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WHALEBOATS, ROW-GALLEYS AND FLOATING BATTERIES

British Gunboats in the 1760 Canada Campaign

by

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A thesis submitted to the Department of History

in conformity with the requirements for

the degree of Master of Arts

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Abstract

In September 1760 three British-American army corps, led by gunboats of the Royal Regiment of Artillery, converged on Montreal and forced the surrender of the French North American army. The campaign was a tactical and logistical triumph. After four years of experimentation and defeat, the British army had at last successfully adapted European methods of siege-warfare to the North American environment.

By mounting heavy smooth-bore artillery in an *ad hoc* assortment of small vessels, British artillerymen solved the problem of how to deploy their guns in the wilderness. In the process they created a new tactical role for heavy ordnance and invented riverine warfare in North America. Cooperatively managed by British artillerymen who served the guns and American provincial soldiers who manned the oars, British gunboats smashed the frontier defences of New France and transformed North America and North American warfare.

Acknowledgments

My interest in the British Royal Regiment of Artillery in the 1760 Canada Campaign was sparked while doing a paper about the Royal Navy on the Great Lakes. Much to my surprise I found that conventional warships played a minor part in the final campaign of the Seven Years' War in the North American interior. An *ad hoc* assortment of gunboats manned by British artillerymen and American provincials wrested control of the inland lakes and rivers from the French. As this realization sank in, my preconceived notions of the supremacy of sea-power crumbled as quickly as did the navy's *modi operandi*, press gang and prize money, when it went beyond salt water. I would like to thank my supervisor, Professor James Pritchard, for encouraging me to expand on what I learned about eighteenth-century maritime affairs on Lake Ontario and putting up with my hesitant attempts to tell the story.

I would also like to thank my colleagues in History 843, and my colleague in History 856, who listened graciously to my attempts to explain why I think cooperation between metropolitan and colonial troops in 1760 is a plausible interpretation of the evidence. Thank you, Joe, for asking if the provincials were coerced. I can finally say with some certitude, no, they were not.

In the past year as I followed the artillery through the wilderness I had the privilege of meeting many generous people. I would like to acknowledge their kindness. Thanks to John Dann and John Harriman at the William L. Clements Library, Chris Fox at the Thompson-Pell Research Centre at Fort Ticonderoga, George Henderson at Queen's University Archives, Maurice Smith at the Marine Museum of the Great Lakes at Kingston, and the staffs of Stauffer Library at Queen's University and Massey Library at the Royal Military College of Canada. Special thanks to Robert Andrews for sharing with me his encyclopedic knowledge of Jeffery Amherst and his army. An extra special thanks to Mum, Lisa, Chris and Jessie for being a close, though geographically distant, family and to Julie for retrieving me when I was lost. Lastly, I would like to dedicate this thesis to the memory of my father, an artilleryman and engineer.

