁸³
<u>30.11.44</u>	18-68	189 ⁸⁴	39-760 ⁸⁵
<u>31.12.44</u>	9-43	94	37-785 ⁸⁶
<u>31.01.45</u>	22-65	127	43-795 ⁸⁷
<u>28.02.45</u>	89-53	99	39-738 ⁸⁸
<u>31.03.45</u>	56-76	219	42-815 ⁸⁹
<u>30.04.45</u>	94-30	98	43-806 ⁹⁰
<u>05.05.45</u>	10-4	28	41-791 ⁹¹
<u>Totals</u>	<u>1,076-786 (1,862)</u>	<u>1,919</u>	—

⁷³ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week (to 4 October) LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

⁷⁴ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

⁷⁵ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

⁷⁶ LAC, RG 24 Volume 15,180. Le Regiment de la Chaudière War Diary June 1944. 24 June 1944 return.

⁷⁷ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

⁷⁸ LAC, RG 24 Volume 15,180. Le Regiment de la Chaudière War Diary July 1944. 29 July 1944 return.

⁷⁹ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3-30 August 1944.

⁸⁰ LAC, RG24, Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁸¹ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

⁸² LAC, RG24, Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁸³ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁸⁴ Included in reinforcements are 75 missing rejoined personnel.

⁸⁵ LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁸⁶ LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁸⁷ LAC, RG24, Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁸⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁸⁹ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 30 March 1945 return.

⁹⁰ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁹¹ LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.6: The 8th Canadian Infantry Brigade: The North Shore Regiment

Date	Battle and non-battle casualties for month given ⁹²	Personnel reinforcements ⁹³	Strength: O-ORs end of month:
<u>WE 01.45</u>	—	—	38-812
<u>24.06.44</u>	191-55⁹⁴	230*	37-797⁹⁵
<u>29.07.44</u>	415-100⁹⁶	467*	36-750⁹⁷
<u>30.08.44</u>	215-78⁹⁸	267*	35-725⁹⁹
<u>30.09.44</u>	101-75¹⁰⁰	225*	36-773¹⁰¹
<u>31.10.44</u>	105-112	188	35-726¹⁰²
<u>30.11.44</u>	9-46	70	38-806¹⁰³
<u>31.12.44</u>	9-63	69	38-796¹⁰⁴
<u>31.01.45</u>	19-77	116	38-811¹⁰⁵
<u>28.02.45</u>	104-61	100	35-748¹⁰⁶
<u>31.03.45</u>	88-58	195	38-785¹⁰⁷
<u>30.04.45</u>	70-28	118	39-802¹⁰⁸
<u>05.05.45</u>	3-10	51	42-827¹⁰⁹
<u>Totals</u>	<u>1,329-763 (2,092)</u>	<u>2,096</u>	—

⁹² LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week (to 4 October). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

⁹³ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

⁹⁴ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

⁹⁵ LAC, RG 24 Volume 15,127. The North Shore Regiment War Diary June 1944. 24 June 1944 return.

⁹⁶ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

⁹⁷ LAC, RG 24 Volume 15,127. The North Shore Regiment War Diary July 1944. 29 July 1944 return.

⁹⁸ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3-30 August 1944.

⁹⁹ LAC, RG24, Volume 13,658 First Canadian Army, A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁰⁰ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

¹⁰¹ LAC, RG24 Volume 13,659. First Canadian Army, A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁰² LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹⁰³ LAC, RG24 Volume 13,660. First Canadian Army, A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁰⁴ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁰⁵ LAC, RG24 Volume 13,662. First Canadian Army, A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁰⁶ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁰⁷ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁰⁸ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁰⁹ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.7: The 9th Canadian Infantry Brigade: The Highland Light Infantry of Canada

<u>Date</u>	<u>Battle and non-battle casualties for</u> <u>month given</u> ¹¹⁰	<u>Personnel reinforcements</u> ¹¹¹	<u>Strength: O-ORs</u> <u>end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>24.06.44</u>	71-19 ¹¹²	77*	37-800 ¹¹³
<u>31.07.44</u>	348-35 ¹¹⁴	381*	37-798 ¹¹⁵
<u>30.08.44</u>	79-53 ¹¹⁶	84*	37-750 ¹¹⁷
<u>30.09.44</u>	132-53 ¹¹⁸	169*	36-735 ¹¹⁹
<u>31.10.44</u>	179-50	189	33-777 ¹²⁰
<u>30.11.44</u>	27-54	90	40-807 ¹²¹
<u>31.12.44</u>	12-59	98	37-813 ¹²²
<u>31.01.45</u>	10-94	98	37-807 ¹²³
<u>28.02.45</u>	34-50	98	43-810 ¹²⁴
<u>31.03.45</u>	166-114	203	33-787 ¹²⁵
<u>30.04.45</u>	61-37	54	39-812 ¹²⁶
<u>05.05.45</u>	3-4	24	41-847 ¹²⁷
<u>Totals</u>	<u>1,122-622 (1,744)</u>	<u>1,565</u>	–

¹¹⁰LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week (to 4 October). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle. 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

¹¹¹LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. *Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

¹¹²LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

¹¹³LAC, RG 24 Volume 15,076. The Highland Light Infantry of Canada War Diary June 1944. 24 June 1944 return.

¹¹⁴LAC, RG 24 Volume 10527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

¹¹⁵LAC, RG 24 Volume 15,076. The Highland Light Infantry of Canada War Diary July 1944. 29 July 1944 return.

¹¹⁶LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3-30 August 1944.

¹¹⁷LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹¹⁸LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

¹¹⁹LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 August 1944 return.

¹²⁰LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹²¹LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹²²LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹²³LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹²⁴LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹²⁵LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹²⁶LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹²⁷LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.8: The 9th Canadian Infantry Brigade: The Stormont, Dundas & Glengarry Highlanders

<u>Date</u>	<u>Battle and non-battle casualties for month given</u> ¹²⁸	<u>Personnel reinforcements</u> ¹²⁹	<u>Strength: O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>30.06.44</u>	136-50 ¹³⁰	163*	38-789 ¹³¹
<u>28.07.44</u>	298-47 ¹³²	279*	34-727 ¹³³
<u>30.08.44</u>	97-97 ¹³⁴	237*	39-765 ¹³⁵
<u>30.09.44</u>	122-91 ¹³⁶	189*	40-740 ¹³⁷
<u>31.10.44</u>	183-30	165	36-774 ¹³⁸
<u>30.11.44</u>	43-63	132	40-781 ¹³⁹
<u>31.12.44</u>	3-43	87	38-802 ¹⁴⁰
<u>31.01.45</u>	7-91	114	37-804 ¹⁴¹
<u>28.02.45</u>	30-50	69	40-797 ¹⁴²
<u>31.03.45</u>	130-85	195	37-803 ¹⁴³
<u>30.04.45</u>	44-44	187	40-811 ¹⁴⁴
<u>05.05.45</u>	65-14	4	38-795 ¹⁴⁵
<u>Totals</u>	<u>1,158-705 (1,863)</u>	<u>1,821</u>	–

¹²⁸ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week (to 4 October). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle. 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

¹²⁹ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-T-7096. *Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

¹³⁰ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

¹³¹ LAC, RG 24 Volume 15,270. The Stormont, Dundas and Glengarry Highlanders War Diary June 1944. 30 June 1944 return.

¹³² LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

¹³³ LAC, RG 24 Volume 15,270. The Stormont, Dundas and Glengarry Highlanders War Diary July 1944. 28 July 1944 return.

¹³⁴ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3-30 August 1944.

¹³⁵ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹³⁶ LAC, RG 24 Volume 10527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

¹³⁷ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹³⁸ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹³⁹ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁴⁰ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁴¹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁴² LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁴³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁴⁴ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁴⁵ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.9: The 9th Canadian Infantry Brigade: The North Nova Scotia Highlanders

<u>Date</u>	<u>Battle and non-battle casualties for month given</u> ¹⁴⁶	<u>Personnel reinforcements</u> ¹⁴⁷	<u>Strength: O-ORs end of month</u>
<u>WE 01.45</u>	–	–	38-812
<u>24.06.44</u>	354-77 ¹⁴⁸	392*	38-773 ¹⁴⁹
<u>29.07.44</u>	344-68 ¹⁵⁰	202*	29-572 ¹⁵¹
<u>30.08.44</u>	183-96 ¹⁵²	475*	40-757 ¹⁵³
<u>30.09.44</u>	136-91 ¹⁵⁴	168*	36-702 ¹⁵⁵
<u>31.10.44</u>	173-49	225	37-726 ¹⁵⁶
<u>30.11.44</u>	12-61	177	37-826 ¹⁵⁷
<u>31.12.44</u>	8-66	72	34-819 ¹⁵⁸
<u>31.01.45</u>	16-78	135	42-802 ¹⁵⁹
<u>28.02.45</u>	67-65	106	37-803 ¹⁶⁰
<u>31.03.45</u>	216-80	185	38-812 ¹⁶¹
<u>30.04.45</u>	49-56	108	40-811 ¹⁶²
<u>05.05.45</u>	18-9	35	40-829 ¹⁶³
<u>Totals</u>	<u>1,576-796 (2,372)</u>	<u>2,280</u>	–

¹⁴⁶ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week. LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle. 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

¹⁴⁷ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

¹⁴⁸ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1 June-28 June 1944.

¹⁴⁹ LAC, RG 24 Volume 15,122. The North Nova Scotia Highlanders War Diary June 1944. 24 June 1944 return.

¹⁵⁰ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

¹⁵¹ LAC, RG 24 Volume 15,122. Nova Scotia Highlanders War Diary July 1944. 29 July 1944 return.

¹⁵² LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3-30 August 1944.

¹⁵³ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁵⁴ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 31 August-4 October 1944.

¹⁵⁵ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁵⁶ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹⁵⁷ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁵⁸ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁵⁹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁶⁰ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁶¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁶² LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁶³ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.10: The 3rd Canadian Infantry Division: The Cameron Highlanders of Ottawa (MG)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ¹⁶⁴	<u>Personnel reinforcements for month</u> <u>given</u> ¹⁶⁵	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE 01.45</u>	—	—	36-711
<u>30.06.44</u>	107-13 ¹⁶⁶	69*	35-661 ¹⁶⁷
<u>28.07.44</u>	73-33 ¹⁶⁸	136*	36-690 ¹⁶⁹
<u>30.08.44</u>	54-33 ¹⁷⁰	98*	35-702 ¹⁷¹
<u>30.09.44</u>	44-36 ¹⁷²	61*	37-681 ¹⁷³
<u>31.10.44</u>	30-33	231	37-719 ¹⁷⁴
<u>30.11.44</u>	4-37	21	37-694 ¹⁷⁵
<u>31.12.44</u>	0-35	44	37-710 ¹⁷⁶
<u>31.01.45</u>	1-44	54	37-794 ¹⁷⁷
<u>28.02.45</u>	4-24	16	40-724 ¹⁷⁸
<u>31.03.45</u>	10-50	49	42-718 ¹⁷⁹
<u>30.04.45</u>	12-57	50	41-716 ¹⁸⁰
<u>05.05.45</u>	2-9	2	42-703 ¹⁸¹
<u>Totals</u>	341-404 (745)	831	—

¹⁶⁴ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September, 1944 totals by week. LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle. 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

¹⁶⁵ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months June-September 1944.

¹⁶⁶ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 1-28 June 1944.

¹⁶⁷ LAC, RG 24 Volume 15,026. The Cameron Highlanders of Ottawa (MG) War Diary June 1944. 30 June 1944 return.

¹⁶⁸ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 29 June-2 August 1944.

¹⁶⁹ LAC, RG 24 Volume 15,026. The Cameron Highlanders of Ottawa (MG) War Diary July 1944. 28 July 1944 return.

¹⁷⁰ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 3-30 August 1944.

¹⁷¹ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁷² LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Total 30 August – 4 October 1944.

¹⁷³ LAC RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁷⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹⁷⁵ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁷⁶ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁷⁷ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁷⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁷⁹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁸⁰ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁸¹ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.11: The 3rd Canadian Infantry Division: The 7th Canadian Reconnaissance Regiment**(17th Duke of York Royal Canadian Hussars)**

<u>Date</u>	<u>Battle and non-battle casualties for</u> <u>month given</u> ^{182*}	<u>Personnel</u> <u>reinforcements</u> ¹⁸³	<u>Strength: O-ORS end of</u> <u>month</u>
<u>WE 01.45</u>			41-755
<u>30.06.44</u>	No data	No data	40-770 ¹⁸⁴
<u>29.07.44</u>	No data	No data	40-753 ¹⁸⁵
<u>30.08.44</u>	No data	No data	43-722 ¹⁸⁶
<u>30.09.44</u>	60-No data	No data	43-738 ¹⁸⁷
<u>31.10.44</u>	39-33	83	42-742 ¹⁸⁸
<u>30.11.44</u>	10-25	15	43-707 ¹⁸⁹
<u>31.12.44</u>	9-40	39	39-771 ¹⁹⁰
<u>31.01.45</u>	2-47	47	43-766 ¹⁹¹
<u>28.02.45</u>	4-36	26	45-765 ¹⁹²
<u>31.03.45</u>	8-72	67	47-757 ¹⁹³
<u>30.04.45</u>	22-40	45	42-745 ¹⁹⁴
<u>05.05.45</u>	1-11	18	40-744 ¹⁹⁵
<u>Totals</u>	<u>Incomplete</u>	<u>Incomplete</u>	–

¹⁸²LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle figures. LAC, RG 24 Volume 14,217. 7th Canadian Reconnaissance Regiment War Diaries June-September 1944. T-12660. *Accurate June-September 1944 non-battle and battle figures were not found and information is only partly available in the war diary.

¹⁸³LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

¹⁸⁴LAC, RG 24 Volume 14,217. 7th Canadian Reconnaissance Regiment War Diary June 1944. T-12660. 30 June 1944 return.

¹⁸⁵LAC, RG 24 Volume 14,217. 7th Canadian Reconnaissance Regiment War Diary July 1944. T-12660. 29 July 1944 return.

¹⁸⁶LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁸⁷LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁸⁸LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹⁸⁹LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁹⁰LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁹¹LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1944 return.

¹⁹²LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1944 return.

¹⁹³LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹⁹⁴LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁹⁵LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table D.12: 3rd Canadian Infantry Division: 3rd Anti-Tank Regiment, RCA¹⁹⁶

<u>Date</u>	<u>Strength: O-ORs for date given</u>
<u>WE 01.45</u>	37-741
<u>30.06.44</u>	36-645 ¹⁹⁷
<u>29.07.44</u>	33-630 ¹⁹⁸
<u>25.08.44</u>	36-603 ¹⁹⁹
<u>29.09.44</u>	35-653 ²⁰⁰
<u>27.10.44</u>	37-640 ²⁰¹
<u>24.11.44</u>	36-613 ²⁰²
<u>29.12.44</u>	36-624 ²⁰³
<u>26.01.45</u>	36-632 ²⁰⁴
<u>23.02.45</u>	33-605 ²⁰⁵
<u>30.03.45</u>	35-603 ²⁰⁶
<u>30.04.45</u>	35-599 ²⁰⁷
<u>04.05.45</u>	35-624 ²⁰⁸

¹⁹⁶ For this RCA regiment, only partial information was located for battle and non-battle casualties. A partial accurate summary of all 3rd Canadian Infantry Division RCA casualties and reinforcements is located in Table D.17.

¹⁹⁷ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary June 1944. T-16455. 30 June 1944 return.

