THE 1759 CAMPAIGN FOR QUEBEC CITY: A HISTORICAL WARGAME OF THE FRENCH AND INDIAN WAR

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MASTER OF MILITARY ART AND SCIENCE
Wargame Design

by

JOSEPH A. HENDERSON, MAJOR, U.S. ARMY
M.A., The University of Oklahoma, Norman, Oklahoma, 2017
B.A., The Johns Hopkins University, Baltimore, Maryland, 2008

Fort Leavenworth, Kansas
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The British campaign to capture the French fortress city of Quebec in 1759 led to the decisive battle of the French and Indian War, and paved the way for British domination of North America for the next twenty years. While the ultimate battle on the Plains of Abraham is known to most scholars, the campaign along the St. Lawrence River that led up to the battle provides many lessons of operational level leadership that are still relevant today: maneuvering forces and securing lines of operation, integrating land and naval forces in joint operations, massing forces at the decisive point, simultaneity in operations, and the strategic use of key terrain.

This paper provides the historical basis and rationale for the modeling decisions made by the researcher in the development of this wargame. Players will take on the roles of the Army Commanders, both learning the historical details of the campaign, and immersing players in the commanders' decision making process. The wargame enables players to make decisions consistent with the information and capabilities available to the commanders during the campaign, and thereby allows them to gain an understanding as to why the campaign unfolded the way it did.

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THESIS APPROVAL PAGE

Name of Candidate: Joseph A. Henderson

Thesis Title: The 1759 Campaign for Quebec City: A Historical Wargame of the French and Indian War

Approved by:

_____, Thesis Committee Chair
James J. Sterrett, Ph.D.

_____, Member
Harry S. Laver, Ph.D.

_____, Member
Kenneth A. Turner, M.A.

Accepted this 14th day of June 2019 by:

_____, Director, Graduate Degree Programs
Robert F. Baumann, Ph.D.

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

THE 1759 CAMPAIGN FOR QUEBEC CITY: A HISTORICAL WARGAME OF THE FRENCH AND INDIAN WAR, by Major Joseph A. Henderson, 103 pages.

The British campaign to capture the French fortress city of Quebec in 1759 led to the decisive battle of the French and Indian War, and paved the way for British domination of North America for the next twenty years. While the ultimate battle on the Plains of Abraham is known to most scholars, the campaign along the St. Lawrence River that led up to the battle provides many lessons of operational level leadership that are still relevant today: maneuvering forces and securing lines of operation, integrating land and naval forces in joint operations, massing forces at the decisive point, simultaneity in operations, and the strategic use of key terrain.

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Dr1	Defender Retreats One Area
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F	Fatigue
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NS	Naval Squadron
S	Strength
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CHAPTER 1

INTRODUCTION

> To The Army. The enemy's force is now divided; great scarcity of provisions is in their camp, and universal discontent among the Canadians . . . A vigorous blow struck by the army at this juncture may determine the fate of Canada . . . the troops will land where the French seem least to expect it.
>
> —MG Wolfe, General Orders of 12 September 1759, from Beckles Willson, *The Life and Letters of James Wolfe*

The British campaign to capture the French fortress city of Quebec in 1759 led to the decisive battle of the French and Indian War, and paved the way for British domination of North America for the next twenty years. While the decisive battle on the Plains of Abraham is known to most scholars, understanding the campaign along the St. Lawrence River that led up to the battle puts the battle in context, and provides many lessons of operational level leadership that are still relevant today.[1] This paper will provide the rationale for the decision to build a wargame, examine the critical historical facts underpinning the wargame design, and discuss how these historical elements create not only a historically accurate, but also playable, wargame.

In the wargame, players will take on the roles of the Army commanders, learning both the historical details of the campaign, and immersing themselves in the commanders' decision making process. In this way, the wargame enables players to make decisions consistent with the information and capabilities available to the commanders during the campaign, and gain an understanding as to why the campaign unfolded the

[1] F.E. Whitton, *Wolfe and North America* (Port Washington, NY: Kennikat Press, 1929), 10-11.

way it did. This is a two player wargame, with players taking on the roles of either British Major General James Wolfe or French Lieutenant General Louis-Joseph de Montcalm-Grozon. Players command their armies at the operational level, contesting the St. Lawrence River region and Quebec City itself.

This paper is divided into four chapters: the introduction, a literary review of sources, an explanation of relevant historical factors and modeling mechanisms used to simulate the selected elements, and a conclusion. Enclosed are the game designer notes and rules, playing pieces and charts, and the map.

Problem Statement

This project will address the lack of an educational historical wargame which enables players to understand the commanders' decision making process against a thinking enemy, gain unique insights into replicating decision-making in a complex context,[2] and appreciate the operational level challenges experienced by the army commanders during the 1759 Quebec Campaign.

Research Question

This problem statement led to the foundational question of this research project: Can the 1759 Quebec Campaign be effectively represented to demonstrate the historical challenges of leadership at the operational level in a competitive wargame? This includes four secondary questions addressed in chapter three.

[2] Concepts and Doctrine Center, *Wargaming Handbook: Development, Concepts, and Doctrine Centre* (Swindon, Wiltshire: Ministry of Defence Shrivenham, 2017), 11.

Secondary Question 1: What were the decisions made by Wolfe and Montcalm during this campaign? This question forms the basis for the player experience during the wargame, and is the primary purpose of building this wargame. Only by understanding how and why the commanders acted the way they did, could the researcher design a game to teach these aspects to players. Primary source material, including journals and letters from the commanders, reveal not only what decisions the commanders made, but also why they made those decisions and how they dealt with unexpected changes to their plans. These decisions inform the wargame, integrating multiple models and historical factors into single decisions for the players,[3] and ensuring the focus of the wargame remains on the decisions made by players.[4]

Secondary Question 2: What decisions should the players not make during the wargame? By focusing only on the critical decisions necessary for the army commanders, this wargame avoids not only overwhelming the player with too much information to make learning useful, but also creates an easily playable game. This subsidiary question will be largely addressed when discussing various scope and delimitations later in this chapter, and further when discussing aspects of modeling by individual game component in chapter three, primarily in the sequence of play and decision cycles section.

Secondary Question 3: How does the wargame ensure players make decisions consistent with historical realities, but without the benefit of hindsight? As discussed in the introduction, the history of the campaign of 1759 is unknown to many scholars, and

[3] Philip Sabin, *Simulating War* (London: Bloomsbury Publishing, 2012), 17.

[4] Ibid., 113.

the goal of this wargame is for players to understand the commanders' decision making process against a thinking enemy, gain unique insights into replicating decision-making in a complex context,[5] and appreciate the operational level challenges experienced by the army commanders during the 1759 Quebec Campaign through the playing of this wargame. The goal of the wargame is not to replicate history, although this is possible, but rather to have players make logical decisions consistent within the historical context, leading to possible victory by either side. This allows the wargame to have different outcomes over multiple playthroughs, and chapter three's section on victory conditions will address the spread of outcomes in relation to history.[6] To prevent players from using hindsight, the wargame does not rely exclusively on the historical obscurity of the campaign,[7] but introduces fog of war[8] and other game mechanics to model the critical uncertainty of war.[9] This prevents players from using any detailed prior knowledge of the campaign to benefit their decisions. The extent and limitations of these mechanics are further addressed in chapter three in the section on victory conditions.

Secondary Question 4: How does the wargame adjudicate and model factors outside of the players' control? The goal in answering this subsidiary question is twofold:

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[5] *Wargaming Handbook: Development, Concepts, and Doctrine Centre*, 11.

[6] Sabin, 55.

[7] Francis Parkman, *Montcalm and Wolfe* (New York: R. R. Donnelley & Sons, 1984), xxxiii-xxxiv.

[8] Sabin, 110.

[9] Carl von Clausewitz et al., *On War* (Princeton, N.J.: Princeton University Press, 1984), 101.

first, to ensure historical factors influence the overall conduct of the game; and second, to make most of these historical factors transparent to the players. All of the key historical factors chosen are modeled in the wargame due to their impact on the course of events in history. The wargame will model "terrain . . . the deployment and capabilities of the military forces, and the passage of time during the engagement, thereby providing a synthetic experimental environment that mirrors in certain key respects the real range of potential . . . outcomes."[10] The wargame's model ensures the wargame is historically accurate, while player decisions determine the course of the campaign. The final aspect determining the outcome in war, and in this wargame, is chance,[11] which is incorporated through a fog of war mechanic and die rolling, all further explained in chapter three.[12]

Theoretical Framework

Three theories underpin this research and are critical to understanding the nature of this project. This section will lay out the three theoretical frameworks used by the researcher: the operational level of war, the commanders' decision making process, and wargaming. While this section will define many of the key terms and theories used by the researcher to construct this paper, additional terms and definitions specific to the wargame are found later in this chapter in the definition of terms section.

The theory and foundation of warfare has many principles, and among the most important is the definition and discussion of the tactical, operational, and strategic levels

[10] Sabin, 4.

[11] Clausewitz et al., 101.

[12] Sabin, 113.

of warfare which "link tactical actions to the achievement of national objectives."[13] At the operational level of war, the commander begins by "determin[ing] when, where, and for what purpose major forces will be employed and to influence the adversary's disposition before combat."[14] After the initial placement of forces, armies use these forces to conduct operations.

> An operation is a sequence of tactical actions with a common purpose or unifying theme. An operation may entail the process of carrying on combat, including movement, supply, attack, defense, and maneuvers needed to achieve the objective of any battle or campaign. However, an operation need not involve combat. A major operation is a series of tactical actions, such as battles, engagements, and strikes, conducted by combat forces coordinated in time and place, to achieve strategic or operational objectives in an operational area.[15]

This wargame focuses exclusively on the operational level of war by incorporating the factors of combat, movement, supply, attack, defense, and maneuver discussed above. The wargame deliberately excludes both the tactical level and strategic level of warfare as further discussed in the scope and delimitations section.

The second theoretical framework used in this research, and another critical theory of warfare, is the operations process. Understanding the process of how commanders understand and visualize the battlefield, and describe and direct forces to accomplish their operational objectives is critical to modeling those aspects in the

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[13] Headquarters, The Joint Staff, *Joint Publication 1 Change 1: Doctrine for the Armed Forces of the United States*, (Washington, DC: Government Publishing Office, 2017), I-7.

[14] Ibid., I-8.

[15] Ibid., I-9.

wargame.[16] While all staff procedures are abstracted in the wargame, and decisions are executed instantaneously, players will still understand the operations process by planning, preparing, executing, and assessing operations; by building and maintaining situational understanding, and by applying critical and creative thinking during every phase of the wargame.[17] While the goal of this wargame is not to have players move step by step through the operations process, players will understand the operations process naturally by assessing their environment, making decisions, and receiving feedback on the outcome of those decisions. Finally, players will experience aspects of Clausewitz's theory of military genius, because understanding the situation, reacting to changing events, and accurately discerning the enemy's intentions, are all necessary to win the wargame.[18]

The final theoretical framework used for this project is the structure and utility of wargaming. The structure of a wargame is at its foundation a mathematical model. "A war game is 'a warfare model or simulation whose operation does not involve the activities of actual military forces, and whose sequence of events affects and is, in turn, affected by the decisions made by players representing the opposing sides' . . . The essence of war gaming is the examination of conflict in an artificial environment."[19]

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[16] Headquarters, Department of the Army, *Army Doctrine Publication No. 5-0: The Operations Process* (Washington, DC: Government Printing Office, 2012), 1-3.

[17] Ibid., 2.

[18] Clausewitz et al., 101-103.

[19] Robert Rubel, "The Epistemology of Wargaming," *Naval War College Review*, (Volume 59, no. 2, 2006): 109. Rubel is quoting and expanding on Peter Perla, *The Art of*

While the model for this wargame is fully explained in chapter three of this paper, in order to create a valid model, all wargame research must study models of the geographic environment, the orders of battle of the opposing forces, the generic capabilities of forces, and the decisions facing the real commanders.[20] A valid wargame model thus leads to players achieving victory conditions by making logical choices consistent with the character of the historical campaign.[21] The utility of wargaming is also paramount in the theory and foundation of warfare. Clausewitz discusses wargaming at length, providing his views on using wargames and historical study to critically review past campaigns.[22] Current doctrine from both the US and the UK stresses the necessity for wargaming in preparing for future conflicts, refining planned operations, and enabling active learning.[23] These three theoretical frameworks provide the structure for this research project.

Key Assumptions

This project made five key assumptions. First, to ensure this research has a purpose, the researcher assumes that this event can be modeled in a historical wargame,

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Wargaming: A Guide for Professionals and Hobbyists, (Annapolis, MD: Naval Institute Press, 1990), 164.

[20] Sabin, 47-48.

[21] Ibid., 113.

[22] Clausewitz et al., 164-167.

[23] Headquarters, Department of the Army, *Training and Doctrine Command Pamphlet 525-3-1 Change 1: The U.S. Army Operating Concept, Win in a Complex World 2020-2040* (Washington, DC: Government Printing Office, 2014), 33; Headquarters, The Joint Staff, *Joint Publication 5: Joint Planning* (Washington, DC: Government Publishing Office, 2017), V-31; *Wargaming Handbook: Development, Concepts, and Doctrine Centre*, 11.

and will focus on how to model the campaign, achieving a reasonably accurate model through completion of this project. Second, the researcher assumes the only things necessary for a wargame are "physical components (map and counters), a rules system, and decisions made by individual players."[24] Third, the researcher assumes players have not played wargames before and therefore will define all terms, and minimize the complexity of the wargame wherever possible, particularly in accepting tradeoffs in favor of playability over historical accuracy at the tactical level. Fourth, the researcher assumes that players are not intimately familiar with the 1759 Quebec Campaign. For this reason, the researcher will focus on the historical aspects of the campaign at the operational level in order to teach the players the history of the campaign through the wargame. The researcher will include general strategic notes to provide an overall strategic construct of the campaign and seek to minimize, but not eliminate, moves that may be detrimental to the player. Lastly, the researcher assumes that no other wargame provides this experience for players. The author studied six other wargames which simulate the French and Indian War, and all of these games either operate at the grand strategic level, or at the tactical level. Decisions by the researcher leading to these assumptions are discussed further in this chapter in the scope and delimitations section, while the aspects included in the game are explained in detail in chapter three.

Definition of Terms

The following terms are in addition to those defined earlier in the theoretical framework section and are necessary to understand this research project:

[24] Sabin, 113.

Chance: Chance is "something that happens unpredictably without discernable human intention or observable cause."[25] Clausewitz describes chance as one of his four critical elements of warfare, stating that "no other human activity is so continuously or universally bound up with chance [than war]. And through the element of chance, guesswork and luck come to play a great part in war[26] . . . chance makes everything more uncertain and interferes with the whole course of events."[27] In the wargame, chance is accounted for in three ways: through die rolls, through a week-long operations cycle, and through the fog of war mechanic.

Combat Results Table: The combat results table (CRT) is used to resolve combat during the land and naval combat phases of the wargame. Players receive combat dice depending on the number and quality of units engaged, and consult the CRT to determine the results. The CRT varies for French and British forces due to the historical differences in combat effectiveness. The CRT has three possible outcomes: no effect, loss of strength, or increase in fatigue.

Entrenchments: Entrenchments are fortifications built by soldiers to "place oneself in a strong defensive position."[28] These include trenches dug in the ground with

[25] Merriam-Webster, "Chance." Accessed March 12, 2019, https://www.merriam-webster.com/dictionary/chance.

[26] Clausewitz et al., 85.

[27] Ibid., 101.

[28] Merriam-Webster, "Entrench." Accessed March 12, 2019, https://www.merriam-webster.com/dictionary/entrench.

wooden revetments to increase the durability and effectiveness of the earthworks. In the wargame, units that are entrenched receive a bonus when defending in combat.