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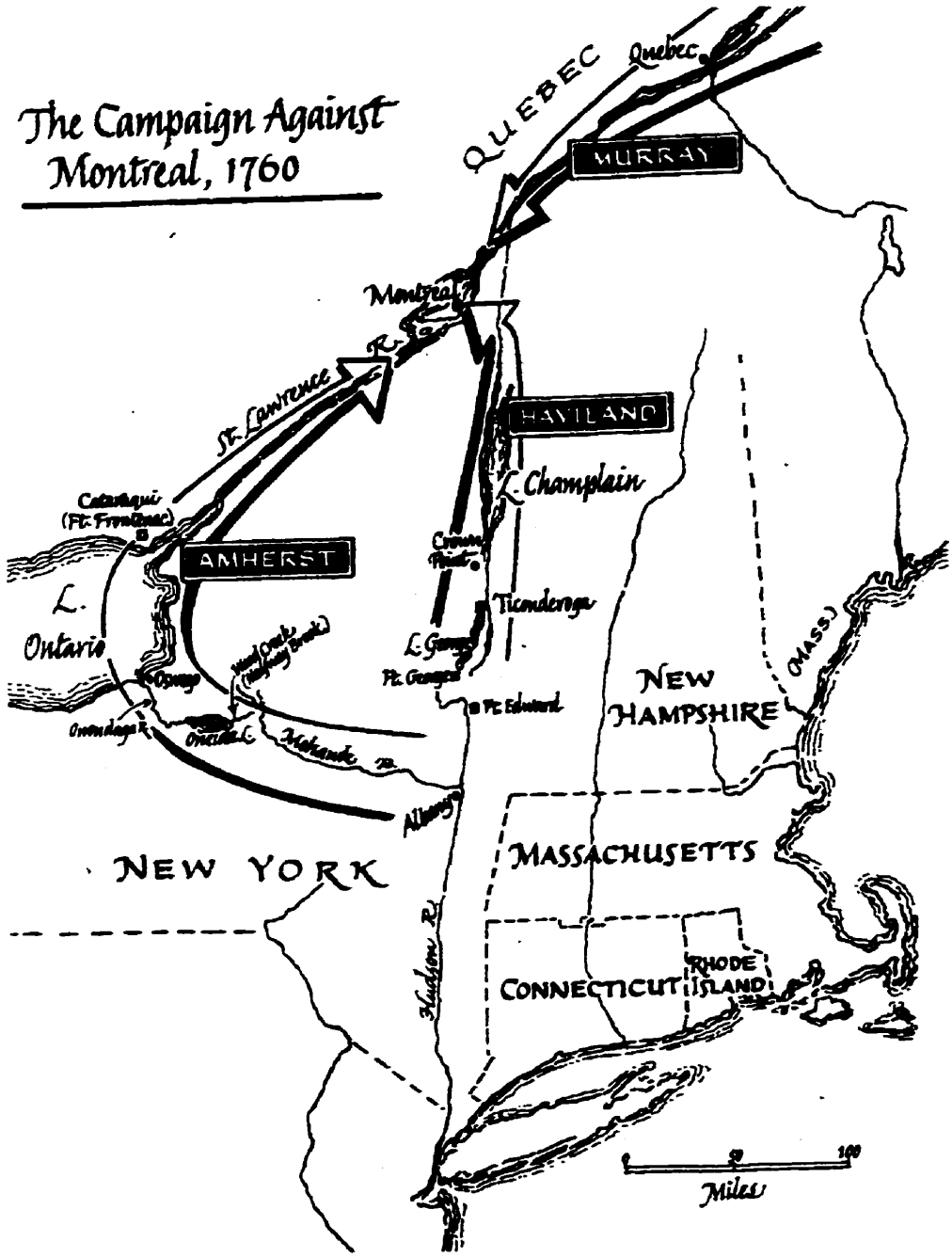
The Campaign Against Montreal, 1760
QUEBEC
Quebec
MURRAY
Montreal
St. Lawrence R.
HAVILAND
L. Champlain
Crown Point
Ticonderoga
AMHERST
L. Ontario
Oswego
L. George
Pt. George
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Onondaga L.
Mohawk R.
Albany
NEW YORK
NEW HAMPSHIRE
MASS.
MASSACHUSETTS
Hudson R.
CONNECTICUT
RHODE ISLAND
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-One-

Artillery in the Wilderness
1755-1760

Geography is three-fourths of military science.
-von Moltke

On September 6th 1760, the largest British-American army ever assembled in the North American interior was encamped before the walls of Montreal. Seventeen thousand regular and provincial troops in three battle-hardened corps encircled France's last major stronghold and the remnants of ten once powerful, now checkmated, French battalions. On the St. Lawrence River above the town, upwards of eight hundred bateaux, escorted by row-galleys mounting cannons and howitzers, blocked the French westward line of retreat. Below, four ships of the British Royal Navy and a fleet of row-galleys, navy flat-boats and armed transports controlled the eastern approaches. Opposite the town, whaleboats armed with swivel guns and light mortars supported American ranger and British light infantry companies that patrolled the river's southern shore. To the north, where the littoral plain slopes gradually upward toward the brooding bulk of Mount Royal, artillerymen and three hundred New York provincial pioneers harnessed to cannon laboured in the gathering twilight bringing up the heavy siege-guns.[1] Around a thousand fires in the British-American camps, infantrymen eager for spoil cleaned their firelocks, sipped grog and awaited the opening salvos.

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[1] Nathaniel Woodhull. "A Journal Kept by General Nathaniel Woodhull," The Historical Magazine. Volume V. (New York: Charles B. Richardson & Co., 1861) p. 259. "The Yorkers immediately furnished a party to draw the light artillery down, and 300 were drafted to draw down the 24-pounders, the same evening."