¹⁹⁸ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary July 1944. T-16455. 28 July 1944 return.

¹⁹⁹ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary August 1944. T-16455. 25 August 1944 return.

²⁰⁰ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary September 1944. T-16455. 29 September 1944 return.

²⁰¹ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary October 1944. T-16455. 27 October 1944 return.

²⁰² LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary November 1944. T-16455. 24 November 1944 return..

²⁰³ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary December 1944. T-16455. 29 December 1944 return.

²⁰⁴ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary January 1945. T-16455. 26 January 1945 return.

²⁰⁵ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary February 1945. T-16455. 23 February 1945 return.

²⁰⁶ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary March 1945. T-16455. 30 March 1945 return.

²⁰⁷ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary April 1945. T-16455. 27 April 1945 return.

²⁰⁸ LAC, RG 24 Volume 14,562. 3rd Anti-Tank Regiment, RCA War Diary May 1945. T-16455. 4 May 1945 return.

Table D.13: 3rd Canadian Infantry Division: 12th Field Regiment, RCA.

<u>Date</u>	<u>Strength: O-ORs for date given</u>
<u>WE 01.45</u>	38-638
<u>24.06.44</u>	42-633²⁰⁹
<u>29.07.44</u>	39-636²¹⁰
<u>26.08.44</u>	38-627²¹¹
<u>30.09.44</u>	38-628²¹²
<u>28.10.44</u>	38-626²¹³
<u>25.11.44</u>	38-630²¹⁴
<u>30.12.44</u>	38-628²¹⁵
<u>27.01.45</u>	38-626²¹⁶
<u>24.02.45</u>	36-605²¹⁷
<u>31.03.45</u>	39-620²¹⁸
<u>25.04.45</u>	37-626²¹⁹
<u>05.05.45</u>	39-631²²⁰

²⁰⁹LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary June 1944. T-16360. 24 June 1944 return.

²¹⁰ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary July 1944. T-16360. 29 July 1944 return.

²¹¹ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary August 1944. T-16360. 26 August 1944 return.

²¹² LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary September 1944. T-16360. 30 September 1944 return

²¹³ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary October 1944. T-16360. 28 October 1944 return

²¹⁴ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary November 1944. T-16360. 25 November 1944 return

²¹⁵ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary December 1944. T-16360. 30 December 1944 return

²¹⁶ LAC, RG 24 Volume 14,461. 12th Field Regiment, RCA War Diary January 1945. T-16360. 27 January 1945 return

²¹⁷ LAC, RG 24 volume 14,541. 12th Field Regiment, RCA War Diary February 1945. T-16437. 24 February 1945 return.

²¹⁸ LAC, RG 24 volume 14,541. 12th Field Regiment, RCA War Diary March 1945. T-16437. 31 March 1945 return.

²¹⁹ LAC, RG 24 volume 14,541. 12th Field Regiment, RCA War Diary April 1945. T-16437. 25 April 1945 return.

²²⁰ LAC, RG 24 volume 14,541. 12th Field Regiment, RCA War Diary May 1945. T-16437. 5 May 1945 return.

Table D.13: 3rd Canadian Infantry Division: 13th Field Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs for date given</u>
<u>WE 01.45</u>	38-638
<u>24.06.44</u>	40-628 ²²¹
<u>30.07.44</u>	36-632 ²²²
<u>08.44</u>	No data
<u>30.09.44</u>	37-638 ²²³
<u>28.10.44</u>	38-629 ²²⁴
<u>25.11.44</u>	36-630 ²²⁵
<u>30.12.44</u>	37-626 ²²⁶
<u>27.01.45</u>	38-630 ²²⁷
<u>24.02.45</u>	38-612 ²²⁸
<u>31.03.45</u>	37-613 ²²⁹
<u>28.04.45</u>	36-603 ²³⁰
<u>05.05.45</u>	37-619 ²³¹

²²¹ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary June 1944. T-16363. 24 June 1944 return.

²²² LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary July 1944. T-16363. 30 July 1944 return.

²²³ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary September 1944. T-16363. 30 September 1944 return.

²²⁴ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary October 1944. T-16363. 28 October 1944 return.

²²⁵ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary November 1944. T-16364. 28 November 1944 return.

²²⁶ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary December 1944. T-16364. 30 December 1944 return.

²²⁷ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary January 1945. T-16364. 27 January 1945 return.

²²⁸ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary February 1945. T-16364. 24 February 1945 return.

²²⁹ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary March 1945. T-16364. 31 March 1945 return

²³⁰ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary April 1945. T-16364. 28 April 1945 return

²³¹ LAC, RG 24 Volume 14,465. 13th Field Regiment, RCA War Diary May 1945. T-16364. 5 May 1945 return

Table D.14: 3rd Canadian Infantry Division: 14th Field Regiment, RCA.

<u>Date</u>	<u>Strength: O-ORS for date given</u>
<u>WE 01.45</u>	38-638
<u>24.06.44</u>	41-594²³²
<u>27.07.44</u>	39-634²³³
<u>26.08.44</u>	38-625²³⁴
<u>30.09.44</u>	38-622²³⁵
<u>28.10.44</u>	38-628²³⁶
<u>25.11.44</u>	37-621²³⁷
<u>30.12.44</u>	34-631²³⁸
<u>27.01.45</u>	38-620²³⁹
<u>24.02.45</u>	37-613²⁴⁰
<u>24.03.45</u>	36-616²⁴¹
<u>28.04.45</u>	38-616²⁴²
<u>05.05.45</u>	38-605²⁴³

²³² LAC, RG 24 Volume 14,471. 14th Field Regiment, RCA War Diary June 1944. T-16371. 24 June 1944 return.

²³³ LAC, RG 24 Volume 14,471. 14th Field Regiment, RCA War Diary July 1944. T-16371. 27 July 1944 return.

²³⁴ LAC, RG 24 Volume 14,471. 14th Field Regiment, RCA War Diary August 1944. T-16371. 26 August 1944 return.

²³⁵ LAC, RG 24 Volume 14,471. 14th Field Regiment, RCA War Diary September 1944. T-16371. 30 September 1944 return.

²³⁶ LAC, RG 24 Volume 14,472. 14th Field Regiment, RCA War Diary October 1944. T-16372. 28 October 1944 return.

²³⁷ LAC, RG 24 Volume 14,472. 14th Field Regiment, RCA War Diary November 1944. T-16372. 25 November 1944 return.

²³⁸ LAC, RG 24 Volume 14,472. 14th Field Regiment, RCA War Diary December 1944. T-16372. 30 December 1944 return.

²³⁹ LAC, RG 24 Volume 14,472. 14th Field Regiment, RCA War Diary January 1945. T-16372. 27 January 1945 return.

²⁴⁰ LAC, RG 24 Volume 14,472. 14th Field Regiment, RCA War Diary February 1945. T-16372. 24 February 1945 return.

²⁴¹ LAC, RG 24 Volume 14,473. 14th Field Regiment, RCA War Diary March 1945. T-16373. 24 March 1945 return.

²⁴² LAC, RG 24 Volume 14,473. 14th Field Regiment, RCA War Diary April 1945. T-16373. 28 April 1945 return.

²⁴³ LAC, RG 24 Volume 14,473. 14th Field Regiment, RCA War Diary May 1945. T-16373. 5 May 1945 return.

Table D.16: 3rd Canadian Infantry Division: 4th Light Anti-Aircraft Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs</u> <u>for date given</u>
<u>WE 01.45</u>	34-551
<u>24.06.44</u>	43-726 ²⁴⁴
<u>29.07.44</u>	52-980 ²⁴⁵
<u>26.08.44</u>	42-829 ²⁴⁶
<u>30.09.44</u>	32-551 ²⁴⁷
<u>28.10.44</u>	33-547 ²⁴⁸
<u>25.11.44</u>	34-537 ²⁴⁹
<u>30.12.44</u>	33-544 ²⁵⁰
<u>27.01.45</u>	34-546 ²⁵¹
<u>24.02.45</u>	32-533 ²⁵²
<u>31.03.45</u>	34-552 ²⁵³
<u>28.04.45</u>	34-542 ²⁵⁴
<u>05.05.45</u>	30-541 ²⁵⁵

²⁴⁴ LAC, RG 24 Volume 14,594. 4th Light Anti-Aircraft Regiment, RCA War Diary June 1944. 24 June 1944 return.

²⁴⁵ LAC, RG 24 Volume 14,594. 4th Light Anti-Aircraft Regiment, RCA War Diary July 1944. 29 July 1944 return.

²⁴⁶ LAC, RG 24 Volume 14,594. 4th Light Anti-Aircraft Regiment, RCA War Diary August 1944. 26 August 1944 return

²⁴⁷ LAC, RG 24 Volume 14,594. 4th Light Anti-Aircraft Regiment, RCA War Diary September 1944. 30 September 1944 return

²⁴⁸ LAC, RG 24 Volume 14,594. 4th Light Anti-Aircraft Regiment, RCA War Diary October 1944. 28 October 1944 return

²⁴⁹ LAC, RG 24 Volume 14,594. 4th Light Anti-Aircraft Regiment, RCA War Diary November 1944. 25 November 1944 return

²⁵⁰ LAC, RG 24 Volume 14,594. 4th Light Anti-Aircraft Regiment, RCA War Diary December 1944. 30 December 1944 return

²⁵¹ LAC, RG 24 Volume 14,594. 4th Light Anti-Aircraft Regiment, RCA War Diary January 1945. 27 January 1945 return

²⁵² LAC, RG 24 Volume 14,595. 4th Light Anti-Aircraft Regiment, RCA War Diary February 1945. 24 February 1945 return

²⁵³ LAC, RG 24 Volume 14,595. 4th Light Anti-Aircraft Regiment, RCA War Diary March 1945. 31 March 1945 return

²⁵⁴ LAC, RG 24 Volume 14,595. 4th Light Anti-Aircraft Regiment, RCA War Diary April 1945. 28 April 1945 return

²⁵⁵ LAC, RG 24 volume 14,595. 4th Light Anti-Aircraft Regiment, RCA War Diary May 1945. 5 May 1945 return

Table D.17: 3rd Canadian Infantry Division: Total divisional RCA battle and non-battle casualties & reinforcements by month June 1944- May 1945;²⁵⁶

<u>Date</u>	<u>Battle-non-battle casualties for month given</u>	<u>Personnel reinforcements for month given</u>
<u>06.44</u>	225- No data	No data
<u>07.44</u>	197- No data	No data
<u>08.44</u>	139- No data	No data
<u>09.44</u>	No data	No data
<u>10.44</u>	48-60	127
<u>11.44</u>	40-94	105
<u>12.44</u>	No data	No data
<u>01.45</u>	3-156	146
<u>02.45</u>	44-108	116
<u>03.45</u>	No data	No data
<u>04.45</u>	No data	No data
<u>05.45</u>	1-37	53
<u>Totals</u>	<u>Incomplete</u>	<u>Incomplete</u>

²⁵⁶ LAC, RG24 Volume 13,776-13,779. 3rd Canadian Infantry Division A & Q War Diaries. 6 June 1944 - 5 May 1945. T-10533-10537. All RCA personnel for all five divisional RCA regiments combined.

Table D.18: A vehicle/weapons state 3rd Canadian Infantry Division June 1944–April 1945²⁵⁷

<u>Vehicle/Weapons System</u>	<u>Valentine Archer 17-Pdr SP</u>	<u>Valentine Charger</u>	<u>M-10 3 - Inch SP</u>	<u>M7 105mm SP</u>	<u>6-Pdr A/T guns</u>	<u>17-Pdr A/T guns</u>	<u>25-Pdr towed</u>
<u>WE 30.04.45</u>	<u>18</u>	<u>11</u>	<u>0</u>	<u>0</u>	<u>62</u>	<u>18</u>	<u>72</u>
<u>31.07.44</u>	<u>0</u>	<u>0</u>	<u>15</u>	<u>101</u>	<u>95</u>	<u>0</u>	<u>0</u>
<u>31.08.44</u>	<u>0</u>	<u>0</u>	<u>15</u>	<u>52</u>	<u>96</u>	<u>0</u>	<u>72</u>
<u>31.09.44</u>	No data	No data	No data	No data	<u>94</u>	<u>0</u>	<u>72</u>
<u>31.10.44</u>	<u>0</u>	<u>0</u>	<u>12</u>	<u>17</u>	<u>95</u>	<u>0</u>	<u>72</u>
<u>31.11.44</u>	<u>0</u>	<u>0</u>	<u>9</u>	<u>0</u>	<u>94</u>	<u>0</u>	<u>72</u>
<u>31.12.44</u>	<u>0</u>	<u>0</u>	<u>11</u>	<u>0</u>	<u>94</u>	<u>0</u>	<u>72</u>
<u>31.01.45</u>	<u>12</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>78</u>	<u>12</u>	<u>72</u>
<u>28.02.045</u>	No data	No data	No data	No data	<u>78</u>	<u>12</u>	<u>72</u>
<u>31.03.45</u>	<u>12</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>62</u>	<u>18</u>	<u>72</u>
<u>30.04.45</u>	<u>14</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>61</u>	<u>17</u>	<u>72</u>
<u>Monthly averages</u>	<u>5</u>	<u>1</u>	<u>8</u>	<u>21</u>	<u>85</u>	<u>6</u>	<u>65</u>

A vehicle/weapons state part 2.

<u>Vehicle/ Weapons System</u>	<u>20mm AA Quad</u>	<u>40mm AA towed</u>	<u>40mm AA SP</u>	<u>4.2 inch Mortar</u>	<u>2 Inch mortar</u>	<u>3 Inch mortar</u>	<u>.303 Vickers MMG</u>
<u>WE 30.04.45</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>16</u>	<u>283</u>	<u>60</u>	<u>40</u>
<u>31.07.44</u>	<u>0</u>	<u>0</u>	<u>54</u>	<u>16</u>	<u>269</u>	<u>63</u>	No data
<u>31.08.44</u>	<u>0</u>	<u>0</u>	<u>36</u>	<u>18</u>	<u>286</u>	<u>61</u>	No data
<u>31.09.44</u>	<u>0</u>	<u>0</u>	<u>36</u>	<u>16</u>	<u>275</u>	<u>61</u>	No data
<u>31.10.44</u>	<u>0</u>	<u>0</u>	<u>36</u>	<u>16</u>	<u>257</u>	<u>60</u>	No data
<u>31.11.44</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>16</u>	<u>266</u>	<u>61</u>	No data
<u>31.12.44</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>18</u>	<u>292</u>	<u>60</u>	No data
<u>31.01.45</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>18</u>	<u>290</u>	<u>61</u>	<u>36</u>
<u>28.02.045</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>18</u>	<u>290</u>	<u>61</u>	<u>36</u>
<u>31.03.45</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>18</u>	<u>308</u>	<u>60</u>	<u>36</u>
<u>30.04.45</u>	<u>0</u>	<u>18</u>	<u>18</u>	<u>18</u>	<u>285</u>	<u>61</u>	<u>36</u>
<u>Monthly averages</u>	<u>0</u>	<u>11</u>	<u>27</u>	<u>17</u>	<u>282</u>	<u>61</u>	<u>36</u>

²⁵⁷ LAC, RG 24 Volume 10553 File 215A21.085 (D1) 21st AG. 21st AG. Canadian A & B Canadian Vehicle Position. LAC RG24 Volume 10,670 File 215C1.083 (D6). Equipment State Canadian Army Monthly Report (Non-Vehicle/AFV)

A vehicle/weapons state part 3.