Fatigue: Fatigue models a unit's threshold for conducting operations without resting and refitting. Players must ensure units are given time to recover and remove fatigue during the campaign. Each unit's fatigue counter starts at zero and changes based on unit actions. Units that reach maximum fatigue immediately lose half of their remaining strength, must rest during their next land movement phase, may not attack during their land combat phase, may not refuse defensive combat, do not produce dice for defensive combat, and lose strength in place of gaining fatigue for CRT resolution.

Firepower: Firepower represents a unit's ability to inflict casualties on an opponent through direct fire and melee combat. Firepower is based on both the quality and strength of the unit, and determines the number of dice the player rolls when the unit is engaged in combat. A unit loses firepower when its strength drops below a given level. Units never recover or gain firepower because they cannot regain strength.

Fog of War: Fog of war is the uncertainty in operations that prevents the commanders from achieving situational awareness and gaining a clear understanding of the battlefield. Clausewitz builds on this definition, stating that "War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty."[29] In the wargame, the fog of war is simulated by keeping units hidden from the opposing player, and revealing them only when conducting reconnaissance or combat.

[29] Clausewitz et al., 101.

Friction: Clausewitz defines friction as the

> countless minor incidents—the kind you can never really foresee—[that] combine to lower the general level of performance . . . friction is the only concept that more or less corresponds to the factors that distinguish real war from war on paper . . . action in war is like movement in a resistant element. Just as the simplest and most natural of movements, walking, cannot easily be performed in water, so in war it is difficult for normal efforts to achieve even moderate results.[30]

In the wargame, friction is modeled through the fog of war model, as discussed earlier, and a week-long turn cycle. While units historically are able to move greater distances and fight additional combat in a week-long time period, each turn cycle encompasses all the planning, preparing, resupply, recovery, and consolidation actions needed to conduct a week of operations.

Lines of Operation: The Army defines Lines of operation as "A line that defines the directional orientation of a force in time and space in relation to the enemy and links the force with its base of operations and objectives."[31] Lines of operation are secured by controlling areas and marking them with colored cubes in the wargame. Lines of operation affect the ability of the player to move his units between areas.

Natural Line of Retreat: A natural line of retreat encompasses the path taken by an army when it retires or is driven back, ordinarily encompassing the roads passed over by an army while they were advancing.[32] In the wargame, units must utilize a natural line of

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[30] Clausewitz et al., 119-120.

[31] Headquarters, Department of the Army, *Army Doctrine Reference Publication No. 1-02: Terms and Military* Symbols (Washington, DC: Government Publishing Office, 2016), 1-59.

[32] Edward Farrow, *Farrow's Military Encyclopedia: A Dictionary of Military Knowledge* (New York, NY: Published by the Author, 1885), 220.

retreat if possible towards the area from which the unit came, or back towards the bulk of the player's other forces.

Operational Art: "Operational art is the cognitive approach by commanders and staffs—supported by their skill, knowledge, experience, creativity, and judgment—to develop strategies, campaigns, and operations to organize and employ military forces by integrating ends, ways, and means."[33] Players use operational art in the wargame to develop plans for their armies.

Siegeworks: "Siegeworks are temporary forts or parallels where siege guns are mounted when conducting a military blockade of a city or fortified place to compel it to surrender."[34] In the wargame, siegeworks can be constructed by the British player as an alternative to a direct assault on the fortress of Quebec City.

Strength: Strength represents a unit's manpower and combat effectiveness. Strength influences both the number of dice the player rolls when the unit is engaged in combat, and how many casualties the unit can absorb before it is destroyed. A unit loses strength during combat in accordance with the CRT. Units never recover or gain strength due to neither side receiving reinforcements or reorganizing during the campaign.[35]

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[33] *Army Doctrine Publication 5-0*, 6.

[34] Merriam-Webster, "Siege." Accessed March 12, 2019, https://www. merriam-webster.com/dictionary/siege.

[35] Fred Anderson, *Crucible of War* (New York: Alfred A. Knopf, 2000), 310, 347.

Validation: Validation is "the determination of the degree of quality of being well-grounded, sound, or correct in a measuring device."[36] According to Sabin, validation of wargames

> essentially boils down to three basic questions. These questions are as follows: If both sides take the same actions as they did historically, does the game system tend to yield a broadly similar course and outcome for the conflict as occurred in reality? If players exercise rational choices to maximise their chance of game victory, do their strategies at least sometimes match those of the real antagonists? Do the game system and scenario plausibly reflect what we know of the characteristics and underlying dynamics of the historical struggle, either through direct simulation or through more abstract and indirect mechanisms that nevertheless capture the most basic elements of reality?[37]

The validity of this wargame is determined by answering Sabin's three questions, and is described when discussing the results of playtesting and simulation model decisions in chapter three.

Limitations

While attempting to address this campaign in as thorough a manner as possible, there were several limitations to this project that prevented the researcher from presenting an entirely complete research project. The major limitation for this project was the time available for completion. As part of the MMAS process, this project had to be completed in nine months, and did not afford the researcher the extended time necessary to produce a polished and professional wargame.

[36] Merriam-Webster, "Validation." Accessed March 12, 2019, https://www.merriam-webster.com/dictionary/validation.

[37] Sabin, 131.

Primary source material limitations included to: the lack of records kept during the time period the research covers; the amount of time that has passed since the campaign; the small collection accessible online or at the Ike Skelton Combined Arms Research Library (CARL); and the researcher's limited ability to translate French primary sources. The researcher found only seven primary sources available in the CARL archives or publicly online, and must therefore rely heavily on secondary sources to complete this research. While there is much published on the British and French armies, including drill manuals, tactics, and unit rolls for the Seven Years War European theater, there are few documents covering the Quebec campaign of 1759, and in many cases these sources disagree regarding units present, and the status of equipment, morale, and leadership. The elapsed time between the present and the campaign further degrades the availability of primary sources, as surely there are valuable documents that have been lost to history. Finally, the researcher has uncovered multiple French language documents that he could not translate proficiently, was forced to rely on translation services such as Google Translate, or previous English translations by other researchers.

This project is also limited by the researcher's own bias and preferences for historical wargaming. While in many ways the researcher's extensive experience playing wargames is an asset, it may have hindered the ability to remain objective on making choices for this wargame. There were instances where the researcher did not fully explore modeling options due to a pre-conceived notion of what kind of game he wanted to make. This resulted in the game going through several revisions and changes where a less experienced wargamer might have realized the necessity for certain modeling choices more quickly.

Additionally, this wargame suffers, as all wargames do, from the limitation of not truly replicating warfare. A lack of dedicated players to completely recreate a staff, conduct staff procedures, and function as subordinate commanders results in a wargame that replicates all of these factors in a single player.[38] The wargame is also forced to make tradeoffs of accuracy for playability, attempting "to devise a simple, but evocative model"[39] for a useful player experience. While depicting the historical elements the wargame desires to teach, there are many factors that are transparently simulated for players, and several playtests have altered the balance of historical accuracy versus playability. Initial versions of the game heavily favored historical tactical operations, and were subsequently adjusted to increase the playability and overall experience for the players. The researcher had to resist a "constant temptation to incorporate less abstract and more detailed direct simulation of the processes . . . [which results in] unplayable levels of detail and complexity occurring within a single game model."[40]

Finally, while attempting to simulate the decisions made by commanders, this wargame can never truly replicate the experience of combat. Players will maneuver troops and fight battles without the friction of war described above. The wargame will attempt to model the effects of friction on operations through die rolls, combat modifiers, unit strength, and unit fatigue, but the wargame will be unable to truly replicate the

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[38] Peter Perla, *The Art of Wargaming*, edited by John Curry (Annapolis, MD: The United States Naval Institute, 2011), 224.

[39] George E. P. Box, "Science and Statistics." *Journal of the American Statistical Association*, (Volume 71, no. 356, 1976), 792.

[40] Sabin, 135-136.

conditions found in war. Because of this, units will not experience actual combat, fear, danger, losses, or fatigue during the wargame.[41] The player will also personally not experience the stresses or dangers of combat. These dangers were historically present, as is easily illustrated by the deaths of both Wolfe and Montcalm during the Quebec campaign. While the wargame simulates the death of the player pieces, there is no way to measure player courage, or how players would act while in danger, in a classroom environment.[42]

Scope and Delimitations

In an attempt to focus on the historical lessons learned at the operational level in this campaign, both the tactical level and the strategic level of war are outside the scope of this research project. While Wolfe's campaign was only one piece of the much larger British strategy in Canada in 1759,[43] the objective for both players is only control of the St. Lawrence River and the Quebec City fortifications.[44] A historical factor that had bearing on this campaign was the departure of French troops on August 9, 1759, under the Chevalier de Levis to reinforce Montreal from the British advance.[45] This departure is modeled by forcing the French player to lose a certain amount of troops on this date in

[41] Perla, 7.

[42] Clausewitz et al., 114.

[43] Anderson, 310-311.

[44] Beckles Willson, *The Life and Letters of James Wolfe*, (London: William Heinemann, 1909), 446.

[45] Parkman, 460.

the campaign. No other outside factors, either from the North American or European theater, affect the player in this wargame. All events will unfold in Europe and North America as they did in 1759, except on the operational map of this wargame.

While the wargame will not incorporate the strategic level of war, it will also not deal in the tactical minutia of the campaign. Players will maneuver troops and commit them to battle, but will not make decisions on actual deployment formations, firing orders, or hand-to-hand combat. The game assumes that subordinate leaders are making competent decisions and calculates combat results based on both the quality and quantity of units involved, and a degree of chance. Combat resolution is further discussed in chapter three.

For ease of play, many operations are simplified to narrow the focus of the player to the critical decisions of the campaign. Terrain, weather, naval operations, and sieges are all simulated on a large scale. Geography is included in the wargame by showing how different areas are connected and their relative distance, but specific terrain is not a factor for players. Rain does not hinder operations, and the campaign ends with the arrival of winter on the St. Lawrence River in September 1759, which historically ended British operations.[46]

French and British naval operations were subordinate to army operations during this campaign.[47] While players can maneuver and fight naval units, naval combat itself is not covered in depth. Admirals are assumed to be fighting the engagements competently.

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[46] C. P. Stacey, *Quebec, 1759* (New York: St. Martin's Press, 1959), 16.

[47] Ibid., 59.

There are no joint army-navy attacks in the wargame, as naval fire consisted of only ineffective bombardments of Quebec City during the campaign.[48] Finally, siege dynamics are limited to the construction of siegeworks by the British player. All of these concepts and how they are modeled in the wargame are fully explored in chapter three.

This wargame limits each player's decision making on supply issues. Historically, both army commanders were unconcerned with supplies during this campaign. British forces were well supplied[49] and able to use the St. Lawrence River and their overwhelming naval superiority to resupply the army. The French defenders in Quebec received a resupply convoy from France just before the campaign began, which was sufficient to supply the French and Canadians throughout the 1759 campaigning season.[50] The game assumes that within the week-long turn cycle subordinate leaders are fully resupplying their formations.

Three other historical factors are not included in game mechanics. First, there is no randomization of events, and all units are able to move evenly, do not panic, and are unaffected by weather. Second, the sickness of Wolfe, who dealt with severe bouts of kidney stones[51] and other sicknesses throughout the campaign, is not simulated in any way. Third, the French player is unable to attack British local camps or headquarters. These factors, while historically interesting, are removed in order to focus the player on

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[48] Anderson, 344.

[49] Robin Reilly, *Wolfe of Quebec* (London: White Lion Publishers, 1960), 223.

[50] Anderson, 345.

[51] Ibid.

critical decisions. Daily variations in the weather do not greatly affect the turn period spanning a week of operations, and aside from the arrival of winter, weather was not a large factor historically. While Wolfe's sickness incapacitated him at times, it never prevented the British force from making decisions, as Wolfe continued to consult with his Brigadiers and his naval commander, Vice Admiral Charles Saunders, during these times.[52] Lastly, the inability of the French to attack a British objective focuses the French player on his goal of defending Quebec, and historically models the French mindset during this campaign.

Finally, this wargame does not deal with any ethical and moral issues of the campaign, and players will play the game in a moral vacuum without judging the historical actions of either side.[53] Players will not have to deal with the internal strife over committing soldiers to combat and losing men in those engagements. Players are also unable to commit war crimes, which is a historical inaccuracy. There are multiple accounts during the French and Indian War of both sides committing atrocities against combatants and non-combatants.[54] During this campaign, part of the British strategy was to goad the French into battle by committing acts of terror against their population and property in the surrounding area.[55] The strategy was not effective for the British though,

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[52] Stuart Reid, *Quebec 1759: The Battle that won Canada* (Westport, CT: Osprey Publishing Ltd., 2005), 47.

[53] Sabin, 162.

[54] Russell Bellico, *Empires in the Mountains* (New York: Purple Mountain Press, 2010), 127.

[55] Anderson, 344.

and the French remained firmly entrenched in their defensive position. The British terror campaign was soon abandoned,[56] and the decision is removed from the player to focus the decision making on relevant conventional operations.

Significance of Study

By playing this wargame, players will learn about the operational level of war in mid-1700s North America; the commanders' decision making process against a thinking enemy commander; and the specific history of the Quebec Campaign of 1759. This is significant because several principles of warfare[57] and elements of operational design in current doctrine are present in this wargame. Commanders are forced to: maneuver forces while securing their lines of operation; integrate land and naval elements into a joint force in a single joint area of operations; mass forces at a decisive point through rapid maneuver; arrange forces to conduct geographically dispersed simultaneous operations; and strategically use key terrain to shape operations.[58]

Players also benefit from playing wargames in general, gaining unique insights and replicating decision-making in a complex context.[59] Players learn about "force, space and time relationships in the specific battle or campaign being simulated, [and] soon acquire an intuitive feel for more generic interactive dynamics associated with warfare as

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[56] Anderson., 345.

[57] *Joint Publication 1*, I-3.

[58] *Joint Publication 5-0,* IV-1.

[59] *Wargaming Handbook: Development, Concepts, and Doctrine Centre*, 11.

a whole."[60] Players "must grapple with real strategic and tactical dilemmas as they struggle to beat their colleagues, and because the games show that the historical outcome of a conflict was not bound to occur."[61] Finally, players will hopefully be inspired to create their own wargames to understand a historical event, or examine a likely future conflict in a simulated environment.[62]

Research Methodology

This paper is a mixed method study, with the researcher using three methodologies to complete the research for this project: historical method, document analysis, and wargame design.[63] The researcher used both primary and secondary sources, leaning heavily on written documents from the period, while using established procedures for source criticism to evaluate conflicting accounts of the battle.[64] Document analysis of written orders, journal entries, and both professional and private correspondence illuminated the thought process of the army commanders and allowed the researcher to incorporate these decisions into the wargame.[65] Finally, the researcher

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[60] Sabin, 31.

[61] Ibid., 37.

[62] Rubel, 109.

[63] Priscoe Hernandez, "Fundamentals of Research A211." Lecture (United States Army Command and General Staff Officers College, September 13, 2018).

[64] Fritz Sager and Christian Rosser, "Historical Methods." *The Routledge Handbook of Interpretive Political Science*. Edited by Mark Bevir and R.A.W. Rhodes. New York: Routledge (2015), https://www.researchgate.net/publication/28162 0532_ Historical_Methods/download (accessed March 13, 2019).

[65] Glenn A. Bowen, "Document Analysis as a Qualitative Research Method." *Qualitative Research Journal* (Volume 9, no. 2, 2009), 30.

followed the process for building a wargame proposed in *Simulating War* to develop his wargame, and conducted thirteen iterations of playtesting to refine the proposed simulation model and validate the results.[66]

Summary

This introduction chapter explained the parameters of this project, and the way the research was conducted. The following chapters will provide an explanation of the research itself and answer the research question: can the 1759 Quebec Campaign be effectively represented to understand the historical challenges of leadership at the operational level in a competitive wargame? The next chapter will discuss the literature reviewed and the wargames played by the researcher during this project.

[66] Sabin.