In the town, 2,200 French *troupes de terre* and scarcely 650 *troupes de la marine* stood to arms behind Montreal's walls while their officers and the colony's civil administrators parleyed with the British commander-in-chief. Forced back on three fronts, abandoned by the Canadian militia and their native allies, the exhausted French regulars were trapped in a position they could not defend. Constructed as a barrier against Iroquois incursions and hit and run guerrilla raids, Montreal's fortifications were no defence against the most powerful engines of eighteenth-century warfare. James Johnstone, a Scottish Jacobite officer serving in the French army, later recalled the scene. "We were all pent up in that miserable place -- without provisions, a thousand times worse off than an advantageous position in open fields -- those pitiful walls could not resist two hours' cannonade without being level with the ground."[2]

Negotiations for the surrender of the town continued through September 7 and into the early morning hours of September 8. For the most part, British Major-General Jeffery Amherst's conditions were generous. The first article of capitulation, however, stung. "The whole garrison of Montreal must lay down arms, and shall not serve in the present war."[3] Gaston-Francois Chevalier de Lévis, the French military commander, was outraged. King Louis XV would not only lose the services of eight battalions of land forces and two of marine for the remainder of the war, without employment his officers and men would be condemned to poverty. Lévis dispatched Colonel La Pause, his influential and respected quarter-master, to the British camp in protest. But before La Pause could fairly begin, his representations were silenced. Amherst was adamant. "I cannot alter in the least, the conditions which I have offered to the Marquis de Vaudreuil;

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[2] The Campaign of 1760 in Canada. A narrative attributed to Chevalier Johnstone. (Quebec: Literary and Historical Society of Quebec, 1887) p.23

[3] "Articles of Capitulation for the Surrender of Canada". Documents Relative to the Colonial History of the State of New York. Volume X. (ed.) E.B. Callaghan. (Albany: Weed, Parsons and Company, 1858) p. 1107.

and I expect his definitive answer."[4] La Pause returned dismayed. The French army was to be punished "on account of the infamous part which the troops of France had acted, in exciting the savages to perpetrate the most horrid and unheard-of barbarities during the whole progress of the war."[5] Coming from the man who fired red-hot shot into a French fort and later condoned the distribution of small-pox infected blankets to American natives, the reproach was grossly unjust.

In a desperate bid to win honourable terms, Chevalier de Lévis demanded of the governor-general that he be allowed to retire with his tattered army to Ile St. Hélène and make a final stand. Pierre de Rigaud, Marquis de Vaudreuil-Cavagnal ordered him to conform to Amherst's demands. Hope and munitions had been lost that spring in an attempt to retake Quebec, and honour could not compensate for the horrors that an artillery barrage and an unbridled soldiery would inflict on the town and its inhabitants if futile resistance was continued. Vaudreuil had only to look at the ring of artillery that enclosed Montreal to know that New France was beaten. With every volley of the British guns, half a ton of iron would come crashing into the town. Late in the afternoon, he signed the articles of capitulation while humiliated French regulars burned their regimental colours.[6]

The following morning, September 9, an officer's party of the British Royal Regiment of Artillery drawing a 12-pounder brass cannon, and led by Lieutenant Thomas Davies R.A. bearing the Union flag of England and Scotland, marched through the Lachine gate and entered the town. Escorted by a "band of musick" and three hundred grenadiers with bayonets fixed, the British flag was taken "to the most conspicuous part

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[4] Robert Beatson. Naval and Military Memoirs of Great Britain from 1727-1783 Volume II. reprint. (Boston: Gregg Press, 1972) p. 400. Major-General Amherst to M. le Chevalier de Lévis.
[5] Ibid. p. 399.
[6] Jeffery Amherst. The Journal of Jeffery Amherst. edited by J. Clarence Webster. (Toronto: The Ryerson Press, 1931) p. 247.

of the cittadel [sic] and when hoisted three cheers were given and answered by the parade."[7] In the Place d'Armes the clatter of surrendered muskets tossed in a pile by French regulars was a sombre counterpoint to the British hurrahs. The Seven Years' War in North America was over. What began with a minor backwoods skirmish between Canadian and Virginian militiamen in the Ohio valley in 1754 ended six years later with a massive British-American amphibious assault on Montreal. Spearheaded by artillery mounted in whaleboats, row-galleys and floating-batteries, Amherst's three army corps smashed the frontier defences of France's 150-year-old wilderness empire and transformed North America and North American warfare forever.