<u>Vehicle/Weapons System</u>	<u>Universal Carriers</u>	<u>T-16 (gun tractor) Carriers</u>	<u>Wasp II</u>	<u>MMG Carriers</u>	<u>Mortar 3-Inch & 4.2-Inch Carriers combined</u>
<u>WE 30.04.45</u>	<u>313</u>	<u>120</u>	<u>0</u>	<u>72</u>	<u>133</u>
30.06.44	No data	No data	No data	No data	No data
31.07.44	361	9	0	70	168
31.08.44	349	13	1	67	170
30.09.44	No data	No data	No data	No data	No data
31.10.44	351	24	6	55	158
30.11.44	315	26	4	56	152
31.12.44	331	28	15	64	154
31.01.45	296	37	19	2	122
28.02.45	No data	No data	No data	No data	No data
31.03.45	331	72	12	59	118
30.04.45	362	100	36	88	125
<u>Monthly Averages</u>	<u>337</u>	<u>39</u>	<u>12</u>	<u>58</u>	<u>146</u>

A vehicle/weapons state part 4.

<u>Vehicle/Weapons System</u>	<u>AOP Carriers</u>	<u>Scout Cars all makes</u>	<u>Armd Cars all makes</u>
<u>WE 30.04.45</u>	<u>9</u>	<u>25</u>	<u>31</u>
30.06.44	No data	No data	No data
31.07.44	0	6	31
31.08.44	0	5	31
30.09.44	No data	No data	No data
31.10.44	2	8	40
30.11.44	0	14	37
31.12.44	0	14	36
31.01.45	1	14	36
28.02.45	No data	No data	No data
31.03.45	1	15	34
30.04.45	1	28	30
<u>Monthly Averages</u>	<u>1</u>	<u>13</u>	<u>34</u>

Table D.18: 3rd Canadian Infantry Division: New or repaired heavy AFVs delivered²⁵⁸

<u>Month</u>	<u>Valentine Archer 17-Pdr SP Deliveries</u>	<u>M-10 3-Inch SP Deliveries</u>	<u>Valentine Charger Deliveries</u>
<u>Month</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>06.44</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>07.44</u>	<u>0</u>	<u>3</u>	<u>0</u>
<u>08.44</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>09.44</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>10.44</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>11.44</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>12.44</u>	<u>0</u>	<u>2</u>	<u>0</u>
<u>01.45</u>	<u>12</u>	<u>0</u>	<u>0</u>
<u>02.45</u>	<u>1</u>	<u>0</u>	<u>0</u>
<u>03.45</u>	<u>1</u>	<u>0</u>	<u>3</u>
<u>04.45</u>	<u>2</u>	<u>0</u>	<u>0</u>
<u>Totals</u>	<u>16</u>	<u>5</u>	<u>3</u>

²⁵⁸ LAC, RG 24 Volume 14,652. 3rd Anti-Tank Regiment RCA War Diaries June 1944-May 1945. T-16455. All deliveries mentioned of heavy AFVs. LAC, RG 24 Volume 10,553. 21st AG. A & B Canadian Vehicle Position Report. File 215A21.085 (D1)

Appendix 5: The 4th Canadian Armoured Division statistics August 1944-May 1945

Table E.1: The 4th Canadian Armoured Brigade: The 21st Canadian Armoured Regiment (The Governor General's Foot Guards)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given¹</u>	<u>Personnel</u> <u>reinforcements²</u>	<u>Strength: O-ORs end of</u> <u>month:</u>
<u>WE</u> <u>01.45</u>	–	–	38-647
<u>30.08.44</u>	124-Not reported	46	28-551³
<u>30.09.44</u>	31-Not reported	63	36-563⁴
<u>31.10.44</u>	28-27	161	37-535⁵
<u>30.11.44</u>	15-36	158	37-580⁶
<u>31.12.44</u>	0-33	54	39-580⁷
<u>31.01.45</u>	0-24	83	37-571⁸
<u>28.02.45</u>	12-26	125	35-596⁹
<u>31.03.45</u>	23-41	180	38-631¹⁰
<u>30.04.45</u>	39-16	98	36-645¹¹
<u>05.05.45</u>	7-6	18	37-648¹²
<u>Totals</u>	<u>279-Incomplete</u>	<u>986</u>	–

¹ LAC, Volumes 13,659 – 13,665. First Canadian Army A & Q War Diaries September 1944-May 1945. Consolidated daily casualty and strength returns. LAC, RG24 Volume 14,255. 21st Canadian Armoured Regiment War Diaries August-September 1944. Pt I orders for August-September 1944.

² LAC, Volumes 13,659 – 13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Consolidated daily casualty and strength returns. LAC, RG24 Volume 14,255. 21st Canadian Armoured Regiment War Diaries August-September 1944. Pt I orders for August-September 1944.

³ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁵ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁶ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November, 1944 return.

⁷ LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁰ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹¹ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹² LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table E.2: The 4th Canadian Armoured Brigade: The 22nd Canadian Armoured Regiment (The Canadian Grenadier Guards).

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given¹³</u>	<u>Personnel</u> <u>reinforcements¹⁴</u>	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	38-647
<u>30.08.44</u>	140-17	210	30-526 ¹⁵
<u>30.09.44</u>	41-16	74	34-511 ¹⁶
<u>31.10.44</u>	22-39	129	37-577 ¹⁷
<u>30.11.44</u>	13-66	102	36-596 ¹⁸
<u>31.12.44</u>	1-28	62	36-604 ¹⁹
<u>31.01.45</u>	1-31	52	36-589 ²⁰
<u>28.02.45</u>	21-15	85	30-583 ²¹
<u>31.03.45</u>	28-34	184	38-656 ²²
<u>30.04.45</u>	36-23	79	36-647 ²³
<u>05.05.45</u>	11-3	24	36-648 ²⁴
<u>Totals</u>	<u>314-272 (586)</u>	<u>1,001</u>	–

¹³ LAC, Volumes 13,659-13,665. First Canadian Army A & Q War Diaries September 1944-May 1945. Consolidated daily casualty and strength returns for battle and non-battle. LAC, RG24 Volume 14,260. 22nd Canadian Armoured Regiment War Diaries August-September 1944. T-12727. Pt I Orders for August-September 1944.

¹⁴ LAC, Volumes 13,659 – 13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. Consolidated daily casualty and strength returns. LAC, RG24 Volume 14,260-14,261. 22nd Canadian Armoured Regiment War Diary August-September 1944. T-12727. Pt I Orders for August-September 1944.

¹⁵ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁶ LAC RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁷ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092 31 October 1944 return.

¹⁸ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁹ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

²⁰ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

²¹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

²² LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

²³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²⁴ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table E.3: The 4th Canadian Armoured Brigade: The 28th Canadian Armoured Regiment (The British Columbia Regiment)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ²⁵	<u>Personnel reinforcements</u> <u></u> ²⁶	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>			38-647
<u>30.08.44</u>	171-Not reported	121	36-589 ²⁷
<u>30.09.44</u>	20-Not reported	513 ^{28*}	39-584 ²⁹
<u>31.10.44</u>	25-19	104	35-594 ³⁰
<u>30.11.44</u>	0-27	85	38-604 ³¹
<u>31.12.44</u>	2-59	65	37-607 ³²
<u>31.01.45</u>	0-41	65	37-608 ³³
<u>28.02.45</u>	12-34	95	36-631 ³⁴
<u>31.03.45</u>	57-34	170	38-659 ³⁵
<u>30.04.45</u>	63-21	51	36-658 ³⁶
<u>05.05.45</u>	4-4	11	37-651 ³⁷
<u>Totals</u>	<u>354-Incomplete</u>	<u>1,280</u>	-

²⁵ LAC, RG 24 Volume 13,659-13,665. First Canadian Army A & Q War Diaries September 1944-May 1945. T-7092-7096. Daily consolidated casualty and strength returns. LAC, RG24 Volume 14,292. 28th Canadian Armoured Regiment War Diary August 1944. T-12764. Pt I Orders. Appendix 6 Casualty list August 1944.

²⁶ LAC, RG 24 Volume 13,659-13,665. First Canadian Army A & Q War Diaries September 1944-May 1945. T-7092-7096. Daily consolidated casualty and strength returns. LAC, RG24 Volume 14,292. 28th Canadian Armoured Regiment War Diaries August-September 1944. T-12764-12765. War Diary and Pt I orders 10-11 August 1944, War Diary and Pt I Orders September 1944. Total combined figure for postings to regiment for August-September 1944 is 634 officers and other ranks. .

²⁷ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

²⁸ LAC, RG24 Volume 14,292. 28th Canadian Armoured Regiment War Diaries August-September 1944. T-12764-12765. Pt I orders. During this month the Regiment attached a large number of personnel to the 25th Canadian Armoured Delver Regiment for training and to receive new AFVs. The Pt I orders reflect a large number of personnel being posted in that may have already been in the regiment.

²⁹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

³⁰ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

³¹ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

³² LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

³³ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

³⁴ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

³⁵ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945.

³⁶ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

³⁷ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table E.4: The 4th Canadian Armoured Brigade: The Lake Superior Regiment (Motor)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ³⁸	<u>Personnel</u> <u>reinforcements</u> ³⁹	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE 01.45</u>	—	—	39-818
<u>30.08.44</u>	184-47 ⁴⁰	148*	32-740 ⁴¹
<u>30.09.44</u>	96-47 ⁴²	164*	38-731 ⁴³
<u>31.10.44</u>	100-54 ⁴⁴	174	33-762 ⁴⁵
<u>30.11.44</u>	43-54	186	38-803 ⁴⁶
<u>31.12.44</u>	8-47	60	40-806 ⁴⁷
<u>31.01.45</u>	14-45	105	36-801 ⁴⁸
<u>28.02.45</u>	45-43	59	33-810 ⁴⁹
<u>31.03.45</u>	131-66	218	39-807 ⁵⁰
<u>30.04.45</u>	157-49	165	32-804 ⁵¹
<u>05.05.45</u>	19-4	57	34-830 ⁵²
<u>Totals</u>	<u>797-456 (1,253)</u>	<u>1,336</u>	—

³⁸ LAC, RG 24 Volume 10,527. File 215.921.009 (D203). Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September 1944 totals by week (to 4 October 1944). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle. 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

³⁹ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months August-September 1944.

³⁹LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months August-September 1944.

⁴⁰ LAC, RG 24 Volume 10,527. File 215.921.009 (D203). Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Totals 27 July-30 August 1944.* These totals were reported by the Canadian Army on a weekly basis.

⁴¹ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁴² LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.* These totals were reported by the Canadian Army on a weekly basis.

⁴³ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁴⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle for 1-4 October 1944 which was included in the September 1944 return due to the weekly reporting practice.

⁴⁵ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁴⁶ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁴⁷ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁴⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁴⁹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁵⁰ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁵¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁵² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table E.5: The 10th Canadian Infantry Brigade: The Lincoln and Welland Regiment

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ⁵³	<u>Personnel</u> <u>reinforcements</u> ⁵⁴	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	—	—	38-812
<u>30.08.44</u>	258-71 ^{55*}	101*	33-589 ⁵⁶
<u>30.09.44</u>	166-42 ⁵⁷	408*	37-785 ⁵⁸
<u>31.10.44</u>	210-26 ⁵⁹	117	31-616 ⁶⁰
<u>30.11.44</u>	64-42	335	37-804 ⁶¹
<u>31.12.44</u>	14-49	89	37-816 ⁶²
<u>31.01.45</u>	176-77	248	28-764 ⁶³
<u>28.02.45</u>	65-90	217	29-818 ⁶⁴
<u>31.03.45</u>	146-96	318	39-803 ⁶⁵
<u>30.04.45</u>	301-36	273	38-816 ⁶⁶
<u>05.05.45</u>	73-4	18	37-776 ⁶⁷
<u>Totals</u>	<u>1,473-533 (2,006)</u>	<u>2,124</u>	—

⁵³ LAC, RG 24 Volume 10,527. File 215.921.009 (D203). Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. June-September 1944 totals by week (to 4 October 1944). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944- May 1945. T-7092-7096. Battle and non-battle. 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

⁵⁴ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months August-September 1944.

⁵⁵ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Totals 27 July-30 August 1944.* These totals were reported by the Canadian Army on a weekly basis.

⁵⁶ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁵⁷ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.* These totals were reported by the Canadian Army on a weekly basis.

⁵⁸ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁵⁹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle for 1-4 October 1944 included in the September 1944 return due to weekly reporting practice.

⁶⁰ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁶¹ LAC RG24 Volume 13,659. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁶² LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁶³ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁶⁴ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁶⁵ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁶⁶ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁶⁷ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table E.6: The 10th Canadian Infantry Brigade: The Algonquin Regiment

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ⁶⁸	<u>Personnel</u> <u>reinforcements</u> ⁶⁹	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	—	—	38-812
<u>30.08.44</u>	244-20 ⁷⁰	21*	36-571 ⁷¹
<u>30.09.44</u>	261-29 ⁷²	519*	36-800 ⁷³
<u>31.10.44</u>	180-58 ⁷⁴	164	33-670 ⁷⁵
<u>30.11.44</u>	83-89	278	38-787 ⁷⁶
<u>31.12.44</u>	9-74	108	37-805 ⁷⁷
<u>31.01.45</u>	15-75	114	37-812 ⁷⁸
<u>28.02.45</u>	37-29	77	38-803 ⁷⁹
<u>31.03.45</u>	325-90	336	36-820 ⁸⁰
<u>30.04.45</u>	230-46	214	30-799 ⁸¹
<u>05.05.45</u>	11-13	41	32-845 ⁸²
<u>Totals</u>	<u>1,395-523 (1,918)</u>	<u>1,872</u>	—

⁶⁸ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. August-September 1944 totals by week (to 4 October 1944). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle. 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

⁶⁹ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months August-September 1944.

⁷⁰ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Totals 27 July-30 August 1944.* These totals were reported by the Canadian Army on a weekly basis.

⁷¹ LAC, RG24, Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁷² LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.* These totals were reported by the Canadian Army on a weekly basis.

⁷³ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁷⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle for 1-4 October 1944. These numbers included in the September return due to weekly reporting practice.

⁷⁵ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁷⁶ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁷⁷ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁷⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁷⁹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary. February 1945. T-7094. 28 February 1945 return.

⁸⁰ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁸¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁸² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table E.7: The 10th Canadian Infantry Brigade: The Argyll and Sutherland Highlanders (Princess Louise's) of Canada

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ⁸³	<u>Personnel</u> <u>reinforcements</u> ^{84*}	<u>Strength: O-ORs end of</u> <u>month:</u>
<u>WE</u> <u>01.45</u>	—	—	38-812
<u>30.08.44</u>	218-61 ^{85*}	24	24-528 ⁸⁶
<u>30.09.44</u>	222-38 ^{87*}	579*	37-834 ⁸⁸
<u>31.10.44</u>	186-64 ⁸⁹	118	29-649 ⁹⁰
<u>31.11.44</u>	16-77	259	38-808 ⁹¹
<u>31.12.44</u>	3-55	61	36-807 ⁹²
<u>31.01.45</u>	50-73	82	33-769 ⁹³
<u>28.02.45</u>	60-54	150	28-803 ⁹⁴
<u>31.03.45</u>	171-101	288	37-808 ⁹⁵
<u>30.04.45</u>	167-50	269	40-854 ⁹⁶
<u>05.05.45</u>	32-10	0	38-837 ⁹⁷
<u>Totals</u>	<u>1,144-583 (1,727)</u>	<u>1,806</u>	—

⁸³ LAC, RG 24 Volume 10,527. File 215.921.009 (D203). Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. August-September 1944 totals by week (to 4 October). LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944–May 1945. T-7092-7096. Battle and non-battle. 1-4 October 1944 figures subtracted from October 1944 total battle and non-battle.