CHAPTER 2

LITERATURE REVIEW

Introduction

The goal of this wargame is to have players understand what critical decisions were made by Wolfe and Montcalm during this campaign and what information they factored into their decisions. The researcher used this goal to direct his research for this project. The researcher focused on primary and secondary historical sources and wargame rules, and played existing wargames to understand how other designers chose to model elements. The research for this project falls into three categories: doctrine and methodology, historical literature, and wargame literature and rules. These categories are depicted on the table below, and discussed further in the following sections.

Table 1. Literature Review

	Books	Articles	Wargame Rules
Doctrine and Methodology	8	9	-
Historical Research	19	16	-
Wargame Research	3	2	24

Source: Created by author.

Doctrine and Methodology

The researcher used doctrine and research methodology to build the foundation of this paper, studying ways to compose this paper and perform the historical and wargaming research. Current U.S. Joint and Army doctrine provided the definitions of

key terms and the understanding of concepts. The theories of the operational level of warfare,[67] and the commanders' decision making process[68] are incorporated into the theoretical frameworks. Additional historical definitions of warfare, especially those from Clausewitz's *On War*, assisted the researcher in precisely defining the concepts the wargame aims to teach, and understanding the limitations of a simulation of war.[69]

Historical Literature

The historical literature review was the key component for the wargame. To teach history through the wargame, it was necessary to build a historically accurate model based on a thorough understanding of the history. The historical literature is imperfect due to the limitations discussed earlier in chapter one, and further restricted by the fact that most of the literature on this campaign focuses on the Battle for the Plains of Abraham rather than the entire campaign. The historical research fell into four categories. First, the researcher focused on the history of the French and Indian War in North America, and the Seven Years War globally. For this research, Fred Anderson's *Crucible of War* was the most useful source.[70] Second, the researcher explored the history of the 1759 Quebec campaign, including not only the campaign narrative, but also order of battle, equipment listings, and journals of the participants. Sources used by the researcher

[67] *Joint Publication 1*, I-8.

[68] *Army Doctrine Publication 5-0*, 1-3.

[69] Clausewitz et. al.

[70] Anderson.

include Beckles Willson's *The Life and Letters of James Wolfe*,[71] and the journals of French Colonel Louis-Antoine de Bougainville,[72] British Captain John Knox,[73] and British Brigadier General George Townshend.[74] Third, the researcher looked to discover parallels to this campaign and tried to formulate what might have happened, including predicting casualties by combatants, by studying the history of similar campaigns and battles. Here the researcher leaned heavily on Tony Jaques' *Dictionary of Battles and Sieges: A Guide to 8,500 Battles from Antiquity through the Twenty-first Century.*[75] Finally, the researcher explored the technical history of the period, focusing on the capabilities of units, organization of units, and unit march rates. This research drew mostly from Stephen Brumwell's *Redcoats*[76] and C.P. Stacy's detailed *Quebec 1759.*[77] Practical applications and historical elements the researcher chose to model are discussed

[71] Willson.

[72] Louis Antoine de Bougainville, *Adventure in the Wilderness: The American Journals of Louis Antoine de Bougainville, 1756-1760.* translated and edited by Edward Hamilton, (Norman, OK: University of Oklahoma Press, 1964).

[73] John Knox, The Battle of Quebec: From the Historical Journal of the Campaigns of North America, (Boston, MA: Directors of the Old South Work, 1896).

[74] C. V. F. Townshend, *The Military Life of Field-Marshal George First Marquess Townshend.* (London: John Murray, 1901).

[75] Tony Jaques, *Dictionary of Battles and Sieges: A Guide to 8,500 Battles from Antiquity through the Twenty-first Century*, (Westport, CT: Greenwood Press, 2007).

[76] Stephen Brumwell, *Redcoats: The British Soldier and War in the Americas 1755-1763*, (New York: Cambridge University Press, 2002), 247-248.

[77] Stacey.

further in chapter three. Historical elements the researcher chose not to model are discussed in scope and delimitations in chapter one.

Wargaming Literature and Rules

Once the researcher obtained a fundamental understanding of the historical situation, the next step was understanding the fundamentals of wargames and determining how to model the various historical aspects. The wargaming literature researched for this project fell into three types of categories: understanding games and gameplay in general; understanding how wargames are structured and built; and exploring the necessity for wargaming. Current and historical theories of warfare provided the necessary information on the necessity of wargames, while Ralph Koster's *A Theory of Fun* explained how games educate players and the elements of games that make them successful.[78] While examining a considerable amount of literature on the theories and fundamentals of wargames, the author found Philip Sabin's *Simulating War* to be the most insightful in both structure and content.[79]

Playing a variety of different wargames was critical to see how other game designers solved some of the theoretical problems of modeling that the researcher was trying to incorporate. The researcher used his experiences from playing 24 wargames to shape this one, incorporating and adjusting elements and models from those games into this wargame. All of these elements are further discussed in detail in chapter three where

[78] Ralph Koster, *A Theory of Fun* (Sebastopol, CA: O'Reilly Media, 2013), 122-124.

[79] Sabin.

the practical wargame of relevance is cited. Denis Sauvage's *Napoléon 1806*[80] was the most significant inspiration for this project, with units conducting combat at the operational level and tracking unit status by strength and fatigue. Randall Reed's *1776* provided a format for the rules and designer notes included in Appendix B.[81]

Summary

This chapter identified the most relevant literature pertaining to this research project, and discussed what has been written on the subject of the 1759 Quebec Campaign, wargaming theory, and practical models of wargaming. This chapter also discussed the major influences on this project, and explained how the researcher conducted document review and played multiple wargames. The next chapter will examine the critical historical facts underpinning the modeling decisions made by the researcher and discuss how the researcher modeled these historical elements to create not only a historically accurate, but also playable wargame.

[80] Denis Sauvage, *Napoléon 1806*, (Greenville, NY: Golden Bell Entertainment, LLC., 2017).

[81] Randall Reed, *1776*, (Baltimore, MD: The Avalon Hill Game Co., 1974).

CHAPTER 3

HISTORICAL FACTORS AND SIMULATION MODELS

> A model is by nature a simplified and therefore fictional or idealized representation, often taking quite a rough-and-ready form: hence the term "tinker toy" model from physics, accurately suggesting play, relative crudity, and heuristic purpose.
>
> —Philip Sabin, *Simulating War*

Introduction

This chapter is organized into seven sections, each of which discusses a historical factor that is modeled in this wargame. These sections are: time, sequence of play and decision cycle, unit types and capabilities, terrain and distance, combat, siege dynamics, and victory conditions. Each section defines the element in question, explains why it is necessary to model this element in the wargame, discusses the history on which the model is based, and describes how the game models the section element.

While all of these elements are models in and of themselves, and the overall wargame is a model as well. Wargames are designed in a variety of ways and for numerous purposes, therefore, no matter how it is constructed,

> a wargame is an underlying mathematical model of reality, which seeks to simulate the terrain of the battle area, the deployment and capabilities of the military forces, and the passage of time during the engagement, thereby providing a synthetic experimental environment that mirrors in certain key respects the real range of potential courses and outcomes associated with the armed conflict concerned.[82]

The elements listed above in Sabin's definition are all included in this wargame, and correspond to the following sections in this chapter. Additionally, since the wargame

[82] Sabin, 4.

model as a whole relies on "a web of subjective design judgments,"[83] the researcher will explain in each section the choices made in this wargame.

The wargame itself is not purely a mathematical model though, and "the course and outcome of wargames are themselves determined by a combination of three principal factors, namely reality, skill and chance."[84] Elements of chance and friction are always involved in conflict and, to account for Clausewitz's description of friction, "the real question is not whether luck should be a factor at all, but what is the most appropriate *balance* of luck and skill to underpin variations of wargame outcomes from the single course of events observed in the real conflict."[85] Including these aspects of chance moves the wargame away from a purely excel sheet game, and includes variable outcomes. Additionally, it more completely models the fortunes of war. This wargame models chance through weighted die rolls to determine combat outcomes, and the fog of war mechanic to create a game of imperfect information.

Time

Time was a critical factor in how this campaign unfolded historically. On the largest scale of time, the armies during the French and Indian War in North America did not usually fight during the winter. The campaign season ran from May until October, and units would retire to winter quarters leaving limited forces to guard the frontier until

[83] Sabin, 63.

[84] Ibid., 113.

[85] Ibid., 119.

the following spring.[86] This dynamic was even more relevant to the British during this campaign, as Wolfe and Admiral Saunders were constantly aware that around late September the St. Lawrence River would freeze,[87] denying the British an important advantage over the French: the ability to move supplies and troops rapidly along the river.[88] It was also necessary for the British Quebec campaign to keep pace with the other thrusts of Lord Amherst's plan to attack Canada.[89] However, Wolfe was unable to begin his campaign until April 1759 due to ice in the river, and then by heavy fog covering the mouth of the river until June 18.[90] Wolfe began his drive from Louisbourg on June 4, and arrived with his forces before Quebec City only on June 28.[91] While the British attempted to probe the French defenses on the north shore of the river during July and August, by mid-September 1759 they were compelled to make a more audacious assault on the Plains of Abraham due to the impending arrival of winter. A letter from Wolfe to the British government on September 2 shows that Wolfe was already prepared for the potential failure of the campaign.[92]

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[86] Martin Windrow and Michael Roffe. *Montcalm's Army*, (Reading, England: Osprey Publishing Ltd, 1973), 7.

[87] John A. Lynn, "States in Conflict." In *The Cambridge History of Warfare*, edited by Geoffrey Parker, (New York: Cambridge University Press, 2005), 186-187.

[88] Whitton, 306-307.

[89] Noel St John Williams, *Redcoats Along the Hudson*, (London: Brassey's, 1997), 163.

[90] Anderson, 317.

[91] Ibid., 344.

[92] Stacey, vii.

Montcalm was also aware of the critical timing of the campaign, and understood the need for his forces to delay the British until winter. With the arrival of the news that the British were planning to move from Louisbourg down the St. Lawrence, Montcalm rushed to Quebec City on May 21 to lead the defense of the area.[93] Montcalm's delay tactics are evident throughout the campaign, as he defended the whole northern bank of the St. Lawrence to prevent the British from gaining a beachhead. Montcalm allowed the British to maneuver down the river, and ravage the countryside, but he refused to fight the British in a decisive battle.[94] It was only when the British forces established themselves in a dominant position overlooking the city that the French were finally brought to battle.[95]

The aspect of time for the entire campaign is modeled by twelve one-week-long turns running from June 27 to September 18, 1759, depicted on the following table.

[93] Stacey., 40.

[94] Willson, 469.

[95] Anderson, 356.

Table 2. Time and Turn Structure

Turn	Time Period Depicted
0	Initial Placement of Troops from May 1759
1	June 27, 1759 to July 3, 1759
2	July 4, 1759 to July 10, 1759
3	July 11, 1759 to July 17, 1759
4	July 18, 1759 to July 24, 1759
5	July 25, 1759 to July 31, 1759
6	August 1, 1759 to August 7, 1759
7	August 8, 1759 to August 14, 1759
8	August 15, 1759 to August 21, 1759
9	August 22, 1759 to August 28, 1759
10	August 29, 1759 to September 4, 1759
11	September 5, 1759 to September 11, 1759
12	September 12, 1759 to September 18, 1759

Source: Created by author.

The decision to use week-long turns merits further discussion. Conducting operations in 1759 was a regimented process that included the need to supply and equip forces, march troops by land or transport them by sea, entrench, fight a battle, and recover, reorganize, and resupply from these operations.[96] In addition to the actual movement and combat conducted by forces, the operations cycle included the need for staffs to plan the operations, issue orders, and synchronize movement across the army. For these reasons, battles during the Quebec campaign were infrequent. Over the course of two months, the British made only three concentrated attempts to breach the French river defenses, preferring the tactic of landing uncontested in an attempt to force the French to battle through maneuver.[97] Both this week-long turn cycle, and the fatigue

[96] Sabin, 94.

[97] Anderson, 349.

mechanism discussed later, prevent players from conducting ahistorical continuous combat.

A final examination of the operations process for the Plains of Abraham operation provides a clear example of the necessity for this week-long planning cycle. From Wolfe's letters to Saunders it is clear that Wolfe was considering a final operation to take Quebec City before winter as early as August 29.[98] After weighing his options and refining his plan personally for a week, Wolfe assigned his staff and subordinates to conduct the actual planning and execution of the operation from September 7 to September 13, 1759. Wolfe had ships make initial reconnaissance on September 7, and began moving troops as part of a feint on September 8.[99] Wolfe conducted his leader's reconnaissance personally on September 9, and assembled his Brigadiers to conduct a reconnaissance of their objectives on September 10. Initial orders to the troops were published on September 10, with final orders and consultation with the Brigadiers on September 12. The troops boarded their transports the night of September 12, and the British forces landed on the morning of September 13.[100]

Sequence of Play and Decision Cycles

This wargame models the decisions made by the army commanders at the operational level of war. For this reason, it is necessary to discuss the wargame's sequence of play and turn breakdown, as well as the decision cycle and decisions

[98] Willson, 469.

[99] Williams, 177.

[100] Willson, 471-490.

available to players in the wargame. While the overall length of both the campaign and the turn cycle is discussed above, the structure of each turn warrants further exploration.

The game begins with the initial placement of forces during turn zero. The French player places his forces first, followed by the British player. This models the time from the arrival of Montcalm in Quebec and Wolfe in Louisbourg in early May, until the first appearance of British Army units near Quebec on June 26.[101] The French fortified their positions along the St. Lawrence during May and early June,[102] but British naval expeditions were able to scout most of the positions and determine river conditions in late May 1759.[103] For the remainder of the campaign, the turn is broken down into two player phases, with the British player conducting movement and combat first, followed by French player. This alternating setup is

> the simplest and most common approach . . . such alternating player turns are obviously rather artificial as a reflection of the simultaneous reality . . . However, alternating player turns offers a straightforward way of reflecting how quickly forces of that era can cycle through the OODA loop and react to a new situation . . . Alternating player turns also neatly reflect the episodic nature of real military operations, with successive flurries of offensive and counteroffensive action by each side in turn being much more common than truly simultaneous attacks.[104]

The British player begins each turn modeling the British having the initiative as the attacking force for the entirety of the campaign. During the campaign, French offensive action was limited to one probing attack on encamped British forces on Point

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[101] Lloyd, 72-80.

[102] Stacey, 42.

[103] Ibid., 48.

[104] Sabin, 104-105.

Levis.[105] The movement of British and French forces is limited to one area per turn for land units and two areas per turn for naval units. This movement format ensures that players are able to maneuver their own forces in response to their opponent's moves.

Within each player phase are four action phases: reconnaissance, naval operations, land movement, and land combat. This sequence allows each side to conduct limited operations during the week long turn cycle, permitting units to move, entrench, or rest during the movement phase, and fight one battle during the land combat phase. While these actions historically would have been conducted in varying order, this model enforces a rigid structure of move and then fight within each turn for ease of play.[106] Only a limited number of unit actions are permitted based on the ability of units to conduct operations during this time period. The week-long decision cycle is based on the historical example of the planning and execution for the Battle of the Plains of Abraham illustrated above. The author experimented in an early version of the wargame with having players issue secret simultaneous orders to their units, but the nature of the French reacting to British maneuvering during this campaign was not captured by a simultaneous orders issuing model.[107]

The decision cycle for players in this wargame is based on

> an iterative set of action decision inputs . . . to guide the simulated actions of the combatants, and to respond to the changing course of the simulated conflict, in order to maximise their relative or absolute performance in terms of artificial

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[105] Willson, 473.

[106] Sabin, 94.

[107] Brian Bennett, Uwe Eickert, and Robert Zak. *Strike of the Eagle*. (Fremont, OH: Academy Games, Inc., 2011).