The assault on Montreal in 1760 remains the forgotten campaign of the Seven Years' War in North America. The accounts that deal with it in more than a footnote -- Donald Creighton's The Story of Canada omits the episode entirely -- portray the offensive as a mopping up exercise, the final act of the British victory at Quebec in 1759. A few examples indicate the tenor of the literature. Julian Corbett describes the campaign as a "military promenade."[8] C.P. Stacey dismisses it as "a leisurely march towards a foregone conclusion."[9] Harrison Bird dubs it "a summer long parade."[10] William Kingsford maintains that Chevalier de Lévis' ill-considered offensive at St. Foy in April 1760 and the subsequent loss of precious French ordnance and *materiel* were the principal causes for the loss of Montreal. Amherst had little to do. The French were already defeated when his army entered Canada four months later.[11] George Wrong also

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[7] Williamson Family Papers, NAC microfilm reel A-573. Letter from George Williamson to Lord Ligonier. "Camp at Ft. William 26.08.1760." see also W.H. Askwith. List of Officers of the Royal Regiment of Artillery 1716-1899. (London: William Clowes and Son, 1900) p.299. "Lieutenant Davies hoisted the first British flag in Montreal."
[8] Julian S. Corbett. England in the Seven Year's War: A Study in Combined Strategy (London: Longmans, Green and Co., 1907) p.105.
[9] C.P. Stacey. Quebec, 1759: The Siege and Battle. (Toronto: The MacMillan Company, 1959) p.165.
[10] Harrison Bird. Battle for a Continent (London: Oxford University Press, 1965) p.333.
[11] William Kingsford. The History of Canada Vol. IV (Toronto: Rowsell & Hutchison,

views Amherst's military contribution to the fall of Canada as secondary. He argues that Canada was lost by a weak and foolish court in Versailles, not won by a British-American army in the field.[12]

French historians are equally unimpressed with Amherst's exploits in 1760. Gustave Lanctôt and Guy Frégault credit the French capitulation at Montreal more to the unwillingness -- or was it inability -- of France to reinforce and resupply the colony than anything the British-American army may have done. France was indifferent, if not outright hostile, to Canada, explains Lanctôt.[13] France was outclassed at sea, rejoins Frégault.[14] Whoever is more accurate, it is clear neither think the issue turned on Jeffery Amherst's army.

If we are to credit these accounts, we have to accept that Amherst's campaign was simply a denouement; the final act of a war already won. In my view, this judgment is mistaken. In the summer of 1760, the French army in North America was still an active and dangerous enemy. It had come within a hair of retaking Quebec in April, still held the country west of Niagara and was frantically building ships to re-establish control of Lake Ontario. The only way Amherst could conquer France's wilderness empire was to defeat the French army in the field. If Lévis was allowed to elude a decision and retreat westward to the Illinois country, the war in North America might be prolonged

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1890) p.378. "His (de Lévis) loss in ammunition, provisions and baggage was irreparable. The French ships were all destroyed or taken, and de Lévis must have felt as he regained Montreal, that the time had indeed arrived, which was the beginning of the end."

[12] George Wrong. The Fall of Canada, 1759-1760 (Oxford: Clarendon Press, 1914) p.116. "From the first France's policy in this war had been fatal to her best interests...At a time when, on the continent of Europe, she was menaced by no dangers, but when, across the seas, she was in danger of losing all her possessions, she had chosen so to embroil herself in a land war in Europe that she could not build up her navy."

[13] Gustave Lanctôt. A History of Canada Vol. III Margaret M. Cameron, translator. (Toronto: Clarke, Irwin & Company, 1965) p.184.

[14] Guy Frégault. Canada: War of the Conquest. Margaret M.Cameron, translator. (Toronto: Oxford University Press, 1969) p.233.

indefinitely. To forestall this, Amherst adopted a dangerous plan of attack. He split his army and advanced on three fronts. Both he and Lévis were keenly aware of the hazards of a miscarried strategic envelopment. If any of Amherst's separate converging forces were delayed or checked, the entire operation risked defeat in detail.

Those who view the 1760 Canada campaign as an adjunct operation also fail to recognize that Amherst's assault on Montreal embodied solutions to problems that had haunted the British army in North America for years. Never before had an army of comparable size moved so rapidly through the American wilderness. Never before were the offensive capabilities of mobile artillery so effectively deployed in the interior. The British drive toward Montreal was not a military promenade, nor was it a leisurely march. Jeffery Amherst's three army corps were amphibious, and therein lies the key to the campaign's significance. It was a proto-type. General John Burgoyne's campaign on Lake Champlain during the Revolutionary War, Commander Thomas Macdonough's fresh-water gunboat squadrons during the War of 1812 and Admiral David Porter's Western Flotilla on the Mississippi River during the American Civil war were all copies of Amherst's original. It was the first successful attempt at large-scale, coordinated riverine warfare in North America.