⁸⁴ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

*Estimated figures taking strengths at certain dates and subtracting casualties for months August-September 1944. LAC, RG 24 Volume 15,005. The Argyll & Sutherland Highlanders of Canada War Diary August 1944. Pt I orders for reinforcement data for August 1944.

⁸⁵ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Totals 27 July-30 August 1944.* The reported figure is too These totals were reported by the Canadian Army on a weekly basis.

⁸⁶ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁸⁷ LAC, RG 24 Volume 10,527. File 215.921.009 (D203) Canadian Section GHQ 2 Echelon. Return showing battle and non-battle casualties. Totals 31 August-4 October 1944.* These totals were reported by the Canadian Army on a weekly basis.

⁸⁸ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁸⁹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. Minus battle and non-battle for 1-4 October 1944 included in the September 1944 return due to weekly reporting practice.

⁹⁰ LAC, RG24 Volume 13,659. First Canadian Army A and Q War Diary October 1944. T-7092. 31 October 1944 return.

⁹¹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁹² LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁹³ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

⁹⁴ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁹⁵ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁹⁶ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁹⁷ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table E.8: The 4th Canadian Armoured Division: The 29th Armoured Reconnaissance Regiment (The South Alberta Regiment)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ⁹⁸	<u>Personnel</u> <u>reinforcements</u> ⁹⁹	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>			38-647
<u>30.08.44</u>	Total August-November¹⁰⁰ 220-89	Total: August- November¹⁰¹ 340	33-584¹⁰²
<u>30.09.44</u>			40-592¹⁰³
<u>31.10.44</u>			32-626¹⁰⁴
<u>30.11.44</u>			30-630¹⁰⁵
<u>31.12.44</u>	4-33	66	39-656¹⁰⁶
<u>31.01.45</u>	3-38	32	36-636¹⁰⁷
<u>28.02.45</u>	18-40	58	35-639¹⁰⁸
<u>31.03.45</u>	23-44	118	38-669¹⁰⁹
<u>30.04.45</u>	19-18	29	38-649¹¹⁰
<u>05.05.45</u>	3-0	0	36-643¹¹¹
<u>Totals</u>	<u>290-262 (552)</u>	<u>643</u>	-

⁹⁸ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle casualties.

⁹⁹ LAC, RG24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096.

¹⁰⁰ LAC, RG 24 Volume 14,295 29th Canadian Armoured Reconnaissance Regiment War Diary December 1944. T-12767. 5 December 1944 entry summary of August-November 1944 casualties.

¹⁰¹ LAC, RG 24 Volume 14,295 29th Canadian Armoured Reconnaissance Regiment War Diary December 1944. T-12767. 5 December 1944 entry summary of August-November 1944 reinforcements.

¹⁰² LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁰³ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁰⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹⁰⁵ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁰⁶ LAC, RG24 Volume 13,661. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁰⁷ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return.

¹⁰⁸ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

¹⁰⁹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

¹¹⁰ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹¹¹ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table E.9: 4th Canadian Armoured Division: 5th Anti-Tank Regiment, RCA¹¹²

<u>Date</u>	<u>Strength: O-ORs for date given:</u>
<u>WE 01.45</u>	37-741
<u>26.08.44</u>	34-634
<u>30.09.44</u>	33-722
<u>28.10.44</u>	36-718
<u>25.11.44</u>	36-710
<u>30.12.44</u>	35-695
<u>27.01.45</u>	30-670
<u>24.02.45</u>	33-686
<u>31.03.45</u>	35-700
<u>28.04.45</u>	33-680
<u>05.05.45</u>	32-687

Table E.10: 4th Canadian Armoured Division: 15th Field Regiment, RCA¹¹³

<u>Date</u>	<u>Strength: O-ORs for date given</u>
<u>WE 01.45</u>	38-638
<u>26.08.44</u>	37-585
<u>30.09.44</u>	36-621
<u>28.10.44</u>	38-636
<u>26.11.44</u>	38-627
<u>30.12.44</u>	38-625
<u>27.01.45</u>	37-615
<u>24.02.45</u>	37-618
<u>31.03.45</u>	37-626
<u>28.04.45</u>	38-628
<u>05.05.45</u>	38-627

¹¹² LAC, RG 24 Volume 14,567-14,568. 5th Anti-Tank Regiment, RCA War Diary August 1944-May 1945. T-16717-16718. Weekly field returns for officers and other ranks.

¹¹³ LAC, RG 24 Volume 14,526. 15th Field Regiment, RCA War Diaries August 1944-May 1945. T-16424. Weekly returns for officers and other ranks

Table E.11: 4th Canadian Armoured Division: 23rd Field Regiment, RCA (Self-Propelled)¹¹⁴

<u>Date</u>	<u>Strength: O-ORs for date given</u>
<u>WE 01.45</u>	38-609
<u>26.08.44</u>	38-584
<u>30.09.44</u>	42-603
<u>28.10.44</u>	38-587
<u>25.11.44</u>	38-595
<u>30.12.44</u>	36-597
<u>27.01.45</u>	37-582
<u>24.02.45</u>	38-602
<u>31.03.45</u>	38-599
<u>28.04.45</u>	37-601
<u>05.05.45</u>	37-591

Table E.12: 4th Canadian Armoured Division: 8th Light Anti-Aircraft Regiment, RCA¹¹⁵

<u>Date</u>	<u>Strength: O-ORs for date given</u>
<u>WE 01.45</u>	34-551
<u>26.08.44</u>	40-821
<u>30.09.44</u>	36-561
<u>28.10.44</u>	35-559
<u>25.11.44</u>	35-551
<u>30.12.44</u>	35-551
<u>27.01.45</u>	33-546
<u>24.02.45</u>	34-551
<u>31.03.45</u>	33-546
<u>28.04.45</u>	34-543
<u>05.05.45</u>	33-540

¹¹⁴ LAC, RG 24 Volume 14,536. 23rd Field Regiment (Self-Propelled), RCA War Diaries August 1944-May 1945. T-16434. Weekly field returns for officers and other ranks.

¹¹⁵ LAC, RG 24 Volume 14,609. 8th Light Anti-Aircraft Regiment, RCA War Diaries August 1944-May 1945. T-16761-16762. Weekly field returns of officers and other ranks.

Table E.13: 4th Canadian Armoured Division: Total divisional RCA battle and non-battle casualties & reinforcements by month August 1944- May 1945:¹¹⁶

<u>Date</u>	<u>Battle-non-battle casualties for month given</u>	<u>Personnel reinforcements for month given</u>
<u>08.44</u>	257-Not reported	Not reported
<u>09.44</u>	48-No reported	Not reported
<u>10.44</u>	36-49	102
<u>11.44</u>	29-74	111
<u>12.44</u>	3-120	149
<u>01.45</u>	20-143	148
<u>02.45</u>	21-122	161
<u>03.45</u>	51-103	264
<u>04.45</u>	40-157	205
<u>05.45</u>	23-19	22
<u>Totals</u>	<u>528-Incomplete</u>	<u>Incomplete</u>

¹¹⁶ LAC, RG24 Volume 13,793. 4th Canadian Armoured Division A & Q War Diaries August 1944-May 1945. T-10551. All RCA personnel for all four divisional RCA regiments combined.

Table E.14: A vehicle/weapons state: 4th Canadian Armoured Division August 1944-April 1945¹¹⁷

<u>Vehicle/Weapons System</u>	<u>Sherman 75mm All Marks</u>	<u>Firefly 17-Pdr All Marks</u>	<u>M3 Stuart All Marks</u>	<u>M-10 17-Pdr SP</u>	<u>M-10 3-Inch SP</u>	<u>25-Pdr Sexton SP</u>	<u>RCA OP tanks all marks</u>	<u>RCA Ram GPO Veh</u>
<u>WE 30.04.45</u>	141	96	44	24	0	48	34	12
<u>31.08.44</u>	175	27	35	22	2	23	18	0
<u>31.09.44</u>	No data	No data	No data	No data	No data	No data	No data	No data
<u>31.10.44</u>	184	39	30	23	1	22	17	0
<u>30.11.44</u>	151	67	44	20	1	24	17	0
<u>31.12.44</u>	169	92	46	21	1	25	21	0
<u>31.01.45</u>	169	81	46	23	2	25	25	0
<u>28.02.45</u>	No data	No data	No data	No data	No data	No data	No data	No data
<u>31.03.45</u>	147	86	46	24	0	62	24	0
<u>30.04.45</u>	169	80	41	24	2	50	22	12
<u>Monthly Average</u>	<u>166</u>	<u>67</u>	<u>41</u>	<u>22</u>	<u>1</u>	<u>33</u>	<u>21</u>	<u>2</u>

A vehicle/weapons state part 2

<u>Vehicle/Weapons System</u>	<u>17 Pdr A/T Guns</u>	<u>6-Pdr A/T Guns</u>	<u>25-Pdr Towed</u>	<u>40mm AA SP</u>	<u>40mm AA towed</u>	<u>4.2-Inch Mortars</u>	<u>2-Inch Mortars</u>	<u>3-Inch mortars</u>	<u>.303 MMG</u>
<u>WE 30.04.45</u>	24	30	24	12	12	4	132	24	21
<u>31.08.44</u>	25	31	25	18	36	4	132	24	No data
<u>31.09.44</u>	24	31	25	18	18	4	138	28	No data
<u>31.10.44</u>	24	31	26	30	6	4	142	25	No data
<u>30.11.44</u>	24	30	24	36	0	4	121	26	No data
<u>31.12.44</u>	24	30	24	36	0	4	137	25	No data
<u>31.01.45</u>	24	30	24	36	0	4	138	26	18
<u>28.02.045</u>	24	30	24	36	0	4	130	26	19
<u>31.03.45</u>	24	30	24	36	0	4	121	24	17
<u>30.04.45</u>	24	30	26	24	0	4	126	24	19
<u>Monthly Average</u>	<u>24</u>	<u>30</u>	<u>25</u>	<u>30</u>	<u>7</u>	<u>4</u>	<u>132</u>	<u>25</u>	<u>18</u>

¹¹⁷ LAC RG24 Volume 10,553 21st AG. Canadian A & B Canadian Vehicle Position. File 215A21.085 (D1). LAC, RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6).

A vehicle/weapons state part 3.

<u>Vehicle/Weapons System</u>	<u>Valentine Bridge layer</u>	<u>Wasp II</u>	<u>Universal Carriers</u>	<u>T-16 (gun tractor) Carriers</u>	<u>MMG Carriers</u>
<u>WE 30.04.45</u>	<u>0</u>	<u>0</u>	<u>120</u>	<u>60</u>	<u>28</u>
31.08.44	3	0	162	55	22
30.09.44	No data	No data	No data	No data	No data
31.10.44	0	1	200	100	58
30.11.44	0	2	152	67	24
31.12.44	0	3	143	67	28
31.01.45	0	4	144	70	28
28.02.45	No data	No data	No data	No data	No data
31.03.45	0	3	144	69	26
30.04.45	0	13	177	71	27
<u>Monthly Averages</u>	<u>0</u>	<u>4</u>	<u>160</u>	<u>71</u>	<u>30</u>

A vehicle/weapons state part 4.

<u>Vehicle/Weapons System</u>	<u>Mortar 3-Inch & 4.2-Inch Carriers combined</u>	<u>AOP Carriers</u>	<u>Scout Cars all makes</u>	<u>Armd Cars all makes</u>
<u>WE 30.04.45</u>	<u>27</u>	<u>35</u>	<u>77</u>	<u>3</u>
31.08.44	21	0	119	69
30.09.44	No data	No data	No data	No data
31.10.44	30	0	88	1
30.11.44	30	0	87	1
31.12.44	31	0	89	1
31.01.45	28	0	93	1
28.02.45	No data	No data	No data	No data
31.03.45	24	0	86	1
30.04.45	26	0	96	2
<u>Monthly Averages</u>	<u>27</u>	<u>0</u>	<u>94</u>	<u>11</u>

Table E.15; 4th Canadian Armoured Division total recorded AFV Replacements of major types (Shermans, Fireflies and Stuarts) via D Squadron, 25th Armoured Delivery Regiment (Forward Delivery Squadron)¹¹⁸

<u>Month</u>	<u>M4 Sherman 75mm all marks deliveries</u>	<u>Firefly 17-Pdr all marks deliveries</u>	<u>M3 Stuart all marks deliveries</u>
<u>Month</u>			
08.44	107	8	8
09.44	56	19	4
10.44	30	29	46
11.44	29	32	2
12.44	24	10	2
01.45	29	10	8
02.45	31	35	7
03.45	54	30	11
04.45	56	38	16
05.45	4	4	0
<u>Totals</u>	<u>421</u>	<u>215</u>	<u>105</u>

¹¹⁸ LAC, RG24 Volume 14,276. File 10/43 – 07/45, 944/E. D Squadron 25th Canadian Armoured Delivery Regiment War Diaries August 1944-May 1945. T-12748.

Table E.16: 4th Canadian Armoured Division CAC operational “Fit” tank strengths reported on given dates (Shermans, Fireflies and Stuart tanks for date given)¹¹⁹

<u>Date</u>	<u>Operational heavy AFVs of all makes</u>
31.07.44	350*
31.08.44	239*
31.10.44	254*
30.11.44	262*
01.12.44	249
01.01.45	236
01.02.45	276
02.03.45	330
01.04.45	283
01.05.45	254
<u>Average</u>	<u>273</u>

¹¹⁹ LAC, RG 24 Volume 10,940. 4th Canadian Armoured Division tank states December 1944-May 1945. File 245C4.85 (D1-D2). LAC RG24 Volume 10,553. 21st AG. Canadian A & B Canadian Vehicle Position. File 215A21.085 (D1). *The months July-November, 1944 are taken from this second source and reflect CAC fit tanks of the three main types on strength with the division. Broken down vehicles not immediately repairable would be TOS to the brigade level 2nd line workshops or 25th Canadian Armoured Delivery Regiment’s D Squadron. The division was significantly over strength in AFVs during the month of July 1944.