> victory criteria established to reflect the real measures of success and failure associated with the actual engagement.[108]

During each turn, players must determine if they want to maneuver, rest, entrench, or fight. These decisions are based on the strength and fatigue of their own forces, securing their lines of operations, and reacting to enemy player decisions. Player decisions are limited to the operational level of war, and players are unable to make tactical decisions during combat, to move forces outside of the St. Lawrence area of operations, or to replace lost forces. Additionally, special decisions are allowable based on specific situations in the wargame. The most important special decision is when players choose to conduct a decisive battle. A decisive battle allows a player to conduct a unique type of combat where the army commander continues to press an attack at a key time and place.[109] Instead of conducting only one combat per turn, combat is fought up to six iterations, allowing the army commander to have a personal effect on the battle. This is allowed only late in the game with Montcalm or Wolfe present, and models the gamble Wolfe took in forcing the Battle of the Plains of Abraham as a last ditch effort before winter conditions set in.[110]

Player decisions are further influenced by incomplete information. Players are able to observe the disposition, but not the composition of enemy forces. Having the wargame present imperfect information to the players creates friction in the planning of

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[108] Sabin, 4.

[109] Clausewitz et al., 204-205.

[110] Willson, 476.

each player, and models an element of the unknown in combat.[111] Players are able to reduce this friction by keeping track of the casualties sustained by the enemy, conducting reconnaissance of enemy forces, and forcing the enemy player to reveal his forces by engaging in combat. This models the excellent intelligence available to both the French and the British during the campaign. In his letter to Prime Minister William Pitt, Wolfe laments the frequent scouting by French Indians who make it "impossible to execute anything by surprise,"[112] and Wolfe acknowledges later that he has almost perfect intelligence on the disposition of French forces due to British spies and French deserters.[113]

Unit Types and Capabilities

The forces commanded by Montcalm and Wolfe during this campaign were vastly different from each other. This section will examine the overall army composition and description of individual units; discuss the modeling of unit firepower, strength, fatigue, and discipline; and discuss additional unit capabilities such as entrenching, resting, and forced march.

After the capture of Louisbourg on July 27, 1758, British leaders recognized their next objective would be seizing Quebec City during the 1759 campaign season.[114] Prime Minister Pitt instructed British Commander-in-Chief for North America Jeffrey Amherst

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[111] Clausewitz et al., 119-120.

[112] Willson, 470.

[113] Ibid., 475-481.

[114] Anderson, 297.

"to invade Canada either by way of Lakes George and Champlain or by way of Lake Ontario and the upper St. Lawrence River."[115] Additionally, Pitt assigned "James Wolfe to an independent command that would invade Canada from Louisbourg by way of the lower St. Lawrence."[116] British operations depicted below (figure 1).

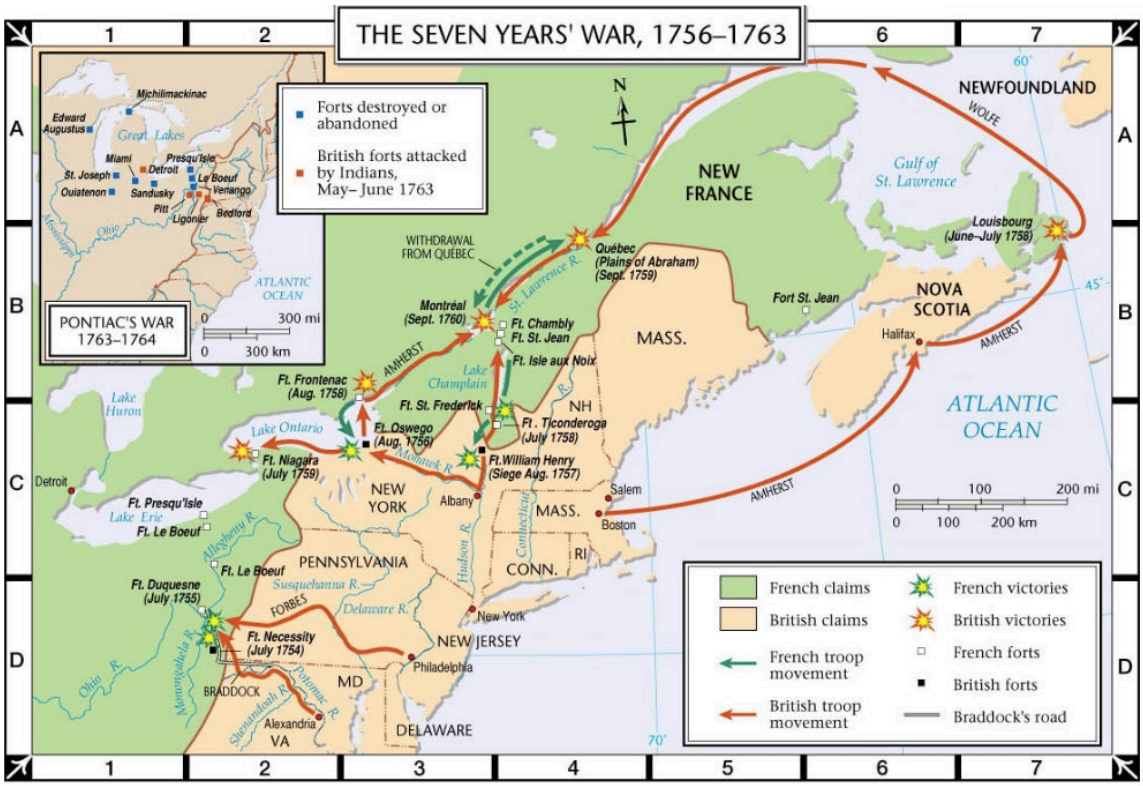

Figure 1. British Campaigns in North American 1756-1763

Source: Seven Years' War, 1756-1763 (London: Pearson Education, 2003).

[115] Anderson, 310.

[116] Ibid.

Wolfe arrived in Louisbourg in May 1759, and began assembling his forces for the expedition.

> At the end of June, Wolfe had about eight thousand six hundred effective soldiers. Of these the ten battalions, commonly mentioned as regiments, supplied six thousand four hundred; detached grenadiers from Louisbourg, three hundred; artillery, three hundred; rangers, four hundred; light infantry, two hundred; marines, one thousand. The complement of the battalions was in some cases seven hundred and in others one thousand; but their actual strength varied from five hundred to eight hundred, except the Highlanders, who mustered eleven hundred, their ranks being more than full.[117]

The British forces for the campaign included mostly regulars, with supporting colonial militia units and rangers.[118] Wolfe also had a substantial naval force under his control commanded by Admiral Saunders.

> Saunders initially had no fewer than 140 vessels under his command – 21 ship of the line varying in size from the 50-gun *Sutherland* to his own *Neptune* (90 guns), five frigates, 14 sloops two bomb vessels, a single cutter and no less than 119 transports of varying shapes and sizes. All of them, moreover, were entirely at Wolfe's disposal for as long as he had occasion for them.[119]

The British forces are modeled in the wargame by eight land units, representing Wolfe's regulars, rangers, grenadiers, and marines, and five naval squadron units representing Saunders' fleet. Because of the focus of the game on the operational level of war, players are unable to move units at less than the battalion level, nor depart from the historical task organization. Additionally, naval squadrons are an amalgamation of Saunders' ships, accounting for both ships of the line and transport ships. This maintains simplicity by releasing the player from the need to maneuver individual ships.

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[117] Parkman, 564.

[118] Knox, 8.

[119] Reid, 26-27.

Facing the British at Quebec was a French army composed mainly of militia and irregular forces. “In the camps along the Beauport shore were about fourteen thousand men, besides Indians . . . Thus the whole number, including Indians, amounted to more than sixteen thousand.”[120] Montcalm’s regular forces amounted to just under 4,000 of these troops,[121] and he had integrated militiamen into these regiments to boost their numbers.[122] Montcalm organized two flying columns, one of 800 men under the Chevalier de Levis,[123] and one of 1,100 men under Louis-Antoine de Bougainville,[124] while “in Quebec itself there was a garrison of between one and two thousand men under the Chevalier de [Ramezay].”[125]

The French navy was completely overmatched by the British navy throughout the campaign. Montcalm could only call on “a floating battery of twelve heavy pieces, a number of gunboats, eight fireships, and several firerafts.”[126] The French navy

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[120] Parkman, 423.

[121] Reid, 17.

[122] Anderson, 347.

[123] W. J. Eccles, “Lévis, François de, Duc de Lévis,” (*Dictionary of Canadian Biography*, vol. 4, University of Toronto/Université Laval, 2003–, accessed April 10, 2019, http://www.biographi.ca/en/bio/levis_francois_de_4E.html).

[124] Reilly, 313.

[125] Parkman, 423.

[126] Ibid.

throughout this operation was not a factor,[127] and the British had naval superiority throughout the campaign.[128]

The French forces are modeled in the wargame by twelve land units, representing Montcalm's regulars, marines, native allies, militia, and cavalry. French naval forces are comprised of one naval squadron, two floating batteries, and two fireships. Two special rules are included for French forces to increase the historical accuracy of the wargame. First, the Ramezay garrison unit for Quebec City is unable to leave the Quebec City area. This reflects the importance of the garrison to defend the city during the campaign, and that the garrison did not depart even to assist in the Battle of the Plains of Abraham.[129] Second, the French player is required to remove one unit from play at the start of turn seven, August 8, 1759. This requirement models the departure of the Chevalier de Levis and 800 men to assist in the French defense of Montreal, after the capture of Fort Niagara by British forces.[130] The ability of the French player to choose a unit to remove, rather than forcing the player to remove Levis' unit, prevents the player from sacrificing the Levis unit in early combat.

All land units have three characteristics: firepower, strength, and fatigue (see figure 3). This system for tracking units was heavily inspired by the wargame *Napoleon*

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[127] Stacey, 38.

[128] Ibid., 59.

[129] Parkman, 476.

[130] Bougainville, 113.

1806.[131] In total, the British player's eight land units have a combined maximum firepower of 12, a combined strength of 37, and a combined maximum fatigue of 45. The French player's twelve land units have a combined maximum firepower of 20, a combined strength of 63, and a combined maximum fatigue of 72 (see figure 4).

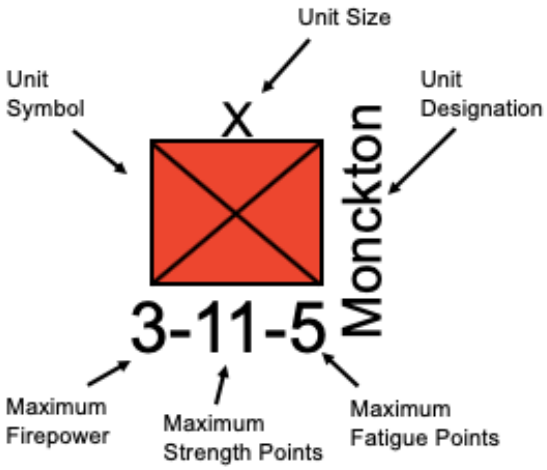

Figure 2. Unit Type and Description

Source: Created by author.

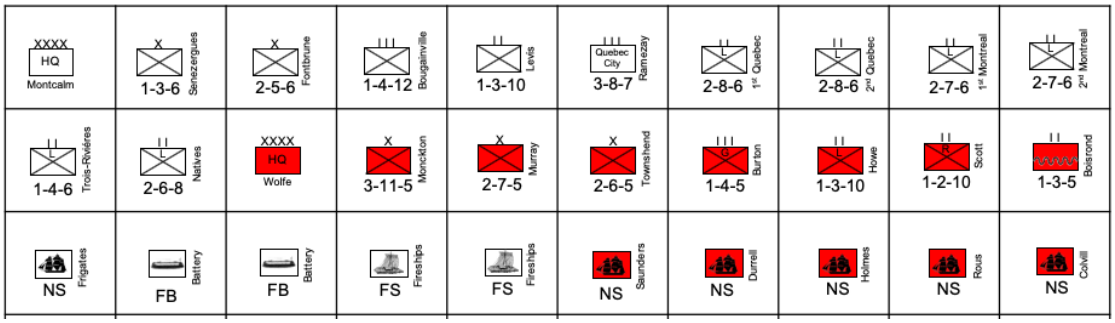

Figure 3. French and British Units

Source: Created by author.

[131] Sauvage.

Firepower represents a unit's effectiveness in combat, and the ability to deal strength and fatigue losses to an opponent. Firepower is determined by both the unit quality and its remaining strength, and is reduced as a unit takes casualties. All units have at least one firepower point. Each point of unit firepower produces one combat die for the attacker to roll on the CRT. The British forces have a firepower advantage due to both the preponderance of experienced regulars in Wolfe's army,[132] the superior discipline of British during engagements in this campaign,[133] and an improved firing doctrine and drill.[134] Firepower is discussed further in the Combat section below.

Strength represents a unit's manpower and combat effectiveness. Strength influences both the number of combat dice the player rolls, and how many casualties the unit can absorb before it is destroyed. A unit loses strength during combat according to the CRT. Combat losses are discussed further in the Combat section below. Strength for each unit was determined by the initial historical number of forces in each unit,[135] with an advantage for the British forces when rounding due to their superior firepower as

[132] Parkman, 434.

[133] Knox, 5.

[134] Brumwell, 247-248.

[135] André Charbonneau, "Québec, ville assiégée." In *Québec, ville militaire (1608-2008)*, edited by Dans Serge Bernier et al., (Montréal: Art Global, 2008), 140-141.

discussed above. Units never recover or gain strength due to neither side receiving reinforcements or reorganizing during the campaign.[136]

Fatigue represents a unit's ability to conduct operations without resting. This accounts for the actual fatigue of the unit, a loss of morale or cohesion, the need to resupply, and recovering wounded soldiers. Players remove fatigue from their units and give them time to recover by resting them for a turn. Units who reach maximum fatigue drastically lose combat effectiveness. Each unit's fatigue counter starts at zero and increases by moving, entrenching, or conducting combat. British light infantry, British rangers, and French flying columns have double the fatigue tolerance of regulars as they historically were able to conduct operations without rest or resupply during this campaign.[137] French regulars have an advantage in fatigue over the British regulars due to Montcalm's integration of resilient Canadian militiamen into all French formations at the beginning of the campaign.[138]

Terrain and Distance

The map for this wargame depicts the operational area for the armies during this campaign. The map is focused along the St. Lawrence River running from the British fortress at Louisbourg to the Deschambault Falls. This corresponds to the operational area for the campaign, as the British began their expedition from Louisbourg, and

[136] Anderson, 310, 345.

[137] Rory M. Cory, "British Light Infantry in North America in the Seven Years War." Monograph, (Vancouver, Canada: Simon Fraser University, 1993), 6-12.

[138] Anderson, 347.

conducted their southernmost operations at Deschambault Falls, unable to land troops farther south due to the impassable falls.[139] This section will describe the Quebec City area and terrain, explain the decision of the author to use an operational area map rather than a hex based map, and discuss the movement capabilities of land and naval units on the map.

Quebec City is located on the northern shore of the St. Lawrence River, perfectly situated on a point to contest all passage up river from the sea. The upper city is naturally defensible due to a steep embankment that continues northeast to the Montmorency Falls.

> Below the town the St. Charles and Montmorency presented substantial obstacles to the movement of attackers overland, while the shoreline offered few promising footholds for assaults from the St. Lawrence itself. Above Quebec [southwest], steep wooded slopes, naked cliffs, and bluffs lined the river's northern shore for miles . . . Montcalm had strongly fortified the riverbank and the hillsides from the St. Charles all the way to the Montmorency Falls.[140]

The area of operations for both armies during this campaign focused on the St. Lawrence River. The British were dependent on the river to allow them to maneuver troops quickly up and down river and bring in supplies.[141] On August 28, 1759, the British discussed marching forces away from the river into the wilderness to attempt to flank the French, but this plan was ultimately rejected due to a greater risk to supply lines and an unwillingness to engage in woodland fighting.[142] The presence of British fleet hydrographers, enabled the British to maneuver their ships in areas the French thought

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[139] Reid, 30.

[140] Anderson, 348.

[141] Stacey, 59.