Perhaps the significance of Jeffery Amherst's enterprise remains obscure because it lacked an equivalent of Wolfe's eleventh hour ascent to the Plains of Abraham and the drama of mortally wounded general officers expiring on the field of battle. There was nothing inspiring or chivalric about the 1760 Canada campaign. In its course, the British fired "hotshot" into French forts, razed farmsteads in St. Lawrence valley parishes, and in the end, punished the French army by refusing them the honours of war. It was not the bold stroke of a youthful hero or a brief clash of arms on a chill September morning, but rather a massive, methodical and ruthlessly modern culmination to five arduous years learning how to adapt European warfare to the North American wilderness.

In 1755, France controlled the North American interior. Securely established in a chain of more than thirty forts strategically sited along a contiguous natural waterway from Louisbourg to New Orleans, and isolated from the British colonies by miles of wilderness, they held a superb defensive position.[15] From these fortified posts, many of them imposing stone and masonry structures invulnerable to all but a formal siege, the French and their native allies sortied against the western frontiers of the British colonies with impunity. This continental strategy to contain British America within static boundaries, first articulated by Sebastien Le Prestre, Marquis de Vauban in 1699 and later championed by Pierre le Moyne, Sieur d'Iberville between 1701-1703, and Roland-Michel Barrin de Galissonière in 1750, forced the British to wage a difficult and expensive offensive war.[16] To break France's grip on the American interior, the French forts, La Galissonière's "bulwark of America",[17] had to be breached by ponderous

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[15] Stanley Pargellis. (ed.) Military Affairs in North America 1748-1765: Selected Documents from the Cumberland Papers in Windsor Castle. (New York: D. Appleton-Century Company, 1936) pp.12-16. "An Account of the Forts in Louisiana and Canada 1752."

[16] John C. Rule. "Jérôme de Phélypeaux, Comte de Pontchartrain, and the Establishment of Louisiana 1696-1715" Frenchmen and French Ways in the Mississippi Valley (ed.) John Francis McDermott. (Urbana: University of Illinois Press, 1969) p.188. "Vauban envisioned a French empire being built around great fortresses in the areas of Canada, the island of St. Domingue, and Louisiana." see also pp.192 and 194. "Iberville warned Jérôme de Pontchartrain that the great threat posed to *Pax Gallica* was the pressure that would soon be exerted on the interior defense lines of New France and the Louisiana territory by a numerically superior British population...He suggested that a series of forts be placed at strategic points along the length of the Mississippi Valley to the Great Lakes providing a girdle around the British colonies." See also Henry Guerlac "Vauban: The Impact of Science on War" in Makers of Modern Strategy from Machiavelli to the Nuclear Age. (ed.) Peter Paret. (Princeton: Princeton University Press, 1986.) pp. 86-87. "Vauban wrote that a fortified frontier should close to the enemy all the points of entry into the Kingdom and at the same time facilitate an attack upon enemy territory."

[17] Roland-Michel Barrin de la Galissonière. "Memoir on the French Colonies in North America" Documents Relative to the Colonial History of the State of New York. Volume X. (ed.) E.B. O'Callaghan. p.232. "...nothing must be spared to strengthen these Colonies, since they may, and are to be considered the bulwark of America, against the attacks of the English..."

artillery battering-trains hauled through miles of trackless, hostile wilderness. The first British campaign of the Seven Years' War vividly illustrated the enormity of the task.

Major-General Edward Braddock's expedition to capture Fort Duquesne on the Ohio River departed from Alexandria in Virginia early in April 1755. Two understrength regiments of the Irish establishment, Sir Peter Halkett's 44th and Colonel Thomas Dunbar's 48th, a detachment of sixty-seven men of the Royal Regiment of Artillery under Captain-Lieutenant Robert Hind and a party of thirty-eight seamen led by Lieutenant Charles Spendelowe formed the nucleus of his command.[18] One thousand American provincials, including two companies of artificers, seven companies of rangers, one troop of Virginia light horse and an unrecorded number of sutlers, women and Indians joined enroute.[19] The train was enormous. Ten brass field pieces, four 8-inch howitzers, fifteen cohorn mortars, sixteen shot wagons, eight powder carts, two tumbrils for entrenching tools, two spare gun carriages, a forge and money cart were followed by an additional three hundred wagons and six hundred pack horses.[20] Captain Gabriel Christie thought "there were more followers and attendants in this little Army than would have serv'd an Army of 20,000 Men in Flanders."[21] Braddock wrote: "the vast line of baggage will occasion great trouble and retard me considerably."[22]

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[18] M.E.S. Laws. "R.N. and R.A. in Virginia" Journal of Army Historical Research Volume 57. 1979. pp. 194-196. In addition to the sixty-seven men of the military branch, there were twenty-one men of the civil branch of the Ordnance Office; James Furnis (commissary and paymaster), a surgeon, clerk of stores, four conductors of stores, a wagon master, master of horse and twelve artificers. Four engineering officers, Patrick Mackellar, Harry Gordon, Adam Williamson (George Williamson's son) and Thomas Sowers also accompanied the expedition. Also see M.E.S. Laws Battery Records of the Royal Artillery 1716-1859 (Woolwich: Royal Artillery Institute, 1952.) p.14, note B. also Pargellis. Military Affairs. pp. 86-91.