Appendix 6: The 5th Canadian Armoured Division: Statistics March-May 1945

Table F.1: The 5th Canadian Armoured Brigade: The 2nd Canadian Armoured Regiment (Lord Strathcona's Horse (Royal Canadians))

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ¹	<u>Personnel</u> <u>reinforcements</u> ²	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	<u>38-647</u>
<u>30.04.45</u>	37-20	51	33-640 ³
<u>05.05.45</u>	0-7	5	34-630 ⁴
<u>Totals</u>	<u>37-27(64)</u>	<u>56</u>	–

Table F.2: The 5th Canadian Armoured Brigade: The 5th Canadian Armoured Regiment (The 8th Prince's Louise's (New Brunswick) Hussars)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ⁵	<u>Personnel</u> <u>reinforcements</u> ⁶	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	<u>38-647</u>
<u>30.04.45</u>	27-28	44	36-642 ⁷
<u>05.05.45</u>	10-13	1	31-614 ⁸
<u>Totals:</u>	<u>37-41(78)</u>	<u>45</u>	–

¹ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

² LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁴ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

⁵ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

⁶ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

⁷ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁸ LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table F.3: The 5th Canadian Armoured Brigade: The 9th Canadian Armoured Regiment: (The British Columbia Dragoons)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ⁹	<u>Personnel</u> <u>reinforcements</u> ¹⁰	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–		<u>38-647</u>
<u>04.04.45</u>	13-12	41	37-652 ¹¹
<u>05.05.45</u>	9-14	6	36-635 ¹²
<u>Totals</u>	<u>22-26 (48)</u>	<u>47</u>	–

Table F.4: The 5th Canadian Armoured Brigade: The Westminster Regiment (Motor)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ¹³	<u>Personnel</u> <u>reinforcements</u> ¹⁴	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–		<u>38-818</u>
<u>30.04.45</u>	41-15	27	36-824 ¹⁵
<u>05.05.45</u>	8-2	9	35-812 ¹⁶
<u>Totals</u>	<u>49-17 (66)</u>	<u>36</u>	–

⁹ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April -May 1945. T-7095-7096. Battle and non-battle casualties April and May 1945.

¹⁰ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April -May 1945. T-7095-7096. Reinforcements for April and May 1945.

¹¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

¹³ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April -May 1945. T-7095-7096. Battle and non-battle casualties.

¹⁴ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April -May 1945. T-7095-7096. Reinforcements.

¹⁵ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹⁶ LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table F.5: The 11th Canadian Infantry Brigade: The Perth Regiment:

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ¹⁷	<u>Personnel</u> <u>reinforcements</u> ¹⁸	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	<u>38-812</u>
<u>30.04.45</u>	65-49	34	29-774 ¹⁹
<u>05.05.45</u>	20-4	31	32-767 ²⁰
<u>Totals</u>	<u>85-53 (138)</u>	<u>65</u>	–

Table F.6: The 11th Canadian Infantry Brigade: The Cape Breton Highlanders

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ²¹	<u>Personnel</u> <u>reinforcements</u> ²²	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	<u>38-812</u>
<u>30.04.45</u>	10-23	25	36-835 ²³
<u>05.05.45</u>	62-8	29	35-776 ²⁴
<u>Totals</u>	<u>72-31 (103)</u>	<u>54</u>	–

¹⁷ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

¹⁸ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

¹⁹ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²⁰ LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

²¹ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April -May 1945. T-7095-7096. Battle and non-battle casualties.

²² LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

²³ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²⁴ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table F.7: The 11th Canadian Infantry Brigade: The Irish Regiment of Canada

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ²⁵	<u>Personnel</u> <u>reinforcements</u> ²⁶	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>			<u>38-812</u>
<u>30.04.45</u>	<u>44-16</u>	<u>43</u>	<u>37-821</u> ²⁷
<u>05.05.45</u>	<u>42-5</u>	<u>2</u>	<u>36-794</u> ²⁸
<u>Totals</u>	<u>86-21 (107)</u>	<u>45</u>	

Table F.8: 5th Canadian Armoured Division: 3rd Canadian Armoured Reconnaissance Regiment (The Governor General's Horse Guards)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ²⁹	<u>Personnel</u> <u>reinforcements</u> ³⁰	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	<u>-</u>		<u>38-647</u>
<u>30.04.45</u>	<u>10-26</u>	<u>35</u>	<u>39-685</u> ³¹
<u>05.05.45</u>	<u>0-10</u>	<u>3</u>	<u>38-679</u> ³²
<u>Totals</u>	<u>10-36 (46)</u>	<u>38</u>	<u>-</u>

²⁵ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Battle and non-battle casualties.

²⁶ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

²⁷ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²⁸ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

²⁹ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April -May 1945. T-7095-7096. Battle and non-battle casualties.

³⁰ LAC, RG24 Volumes 13,664-13,665. First Canadian Army A & Q War Diaries April-May 1945. T-7095-7096. Reinforcements.

³¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

³² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table F.9: 5th Canadian Armoured Division: 17th Field Regiment, RCA, 1-21 April 1945

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ³³	<u>Personnel</u> <u>reinforcements</u> ³⁴	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE 01.45</u>	–		<u>38-638</u>
<u>21.04.45</u>	21-19	25	38-607 ³⁵
<u>Totals</u>	<u>21-21 (42)</u>	<u>26</u>	–

Table F.10: 5th Canadian Armoured Division: 8th Field Regiment (Self-Propelled), RCA, 1-21 April 1945

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ³⁶	<u>Personnel</u> <u>reinforcements</u> ³⁷	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE 01.45</u>	–		<u>38-609</u>
<u>21.04.45</u>	7-27	37	39-598 ³⁸
<u>Totals</u>	<u>7-27 (34)</u>	<u>37</u>	–

Table F.11: 5th Canadian Armoured Division: 4th Anti-Tank Regiment, RCA, 1-21 April 1945

<u>Date</u>	<u>Battle and non-battle casualties for</u> <u>month given</u> ³⁹	<u>Personnel</u> <u>reinforcements</u> ⁴⁰	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE 01.45</u>	–	–	<u>34-741</u>
<u>27.04.45</u>	2-19	59	35-700 ⁴¹
<u>Totals</u>	<u>2-19 (21)</u>	<u>59</u>	–

³³ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Battle and non-battle casualties. These are only for the period 1-21 April 1945. Later records have not been found.

³⁴ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Reinforcements for 1-21 April 1945.

³⁵ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 21 April 1945 return for RCA 5th Canadian Armoured Division.

³⁶ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Battle and non-battle casualties. These are only for the period 1-21 April 1945. Later records have not been found.

³⁷ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Reinforcements for 1-21 April 1945.

³⁸ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 21 April 1945 return for RCA 5th Canadian Armoured Division.

³⁹ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Battle and non-battle casualties. These are only for the period 1-21 April 1945. Later records have not been found.

⁴⁰ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Reinforcements for 1-21 April 1945. Later records have not been found.

⁴¹ LAC, RG 24 Volume 14,565. 4th Light Anti-Aircraft Regiment, RCA War Diary April 1945. T-16715. 27 April 1945 field return.

Table F.12: 5th Canadian Armoured Division: 5th Light Anti-Aircraft Regiment, RCA, 1-21 April 1945

<u>Date</u>	<u>Battle and non-battle casualties for</u> <u>month given</u> ⁴²	<u>Personnel</u> <u>reinforcements</u> ⁴³	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE 01.45</u>	-	-	<u>34-551</u>
<u>28.04.45</u>	<u>0-19</u>	<u>25</u>	<u>35-540</u> ⁴⁴
<u>Totals</u>	<u>0-19</u>	<u>25</u>	-

Table F.13: A vehicle/weapons state: 5th Canadian Armoured Division March-April 1945⁴⁵

<u>Vehicle/Weapons</u> <u>Svstem</u>	<u>Sherman</u> <u>75mm all</u> <u>marks</u>	<u>Firefly</u> <u>17-Pdr</u> <u>all</u> <u>marks</u>	<u>M5</u> <u>Stuart</u> <u>all</u> <u>marks</u>	<u>M-10</u> <u>17 -</u> <u>Pdr</u> <u>SP</u>	<u>25-Pdr</u> <u>Sexton</u> <u>SP</u>	<u>M7</u> <u>Sherman</u> <u>105mm</u>	<u>RCA OP tanks</u> <u>all marks</u>	<u>RCA Ram</u> <u>GPO</u> <u>vehicle</u>
<u>WE 30.04.45</u>	<u>141</u>	<u>96</u>	<u>44</u>	<u>24</u>	<u>24</u>	<u>24</u>	<u>24</u>	<u>6</u>
<u>30.04.45</u>	<u>165</u>	<u>97</u>	<u>28</u>	<u>24</u>	<u>27</u>	<u>27</u>	<u>18</u>	<u>6</u>
<u>Monthly Average</u>	<u>165</u>	<u>97</u>	<u>28</u>	<u>24</u>	<u>27</u>	<u>27</u>	<u>18</u>	<u>6</u>

A vehicle/weapons state part 2

<u>Vehicle/Weapons</u> <u>System</u>	<u>17-Pdr</u> <u>A/T</u> <u>guns</u>	<u>6 Pdr</u> <u>A/T</u> <u>Guns</u>	<u>25-Pdr</u> <u>howitzer</u> <u>towed</u>	<u>40mm</u> <u>AA SP</u>	<u>40mm</u> <u>AA</u> <u>towed</u>	<u>4.2-Inch</u> <u>mortars</u>	<u>2-Inch</u> <u>mortars</u>	<u>3-Inch</u> <u>mortars</u>	<u>.303</u> <u>Vickers</u> <u>MMG</u>
<u>WE 30.04.45</u>	<u>24</u>	<u>30</u>	<u>24</u>	<u>12</u>	<u>12</u>	<u>4</u>	<u>132</u>	<u>24</u>	<u>21</u>
<u>31.03.45</u>	<u>24</u>	<u>30</u>	No Data	<u>36</u>	<u>0</u>	<u>6</u>	<u>140</u>	<u>18</u>	<u>21</u>
<u>30.04.45</u>	<u>24</u>	<u>30</u>	<u>24</u>	<u>24</u>	<u>0</u>	<u>6</u>	<u>142</u>	<u>24</u>	<u>8</u>
<u>Monthly Average</u>	<u>24</u>	<u>30</u>	<u>24</u>	<u>30</u>	<u>0</u>	<u>6</u>	<u>141</u>	<u>21</u>	<u>14.5</u>

A vehicle/weapons state part 3

<u>Vehicle/Weapons System</u>	<u>Valentine bridge</u> <u>laver</u>	<u>Wasp II</u>	<u>Universal</u> <u>Carriers</u>	<u>T-16 (gun</u> <u>tractor)</u> <u>Carriers</u>	<u>MMG Carriers</u>
<u>WE 30.04.45</u>	<u>3</u>	<u>0</u>	<u>120</u>	<u>60</u>	<u>28</u>
<u>30.04.45</u>	<u>3</u>		<u>97</u>	<u>0</u>	<u>1</u>
<u>Monthly Averages</u>	<u>3</u>		<u>97</u>	<u>0</u>	<u>1</u>

⁴² LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Battle and non-battle casualties. These are only for the period 1-21 April 1945. Later records have not been found.

⁴³ LAC, RG24 Volumes 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. Reinforcements for 1-21 April 1945. Later records have not been found.

⁴⁴ LAC, RG 24 Volume 14,599. 5th Light Anti-Aircraft Regiment, RCA War Diary April 1945. T-16749. 28 April 1945 return.

⁴⁵ LAC RG24 Volume 10,553. 21st AG. Canadian A & B Canadian Vehicle Position. File 215A21.085 (D1). LAC RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6).

A vehicle/weapons state part 4

<u>Vehicle/Weapons System</u>	<u>Mortar 3-Inch & 4.2-Inch Carriers combined</u>	<u>AOP Carriers</u>	<u>Scout Cars all makes</u>	<u>Armoured Cars all makes</u>
<u>WE 30.04.45</u>	<u>35</u>	<u>19</u>	<u>142</u>	<u>76</u>
<u>30.04.45</u>	<u>16</u>	<u>1</u>	<u>156</u>	<u>74</u>
<u>Monthly Averages</u>	<u>16</u>	<u>1</u>	<u>156</u>	<u>74</u>

Table F.14: 5th Canadian Armoured Division heavy AFV deliveries by G Squadron, 25th Canadian Armoured Delivery Regiment to 5th Canadian Armoured Division regiments:⁴⁶

<u>Month</u>	<u>M4 Sherman 75mm All Marks Deliveries</u>	<u>17-Pdr Firefly Deliveries</u>	<u>M5 Stuart Deliveries</u>	<u>M7 Sherman 105mm</u>
<u>Month</u>				
<u>03.45</u>	<u>13</u>	<u>1</u>	<u>5</u>	<u>6</u>
<u>04.45</u>	<u>20</u>	<u>14</u>	<u>10</u>	<u>Nil</u>
<u>05.45</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>Nil</u>
<u>Totals</u>	<u>34</u>	<u>16</u>	<u>15</u>	<u>6</u>

⁴⁶ LAC, RG24 Volume 14,280. G Squadron, 25th Canadian Armoured Delivery Regiment War Diary March-May 1945. T-1275.

Appendix 7: The 1st & 2nd Canadian Armoured Brigades statistics June 1944-May 1945

Table G.1: The 1st Canadian Armoured Brigade: The 11th Canadian Armoured Regiment (The Governor General's Horse Guards)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given¹</u>	<u>Personnel</u> <u>reinforcements²</u>	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-	-	
<u>30.04.45</u>	7-13	47	43-790 ³
<u>05.05.45</u>	0-2	2	41-777 ⁴
<u>Totals</u>	<u>7-15 (22)</u>	<u>49</u>	-

Table G.2: The 1st Canadian Armoured Brigade: The 12th Canadian Armoured Regiment (The Three Rivers Regiment)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given⁵</u>	<u>Personnel</u> <u>reinforcements⁶</u>	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-		
<u>30.04.45</u>	0-4	6	43-635 ⁷
<u>05.05.45</u>	0-3	4	45-686 ⁸
<u>Totals</u>	<u>0-7 (7)</u>	<u>10</u>	

¹ LAC, RG 24 Volume 13,664-13,665. First Canadian Army & Q War Diaries April-May 1945. Battle and non-battle casualties.

² LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Reinforcements October 1944-May 1945.

³ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁴ LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return..

⁵ LAC, RG 24 Volume 13,664-13,665. First Canadian Army & Q War Diaries April-May 1945. Battle and non-battle casualties.

⁶ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Reinforcements October 1944-May 1945.

⁷ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return..

⁸ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table G.3: The 1st Canadian Armoured Brigade: The 14th Canadian Armoured Regiment (The Calgary Regiment)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ⁹	<u>Personnel</u> <u>reinforcements</u> ¹⁰	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	-	-	-
<u>30.04.45</u>	<u>4-14</u>	<u>24</u>	<u>38-649</u> ¹¹
<u>05.05.45</u>	<u>0-1</u>	<u>0</u>	<u>36-651</u> ¹²
<u>Totals</u>	<u>4-15 (19)</u>	<u>24</u>	-

Table G.4: A vehicle/weapons state 1st Canadian Armoured Brigade April 1945¹³

<u>Vehicle/Weapons</u> <u>System</u>	<u>Sherman 75mm all</u> <u>marks</u>	<u>Sherman I b</u> <u>105mm</u>	<u>Firefly 17-Pdr all</u> <u>marks</u>	<u>M3-M5 Stuart all</u> <u>marks</u>
<u>WE 30.04.45</u>	<u>103</u>	<u>18</u>	<u>72</u>	<u>33</u>
<u>30.04.45</u>	<u>115</u>	<u>18</u>	<u>34</u>	<u>33</u>
<u>Averages</u>	<u>115</u>	<u>18</u>	<u>34</u>	<u>33</u>

A vehicle/weapons state part 2:

<u>Vehicle/Weapons System</u>	<u>OP/Command tanks all</u> <u>marks</u>	<u>Valentine Bridge Layer</u>	<u>Scout Cars all makes</u>
<u>WE 30.04.45</u>	<u>8</u>	<u>3</u>	<u>35</u>
<u>30.04.45</u>	<u>9</u>	<u>4</u>	<u>50</u>
<u>Averages</u>	<u>9</u>	<u>4</u>	<u>50</u>

Table G.5: 1st Canadian Armoured Brigade heavy AFV deliveries to its armoured regiments by A Squadron, 25th Canadian Armoured Delivery Regiment (Forward Delivery Squadron) March-May 1945¹⁴

<u>Month</u>	<u>Sherman all</u> <u>marks</u> <u>Deliveries</u>	<u>Sherman 17-Pdr</u> <u>Firefly Deliveries</u>	<u>M3 Stuart</u> <u>Deliveries</u>
<u>Month</u>			
<u>03.45</u>	<u>0</u>	<u>60</u>	<u>0</u>
<u>04.45</u>	<u>15</u>	<u>5</u>	<u>16</u>
<u>05.45</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>Totals</u>	<u>15</u>	<u>65</u>	<u>16</u>

⁹ LAC, RG 24 Volume 13,664-13,665. First Canadian Army & Q War Diaries April-May 1945. Battle and non-battle casualties.