[142] Willson, 466-467.

impassable, and sail ships up the river, past Quebec City as far south as Deschambault Falls.[143] The French were determined to use the natural defenses of the shoreline bluffs to contest the British landings, and were able to soundly defeat a British attempt to land at Montmorency on July 31, 1759.[144] The map abstractly depicts this terrain and the areas in relation to one another, but in order to focus players on the operational level of war, the map does not depict detailed terrain within each area.

The early versions of this wargame used a hex map system where each hex represented a quarter mile on the ground. This model drew heavily on inspiration from many Avalon Hill games, but especially *1776*.[145] While this map made it easy for players to understand the terrain around Quebec City, it restricted operations to the area immediately around the city. By moving away from a direct map of the ground to an abstract map of the operational area, the wargame removes the player from the tactical level and focuses him on the important operational decisions: securing lines of operation, understanding which areas connect to each other and which do not, and which of these areas are key to winning the campaign.[146]

The distances themselves are of limited use due to the operational level focus and the week-long turn cycle. Each land unit moves one operational area. The wargame makes an exception for light infantry and flying column land units who are able to

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[143] Stacey, 42.

[144] Reid, 32-42.

[145] Reed.

[146] Tom Russel, *Supply Lines of the American Revolution*, (Dearborn, MI: Hollandspiele LLC., 2017).

conduct a forced march of one additional area per turn, for a fatigue penalty. Moving each unit one area has the additional benefit of making the movement rules easy to learn, and speeding up gameplay. Naval units are able to move two areas due to the longer distances covered by ships relative to land units during the campaign.[147] Finally, naval squadrons are able to ferry land units across the St. Lawrence River. This simplifies the mechanic of having land units ride on ships, without sacrificing the British advantage in mobility along the river.

Combat

Combat in the wargame is modeled in two ways: land combat and naval combat. While joint maneuver of land and naval forces is critical for players, the game does not incorporate joint land and naval combat. This section will present the reasons for limiting combat in this wargame, discuss how combat is adjudicated on the CRT, and discuss the probability of outcomes used for combat resolution.

During the 1759 Quebec campaign both combat and casualties were limited due to the style of the operational campaign. Wolfe arrived at Quebec City late in June 1759, and over the next twelve weeks only two large battles were fought, at Montmorency and the Plains of Abraham.[148] Wolfe tried many times to bring the French to open battle, but the French remained fortified behind their entrenchments, refusing the British gambit.[149] Wolfe's ultimate goal was to obtain a "foothold on the north shore of the St. Lawrence

[147] Stacey, 59.

[148] Bougainville, 318-321.

[149] Anderson, 345.

from which he could open a formal siege"[150] of Quebec City. For these reasons, the campaign was one of maneuvering forces and conducting raids rather than multiple large pitched battles. Although the casualties were costly when the armies fought, the death totals were moderate. Due to the limited manpower available in North America, not nearly as many soldiers were engaged in combat during the siege of Quebec as compared to the contemporary battles of the Seven Years War. Of the 1,768 British soldiers engaged at the Plains of Abraham, 598 were wounded and 58 killed; while the French suffered 556 wounded and 44 killed of their initial force of some 2,500 – 3,500 men.[151] This was due both to the inaccuracy of weapons,[152] with the French volley delivered at too great a range to be effective,[153] and the breaking of the French forces after the first British volley, excluding further combat.[154]

To build a CRT and decide on the probability of losses during combat adjudication, the author researched not only the Battle of the Plains of Abraham, but also other battles in the French and Indian War. This list includes battles at: Fort St. Frederic, Fort William Henry, Fort Carillon,[155] Fort Ticonderoga, Louisbourg, Niagara, Crown

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[150] Anderson, 349.

[151] Reid, 72-83.

[152] Conrad S. Kisch, "Tactical and Practical Problems in the French and Indian War." (*American Studies in Scandinavia*, volume 22, 1990), 40.

[153] Brumwell, 249.

[154] Knox, 5-6.

[155] Bellico.

Point, Oswego, and the Braddock Expedition.[156] Unfortunately, most of these contests were either sieges of forts, or ambushes, and did not mirror the casualties of the Plains of Abraham. The researcher therefore modeled the combat adjudication results most heavily using records from the Battle of the Plains of Abraham. Furthermore, the researcher used this battle as the mean for the probability of the combat outcome, and although luck plays a definite role in the combat simulation model, the results of combat will closely mirror this battle as the norm and not an outlying event.[157] For these reasons, units in combat take casualties 33% of the time, but take fatigue 50-66% of the time, with units able to regain fatigue losses.

For land combat, the CRT is based on the firepower mechanism, where each unit receives between one and three 1d6 dice to roll for the effect of their firepower. Both the attacker and the defender roll dice, and each die has an outcome. This is based on the *Napoleon 1806* combat die system,[158] and creates a wider distribution of outcomes than a unified result CRT, such as that used in *Yom Kippur*.[159] The land CRT is identical for both forces, except for a roll of 2 which has no effect for French forces, and causes one unit of fatigue damage by British forces. This models the superior British fire drill and discipline of the campaign, including training soldiers to aim and fire instead of

[156] Anderson.

[157] Sabin, 119.

[158] Sauvage.

[159] Dean Essig and Al Sandrick, *Yom Kippur*, (Homer, IL: The Gamers, 1995).

presenting their weapons to the enemy,[160] the employment of a double line instead of a triple line which led to a more cohesive fire drill,[161] and the discipline of the British troops to hold fire until the French were as close as forty yards from their lines.[162] Melee combat is conducted as part of the die roll, and is not differentiated from ranged fire. Melee combat was very effective for the British, with Wolfe developing a "simple but effective battle tactic – a close quarter volley, followed by a bayonet charge – that British infantrymen would use to sweep all (or almost all) before them for much of the next hundred years."[163] The final land combat modifier is the presence of entrenchments or siegeworks. Entrenchments reduce the attacker's firepower value by one subtracted from the highest die roll, and models the extensive use of abatis and earthworks used by the French in this campaign. These mechanics force the players to fight the historical campaign of action and counteraction maneuver to seek a decisive battle, rather than fighting ahistorical iterative battles of attrition. The CRT is depicted on the table below.

[160] Brumwell, 249.

[161] Ibid., 255.

[162] Reid, 75.

[163] David J. Blackmore, "Destructive and Formidable: British Infantry Firepower, 1642-1765," (Monograph, Nottingham, England: Nottingham Trent University, 2012), 220. Blackmore is quoting from Saul David, *All the King's Men, The British Soldier from the Restoration to Waterloo* (London: Penguin UK, 2012), 188.

Table 3. Land Combat Results Table

Die	French Result	British Result
1	No Effect	No Effect
2	No Effect	+1 Fatigue
3	+1 Fatigue	+1 Fatigue
4	+1 Fatigue	+1 Fatigue
5	-1 Strength	-1 Strength
6	+1 Fatigue & -1 Strength	+1 Fatigue & -1 Strength

Source: Created by author.

Naval combat in the wargame is handled separately from land combat. Engagements between fireships, naval squadrons, and floating batteries are adjudicated on unique CRTs based on each unit's capabilities. All naval combat uses a 1d10 die and favors the British player, reflecting the overwhelming naval superiority of the British during the campaign.[164] Combat encounters are fought sequentially by unit, with each attacking unit engaging each defender in the contested area. British naval squadrons receive a 20% bonus to die roll when fighting French naval squadrons, and have a 70% chance of destroying the French floating batteries. No ship of the line engagements took place during this campaign, therefore this adjudication is based on estimates of naval squadron combat modeled on other naval engagements during 1759, including the Battles of Neuville and Quiberon Bay.[165] The combat odds for attacks on the floating batteries are taken from Wolfe's journal on the effectiveness of the French floating batteries

[164] Parkman, 423.

[165] Anderson, 382-395.

during the campaign.[166] The final naval combat scenario concerns the French tactic of setting rafts afire and driving them into the British squadrons. While there are historical instances of fireships being effective, the superior British seamanship during the 1759 campaign negated such French attacks. The French employed fireships in three instances, with up to "seventy rafts, boats, and schooners"[167] in one attack, but the attacks were ineffective and "the fireships did no other harm than burning alive one of their own captains and six or seven of his sailors who failed to escape in their boats. Some of them ran ashore before reaching the fleet; the others were seized by the intrepid English sailors."[168] Based on these historical facts, fireships in the wargame are automatically destroyed if attacked by the British naval units and are always consumed at the end of an attack. Fireships have only a 30% chance of destroying a British ship, but increase their odds for each additional British squadron present, modeling the limited maneuverability of a fleet packed into tight quarters. While this percentage of success is high in relation to historical performance of fireships during this campaign, the effect of fireships in the wargame accurately models the decision making of both the French and British commanders, and is based on the wider historical accomplishments of fireships in this era.[169] The naval CRT is depicted below.

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[166] Stacey, 58.

[167] Parkman, 437.

[168] Ibid., 429.

[169] James L. Coggeshall, "The Fireship and its Role in the Royal Navy," (Monograph, College Station, TX: Texas A&M University, 1997), 56-58.

Table 4. Naval Combat Results Table

	Attacker v. Defender			
Die	NS v NS	NS v FB	NS v FB	FS v NS
1	AE	AE	DE	AE
2	AE	Ar1	DE	AE
3	AE	Ar1	DE	AE
4	Ar1	DE	DE	AE
5	Ar1	DE	DE	AE
6	Dr1	DE	DE	Dr1
7	Dr1	DE	DE	Dr1
8	DE	DE	DE	DE
9	DE	DE	DE	DE
10	DE	DE	DE	DE

Source: Created by author.

Siege Dynamics

Realizing the importance of Quebec City as both a French base of operations, and an eastern defense for the French colony of Canada, the British began planning to seize Quebec City as early as 1756.[170] After the capture of Louisbourg on July 27, 1758, the St. Lawrence River was accessible for a campaign against Quebec City during the 1759 campaign season.[171] The French plan for the defense of Quebec and the larger territory of New France was hotly debated between Montcalm and the Marquis de Vaudreuil, the Canadian-born Governor General of Canada. Vaudreuil favored a guerilla warfare type of approach, while Montcalm preferred concentrating all available forces at Quebec to

[170] Anderson, 173.

[171] Ibid., 297.

oppose the British in a conventional manner.[172] Montcalm's strategy ultimately prevailed, and his conventional "disposition of his forces baffled the equally conventional Wolfe. Military operations in America so far had consisted either of sieges or raids…but the defenses of Quebec were so nearly seamless that Wolfe could not gain a foothold on the north shore of the St. Lawrence from which he could open a formal siege."[173] Wolfe recognized the strength of the French position, and upon surveying the defenses he wrote to Pitt that "the Admiral and I have examined the town, with the view of a general assault; but after consulting with the chief Engineer, who is well acquainted with the interior parts of it, and after viewing it with the utmost attention, we found that"[174] a siege would be necessary. The map of the area with the French defenses below (see figure 4) was produced by the British cartographer J. F. W. Des Barres, who accompanied the British expedition.

[172] Anderson, 346-347.

[173] Ibid., 349.

[174] Willson, 470.

Figure 4. Map of Quebec City and Surrounding Area in 1759

Source: J. F. W. Des Barres, *A plan of Quebec and environs with its defences*.

Montcalm also recognized the strength of his position, and was determined not to let the British entrench a beachhead up river of the city to cut off Quebec's supply lines. If the link to Montreal and Montcalm's up river supply depots were severed, a successful siege would just be a matter of time. Wolfe was able to isolate Quebec on the morning on September 13, 1759, using a naval demonstration to fix Montcalm's forces in Beauport,[175] and splitting Montcalm from Bougainville's forces[176] up river by landing in force on the Plains of Abraham. The threat of the British digging in and beginning a siege

[175] Parkman, 470.

[176] Ibid., 468.

forced Montcalm to attack.[177] Although many historians fault Montcalm for not waiting at least to unify with Bougainville before attacking,[178]

> Montcalm concluded that he had no choice but to attack. To his chief of artillery he distractedly announced, 'We cannot avoid action; the enemy is entrenching, he already has two pieces of cannon. If we give him time to establish himself, we shall never be able to attack him with the sort of troops we have . . . Is it possible that Bougainville doesn't hear all that noise?'[179]

The timeline for a potential siege in this wargame was modeled after similar sieges that occurred in the Seven Years War. Sieges in the Indian theater of operations provided similar information on the numbers of troops involved, and an expected length of the siege. Sieges in the Indian theater of operations studied by the author were: Calcutta (14 days), Masulipatam (32 days), Fort St David (33 days), Madras (66 days), and Tanjore (lifted after 22 days).[180] The author discounted many of the European Theater sieges due to the massive amounts of men and material involved compared to the North American theater.[181]

The most useful reference to explore what might have occurred at Quebec City is the British siege of the fortress city of Louisbourg in 1758. Not only was this a

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[177] Parkman, 476.

[178] Whitton, 379-380.

[179] Anderson, 357.

[180] Jaques, 280-1052.

[181] Parkman, 286-288.

conventional siege operation, but Wolfe commanded the British forces conducting the landings.[182]

> More than any other siege of the war in America, Louisbourg in 1758 offered the opportunity to operate in strict accordance with . . . the precepts Vauban set down in his essay *On the Attack and Defense of Fortified Places.* Immediately after landing on June 8, the British began to dig their first parallel trenches . . . The digging of parallels and saps went forward relentlessly until, on July 3, batteries had been erected within six hundred yards of the city . . . On the morning of the twenty-sixth . . . with a breaching battery preparing to open fire on the landward wall at close range, [The French] hoisted a flag of truce and asked for terms.[183]

The siege lasted from June 8 until July 26 (48 days), roughly conforming to Vauban's claim that "a properly invested fortress should be able to hold out no longer than forty days if cut off from external aid."[184] It is easy for the historian to imagine this scene taking place at Quebec City, with the British fortifying their position on the Plains of Abraham and beginning an investment of Quebec on September 13, 1759.

In the wargame, a possible British player victory condition, explored in the next section, is to complete siegeworks at Quebec City. After multiple iterations of playtesting incorporating the forty day timeline for surrender of the city, the author settled on declaring a victory for the British if they could establish siegeworks, ceding the point to Vauban that it would only be a matter of time before the city capitulated. The author explored siege mechanics used in three different games, *Caesar: Epic Battle for*

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[182] Anderson, 250.

[183] Ibid., 253-254.

[184] Ibid., 253.

Alesia,[185] *The Siege of Jerusalem,*[186] and *Zulus on the Ramparts*,[187] but these games focused too heavily on the tactical aspect of conducting a siege. Consequently, in this wargame the British player only needs to set the conditions for his units to conduct a siege, rather than actually conducting a siege. Siegeworks are automatically built in two weeks as long as units are entrenching in the Quebec City area and have active lines of operation.

Victory Conditions

To win the wargame, players must fulfill their side's victory conditions. This section will explain how victory conditions work, discuss how probable the outcome of the campaign was, and describe the victory conditions for this wargame. Finally, this section will link these victory conditions to the historical objectives of the two armies.

Victory conditions in wargames are not necessarily about which side wins the game outright, "but more on which side does better relative to the historical outcome of the contest."[188] These conditions drive player decisions because each player will choose courses of action that lead to him accomplishing these victory conditions, and therefore winning the game. Victory conditions in wargames are usually not the same for both

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[185] Robert Bradley, *Caesar: Epic Battle of Alesia*, (Baltimore, MD: The Avalon Hill Game Co., 1976).

[186] Fred Schachter, B. Sinigaglio, and Steve Weiss. *The Siege of Jerusalem (Third Edition)*, (Baltimore, MD: The Avalon Hill Game Co., 1989).

[187] Joseph Miranda, *Zulus on the Ramparts*, (Irvine, CA: Victory Point Games, 2009).