[19] Pargellis. Military Affairs pp. 88-89. "A Return of the Virginia, Maryland and North Carolina Troops encamp'd at Will's Creek- June the 8th 1755."

[20] Ibid. p.91. "Abstract of the Artillery."

[21] Ibid. p. 120. "Anonymous Letter of Braddock's Campaign." Pargellis suggests the letter may have been penned by Captain Gabriel Christie.

[22] Ibid. p. 82. Edward Braddock to Robert Napier, Alexandria, April 19, 1755,

The army moved at a snail's pace, clearing a road as it went. By the first week of June it was encamped at Will's Creek, the approximate half-way point. A further 110 mountainous miles lay between the army and Fort Duquesne. In a letter written as the final stage of the march was getting underway a wearied Edward Braddock bemoaned: "Nothing can well be worse than the road I have already passed and now I have a hundred and ten miles to march thro an uninhabited wilderness over steep and rocky mountains and almost impassable morasses."[23] At Will's Creek, the artillery detachment was reinforced by Captain Thomas Ord and twelve men of the Royal Artillery company from Newfoundland.[24] Captain Ord took over command of the guns from Captain-Lieutenant Hind and, with the assistance of Lieutenant Spendelowe's seamen, the back-breaking labour of getting the battering-train over the mountains began.

Expressing grave doubts about the possibility of transporting guns and wagons over a roadless, mountainous terrain to the Ohio country, three months earlier Captain Augustus Keppel of H.M.S. *Centurion* had suggested that a party of picked seamen accompany General Braddock. He imagined that gunners "were not so well acquainted with the nature of purchases and the use of tackles as seamen."[25] "They will be of the greatest use in assisting the conveyance of the artillery over the mountains."[26] Reading these words puts one in mind of artillery demonstrations often seen at military tattoos. While it is thrilling to watch competing teams hoist and swing disassembled field pieces over a man-made chasm by means of complicated arrangements of block and tackle, it is mind-numbing to imagine these evolutions enacted perhaps hundreds of times in the

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[23] Ibid. p. 85. Edward Braddock to Robert Napier. Will's Creek, June 8, 1755.
[24] Laws. Battery Records. p. 15. Note B.
[25] Laws. "R.N. and R.A. in Virginia,: p.195. "It should be understood that at that period it as the custom for the Royal Navy to drag the guns and carry the ammunition where horses were not available."
[26] Pargellis. Military Affairs. p. 79. Edward Braddock to Robert Napier. Williamsburg, March 17, 1755.

course of Braddock's wilderness march. The cost of such consuming labour in terms of the army's efficiency and the men's health was shocking. It took one grueling month for Braddock's army to stagger one hundred miles from Will's Creek to the Monongahela River.[27] On July 9th, 1755, just nine miles short of its goal, the exhausted army collided with a numerically inferior force of French and Ottawa and was annihilated within the space of three hours. The rout was near complete. The demoralized remnants of Braddock's command streamed back to the security of their base camp at Will's Creek, leaving nine hundred dead and wounded and a large proportion of the ordnance-train in the hands of the victors. British-America was stunned by the news of Braddock's calamitous failure. A British officer newly arrived in the colonies wrote home: "I cannot conceive how war can be waged in such a country."[28] The disaster brought home in a dramatic way the realization that if France was to be evicted from the interior, if the British colonies were even to survive, a drastic revamping of military ways and means, more in consonance with American realities, was essential.

Adapting to North America was a long and painful process. With the exception of Lieutenant-Colonel John Bradstreet's raid on Cataraqui in 1758 and Colonel John Forbes' pyrrhic victory at Fort Duquesne in the same year, from the time of Braddock's first disastrous foray into the wilderness in 1755 until Amherst's victories in 1759, the British military establishment suffered an unrelieved series of defeats in the American interior. Despite the losses, and they were major in terms of lost men, materiel and morale -- sixteen hundred men and the Lake Ontario fleet in 1756 alone -- these four years also witnessed the nascence of an unique British-American army and the creation of a blue-print for successful wilderness warfare.