¹⁰ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Reinforcements October 1944-May 1945.

¹¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

¹² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

¹³ LAC RG24 Volume 10,553. 21st AG. Canadian A & B Canadian Vehicle Position. File 215A21.085 (D1). 30 April 1945.

¹⁴ LAC, RG 24 Volume 14,269. A Squadron 25th Canadian Armoured Delivery Regiment War Diaries March-May 1945. T-12737.

Table G.6: The 2nd Canadian Armoured Brigade: The 6th Canadian Armoured Regiment (The 1st Hussars)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ¹⁵	<u>Personnel</u> <u>reinforcements</u> ¹⁶	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	38-647
24.06.44	No data	No data	37-670 ¹⁷
29.07.44	No data	No data	38-522 ¹⁸
30.08.44	No data	No data	34-610 ¹⁹
30.09.44	No data	No data	34-564 ²⁰
31.10.44	2-50	83	37-564 ²¹
30.11.44	2-118	199	36-638 ²²
31.12.44	0-94	87	37-637 ²³
31.01.45	1-105	88	32-619 ²⁴
28.02.45	37-86	119	30-615 ²⁵
31.03.45	15-27	121	36-637 ²⁶
30.04.45	36-39	108	39-630 ²⁷
05.05.45	0-6	11	37-624 ²⁸
<u>Totals</u>	<u>Incomplete</u>	<u>Incomplete</u>	–

¹⁵ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle casualties October 1944-May 1945.

¹⁶ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Reinforcements October 1944-May 1945.

¹⁷ LAC, RG 24 Volume 14,213. 6th Canadian Armoured Regiment War Diary June 1944. T-12657. 24 June 1944 return.

¹⁸ LAC, RG 24 Volume 14,213. 6th Canadian Armoured Regiment War Diary July 1944. T-12657. 29 July 1944 return.

¹⁹ LAC, RG24, Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

²⁰ LAC RG24, Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

²¹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

²² LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

²³ LAC, RG24, Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1945 return.

²⁴ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7093. 31 January 1945 return.

²⁵ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

²⁶ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

²⁷ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²⁸ LAC, RG24, Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table G.7: The 2nd Canadian Armoured Brigade: The 10th Canadian Armoured Regiment (The Fort Garry Horse)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ²⁹	<u>Personnel</u> <u>reinforcements</u> ³⁰	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>01.45</u>	–	–	38-647
30.06.44	No data	No data	38-646 ³¹
29.07.44	No data	No data	33-597 ³²
30.08.44	No data	No data	33-555 ³³
30.09.44	22-No data	No data	34-527 ³⁴
31.10.44	51-5	111	39-546 ³⁵
30.11.44	3-22	116	38-608 ³⁶
31.12.44	0-17	45	34-628 ³⁷
31.01.45	0-22	78	36-607 ³⁸
28.02.45	28-24	112	36-633 ³⁹
31.03.45	11-25	71	37-645 ⁴⁰
30.04.45	20-16	63	38-646 ⁴¹
05.05.45	2-4	4	37-636 ⁴²
<u>Totals</u>	<u>Incomplete</u>	<u>Incomplete</u>	–

²⁹ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle casualties October 1944-May 1945.

³⁰ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Reinforcements October 1944-May 1945.

³¹ LAC, RG 24 Volume 14,233. 10th Canadian Armoured Regiment War Diary June 1944. T-12697. 24 June 1944 return.

³² LAC, RG 24 Volume 14,234. 10th Canadian Armoured Regiment War Diary July 1944. T-12697. 29 July 1944 return.

³³ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

³⁴ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

³⁵ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

³⁶ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

³⁷ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

³⁸ LAC RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7093. 31 January 1945 return.

³⁹ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁴⁰ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

⁴¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁴² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table G.8: The 2nd Canadian Armoured Brigade: The 27th Canadian Armoured Regiment (The Sherbrooke Fusiliers)

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ⁴³	<u>Personnel</u> <u>reinforcements</u> ⁴⁴	<u>Strength: O-ORs end of</u> <u>month</u>
WE 01.45	–	–	38-647
30.06.44	165-No data ⁴⁵	No data	37-651 ⁴⁶
29.07.44		No data	39-650 ⁴⁷
30.08.44	No data	No data	38-608 ⁴⁸
30.09.44	7-No data	No data	37-590 ⁴⁹
31.10.44	42-17	85	40-599 ⁵⁰
30.11.44	4-44	135	33-641 ⁵¹
31.12.44	0-31	113	35-650 ⁵²
31.01.45	0-48	102	35-648 ⁵³
28.02.45	4-33	123	34-638 ⁵⁴
31.03.45	26-35	89	36-640 ⁵⁵
30.04.45	28-33	90	37-628 ⁵⁶
05.05.45	0-4	6	35-630 ⁵⁷
<u>Totals</u>	<u>Incomplete</u>	<u>Incomplete</u>	–

⁴³ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Battle and non-battle casualties October 1944-May 1945. LAC, RG 24 Volume 14,287. 27th Canadian Armoured Regiment War Diary July 1944. 31 July 1944 entry mentioning battle casualties.

⁴⁴ LAC, RG 24 Volumes 13,659-13,665. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Reinforcements October 1944-May 1945.

⁴⁵ LAC, RG 24 Volume 14,287. 27th Canadian Armoured Regiment War Diary July 1944. 31 July 1944 entry mentions total casualties from 6 June to 31 July 1944.

⁴⁶ LAC, RG 24 Volume 14,287. 27th Canadian Armoured Regiment War Diary July 1944. 24 June 1944 return.

⁴⁷ LAC, RG 24 Volume 14,287. 27th Canadian Armoured Regiment War Diary July 1944. 29 July 1944 return.

⁴⁸ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

⁴⁹ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

⁵⁰ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

⁵¹ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁵² LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁵³ LAC RG24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7093. 31 January 1945 return.

⁵⁴ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

⁵⁵ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary. March 1945. T-7094. 31 March 1945 return.

⁵⁶ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

⁵⁷ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary. May 1945. T-7096. 5 May 1945 return.

Table G.9: The 2nd Canadian Armoured Brigade: Total battle casualties for 6 June-17 August 1944⁵⁸

	<u>Killed</u>	<u>Died of wounds</u>	<u>Wounded</u>	<u>Missing</u>	<u>Missing Rejoined</u>
<u>Totals</u>	<u>192</u>	<u>30</u>	<u>528</u>	<u>122</u>	<u>33</u>

Table G.10: A vehicle/weapons state: 2nd Canadian Armoured Brigade June 1944-April 1945⁵⁹

<u>Vehicle/Weapons System</u>	<u>Sherman 75mm all marks</u>	<u>Firefly 17-Pdr all marks</u>	<u>M3-M5 Stuart all marks</u>	<u>OP/Command tanks all marks</u>
<u>WE 30.04.45</u>	<u>103</u>	<u>72</u>	<u>33</u>	<u>8</u>
<u>30.06.44</u>	No data	No data	No data	No data
<u>31.07.44</u>	240	24	31	2
<u>31.08.44</u>	211	27	27	6
<u>31.09.44</u>	No data	No data	No data	No data
<u>31.10.44</u>	115	35	11	8
<u>31.11.44</u>	120	55	29	7
<u>31.12.44</u>	113	70	33	7
<u>31.01.45</u>	114	67	33	9
<u>28.02.045</u>	No data	No data	No data	No data
<u>31.03.45</u>	119	67	32	5
<u>30.04.45</u>	136	58	33	5
<u>Averages</u>	<u>146</u>	<u>50</u>	<u>29</u>	<u>6</u>

A vehicle/weapons state part 2

<u>Vehicle/Weapons System</u>	<u>Crusader AA tanks</u>	<u>Valentine Bridge Layer</u>	<u>Humber Scout Cars</u>
<u>WE 30.04.45</u>	<u>0</u>	<u>3</u>	<u>35</u>
<u>30.06.44</u>	No data	No data	No data
<u>31.07.44</u>	19	3	42
<u>31.08.44</u>	15	3	43
<u>31.09.44</u>	No data	No data	No data
<u>31.10.44</u>	6	0	39
<u>31.11.44</u>	2	0	40
<u>31.12.44</u>	2	1	39
<u>31.01.45</u>	1	2	39
<u>28.02.045</u>	No data	No data	No data
<u>31.03.45</u>	1	0	35
<u>30.04.45</u>	1	0	39
<u>Averages</u>	<u>6</u>	<u>1</u>	<u>39</u>

⁵⁸ LAC, RG 24 Volume 10,517. File 215A21-009 (D167). Canadian Army Casualties.

⁵⁹ LAC RG24 Volume 10, 553. 21st AG. Canadian A & B Canadian Vehicle Position. File 215A21.085 (D1) A vehicles that were authorized under the war establishment but never issued are not listed, such as M7 Sherman 105mm tanks. Unauthorized vehicles the brigade had under strength are not listed.

Table G.11: 2nd Canadian Armoured Brigade total recorded Sherman, Firefly and Stuart replacements via C Squadron, 25th Canadian Armoured Delivery Regiment (Forward Delivery Squadron)⁶⁰ to the 2nd Canadian Armoured Brigade⁶¹

<u>Month</u>	<u>Sherman all marks deliveries</u>	<u>Firefly 17-Pdr all marks deliveries</u>	<u>M3/M5 Stuart all marks deliveries</u>
<u>Month</u>			
<u>06.44</u>	8 ⁶²	0	4
<u>07.44</u>	116	1	0
<u>08.44</u>	57	15	1
<u>09.44</u>	44	4	0
<u>10.44</u>	40	10	15
<u>11.44</u>	23	37	19
<u>12.44</u>	21	11	0
<u>01.45</u>	17	8	0
<u>02.45</u>	26	14	1
<u>03.45</u>	35	22	4
<u>04.45</u>	44	10	2
<u>Totals</u>	<u>431</u>	<u>132</u>	<u>46</u>

⁶⁰ RG24, Volumes 14,276-14,277. C Squadron, 25th Canadian Armoured Delivery Regiment War Diaries June 1944-April 1945. Files 10/43 – 12/44, 944/D, 01/45 – 05/45, 944/D. T-1274-12748.

⁶¹ John Martenson, Michael McNorgan, *The Royal Canadian Armoured Corps: An illustrated History* (Toronto: Robin Brass Studio. 2000.), 244. On 10 June 1944 British Army forward delivery squadrons delivered twenty-six AFVs to the 1st Hussars, twenty-one to the Fort Garry Horse and twenty-seven to the Sherbrooke Fusiliers. These AFVs were delivered via British means and no specific types are mentioned.

⁶² RG24, Volume 14,276. C Squadron, 25th Canadian Armoured Delivery Regiment War Diary June 1944. File 10/43 – 12/44, 944/D. T-12747. 8 June 1944 entry states the eight tanks went forward as replacements, but no data is listed as to type.. 17 June 1944 entry records tank replacements, but no type is listed.

**Appendix 8: 1st Canadian Corps, 2nd Canadian Corps and First Canadian Army troops statistics
July 1944-May 1945**

1st & 2nd Canadian Corps troops:

Table H.1: 1st Canadian Corps: 1st Canadian Armoured Car Regiment(The Royal Canadian Dragoons)

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	<u>57-803</u>
<u>30.04.45</u>	58-821 ¹
<u>05.05.45</u>	81-823 ²

Table H.2: 1st Canadian Corps: 7th Anti-Tank Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	<u>38-765</u>
<u>27.04.45</u>	37-673 ³
<u>04.05.45</u>	38-659 ⁴

Table H.3: 1st Canadian Corps: 1st Survey Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	<u>34-589</u>
<u>30.04.45</u>	32-545 ⁵
<u>05.05.45</u>	32-543 ⁶

¹ LAC, RG24, Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return..

² LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

³ LAC, RG 24 Volume 14,573. 7th Anti-Tank Regiment, RCA War Diary April 1945. T-16723. 27 April 1945 return.

⁴ LAC, RG 24 Volume 14,573. 7th Anti-Tank Regiment, RCA War Diary May 1945. T-16723. 4 May 1945 return.

⁵ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁶ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

Table H.4: 1st Canadian Corps: 1st Light Anti-Aircraft Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	<u>34-551</u>
<u>30.04.45</u>	<u>33-551⁷</u>
<u>05.05.45</u>	<u>33-547⁸</u>

Table H.5: A vehicle/weapons state: 1st Canadian Corps troops March-April 1945⁹

<u>Vehicle/Weapons System</u>	<u>M-10 17-Pdr SP</u>	<u>17-Pdr A/T Gun</u>
<u>WE 30.04.45</u>	<u>24</u>	<u>24</u>
<u>31.03.45</u>	<u>24</u>	<u>24</u>
<u>30.04.45</u>	<u>24</u>	<u>23</u>
<u>Averages</u>	<u>24</u>	<u>23.5</u>

A vehicle/weapons state part 2.

<u>Vehicle/Weapons System</u>	<u>40mm towed AA</u>	<u>40mm SP AA</u>	<u>2-Inch mortar</u>
<u>WE 30.04.45</u>	<u>12</u>	<u>12</u>	<u>24</u>
<u>31.03.45</u>	<u>18</u>	<u>18</u>	<u>24</u>
<u>30.04.45</u>	<u>12</u>	<u>18</u>	<u>24</u>
<u>Averages</u>	<u>15</u>	<u>18</u>	<u>24</u>

Table H.6: 25th CADR deliveries of new and repaired AFVs to 1st Canadian Corps units¹⁰

<u>Month</u>	<u>M-10 17-Pdr SP deliveries</u>
<u>03.45</u>	<u>24</u>
<u>04.45</u>	<u>0</u>
<u>Totals</u>	<u>24</u>

⁷ LAC, RG 24 Volume 14,587. 1st Light Anti-Aircraft Regiment, RCA War Diary April 1945. T-16736. 27 April 1945 return.

⁸ LAC, RG 24 Volume 14,587. 1st Light Anti-Aircraft Regiment, RCA War Diary May 1945. T-16737. 5 May 1945 return.

⁹ LAC, RG24 Volume 10,670. Equipment State of Canadian Army in NWE. File 215C1.083 (D6).

¹⁰ LAC, RG 24 Volume 14,573. 7th Anti-Tank Regiment, RCA War Diary March 1945. T-16723. An entire new complement of M-10 17-Pounder tank destroyers is recorded as being issued.