[188] Sabin, 123-124.

armies, as they are based on the historical objectives of the armies. To win this wargame, the British player must either control ten victory points (VPs), control either the Beauport or the Plains of Abraham areas and have two siegeworks established in the Quebec City area, or eliminate all French units. The French player wins the game by preventing British victory conditions or by eliminating all British units. The use of victory points dispersed among key terrain on the map, and the ability of the British to conduct a siege, encourages the French player to disperse his forces along the northern shore of the St. Lawrence River and fight in a manner similar to Montcalm's blueprint, rather than massing all of his forces in Quebec City. Additionally, these victory conditions give each side a real probability of winning the game, as demonstrated during playtesting.

British victory conditions mirror Wolfe's strategy for taking the city. During playtesting, players consistently established a base of operations at Montmorency Falls or the Isle de Orleans,[189] and then got bogged down in assaulting the French forces in the Montmorency area. Players then, as Wolfe did, attempt to move up the river above the city, and outmaneuver the French.[190] Instead of using this approach, the British player's strategy should focus on stringing out the French units through maneuver and massing British units to attack weak points. The British player will ideally force a decisive battle at the Plains of Abraham, Beauport, or Quebec City. The British player should focus on speed in his assault, ensuring he has enough time to accomplish his victory conditions by the end of the game on turn 12. This includes aggressively pursuing combat, and

[189] Stacey, 51-53.

[190] Reid, 30.

destroying the French navy to allow for maximum maneuverability on the map. In playtesting, the British player has consistently won when he is able to seize control of the St. Lawrence River early in the wargame, and use naval support to outmaneuver the French to mass his forces and conduct a decisive battle against only part of the French army. This models exactly the British plan on the Plains of Abraham as described earlier,[191] and the use of the British navy to dominate the St. Lawrence River.[192]

French victory conditions are modeled on Montcalm's design for the campaign. Montcalm "resolved to post his whole force on the St. Lawrence below the city, with his right resting on the St. Charles, and his left on the Montmorency,"[193] and the allocation of victory points at Beauport and Montmorency supports this historical deployment. Victory points are allocated according to the table below.

Table 5. Victory Point Table

Area	Points
Quebec City	10
Plains of Abraham	5
Beauport	5
Sainte Foy	3
Montmorency	2
Saint Augustin	2
Deschambault	1

Source: Created by author.

[191] Parkman, 468.

[192] Stacey, 59.

[193] Parkman, 422.

The French player's strategy should focus on maintaining flexibility to shift his units to meet the British at the point of attack. The French player should use his naval units to delay the British units as far from Quebec City as possible with naval units, and while he must avoid committing his land units piecemeal; there is value in forcing the British to fight for every land area. While it is possible for the French player to transfer units south of the St. Lawrence River to Point Levis or the Isle de Orleans, the French player should be wary of committing units he may not be able to retrograde due to his limited naval squadrons. In playtesting, the French player has consistently won by delaying the British until winter. This includes bogging down British units at Montmorency, and maintaining forces along interior lines to quickly counter British maneuvers.

While the British eventually won the campaign, as late as September the French believed they would emerge victorious. In fact, when Wolfe abandoned his camp at Montmorency on September 3, Vaudreuil wrote

> The breaking up of the camp at Montmorenci and the abandonment of the intrenchments there, the reimbarkation on board the vessels above Quebec of the troops who had encamped on the south bank . . . these and the lateness of the season all combined to announce the speedy departure of the fleet, several vessels of which had even sailed down the river already . . . Everything proves that the grand design of the English has failed.[194]

The belief that both sides can win is borne out in the wargame through thirteen iterations of playtesting, where the British player has won the game seven times, or 53.8% of the time. While it is impossible to prove counterfactual history,[195] the

[194] Parkman, 465-466.

[195] Sabin, 55.

researcher believes this probability of British victory is appropriate for this wargame for two reasons. First, the understanding by the players that each side has a relatively even chance to win replicates the understanding of the campaign by the army commanders at the time. Despite an episode of depression and a melancholy letter to Pitt after his failure at Montmorency on July 31,[196] Wolfe ultimately believed he would be successful in the campaign.[197] Montcalm, throughout his deliberations with Vaudreuil, believed his plan for defense was sound until his arrival on the Plains of Abraham on September 13.[198] Second, while ultimately victorious, there were many aspects of luck that aided the British in their successful landing at the Plains of Abraham. These include: the lead officer in the British attack speaking French and deceiving the posted sentries;[199] the French expecting a supply convoy and therefore not raising an alarm at the sight of ships landing;[200] and the misunderstanding of orders that ended up positioning the French Regiment of Guienne at Beauport instead of covering the heights.[201] Author C. P. Stacey goes further in condemning Wolfe's landing, concluding that "the fact that Wolfe succeeded should not blind us to the weakness of his conception, for he owed his triumph

[196] Willson, 454-460.

[197] Ibid., 463.

[198] Anderson, 359.

[199] Parkman, 472-473.

[200] Whitton, 366.

[201] Stacey, 134.

largely to luck, and a plan which requires so much luck to succeed is not a good plan."[202] For all of these reasons, the victory conditions in the wargame effectively model both actual history, and a logical conjecture of counterfactual history; and by driving players towards historical strategies the victory conditions help players understand the campaign.

Summary

This chapter explained the historical factors that influenced the decisions made by the commanders during this campaign, and how the wargame models each of these factors. This chapter described the role of time, sequence of play and decision cycle, unit types and capabilities, terrain and distance, combat, siege dynamics, and victory conditions. It demonstrated how the wargame incorporates friction, chance, historical results, and the potential for counterfactual history in the wargame. This chapter additionally provided a detailed answer to the question: can the 1759 Quebec Campaign be effectively represented to understand the historical challenges of leadership at the operational level in a competitive wargame? The following chapter will provide a summary of this project, and a way forward for potential future research.

[202] Ibid., 175. Stacey further dissects the decisions of Montcalm and Wolfe throughout the campaign in his brilliant closing chapter on Generalship.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

Introduction

This paper has provided the rationale for the decision to use a wargame to teach history, and addressed the research question: can the 1759 Quebec Campaign be effectively represented to demonstrate the historical challenges of leadership at the operational level in a competitive wargame? By examining the critical historical facts that support the modeling decisions, and discussing how the wargame modeled these historical elements, this project explained the need to address the lack of an educational historical wargame which enables players to understand and appreciate the operational level challenges experienced by the army commanders during the 1759 Quebec Campaign. This chapter will describe the observations made by the researcher during this project, and recommend further possible research on this topic.

Observations

Many observations were provided from playtesters. This feedback was vital for refining the wargame into its present form, and modifying game mechanics for a better overall player experience. The playtests took the form mainly of guided playthroughs, with the researcher providing insight into the rules and his modeling process in response to player questions. The playtesters were generous enough to try different strategies during multiple playthroughs for the benefit of the researcher, and testing incorporated a

mix of novice and fairly expert players.[203] While unable to incorporate all of these suggestions, the following section will lay out recommendations for further research on the topic and refinement of the wargame.

Recommendations for Future Research

Improvements to the rules and overall game design are always possible, however the researcher believes he has achieved a historically accurate and playable wargame, that answers the proposed research question. Further refinement of the wargame would explore six additional topics.

First, the researcher would create an optional rules section to allow for a graduated playing level of the wargame. There are several specific rules, such as rear guard stands, forced march, and refusing combat which would be beneficial to include in an optional section for advanced players, in order not to overwhelm novice players with nuanced rules for limited specific situations. Optional rules for advanced campaigns was expertly handled in the rules for the game *1776*,[204] and this rulebook remains the researcher's primary source for rule formatting.

Second, early versions of this wargame included a tactical aspect of the map which not only linked the operational and tactical levels of war, but also allowed players to maneuver smaller sized units and understand the tactical limitations of these forces. The tactical map additionally involved decisions on the range of weapons, marching

[203] Notably, MAJ David Jackson, MAJ Matt Litvinas, and Maj Bryan Fanick each playtested four iterations of the wargame and provided valuable insight into the player experience.

[204] Reed, 21-23.

times, and use of terrain. A future version of the game would ideally include the ability for advanced players to play on a tactical map as well.

Third, by linking the tactical and operational levels of war, the wargame could be further refined to incorporate additional players as brigade commanders. In this case, inspired by the wargame *Kriegsspiel*,[205] army commanders would play on the operational map and issue orders to brigade commanders fighting on the tactical map. This could even include the ability for army commanders to task organize their forces, unlike the forced historical task organization that currently exists. Additional research into the historical character of the campaign would focus on developing the tensions between the leaders in both armies. This would include the friction between Montcalm, Vaudreuil, Levis, and Ramezay on the French side, and Wolfe and his Brigadiers Townshend, Monckton, and Murray on the British side.

Fourth, the wargame would increase the importance and ability of players to conduct naval operations. While naval operations support land operations in the wargame, they are not the focus. Additionally, land combat between forces does not account for the need to disembark troops when conducting amphibious operations. This is important because the British made great strides in amphibious operations during the Seven Years War,[206] and the British landings at Montmorency on July 31, 1759, were severely impacted by their inability to maneuver landing boats into the shallows to

[205] Georg Leopold von Reiswitz and Georg Heinrich Rudolf von Reiswitz, *Kriegsspiel*, (translated by William E. Leeson. London: Two Fat Lardies, 1983).

[206] Brumwell, 236-245.

disembark and reembark troops.[207] Additionally, tides and weather played a part in naval operations on the St. Lawrence River, as part of the British deception on September 12 involved withdrawing ships as normal with the outgoing tide.[208] As with the addition of a tactical map, these detailed naval operations would detract from the ability of players to complete the game in ninety-minutes and deter beginners from learning the game. They would therefore be included in an optional rules section.

Fifth, although the researcher explored the option of changing the gameboard to a map to increase historical understanding, he was unable to complete this project. While the players still understood the operational aspects of the campaign as the wargame exists, an accurate map depicting the true locations of areas would further immerse the player in the historical elements of the campaign.

Sixth, the researcher conducted no blind playtesting, in which players attempt to figure out the game with only the rules provided and no instruction from the researcher. Including this step in future playtesting would allow for further refinement of the rules to ensure player understanding.

Conclusion

This paper provided the answer to the research question: can the 1759 Quebec Campaign be effectively represented to demonstrate the historical challenges of leadership at the operational level in a competitive wargame? Additionally, this paper provided detailed descriptions to four secondary questions: explaining the decisions made

[207] Stacey, 75-78.

[208] Williams, 177.

by Wolfe and Montcalm during this campaign, deciding what decisions the players should not have to deal with during the wargame, ensuring players make decisions consistent with historical realities, but without the benefit of hindsight, and adjudicating and modeling factors outside of the players' control. This project used three theoretical frameworks: the operational level of war, the commanders' decision making process, and wargaming methodology, and explored this topic through three research methodologies: document analysis, historical method, and wargame design.

The researcher hopes this project achieved three goals. First, that by playing this wargame, players will learn about the history of the 1759 Quebec Campaign. Second, that players will understand the commanders' decision making process against a thinking enemy, and gain unique insights into replicating decision-making in a complex context.[209] Finally, that it will inspire the reader to create his own wargame, either to understand a historical event, or to examine a likely future conflict in a simulated environment.[210]

[209] *Wargaming Handbook: Development, Concepts, and Doctrine Centre*, 11.

[210] Rubel, 109.

APPENDIX A

UNITS AND GAME PIECES

Game Pieces and Parts

British Game Pieces	
Piece	**Number**
British Sequence of Play Chart	1
British Order of Battle Chart	1
British Naval Combat and Unit Type Chart	1
British Units [Red Blocks]	13
British VPs / Strength [Red Cubes]	17
British Fatigue [Blue Cubes]	7
British Entrenchments [Green Cubes]	8
British Siegeworks [Brown Cubes]	8
British Land Firepower [Red1d6 dice]	5
British Naval Firepower [Red 1d10 dice]	1
Turn Marker [Brown Block]	1

French Game Pieces	
Piece	**Number**
French Sequence of Play Chart	1
French Order of Battle Chart	1
French Naval Combat and Unit Type Chart	1
French Units [Black Blocks]	17
French VPs / Strength [Black Cubes]	21
French Fatigue [Orange Cubes]	10
French Entrenchments [Green Cubes]	12
French Land Firepower [Black 1d6 dice]	10
French Naval Firepower [Black 1d10 dice]	1

Additional Game Parts
Map Board
Turn Schedule (on Map-Board)
Order of Battle Privacy Screen
Game Box

Source: Created by author.

APPENDIX B

RULES AND DESIGNER NOTES

Quebec 1759: A Game of the French and Indian War

Rules and Designers Notes

Table of Contents

1. Introduction to the Rules

1.1 ***A Quick Description of Play*** – This game models the 1759 campaign by the British to seize Quebec City from the French, as part of the French and Indian War. In this game, players take on the roles of either British Major General James Wolfe or French Lieutenant General Louis-Joseph de Montcalm-Grozon. Players command their armies at the operational level, contesting the St. Lawrence River region and Quebec City.

1.2 ***Components*** – The game contains an operational level map with land and river areas representing the Quebec City region of the St. Lawrence River as it was in 1759. Units are represented by red and black blocks. Colored cubes are used to keep track of units' current fatigue, current strength, siegeworks, entrenchments, and victory points. The game also contains multiple 1d6 and 1d10 dice used to resolve various game mechanics. Finally, charts are provided to each player for quick reference of important rules.

1.3 ***Map Areas*** – The map is made up of land areas and river areas. Land units occupy land areas and move along land and river lines of operations. Naval units occupy river areas and move along naval lines of operations. Land areas fall into one of five categories: friendly unoccupied, enemy unoccupied, friendly occupied, enemy occupied, or contested. Unoccupied areas have no units in them, and are considered friendly if the active player controls the victory points in that area (Louisbourg is always considered British friendly whether occupied or unoccupied). Occupied

areas have only one player's units in them, and are considered friendly if the active player controls these units. Contested areas have both players' units in them.

1.4 ***Unit Types***

1.4.1. *British Units* – The British player has eight land units with a combined strength of 37, a combined maximum fatigue of 45, and a maximum of 12 combat dice. The British player has five naval squadron units.

1.4.2. *French Units* – The French player has 12 land units with a combined strength of 63, a combined maximum fatigue of 72, and a maximum of 20 combat dice. The French player has five naval units: one naval squadron, two floating batteries, and two fireships.

1.4.3. *Hidden Mode and Revealed Mode* – The default mode for units on the map is hidden mode, with the unit block standing on end and the unit information visible only to the friendly player. Units are moved to revealed mode by lying them down to show their characteristics and designation to both players. Units are put in revealed mode during the enemy player's recon phase (as further described in section 2.2.1.), or if involved in combat during the naval or land combat phases. Units are returned to hidden mode at the end of the action phase in which they were revealed.

1.4.4. *Fatigue* – Fatigue represents a unit's ability to conduct operations without resting and refitting. Players must ensure units are given time to recover and remove fatigue during the campaign. Each unit's fatigue counter starts at zero and increases or decreases based on unit action. Fatigue is further discussed in section 2.3.1.

1.4.5. *Strength* – Strength represents a unit's manpower and combat effectiveness. Strength influences both the number of combat dice the player rolls, and how many casualties the unit can absorb before it is destroyed. A unit loses strength during combat in accordance with the combat results table (CRT) as further described in section 2.4.3. Units never recover or gain strength.

1.4.6. *Firepower* – Firepower represents a unit's effectiveness in combat, and the ability to deal strength and fatigue losses to an opponent. Firepower is determined by both the unit quality and its remaining strength. Firepower is reduced as a unit takes casualties. Each point of unit firepower produces one combat die.

1.4.7. *Army Commanders* – Each army has a commander unit, Montcalm for the French and Wolfe for the British. The Montcalm and Wolfe units move as normal units on the map. Each commander unit produces one combat die when participating in combat. Commander units do not gain fatigue and are not included in even distribution of removal of unit strength. Army commanders are further discussed in section 2.3.2.3.

1.4.8. *Naval Units* – Naval Squadron, Floating Battery, and Fireship units are naval units that occupy river areas, and move on naval lines of operation on the map. Full naval rules are further described in section 2.6.