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[27] Ibid. p. 94. "A sketch of General Braddock's march from Fort Cumberland on the 10th of June 1755 to the field of battle of the 9th July near the River Monongahela."
[28] Lee McCardell. Ill-Starred General: Braddock of the Coldstream Guards. (Pittsburgh: University of Pittsburgh Press, 1958) p. 180.

John Campbell, fourth Earl of Loudoun, Commander-in-Chief in the North American provinces from July 1756 to December 1757, was the driving force behind organizing the British army in North America in the early years of the war.[29] Within weeks of his arrival in North America, Loudoun focused the army's attention northward, away from the western frontiers of the mid-Atlantic provinces, to New York and the strategic Hudson River corridor. This natural water-route which carves its way through the Appalachian Mountains was navigable by small-craft far into the interior. From the headwaters of the Hudson, a twelve mile portage over the height of land led to Lake George, Lake Champlain and the St. Lawrence River valley. From the upper reaches of the Mohawk River, a tributary of the Hudson, the streams of the northern watershed and Lake Ontario were a short twenty miles away. For armies encumbered with heavy European siege-trains, these waterways were the natural, indeed the only practicable, invasion routes into French North America from the British-American colonies.

Lord Loudoun was not the first to recognize the strategic importance of the Hudson waterway, nor the first army commander to utilize it. He was, however, the first to establish storehouses and redoubts along its course. He standardized the army's transport bateaux and at the suggestion of Captain Gabriel Christie, who witnessed the chaos of Braddock's supply train at first hand, created the first British Army Service Corps with the initial purchase of fifty wagons and two hundred horses. Loudoun also ordered the expansion and reinforcement of Fort Edward, at the Hudson River-Lake George carrying place.[30] By 1758 it was the most powerful British fortification in North

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[29] Stanley Pargellis. Lord Loudoun in North America. (New Haven: Yale University Press, 1933) p. 279. "In organizing the British army in America Loudoun performed his ablest work, and his ability as a soldier ought to be measured, not by the failure of his one expedition for which he was not to blame, but by his careful conditioning of the instrument which attained victory in the hands of his successors."

[30] Ibid. "The Administration of the Army." pp. 279-336.

America and briefly the third largest English-speaking community on the continent.[31] Under the protection of its twenty-nine heavy guns mounted in log and earth bastions, thousands of regular and provincial soldiers learned the arts of wilderness warfare: taking cover at the command "tree all" and firing at marks while kneeling and lying down. Major Robert Rogers' famous ranging companies were based there and, after 1758, Colonel Thomas Gage's 80th Light Armed Foot.

During Loudoun's tenure, the Royal Regiment of Artillery in North America increased three-fold and developed a solid administrative and operational framework. James Furnis, Comptroller of Ordnance in North America, directed the civil branch of the Ordnance Office from New York. Answering to the "Right Honourable and Honourable Gentlemen" of the Ordnance Board in London, he was responsible for the regiment's American supply depots as well as financial and administrative matters.[32] Lieutenant-Colonel George Williamson commanded the military branch from an operational headquarters at Albany. In 1756, there were 141 officers and men of the Royal Regiment of Artillery in the province of New York, with the largest detachment stationed at Fort Edward. The arrival of John Godwin's and Samuel Strachey's companies from Woolwich in 1757 increased the total to 339.[33] Although few in number, artillery officers represented the apex of eighteenth-century scientific warfare. Graduates of the recently established Royal Military Academy and drawn largely from professional military families and the "middling sort" of people in British society, they were capable, educated and ambitious. These people of the train were technicians steeped in geometry,

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[31] Jo Anne Fuller. "A Brief History of the 18th Century Military Construction at Fort Edward" in Archaeology in Fort Edward (ed.) David R.Starbuck. (Concord: The Printed Word Inc., 1995) pp. 7-19. see also David R. Starbuck. "America's Forgotten War." Archaeology January/February 1997. pp.60-63.

[32] James Furnis. James Furnis Letterbook 1755-1758. University of Michigan, William L. Clements Library.

[33] Pargellis. Lord Loudoun. p. 324. also see Laws. Battery Records p. 18. Note C.

mathematics and physics and were little understood by officers of the regular army.[34] After the Royal Navy withdrew from the inland waters of North America in 1756, these "mechanical fellows" were at the centre of an *ad hoc* program to design and build river-craft that could effectively mount artillery.