Table H.7: 2nd Canadian Corps troops: The 18th Canadian Armoured Car Regiment

<u>Date</u>	<u>Battle and non-battle casualties for month given¹¹</u>	<u>Personnel reinforcements¹²</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>			<u>57-803</u>
29.07.44	Not Reported	Not Reported	57-797¹³
30.08.44	No Reported	Not Reported	54-786¹⁴
30.09.44	14-Not Reported	Not Reported	55-791¹⁵
31.10.44	9-12	26	56-792¹⁶
30.11.44	Not Reported	Not Reported	57-786¹⁷
31.12.44	0-6	15	35-800¹⁸
31.01.45	5-39	45	54-786¹⁹
28.02.45	5-22	35	51-797²⁰
31.03.45	11-92	49	55-784²¹
30.04.45	21-14	31	56-777²²
05.05.45	1-1	5	55-772²³
<u>Totals</u>	<u>Incomplete</u>	<u>Incomplete</u>	-

¹¹ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Consolidated casualty & strength returns for battle and non-battle casualties.

¹² LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diaries October 1944-May 1945. T-7092-7096. Consolidated casualty & strength returns for reinforcements.

¹³ LAC, RG 24 Volume 14,248. 18th Canadian Armoured Car Regiment War Diary July 1944. T-12714. 29 July 1944 return.

¹⁴ LAC, RG24 Volume 13,658. First Canadian Army A & Q War Diary August 1944. T-7091. 30 August 1944 return.

¹⁵ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary September 1944. T-7092. 30 September 1944 return.

¹⁶ LAC, RG24 Volume 13,659. First Canadian Army A & Q War Diary October 1944. T-7092. 31 October 1944 return.

¹⁷ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

¹⁸ LAC, RG24 Volume 13,660. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

¹⁹ LAC, RG 24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7093. 31 January 1945 return.

²⁰ LAC, RG24 Volume 13,662. First Canadian Army A & Q War Diary February 1945. T-7094. 28 February 1945 return.

²¹ LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary March 1945. T-7094. 31 March 1945 return.

²² LAC, RG24 Volume 13,664. First Canadian Army A & Q War Diary April 1945. T-7095. 30 April 1945 return.

²³ LAC, RG24 Volume 13,665. First Canadian Army A & Q War Diary May 1945. T-7096. 5 May 1945 return.

Table H.8: 2nd Canadian Corps troops: 6th Anti-Tank Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	<u>38-765</u>
29.07.44	37-718²⁴
26.08.44	37-690²⁵
30.09.44	37-755²⁶
28.10.44	35-752²⁷
25.11.44	38-746²⁸
30.12.44	38-726²⁹
31.01.45	37-724³⁰
24.02.45	37-700³¹
31.03.45	38-710³²
21.04.45	38-709³³
05.05.45	37-699³⁴

²⁴ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary July 1944. T-16719. 29 July 1944 return.

²⁵ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary August 1944. T-16719. 26 August 1944 return.

²⁶ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary September 1944. T-16719. 30 September 1944 return

²⁷ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary October 1944. T-16719. 28 October 1944 return

²⁸ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary November 1944. T-16719. 25 November 1944 return.

²⁹ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary December 1944. T-16719. 30 December 1944 return.

³⁰ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary January 1945. T-16719. 27 January 1945 return.

³¹ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary February 1945. T-16719. 24 February 1945 return.

³² LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary March 1945. T-16719. 31 March 1945

³³ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary April 1945. T-16720. 21 April 1945 return.

³⁴ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary May 1945. T-16720. 5 May 1945 return.

Table H.9: 2nd Canadian Corps troops: 2nd Survey Regiment, RCA

<u>Date</u>	<u>Battle and non-battle casualties for month</u> <u>given</u> ³⁵	<u>Personnel</u> <u>reinforcements</u> ³⁶	<u>Strength: O-ORs end of</u> <u>month</u>
<u>WE</u> <u>10.44</u>	-	-	<u>34-589</u>
29.07.44	6-13	3	32-562 ³⁷
30.08.44	48-24	70	32-552 ³⁸
30.09.44	2-15	23	28-546 ³⁹
31.10.44	5-12	47	32-565 ⁴⁰
25.11.44	0-21	32	32-543 ⁴¹
31.12.44	7-16	22	31-541 ⁴²
31.01.45	1-17	52	28-565 ⁴³
24.02.45	0-29	20	26-550 ⁴⁴
31.03.45	2-10	61	31-581 ⁴⁵
30.04.45	2-20	18	30-561 ⁴⁶
05.05.45	0-1	12	31-560 ⁴⁷
<u>Totals:</u>	<u>73-178 (251)</u>	<u>360</u>	-

³⁵ LAC, RG24 Volume 14,648-14,649. 2nd Survey Regiment, RCA War Diary July 1944-May 1945. T-17265-17266. Battle and non-battle casualties.

³⁶ LAC, RG24 Volume 14,648-14,649. 2nd Survey Regiment, RCA War Diary July 1944-May 1945. T-17265-17266. Reinforcements.

³⁷ LAC, RG 24 Volume 14,648. 2nd Survey Regiment, RCA War Diary July 1944. T-17265. 29 July 1944 return.

³⁸ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary August 1944. T-17265. 26 August 1944 return.

³⁹ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary September 1944. T-17266. 30 September 1944 return.

⁴⁰ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary October 1944. T-17266. 28 October 1944 return.

⁴¹ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary November 1944. T-17266. 25 November 1944 return.

⁴² LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary December 1944. T-17266. 30 December 1944 return.

⁴³ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary January 1945. T-17266. 27 January 1945 return.

⁴⁴ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary February 1945. T-17266. 24 February 1945 return.

⁴⁵ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary March 1945. T-17266. 31 March 1945 return.

⁴⁶ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary April 1945. T-17267. 28 April 1945 return.

⁴⁷ LAC, RG 24 Volume 14,649. 2nd Survey Regiment, RCA War Diary May 1945. T-17267. 5 May 1945 return.

Table H.10: 2nd Canadian Corps troops: The 6th Light Anti-Aircraft Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	<u>34-551</u>
29.07.44	42-819⁴⁸
24.08.44	44-812⁴⁹
30.09.44	43-638⁵⁰
28.10.44	34-548⁵¹
30.11.44	34-578⁵²
31.12.44	35-575⁵³
31.01.45	35-570⁵⁴
28.02.45	35-532⁵⁵
31.03.45	33-543⁵⁶
30.04.45	34-544⁵⁷
05.05.45	34-552⁵⁸

⁴⁸ LAC, RG 24 Volume 14,601. 6th Light Anti-Aircraft Regiment, RCA War Diary July 1944. T-16753. 29 July 1944 return.

⁴⁹ LAC, RG 24 Volume 14,602. 6th Light Anti-Aircraft Regiment, RCA War Diary August 1944. T-16753. 24 August 1944 return.

⁵⁰ LAC, RG 24 Volume 14,602. 6th Light Anti-Aircraft Regiment, RCA War Diary September 1944. T-16753. 30 September 1944 return.

⁵¹ LAC, RG 24 Volume 14,602. 6th Light Anti-Aircraft Regiment, RCA War Diary October 1944. T-16753. 28 October 1944 return.

⁵² LAC, RG 24 Volume 13,660.. First Canadian Army A & Q War Diary November 1944. T-7093. 30 November 1944 return.

⁵³ LAC, RG 24 Volume 13,661.. First Canadian Army A & Q War Diary December 1944. T-7093. 31 December 1944 return.

⁵⁴ LAC, RG 24 Volume 13,662. First Canadian Army A & Q War Diary January 1945. T-7094. 31 January 1945 return

⁵⁵ LAC, RG 24 Volume 14,603. 6th Light Anti-Aircraft Regiment, RCA War Diary February 1945. T-16754. 24 February 1945 return.

⁵⁶ LAC, RG 24 Volume 14,603. 6th Light Anti-Aircraft Regiment, RCA War Diary March 1945. T-16755. 31 March 1945 return.

⁵⁷ LAC, RG 24 Volume 14,603. 6th Light Anti-Aircraft Regiment, RCA War Diary April 1945. T-16755. 24 April 1945 return.

⁵⁸ LAC, RG 24 Volume 14,603. 6th Light Anti-Aircraft Regiment, RCA War Diary May 1945. T-16755. 5 May 1945 return.

Table H.11: A vehicle/weapons state 2nd Canadian Corps troops: July 1944-April 1945⁵⁹

<u>Vehicle/ Weapons System</u>	<u>M-10 3- Inch SP</u>	<u>M-10 17- Pdr SP</u>	<u>Sherman command/OP tanks all makes</u>	<u>25-Pdr Sexton SP</u>	<u>Armd Cars all makes</u>	<u>AA Armd Cars all makes</u>	<u>Scout Cars all makes</u>
<u>WE</u> <u>30.04.45</u>	<u>0</u>		<u>0</u>	<u>0</u>	<u>81</u>	<u>0</u>	<u>71</u>
<u>31.07.44</u>	27	0	0	0	81	0	69
<u>31.08.44</u>	25	0	0	0	3	0	3
<u>30.09.44</u>	No data	No data	No data	No data	No data	No data	No data
<u>31.10.44</u>	14	12	9	24	68	7	65
<u>30.11.44</u>	11	11	9	25	74	0	72
<u>31.12.44</u>	11	12	11	24	74	0	65
<u>31.01.45</u>	8	16	8	25	75	0	71
<u>28.02.045</u>	No data	No data	No data	No data	No data	No data	No data
<u>31.03.45</u>	2	23	0	0	74	0	70
<u>30.04.45</u>	1	25	0	0	79	0	70
<u>Average</u>	<u>12</u>	<u>12</u>	<u>5</u>	<u>12</u>	<u>66</u>	<u>1</u>	<u>61</u>

A vehicle/weapons state part 2.

<u>Vehicle/We apons System</u>	<u>Universal Carriers</u>	<u>Ram towers</u>	<u>AOP Carriers</u>	<u>17-Pdr A/T Gun</u>	<u>40mm towed AA</u>	<u>40mm SP AA</u>	<u>2-Inch mortar</u>
<u>WE</u> <u>30.04.45</u>	<u>23</u>	<u>24</u>	<u>6</u>	<u>24</u>	<u>12</u>	<u>12</u>	<u>24</u>
<u>31.07.44</u>	30	0	0	24	36	18	32
<u>31.08.44</u>	29	0	0	24	36	18	24
<u>30.09.44</u>	No data	No data	No data	23	18	18	23
<u>31.10.44</u>	43	22	1	24	18	18	22
<u>30.11.44</u>	41	23	1	24	18	18	20
<u>31.12.44</u>	34	26	0	24	18	18	24
<u>31.01.45</u>	33	26	0	24	18	18	24
<u>28.02.045</u>	No data	No data	No data	24	18	18	24
<u>31.03.45</u>	30	24	0	24	18	18	24
<u>30.04.45</u>	31	24	0	23	18	18	23
<u>Averages</u>	<u>34</u>	<u>18</u>	<u>0</u>	<u>24</u>	<u>22</u>	<u>18</u>	<u>24</u>

⁵⁹ LAC, RG24 Volume 10,670. Equipment State Canadian Army monthly report. File 215C1.083 (D6). LAC, RG 24 Volume 10, 553. 21st AG. Canadian A & B Canadian Vehicle Position Report. File 215A21.085 (D1).

Table H.12: 2nd Canadian Corps troops: Deliveries of new and repaired heavy AFVs by 25th Canadian Armoured Delivery Regiment⁶⁰

<u>Month</u>	<u>M-10 3-Inch SP Deliveries</u>	<u>M-10 17-Pdr SP Deliveries</u>
<u>07.44</u>	2	0
<u>08.44</u>	0	12
<u>09.44</u>	0	0
<u>10.44</u>	0	2
<u>11.44</u>	0	0
<u>12.44</u>	0	1
<u>01.45</u>	0	4
<u>02.45</u>	0	0
<u>03.45</u>	0	7
<u>04.45</u>	0	2
<u>Totals</u>	<u>2</u>	<u>26</u>

First Canadian Army troops: 1st and 2nd Army Group Royal Artillery (AGRA)

Table H.13: First Canadian Army troops: 1st AGRA: 11th Field Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 01.45</u>	38-638
<u>29.04.45</u>	39-608 ⁶¹
<u>05.05.45</u>	36-606 ⁶²

Table H.14: First Canadian Army troops: 1st AGRA: 1st Medium Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	28-540
<u>30.04.45</u>	29-488 ⁶³
<u>05.05.45</u>	29-493 ⁶⁴

⁶⁰ LAC, RG 24 Volume 14,570. 6th Anti-Tank Regiment, RCA War Diary July 1944-April 1945. T-16719-16720.

⁶¹ LAC, RG 24 Volume 14,458. 11th Army Field Regiment, RCA War Diary April 1945. T-16155. 29 April 1945 return.

⁶² LAC, RG 24 Volume 14,458. 11th Army Field Regiment, RCA War Diary May 1945. T-16155. 5 May 1945 return.

⁶³ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁶⁴ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

Table H.15: First Canadian Army troops: 1st AGRA: 2nd Medium Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	28-540
<u>30.04.45</u>	25-485 ⁶⁵
<u>05.05.45</u>	25-479 ⁶⁶

Table H.16: First Canadian Army troops: 1st AGRA: 5th Medium Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	28-540
<u>30.04.45</u>	30-496 ⁶⁷
<u>05.05.45</u>	29-501 ⁶⁸

⁶⁵ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁶⁶ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

⁶⁷ LAC, RG 24 Volume 13,708. 1st Canadian Corps A & Q War Diary April 1945. T-1862. 30 April 1945 return.

⁶⁸ LAC, RG 24 Volume 13,709. 1st Canadian Corps A & Q War Diary May 1945. T-1863. 5 May 1945 return.

Table H.17: First Canadian Army troops: 2nd AGRA: 19th Army Field Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	38-609
<u>24.06.44</u>	38-646⁶⁹
<u>29.07.44</u>	38-639⁷⁰
<u>26.08.44</u>	34-621⁷¹
<u>30.09.44</u>	38-605⁷²
<u>28.10.44</u>	37-602⁷³
<u>30.11.44</u>	37-604⁷⁴
<u>30.12.44</u>	39-598⁷⁵
<u>27.01.45</u>	38-594⁷⁶
<u>24.02.45</u>	38-557⁷⁷
<u>31.03.45</u>	38-588⁷⁸
<u>28.04.45</u>	41-585⁷⁹
<u>05.05.45</u>	36-577⁸⁰

⁶⁹ LAC, RG 24 Volume 14,530. 19th Army Field Regiment, RCA War Diary June 1944. T-16428. 24 June 1944 return.

⁷⁰ LAC, RG 24 Volume 14,530. 19th Army Field Regiment, RCA War Diary July 1944. T-16428. 29 July 1944 return.

⁷¹ LAC, RG 24 Volume 14,530. 19th Army Field Regiment, RCA War Diary August 1944. T-16428. 26 August 1944 return.

⁷² LAC, RG 24 Volume 14,530. 19th Army Field Regiment, RCA War Diary September 1944. T-16428. 30 September 1944 return.

⁷³ LAC, RG 24 Volume 14,531. 19th Army Field Regiment, RCA War Diary October 1944. T-16428. 28 October 1944 return.