2. Rules of the Game

2.1. ***Sequence of Play*** – The game begins with the initial placement of troops by the British and French player during turn zero. Gameplay follows from turn one to turn twelve, with the game ending at the conclusion of turn twelve. Each turn is broken down into the British and the French player phases. Each player phase is further broken down into four action phases: the recon phase, the naval phase, the land movement phase, and the land combat phase. The British player moves first, followed by the French player. When each player has completed his player phases, the turn is complete.

2.2. ***Action Phases***

2.2.1. *Recon Phase* - Reconnaissance is a special action that does not involve any friendly units. The player chooses any one land area or river area, and the enemy player reveals all of his units in that area, allowing the friendly player to inspect the units until the end of the friendly player's recon phase. Once the friendly player's recon phase is complete, the enemy player returns his units to hidden mode. The enemy player does not reveal the current unit strength or fatigue, which remain hidden behind the enemy player's screen. Players may only conduct one recon action per player phase, and may only conduct recon of one land area OR one river area. There is no restriction on which area the player may choose to inspect, and there is no limit to the amount of times (consecutive or non-consecutive) any one land area or river area may be reconnoitered over the course of the game.

2.2.2. *Naval Phase* – Naval movement and combat takes place during this phase, and is fully explained in section 2.6. Naval units conduct movement and then combat, and complete all moves and combat before land unit actions.

2.2.3. *Land Movement Phase* – During the player's movement phase, the player may move, entrench, or rest each of his units.

2.2.3.1. *Moving a Unit* - To move a unit, the player repositions the unit in hidden mode from one land area to an adjacent land area. There is no maximum or minimum number of units the player must move during his movement phase, as long as each unit moves only once per turn, and the unit does not either entrench or rest in that same turn.

2.2.3.1.1. Units gain +1 fatigue for each move action.

2.2.3.1.2. A unit may not move from a contested land area to an enemy occupied or enemy unoccupied area.

2.2.3.1.3. There must be an established river line of operation if moving by river (explained further in section 2.6.2).

2.2.3.1.4. French units may not move into the British only land area of Louisbourg.

2.2.3.1.5. All friendly unit moves are considered to happen simultaneously, and players cannot sequence their friendly unit moves within a land movement phase.

2.2.3.2. *Forced March* - British light units (Howe's Light Infantry and Scott's Rangers), and French flying columns (Levis' Flying Column and Bougainville's Flying Column) may conduct a forced march and move one additional land area during their land movement phase.

2.2.3.2.1. Units receive an additional +2 fatigue when conducting a forced march.

2.2.3.2.2. If the unit is unable to gain an additional +2 fatigue, the unit may not conduct a forced march.

2.2.3.2.3. Although they may only perform this action once per move phase, there is no limit to the amount of times in the game the unit may conduct a forced march.

2.2.3.2.4. Units may not conduct a forced march along river lines of operation.

2.2.3.2.5. All normal movement rules apply as described above in section 2.2.3.1.

2.2.3.3. *Entrenching a Unit* - Units that do not move or rest may entrench.

2.2.3.3.1. Units that are entrenched lose their entrenchments if they move or attack (units that defend do not lose entrenchments).

2.2.3.3.2. Units that rest do not lose their entrenchments.

2.2.3.3.3. French units that move into the French occupied Quebec City area automatically entrench, without waiting a turn or gaining any fatigue.

2.2.3.3.4. Units that are entrenched and attack from Quebec City do not lose their entrenchments, but get no die modifier during their attack.
2.2.3.3.5. Units are marked as entrenched by adding a green block on top of the unit.
2.2.3.3.6. Units that entrench gain +1 fatigue.
2.2.3.3.7. Naval units may not entrench.
2.2.3.3.8. Commander units do not receive any entrenchment bonuses, but players may place a green block on them at any time for deception.
2.2.3.3.9. Units that are entrenched receive a bonus in combat as further described in section 2.4.6.

2.2.3.4. *Resting a Unit* – Units that do not move or entrench may rest.
2.2.3.4.1. Units that rest in a friendly occupied land area remove all of their accumulated fatigue.
2.2.3.4.2. Units that rest in a contested land area remove half of their accumulated fatigue. Fatigue recovered is rounded up, or advantageous to the resting unit. Thus, a unit with five fatigue that rests in a contested area has its fatigue reduced to 2.
2.2.3.4.3. Fatigue is further discussed in section 2.3.1.
2.2.3.4.4. Units that rest during the land movement phase may not attack during the land combat phase, but may still defend in the land combat phase of the next player's phase.

2.2.4. *Land Combat Phase* - A player may conduct an attack in any contested land area once his movement phase is complete.
2.2.4.1. Units participating in combat gain +1 fatigue.
2.2.4.2. Combat is conducted as further described in section 2.4.

2.3. ***Additional Unit Mechanics***

2.3.1. Unit Fatigue

2.3.1.1. *Gaining Fatigue* - Units gain fatigue by performing actions during the land movement and land combat phases.
2.3.1.1.1. Units that entrench or move gain +1 fatigue.
2.3.1.1.2. Units that enter in combat gain +1 fatigue whether they are the attacker or the defender.
2.3.1.1.3. Units may refuse combat and do not gain any fatigue as described further in section 2.4.2.
2.3.1.1.4. Units gain additional fatigue during combat resolution as further discussed in section 2.4.3.
2.3.1.1.5. Units conducting a forced march gain an additional +2 fatigue. As further discussed in section 2.2.3.2.
2.3.1.1.6. Naval units, Army Commanders, and the Ramezay unit do not gain fatigue.

2.3.1.2. *Removing Fatigue* – Units remove all of their fatigue by resting during their land movement phase.
2.3.1.2.1. Units that rest in a friendly occupied land area have their fatigue reduced to 0.
2.3.1.2.2. Units that rest in a contested land area remove half of their accumulated fatigue. Fatigue recovered is rounded up, or advantageous to the resting unit. Thus, a unit with five fatigue that rests in a contested area has its fatigue reduced to 2.
2.3.1.2.3. Units that rest during the land movement phase may not attack during the land combat phase, but may still defend in the land combat phase of the next player's phase.

2.3.1.3. *Reaching Maximum Fatigue*

2.3.1.3.1. Units that have accumulated their maximum number of fatigue:

(1) Immediately lose half of their remaining (not maximum) strength
(2) Must rest during their next land movement phase
(3) May not attack during their land combat phase
(4) May not refuse defensive combat
(5) Do not produce dice for defensive combat
(6) Lose strength in place of gaining fatigue for CRT resolution.

2.3.1.3.2. If the unit is forced to both gain fatigue and lose strength resolution in the same turn, all of the fatigue/strength resolution is assessed first before losing strength for having maximum fatigue.

2.3.1.3.3. Units who have only one strength point remaining and reach max fatigue are eliminated.

2.3.1.3.4. Units who reach max fatigue during a decisive battle may not attack in further iterations of that decisive battle. All other rules apply.

2.3.2. Special Unit Rules and Capabilities

2.3.2.1. *Ramezay Unit* – The Ramezay French unit begins the game in the Quebec City area.

2.3.2.1.1. The Ramezay unit represents the soldiers defending the Quebec City fortifications.

2.3.2.1.2. The Ramezay unit may not move to any other area during the game.

2.3.2.1.3. The Ramezay unit does not gain fatigue for movement or entrenching, only during combat resolution.

2.3.2.2. *Departure of French Units (Turn 7)*

2.3.2.2.1. This unit is removed due to the historical necessity of defending the French capital of Montreal from British attacks.

2.3.2.2.2. At the beginning of the French player phase on turn seven, the French player must remove at least one land unit from the game with a combined remaining unit strength of three.

2.3.2.2.3. The French player may not remove the Montcalm or Ramezay unit from the game.

2.3.2.2.4. The French player may not remove units from the Point Levis or the Isle de Orleans areas unless they have an established river line of operation at the start of the French player phase on turn seven.

2.3.2.3. *Army Commanders*

2.3.2.3.1. Army Commanders that participate in combat produce one combat die.

2.3.2.3.2. Players that lose -1 to -3 total combined unit strength in combat, roll a 1d10 with a one resulting in commander elimination.

2.3.2.3.3. Players that lose -4 or more combined unit strength in combat, roll a 1d6 with a one resulting in commander elimination.

2.3.2.3.4. Players may use their commander to force a decisive battle as described in section 2.4.5.

2.3.2.3.5. Players fighting a decisive battle always roll a 1d6, regardless of strength lost by their units.

2.3.2.3.6. Players that lose all of the strength of engaged units automatically lose their commander (if the commander was also engaged).

2.3.2.3.7. Army Commander units that conduct combat without any additional friendly units are automatically eliminated.

2.3.2.3.8. Commanders who are eliminated are immediately removed from the map.

2.4. ***Combat*** – Players conduct combat during the land combat phase as discussed in section 2.2.4.

2.4.1. How to Conduct Land Combat

2.4.1.1. At the beginning of the current player's land combat phase, the player declares which units in contested land areas are going to attack.

2.4.1.2. The player does not need to attack with all units in a contested area, but produces no dice or strength or fatigue resolution for units not participating in combat.

2.4.1.3. The defending player determines which units he will commit to combat, and may refuse combat in accordance with section 2.4.2.

2.4.1.4. Players move the units conducting combat into revealed mode, and if there are multiple battles being fought, the attacking player chooses the order of contested land area combat resolution.

2.4.1.5. Players roll one, two, or three 1d6 combat dice for each unit, according to the order of battle chart and current strength of the units engaged.

2.4.1.6. Combat is conducted as one large dice roll, and may not be split between individual units in the same contested land area.

2.4.1.7. Combat resolution, modifiers, and special scenarios are covered in the sections below.

2.4.2. Refusing Land Combat

2.4.2.1. The attacking player does not need to attack with all units in one contested area, but produces no combat dice and suffers no strength or fatigue resolution for units not participating in combat.

2.4.2.2. The defending player must defend with at least one unit, but may refuse combat with any additional units.

2.4.2.3. Defending units not participating in combat produce no combat dice and do not suffer strength/fatigue losses during combat resolution.

2.4.2.4. When the defending player refuses combat with units, he then has two options:

(1) The defending player may withdraw all units not participating in combat from the contested land area to any connected friendly land area, as long as one unit remains in the contested land area to defend against the attack or

(2) The defending player may choose to leave all units refusing combat in the contested land area.

a. In this case, the defending unit(s) take all of the combat resolution (splitting it evenly among all units engaged in combat, but not units that refused combat).

b. If the defending unit(s) are unable to take all the assessed fatigue, they take those losses from unit strength (on a 1 for 1 basis) and receive additional penalties for having maximum fatigue as further discussed in section 2.3.1.3.

c. If the defending unit is unable to take any more strength losses, the defending player's units remaining in the contested land area, who initially refused combat, are forced to retreat to an adjacent friendly land area and gain +1 to fatigue (utilizing a natural line of retreat if possible towards the area the unit came from, or back towards the bulk of his own forces).

d. If these units are unable to retreat to a friendly land area (they may not retreat to a contested land area), each unit loses -1 strength.

2.4.2.5. British units entrenched or in siegeworks in the Quebec City area may not refuse combat.

2.4.3. Resolving Land Combat (losing strength, gaining fatigue, and retreating)

2.4.3.1. After committing units to combat and rolling the allotted combat dice for each unit, players consult the Combat Results Table (CRT) on their player chart to determine effects of the combat.

2.4.3.2. Players roll dice simultaneously and apply the results simultaneously.

2.4.3.3. Die rolls either cause No Effect (NE), or cause units to gain fatigue, and/or lose strength.

2.4.3.4. Units are unable to ever regain or recover strength and are removed from the game if they have no remaining strength.

2.4.3.5. Units may recover fatigue by resting during the movement phase as discussed in section 2.2.3.4.

2.4.3.6. Units that are unable to take all the assessed fatigue, take those losses as strength (on a 1 for 1 basis), and receive additional penalties for having maximum fatigue as further discussed in section 2.3.1.3.

2.4.3.7. **Players losing strength and gaining fatigue must apply the results as evenly as possible across all units engaged in combat.**

2.4.3.8. If a player loses a combined seven or more strength during one combat die roll, all of his units are forced to retreat to an adjacent friendly land area and gain +1 fatigue (utilizing a natural line of retreat if possible towards the area the unit came from, or back towards the bulk of his own forces). If units are unable to retreat to a friendly land area (they may not retreat to a contested land area), each unit loses -1 strength. This rule does not apply to the Quebec City area or decisive battle scenarios.

2.4.4. Rear Guard Stand – Players may choose to have one unit take -1 strength instead of +2 fatigue one time during each land combat phase.

2.4.5. Decisive Battle

2.4.5.1. Players may force a decisive battle in the following conditions:

2.4.5.1.1. If they attack with their army commander present, and the attack occurs in the Plains of Abraham, Beauport, or Quebec City areas during any turn.

2.4.5.1.2. If they attack with their army commander present, in any area, after turn eleven.

2.4.5.1.3. If their army commander has been eliminated, in any one area per player phase, after turn eleven.

2.4.5.2. At the end of his land combat phase, the player wishing to force a decisive battle states that he wishes to do so.

2.4.5.3. The player still rolls a die for commander death according to land combat phase rules in section 2.3.2.3., and may only conduct decisive battle in accordance with section 2.4.5.1.3. if this initial die roll eliminates his commander.

2.4.5.4. Players then conduct an additional land combat phase only in the specified land area, repeating this scenario as long as desired by the attacking player.

2.4.5.5. Defending units that do not have their army commander present are forced to accept battle, and may not refuse battle with any units, or retreat any units to another land area.

2.4.5.6. Defending units with their army commander present, may retreat to an adjacent friendly land area gaining +1 fatigue for all units.

2.4.5.7. Defending units who retreat, do not need to leave a unit behind in the contested land area to defend.

2.4.5.8. Defending units may not retreat to a contested area or refuse to accept additional combat if they remain in the decisive battle land area.
2.4.5.9. Players fighting a decisive battle always roll a 1d6 to determine army commander casualties, regardless of strength lost by his units.
2.4.5.10. For every additional round of the land combat phase initiated by the attacker, the risk of army commander casualty is increased by one number on the die roll, regardless of the strength casualties inflicted. For example, if the player conducts two additional land combat phases his commander will be killed on a roll of 3 or lower on a 1d6 die. This die is rolled at the end of the decisive battle, not after each iteration.
2.4.5.11. Players may force decisive battle in one player phase up to five times (six attacks total including the initial attack). In this case, the army commander is automatically eliminated after the sixth attack.
2.4.5.12. Defending commanders increase their odds of elimination in the same manner as the attacking commander, but have the option not to produce a die for the commander and not increase the commander's odds of elimination.
2.4.5.13. The defending player may also withdraw his units when his commander is present after any round of the land combat phase to a friendly controlled area for +1 fatigue cost to each unit.
2.4.5.14. There is no limit to how many times either player may force decisive battle in a game, and the increased risk to commanders resets at the end of the current player phase to the default rules described in section 2.3.2.3.

2.4.6. Entrenchment and Siegeworks Modifiers
2.4.6.1. Units defending from entrenchments or siegeworks receive -1 to the highest attacker die roll.
2.4.6.2. Units defending from entrenchments or siegeworks receive -1 to the number of dice for each unit entrenched. For example, if the attacker rolls five dice and the defender has four units entrenched, the attacker receives -1 to the highest four of his five dice.
2.4.6.3. If the defender has more units entrenched than the attacker has dice, then the attacker receives a -1 from all of his dice rolls with no further penalty.
2.4.6.4. Defending units participating in combat that are not entrenched receive the first combat resolutions from all combat when applying fatigue/strength resolution evenly.

2.4.7. Naval Combat – Naval combat is conducted during the naval phase, and is covered in naval operations further in section 2.6.3.