⁷⁴ LAC, RG 24 Volume 14,531. 19th Army Field Regiment, RCA War Diary November 1944. T-16428. 25 November 1944 return.

⁷⁵ LAC, RG 24 Volume 14,531. 19th Army Field Regiment, RCA War Diary December 1944. T-16428. 30 December 1944 return.

⁷⁶ LAC, RG 24 Volume 14,531. 19th Army Field Regiment, RCA War Diary January 1945. T-16428. 27 January 1945 return.

⁷⁷ LAC, RG 24 Volume 14,531. 19th Army Field Regiment, RCA War Diary February 1945. T-16428. 24 February 1945 return.

⁷⁸ LAC, RG 24 Volume 14,531. 19th Army Field Regiment, RCA War Diary March 1945. T-16429. 31 March 1945 return.

⁷⁹ LAC, RG 24 Volume 14,531. 19th Army Field Regiment, RCA War Diary April 1945. T-16429. 28 April 1945 return.

⁸⁰ LAC, RG 24 Volume 14,531. 19th Army Field Regiment, RCA War Diary May 1945. T-16429. 5 May 1945 return.

Table H.18: First Canadian Army troops: 2nd AGRA: 3rd Medium Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	28-540
<u>29.07.44</u>	28-506 ⁸¹
<u>26.08.44</u>	26-517 ⁸²
<u>28.09.44</u>	28-534 ⁸³
<u>28.10.44</u>	28-545 ⁸⁴
<u>28.11.44</u>	28-539 ⁸⁵
<u>30.12.44</u>	27-526 ⁸⁶
<u>27.01.45</u>	29-516 ⁸⁷
<u>24.02.45</u>	29-505 ⁸⁸
<u>31.03.45</u>	28-520 ⁸⁹
<u>28.04.45</u>	26-512 ⁹⁰
<u>05.05.45</u>	27-511 ⁹¹

⁸¹ LAC, RG 24 Volume 14,389. 3rd Medium Regiment, RCA War Diary July 1944. T-15904. 29 July 1944 return.

⁸² LAC, RG 24 Volume 14,389. 3rd Medium Regiment, RCA War Diary August 1944. T-15904. 26 August 1944 return.

⁸³ LAC, RG 24 Volume 14,389. 3rd Medium Regiment, RCA War Diary September 1944. T-15905. 30 September 1944 return.

⁸⁴ LAC, RG 24 Volume 14,389. 3rd Medium Regiment, RCA War Diary October 1944. T-15905. 28 October 1944 return.

⁸⁵ LAC, RG 24 Volume 14,389. 3rd Medium Regiment, RCA War Diary November 1944. T-15905. 28 November 1944 return.

⁸⁶ LAC, RG 24 Volume 14,389. 3rd Medium Regiment, RCA War Diary December 1944. T-15905. 28 December 1944 return.

⁸⁷ LAC, RG 24 Volume 14,389. 3rd Medium Regiment, RCA War Diary January 1945. T-15905. 27 January 1945 return.

⁸⁸ LAC, RG 24 Volume 14,390. 3rd Medium Regiment, RCA War Diary February 1945. T-15906. 24 February 1945 return.

⁸⁹ LAC, RG 24 Volume 14,390. 3rd Medium Regiment, RCA War Diary March 1945. T-15906. 31 March 1945 return.

⁹⁰ LAC, RG 24 Volume 14,390. 3rd Medium Regiment, RCA War Diary April 1945. T-15906. 28 April 1945 return.

⁹¹ LAC, RG 24 Volume 14,390. 3rd Medium Regiment, RCA War Diary May 1945. T-15906. 5 May 1945 return.

Table H.19: First Canadian Army: 2nd AGRA units: 4th Medium Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	28-540
<u>07.44</u>	No data
<u>08.44</u>	No data
<u>09.44</u>	No data
<u>10.44</u>	No data
<u>11.44</u>	No data
<u>12.44</u>	No data
<u>01.45</u>	No data
<u>02.45</u>	No data
<u>03.45</u>	No data
<u>04.45</u>	No data
<u>05. 45:</u>	No data

Table H.20: First Canadian Army: 2nd AGRA: 7th Medium Regiment, RCA

<u>Date</u>	<u>Strength: O-ORs end of month</u>
<u>WE 10.44</u>	28-540
<u>29.07.44</u>	27-514⁹²
<u>26.08.44</u>	28-507⁹³
<u>30.09.44</u>	28-511⁹⁴
<u>28.10.44</u>	28-528⁹⁵
<u>25.11.44</u>	28-535⁹⁶
<u>30.12.44</u>	28-528⁹⁷
<u>27.01.45</u>	28-532⁹⁸
<u>24.02.45</u>	27-490⁹⁹
<u>31.03.45</u>	27-515¹⁰⁰
<u>28.04.45</u>	28-515¹⁰¹
<u>05.05.45</u>	26-512¹⁰²

⁹² LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary July 1944. T-15917. 27 July 1944 return.

⁹³ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary August 1944. T-15917. 26 August 1944 return.

⁹⁴ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary September 1944. T-15917. 30 September 1944 return.

⁹⁵ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary October 1944. T-15917. 28 October 1944 return.

⁹⁶ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary November 1944. T-15918. 25 November 1944 return.

⁹⁷ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary December 1944. T-15918. 30 December 1944 return.

⁹⁸ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary January 1945. T-15918. 27 January 1945 return.

⁹⁹ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary February 1945. T-15918. 24 February 1945 return.

¹⁰⁰ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary March 1945. T-15919. 31 March 1945 return.

¹⁰¹ LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary April 1945. T-15919. 28 April 1945 return.

¹⁰² LAC, RG 24 Volume 14,401. 7th Medium Regiment, RCA War Diary May 1945. T-15919. 5 May 1945 return.

Table H.21: First Canadian Army 2nd AGRA total battle and non-battle casualties, reinforcements July 1944-May 1945¹⁰³

<u>Date</u>	<u>Battle and non-battle casualties for month given</u>	<u>Personnel reinforcements</u>
<u>07.44</u>	No data	No data
<u>08.44</u>	No data	No data
<u>09.44</u>	12-Not Data	No data
<u>10.44</u>	72-116	210
<u>11.44</u>	41-136	145
<u>12.44</u>	5-219	229
<u>01.45</u>	4-132	97
<u>02.45</u>	26-134	88
<u>03.45</u>	41-178	231
<u>04.45</u>	1-44	21
<u>05.45</u>	0-1	0
<u>Totals</u>	<u>Incomplete</u>	<u>Incomplete</u>

Table H.22: A vehicle/weapons state: First Canadian Army troops: July 1944-May 1945¹⁰⁴

<u>Vehicle/Weapons System</u>	<u>25-Pdr Sexton SP</u>	<u>M7 105mm Priest SP</u>	<u>5.5 Inch howitzer</u>	<u>4.5 Inch Howitzer</u>
<u>WE 30.04.45</u>	<u>24</u>	<u>0</u>	<u>48</u>	<u>0</u>
<u>31.07.44</u>	<u>24</u>	<u>No data</u>	<u>47</u>	<u>0</u>
<u>31.08.44</u>	<u>No data</u>	<u>No data</u>	<u>47</u>	<u>0</u>
<u>31.09.44</u>	<u>No data</u>	<u>No data</u>	<u>48</u>	<u>0</u>
<u>31.10.44</u>	<u>24</u>	<u>No data</u>	<u>48</u>	<u>0</u>
<u>31.11.44</u>	<u>25</u>	<u>No data</u>	<u>32</u>	<u>14</u>
<u>31.12.44</u>	<u>24</u>	<u>No data</u>	<u>32</u>	<u>16</u>
<u>31.01.45</u>	<u>25</u>	<u>No data</u>	<u>32</u>	<u>16</u>
<u>31.02.045</u>	<u>No data</u>	<u>No data</u>	<u>32</u>	<u>16</u>
<u>31.03.45</u>	<u>No data</u>	<u>No data</u>	<u>32</u>	<u>16</u>
<u>30.04.45</u>	<u>No data</u>	<u>No data</u>	<u>48</u>	<u>64</u>
<u>Averages</u>	<u>24</u>	<u>Incomplete</u>	<u>40</u>	<u>24</u>

¹⁰³ LAC, RG 24 Volume 13,659-13,665. First Canadian Army A & Q War Diary September 1944-May 1945. T-7092-7095. Consolidated casualty and strength returns for battle and non-battle. LAC, RG 24 Volume 13,659-13,665. First Canadian Army A & Q War Diary September 1944-May 1945. T-7092-7095. Consolidated casualty and strength returns for reinforcements.

¹⁰⁴ LAC, RG24 Volume 10,670. Equipment State Canadian Army Monthly Report. File 215C1.083 (D6). LAC, RG 24 Volume 10, 553. 21st AG. Canadian A & B Canadian Vehicle Position Report. File 215A21.085 (D1). 30 April 1945 report.

Appendix 9: 2nd Canadian Corps Reinforcement Company as an additional rehabilitation tool for Neuro-Psychiatric (Battle Exhaustion) casualties

Table I.1: Neuro-Psychiatric (NP) Cases October 1944 within the 3rd Canadian Infantry Division after the Scheldt Estuary battles.¹

Total N.P. Casualties - 295	Total reported Casualties – 1957	percent of NP Casualties – 15 percent
N.P Casualties Infantry – 268	Total Infantry Casualties - 1626	percent NP Casualties – 16.4 percent
N.P Casualties RCA - 3	Total Casualties RCA- 93	percent NP Casualties 3.2 percent
N.P Casualties Divisional Troops - 24	Total Casualties Divisional Troops -238	percent NP Casualties – 10 percent

Table I.2: Treatment options that were utilized for NP casualties:

Corps Reinforcement Centre/Company	199	67.5 percent
Reboard and Reallocation	52	17.6 percent
Further rehabilitation	28	9.5 percent
General hospital	16	5.4 percent
<u>Totals</u>	<u>295</u>	<u>100 percent</u>

¹ Terry Copp, *Cinderella Army*. Appendix E, 308. LAC. 3rd Canadian Infantry Division Psychiatric Report, October 1944. LAC, ADMS 3rd Canadian Infantry Division War Diary, November 1944. These numbers do not include killed and missing casualties, as they are deemed irreversible total losses in personnel.

Appendix 10: Infantry other ranks shortages in North West Europe 1944-1945

Table J.1: Infantry other ranks shortages by division 27 August 1944-28 April 1945 in NWE.¹

<u>Date</u>	<u>1st Canadian Infantry Division</u>	<u>2nd Canadian Infantry Division</u>	<u>3rd Canadian Infantry Division</u>	<u>4th Canadian Armoured Division</u>	<u>5th Canadian Armoured Division</u>	<u>Total</u>	<u>No.2 CBRG holdings</u>
27.08.44	-	1,999	604	522	-	3,125	1,726
29.08.44	-	2,495	836	846	-	4,177	1,306
30.08.44	-	2,522	878	846	-	4,246	1,231
31.08.44	-	2,612	875	831	-	4,318	1,354
3.09.44	-	2,645	752	761	-	4,158	876
4.09.44	-	1,960	736	755	-	3,451	731
5.09.44	-	1,960	737	761	-	3,458	1,785
6.09.44	-	1,450	630	706	-	2,786	954
7.09.44	-	1,478	666	706	-	2,850	882
8.09.44	-	1,478	770	715	-	2,963	987
11.09.44	-	1,794	741	872	-	3,407	1,841
12.09.44	-	1,727	759	865	-	3,351	1,317
13.09.44	-	1,727	788	729	-	3,244	1,141
14.09.44	-	1,550	806	719	-	3,075	1,781
16.09.44	-	1,495	733	713	-	2,941	1,829
18.09.44	-	1,482	814	641	-	2,937	1,710
19.09.44	-	1,553	783	641	-	2,977	2,746
20.09.44	-	1,523	711	707	-	2,941	2,227
22.09.44	-	1,464	621	624	-	2,709	2,492
23.09.44	-	1,299	602	629	-	2,503	1,535
26.09.44	-	1,408	673	282	-	2,363	2,363
27.09.44	-	1,452	802	318	-	2,572	2,363
28.09.44	-	1,442	809	324	-	2,575	2,288
29.09.44	-	1,470	761	180	-	2,411	2,053
02.10.44	-	1,267	816	125	-	2,208	2,814
5.10.44	-	1,165	552	106	-	1,823	2,028
7.10.44	-	1,224	540	112	-	1,876	1,889
10.10.44	-	1,058	464	161	-	1,683	1,160
11.10.44	-	973	624	182	-	1,779	2,124
12.10.44	-	934	646	179	-	1,759	3,053
13.10.44	-	979	749	150	-	1,878	2,181
14.10.44	-	869	851	94	-	1,814	2,234
16.10.44	-	753	747	119	-	1,619	1,947
17.10.44	-	820	793	103	-	1,716	1,858
18.10.44	-	852	548	119	-	1,519	3,512
19.10.44	-	681	566	131	-	1,378	1,985
20.10.44	-	652	415	141	-	1,208	2,735
23.10.44	-	478	410	288	-	1,176	2,419
24.10.44	-	474	385	274	-	1,133	2,352
25.10.44	-	548	426	294	-	1,268	2,476
26.10.44	-	657	533	285	-	1,475	2,042
30.10.44	-	679	670	554	-	1,903	1,921
31.10.44	-	679	724	557	-	1,960	1,949
1.11.44	-	755	768	571	-	2,094	2,064
2.11.44	-	815	787	635	-	2,237	2,070
3.11.44	-	858	776	615	-	2,249	2,358

¹ LAC, RG24, Volume 10,699. Infantry other ranks shortages in NWE 1944-1945 Report.

4.11.44	-	798	805	697	-	2,300	2,398
6.11.44	-	803	678	635	-	2,116	2,748
7.11.44	-	803	519	639	-	1,961	2,754
8.11.44	-	803	424	127	-	1,354	2,000
9.11.44	-	632	424	227	-	1,283	2,153
10.11.44	-	530	278	262	-	1,070	1,325
11.11.44	-	579	278	188	-	1,045	1,456
13.11.44	-	424	90	134	-	648	2,323
30.11.44	-	325	125	40	-	490	0
29.12.44	-	205	182	36	-	423	20
06.01.45	-	123	104	57	-	284	3,131
13.01.45	-	65	173	51	-	289	3,414
20.01.45	-	105	169	211	-	385	2,650
27.01.45	-	Nil	Nil	95	-	95	2,537
3.02.45	-	Nil	Nil	210	-	210	2,608
10.02.45	-	Nil	Nil	Nil	-	Nil	2,516
17.02.45	-	Nil	Nil	49	-	49	3,768
24.02.45	-	Nil	334	Nil	-	334	4,221
03.03.45	-	244	72	105	-	421	3,704
10.03.45	-	371	62	254	-	687	2,715
17.03.45	-	4	Nil	86	-	90	2,193
24.03.45	132	9	54	8	28	231	3,979
31.03.45	156	48	191	34	Nil	429	5,476
07.04.45	Nil	75	Nil	55	Nil	130	4,036
14.04.45	74	17	50	14	Nil	155	4,022
21.04.45	72	64	25	30	Nil	191	3,473
28.04.45	23	193	225	89	108	638	3,728

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