2.5 ***Conducting a Siege*** – The British player may conduct a siege in the Quebec City area.
2.5.1. To build siegeworks, the player begins by entrenching any unit in the Quebec City area during the unit's land movement phase and placing a green cube on top of the unit (+1 fatigue).
2.5.2. The unit must then entrench for a second land movement phase to complete the siegeworks (+1 fatigue).
2.5.3. After completing the siegeworks, the unit is marked on top with a brown cube (with the green cube remaining in place).
2.5.4. Units do not have to entrench and construct siegeworks on two consecutive turns, for example a unit may construct entrenchments and then rest before construct siegeworks, taking three total turns.
2.5.5. The British player may have units construct siegeworks concurrently.

2.5.6. While there is no maximum to the number of siegeworks the British player may construct, he only needs to construct two siegeworks to invest Quebec City fully and complete the second part of victory conditions in accordance with section 2.8.1.
2.5.7. French units are unable to move out of the Quebec City area if British units have constructed two siegeworks.
2.5.8. British units entrenched or in siegeworks in the Quebec City area may not refuse combat.
2.5.9. British units that attack from siegeworks lose both the siegeworks and the entrenchments.

2.6. ***Naval Movement and Combat*** – Naval units are placed in river areas, move along naval lines of operation, and conduct combat in river areas. River areas separating land areas are referred to as river lines of operation.

2.6.1. *Naval Movement*
2.6.1.1. Naval units may move between connected river areas along naval lines of operation at the rate of two river areas per naval phase.
2.6.1.2. Units may not bypass river areas and must stop and engage in naval combat with all enemy naval units present.
2.6.1.3. Units may enter a river area regardless of the presence or lack of other units, and there is no limit to the number of naval units in one river area.
2.6.1.4. Naval units may also pass through friendly naval units with no penalty.
2.6.1.5. Naval units must engage enemy units present in their river area and do not have the option to refuse combat.

2.6.2. *Transporting Land Units*
2.6.2.1. Naval squadrons may transport up to two land units during the player phase.
2.6.2.2. Fireships and Floating Batteries may never transport units.
2.6.2.3. Land units may only move from one land area to another linked by a river line of operation if the river area linking them has a friendly naval squadron present.
2.6.2.4. Naval squadrons may not transport units and fight naval combat in the same turn.
2.6.2.5. Land unit transport cannot occur in an area in which combat occurred during the same turn.
2.6.2.6. Land units do not actually move on naval units, but across them as a bridge from one land area to another.
2.6.2.7. Naval units must move during their naval phase, followed by land units movement during the land movement phase; therefore, naval units may move and then be used to transport land units, but may not be used to transport land units and then move.

2.6.3. *Naval Combat*
2.6.3.1. Naval combat takes place when any naval unit enters a river area containing an enemy naval unit.
2.6.3.2. Once the player has finished all naval movement actions, both players move all contested river area naval units into revealed mode.
2.6.3.3. Naval squadron units may conduct combat as either the attacker or the defender; fireship units may only attack; and floating batteries may only defend.
2.6.3.4. Floating batteries cannot move.
2.6.3.5. Naval squadrons may not transport units and fight naval combat in the same turn.
2.6.3.6. Units conduct combat according to the naval combat player chart, with combat modifiers listed on the naval die roll combat modifier chart.

2.6.3.7. Fireship units are consumed when attacking, and regardless of combat result are removed from the game. This represents the attacker lighting the ships on fire and driving them into the enemy fleet.
2.6.3.8. Fireships may never defend, and are automatically eliminated if attacked.
2.6.3.9. Single attacking naval units fight multiple defending units sequentially, resolving combat in the order the attacker desires.
2.6.3.10. If the attacking unit is forced to retreat or is destroyed, the rest of the defending units are not engaged
2.6.3.11. Victorious fireships are not destroyed until the end of combat with all units.
2.6.3.12. Multiple naval units attacking a single defending naval unit do not combine their firepower. They fight sequential battles against the defender in the order chosen by the attacker.
2.6.3.13. Defending units forced to retreat do not do so until all naval combat is completed by all attacking units.
2.6.3.14. Units eliminated are immediately removed, and any CRT bonuses are recalculated before any further die rolls.
2.6.3.15. Multiple naval units attacking multiple defending naval units fight each other sequentially in the order the attacker desires.
2.6.3.16. Naval units receiving multiple retreat resolutions (Ar1 or Dr1) retreat only one river area.
2.6.3.17. The defender chooses his line of retreat, but his retreat should follow a natural line of retreat if possible towards the area the unit came from, or back towards the bulk of his own forces.
2.6.3.18. If the unit cannot retreat due to the presence of enemy units in all surrounding river areas, the unit is eliminated.

2.7. ***Setting up the Game***

2.7.1. *French*

2.7.1.1. The French player places his units first.
2.7.1.2. The game begins with the Ramezay, Montcalm, and the 1st and 2nd Quebec District Militia units in the Quebec City area.
2.7.1.3. The remainder of his land units may be distributed in any desired fashion between the Quebec City, Plains of Abraham, Beauport, Deschambault, Montmorency, Sainte Foy, St Augustin, Point Levis, and Isle de Orleans land areas.
2.7.1.4. The player does not have to put units in every land area.
2.7.1.5. The French player may entrench any units he desires (with no fatigue accumulated).
2.7.1.6. The French player places his naval units in any combination on any of the river areas except for the Lower Island Channel, Lower St. Lawrence, and Northern St. Lawrence River areas.
2.7.1.7. All land areas except for Louisbourg begin the game as French controlled.

2.7.2. *British*

2.7.2.1. The British player places his units second.
2.7.2.2. All British land units begin in the Louisbourg area.
2.7.2.3. The British player places his naval squadrons in any desired combination in the Lower Island Channel, Lower St. Lawrence, and Northern St. Lawrence river areas.

2.8. ***Victory Conditions***

2.8.1. *British* – The British player wins the game by achieving at least one of the following conditions:

(1) Controlling 10 Victory Points (VPs) at the end of any turn (after the French player phase) as described in section 2.8.3.
(2) Controlling either the Beauport or the Plains of Abraham areas, AND having two siegeworks established in the Quebec City area (as described in section 2.5) at the end of any turn (after the French player phase).
(3) Eliminating all French units.

2.8.2. *French* – The French player wins the game by preventing British victory conditions or by eliminating all British units.

2.8.3. *Victory Points* – Victory Points (VPs) are annotated on the corners of each land area. The player currently controlling the land area places a cube of his player color on the VP number on his side of the land area. VP breakdowns for each area are listed on each players' game chart.

2.8.4. *How to capture and control areas*
2.8.4.1. The Louisbourg area begins the game as a British controlled area.
2.8.4.2. All other land areas begin the game controlled by the French.
2.8.4.3. A player captures a land area by having at least one friendly unit present in an enemy unoccupied land area at the end of either players' phase (does not need to be the end of the turn).
2.8.4.4. If a player has moved through an enemy unoccupied area using a forced march, this does not capture the land area through which the player moved.
2.8.4.5. The player removes the opponent's VP counter, and exchanges it for his own, creating a friendly occupied area.
2.8.4.6. Following capture, the player does not have to have a unit remain in the land area to continue controlling the land area, but cannot contest the land area without a unit present.
2.8.4.7. River areas are never considered captured or controlled.

3. Designer's Notes

3.1. ***British Overall Strategy*** – The British player's strategy should focus on stringing out the French units through maneuver and then massing friendly units to attack weak points (ideally forcing a decisive battle in the Plains of Abraham, Beauport, or Quebec City). The British player should focus on speed in his assault, ensuring he has enough time to accomplish his victory conditions. This includes aggressively pursuing combat, and destroying the French navy to allow for maximum maneuverability on the map.

3.2. ***French Overall Strategy*** – The French player's strategy should focus on maintaining flexibility to shift his units to meet the British point of attack. The French player should delay the British units as far from Quebec City as possible with naval units. While he must avoid committing his land units piecemeal, there is value in forcing the British to fight for every land area. While it is possible for the French player to transfer units south of the St. Lawrence to Point Levis or the Isle de Orleans, the French player should be wary of committing units he may not be able to retrograde due to his limited naval squadrons.

APPENDIX C

CHARTS AND SUPPORTING DOCUMENTS

British Sequence of Play

Player Phase

0. Move Turn Marker to the next Turn.
1. Recon Phase - one land area or one river area, revealing units for your recon phase
2. Naval Phase
    1. Move Naval Units
    2. Resolve Naval Combat – naval units used in combat may not transport land units
3. Land Movement Phase
    1. Move - one area to a connected area (+1 fatigue)
    2. Entrench - fortify units who have not moved or rested (+1 fatigue)
    3. Rest - remove all fatigue, or half of current fatigue in contested area [cannot attack]
4. Land Combat Phase
    1. Attack or Defend (+1 fatigue)
    2. Roll number of dice based on order of battle
    3. Resolve combat based on CRT – distribute Strength/Fatigue evenly among units engaged

Die	French	British
1	NE	NE
2	NE	+1 Fatigue
3	+1 Fatigue	+1 Fatigue
4	+1 Fatigue	+1 Fatigue
5	-1 Strength	-1 Strength
6	+1 Fatigue & -1 Strength	+1 Fatigue & -1 Strength

**Defender entrenched gives -1 to one attacker die roll

Area	VPs
Quebec City	10
Plains Abraham	5
Beauport	5
Sainte Foy	3
Montmorency Falls	2
Saint Augustin	2
Deschambault	1

British Naval Combat and Unit Types

Naval Combat Table

Die Roll (1d10)	Attacker v Defender: NS v NS*	NS v FB	NS v FS	FS v NS*
1	AE	AE	Fireship Eliminated	AE
2	AE	Ar1		AE
3	AE	Ar1		AE
4	Ar1	DE		AE
5	Ar1	DE		AE
6	Dr1	DE		Dr1
7	Dr1	DE		Dr1
8	DE	DE		DE
9	DE	DE		DE
10	DE	DE		DE

Naval Die Roll Combat Modifier

+2	• British Naval Squadrons attacking French Naval Squadrons
+1	• Fireships attacking Naval Squadrons receive +1 for each additional squadron present in the operational river area (after the first squadron); this is reassessed for every combat die roll, and may change multiple times per phase based on the destruction of Squadrons
-2	• French Naval Squadrons attacking British Naval Squadrons

Abbreviations

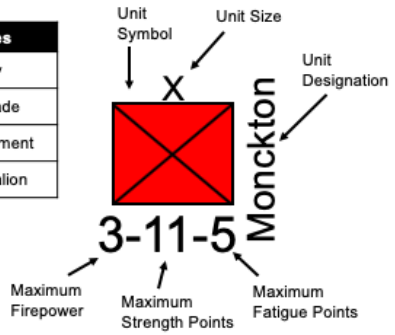
AE	Attacker Eliminated
Ar1	Attacker Retreats 1 area
DE	Defender Eliminated
Dr1	Defender Retreats 1 area

Unit Types

	Regular Infantry	HQ	Headquarters
G	Grenadiers		Fireship
R	Rangers		Floating Battery
	Marines		Naval Squadron
L	Light Infantry / Militia / Natives		

Unit Sizes

XXXX	Army
X	Brigade
III	Regiment
II	Battalion



French Sequence of Play

Player Phase

1. Recon Phase - one land area or one river area, revealing units for your recon phase
2. Naval Phase
   1. Move Naval Units
   2. Resolve Naval Combat – naval units used in combat may not transport land units
3. Land Movement Phase
   1. Move - one area to a connected area (+1 fatigue)
   2. Entrench - fortify units who have not moved or rested (+1 fatigue)
   3. Rest - remove all fatigue, or half of current fatigue in contested area [cannot attack]
4. Land Combat Phase
   1. Attack or Defend (+1 fatigue)
   2. Roll number of dice based on order of battle
   3. Resolve combat based on CRT – distribute strength and fatigue evenly among units engaged

Die	French	British
1	NE	NE
2	NE	+1 Fatigue
3	+1 Fatigue	+1 Fatigue
4	+1 Fatigue	+1 Fatigue
5	-1 Strength	-1 Strength
6	+1 Fatigue & -1 Strength	+1 Fatigue & -1 Strength

**Defender entrenched gives -1 to one attacker die roll

Area	VPs
Quebec City	10
Plains Abraham	5
Beauport	5
Sainte Foy	3
Montmorency Falls	2
Saint Augustin	2
Deschambault	1

French Naval Combat and Unit Types

Naval Combat Table

	Attacker v Defender			
Die Roll (1d10)	NS v NS*	NS v FB	NS v FS	FS v NS*
1	AE	AE	Fireship Eliminated	AE
2	AE	Ar1		AE
3	AE	Ar1		AE
4	Ar1	DE		AE
5	Ar1	DE		AE
6	Dr1	DE		Dr1
7	Dr1	DE		Dr1
8	DE	DE		DE
9	DE	DE		DE
10	DE	DE		DE

Naval Die Roll Combat Modifier

+2	• British Naval Squadrons attacking French Naval Squadrons
+1	• Fireships attacking Naval Squadrons receive +1 for each additional squadron present in the operational river area (after the first squadron); this is reassessed for every combat die roll, and may change multiple times per phase based on the destruction of Squadrons
-2	• French Naval Squadrons attacking British Naval Squadrons

Abbreviations

AE	Attacker Eliminated
Ar1	Attacker Retreats 1 area
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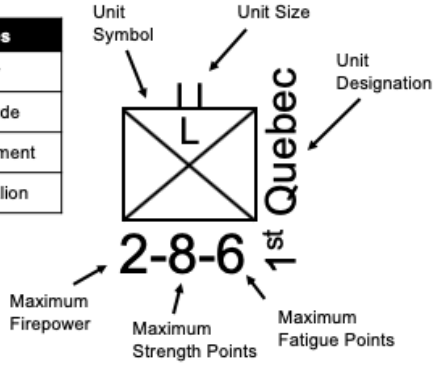
Dr1	Defender Retreats 1 area

Unit Types

	Regular Infantry	HQ	Headquarters
G	Grenadiers		Fireship
R	Rangers		Floating Battery
~	Marines		Naval Squadron
L	Light Infantry / Militia / Natives		

Unit Sizes

XXXX	Army
X	Brigade
III	Regiment
II	Battalion



French and British Units

XXXX HQ Montcalm	X 1-3-6 Senezergues	X 2-5-6 Fortifrune	III 1-4-12 Bougainville	II 1-3-10 Levis	III Quebec City 3-8-7 Ramezay	II L 2-8-6 1st Quebec	II L 2-8-6 2nd Quebec	II L 2-7-6 1st Montreal	II L 2-7-6 2nd Montreal
II L 1-4-6 Trois-Rivières	II L 2-6-8 Natives	XXXX HQ Wolfe	X 3-11-5 Monckton	X 2-7-5 Murray	X 2-6-5 Townshend	III G 1-4-5 Burton	II L 1-3-10 Howe	II R 1-2-10 Scott	II 1-3-5 Boisrond
NS Frigates	FB Battery	FB Battery	FS Fireships	FS Fireships	NS Saunders	NS Durell	NS Holmes	NS Rous	NS Colvill
Turn									

British Order of Battle

Wolfe (1d)

1

Boisrond's Marines (1d)

1	2	3			
0	1	2	3	4	5

Scott's Rangers (1d)

1	2									
0	1	2	3	4	5	6	7	8	9	10

Burton's Grenadiers (1d)

1	2	3	4		
0	1	2	3	4	5

Howe's Light Infantry (1d)

1	2	3								
0	1	2	3	4	5	6	7	8	9	10

Monkton's Brigade (3d)

1	2	3	4	5	6	7	8	9	10	11
0	1	2	3	4	5					

Murray's Brigade (2d)

1	2	3	4	5	6	7
0	1	2	3	4	5	

Townshend's Brigade (2d)

1	2	3	4	5	6
0	1	2	3	4	5

Key	
1d	# of unit Strength: receives 1 die
2d	# of unit Strength: receives 2 dice
3d	# of unit Strength: receives 3 dice
F	Fatigue: forced march capable
F	Fatigue: not forced march capable

Source: Created by author.

APPENDIX D

MAP

Attached pdf created by Author.

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