If learning to adapt to American wilderness conditions was the British army's most pressing challenge in 1755, by 1760 it was its most profound success. Soldiers who once trudged through trackless forests were now transported in vast flotillas, their parade-square uniforms re-cut for utility and their swords exchanged for hatchets. The arts of "la petite guerre", once the exclusive domain of irregular ranging companies, were now practised by newly formed regular light infantry units, and the two-deep thin red line, that later became synonymous with British infantry, was first employed.[35] Most importantly, by 1760, the British had learned how to deploy their heavy artillery in the North American wilderness. By mounting artillery into whaleboats, row-galleys and floating batteries, what was once a vulnerable and burdensome appendage to an army on the move became a central tactical element. The army could now utilize its most powerful weapons to screen troop movements and support infantry assaults as well as lay siege to fortified positions. Two centuries before the advent of mechanized warfare, artillery found its modern place in the vanguard of Amherst's invading army. "Both in the psychological effects of its presence and in its actual use the role of the British heavy-artillery train was of decisive importance in determining the outcome of the war."[36]

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[34] J.A. Houlding. Fit for Service: The Training of the British Army 1715-1795. (Oxford: Oxford University Press, 1981) p. xii.

[35] Daniel J. Beattie. "The Adaptation of the British Army to Wilderness Warfare 1755-1763" in Adapting to Conditions (ed.) Maarten Ultee. (University: University of Alabama Press, 1986) p. 78. see also Daniel J. Beattie. General Jeffery Amherst and the Conquest of Canada 1758-1760 (unpublished dissertation: Duke University, 1975)

[36] Lawrence Henry Gipson. The Great War for the Empire: The Victorious Years. 1758-1760. (New York: Alfred A. Knopf, 1949) p. ix.

The story of British gunboats in the 1760 Canada campaign is a history of combinations. At the most fundamental level it is about exigency and geography. The British army's need to take artillery into the North American interior and the existence of a navigable waterway stretching deep into the hinterland made conveyance by water natural and logical. The step from simply transporting the siege-trains by water to developing gunboats resulted from a combination of circumstance and available resources. After the loss of the Lake Ontario fleet in 1756, and subsequent withdrawal of the British Royal Navy from the inland waters of North America, responsibility for the defence of vital frontier lakes and rivers fell to the Royal Artillery. Only they had the resources to take on the task. How they accomplished this singular assignment, indeed, how they invented a new tactical role for artillery in the process, is the central theme of this thesis.

The Royal Artillery's gunboats were a combination of traditional maritime design and wilderness innovation. In Chapter Two, I investigate their designs, construction and armament. Amherst's whaleboats, for example, may have derived from the centuries-old Basque shallop. Similar vessels hunted whales off the coast of Labrador within fifty years of Columbus's first voyage. About thirty-four feet long and double-ended, they were light and fast. During the 1760 Canada campaign some had a swivel gun or small mortar mounted forward at the harpooner's station.

Row-galleys also had a trans-Atlantic pedigree. These gunboats probably descended from the sixteenth-century ocean-going pinnace. Square sterned, lightly built of pine and narrower in relation to its length than other sea-going vessels, the pinnace was "suitable for privateering, exploring and for landing people on a coast."[37] An illustration of the pinnace *Virginia* taken from a 1607 map of George Popham's short-

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[37] William A. Baker. Colonial Vessels: Some Seventeenth-Century Sailing Craft. (Barre: Barre Publishing Company, 1962) p. 54.

lived Sagadahoc Colony at the mouth of the Kennebec River, shows a vessel very similar to a contemporary drawing of a Lake Ontario row-galley. The 1760 row-galleys carried a single, forward-firing heavy siege-gun.

Floating-batteries were uniquely American. Angular, ungainly and crudely constructed, contemporary accounts refer to them as floating-castles, radeaus, or arks-of-redoubt. Mounting six 24-pounder heavy cannon and a 13-inch mortar, the eighty-four foot long *Ligonier* was the most powerful mobile artillery emplacement in North America and the flagship of the Lake Champlain corps of Amherst's assault on Montreal. The discovery of the floating-battery *Land Tortoise* in 1990 sheds valuable new light on these indigenous vessels.[38]

The story of Amherst's gunboats is also about a combination of men. In Chapter Three, I examine the British artillerymen who served the guns and the American provincials who sailed and rowed the galleys and floating batteries. William Martin's company of the Royal Artillery and Colonel Christopher Harris's 1st Rhode Island Regiment manned the gunboats on Lake Champlain. The larger Lake Ontario squadron comprised detachments from Samuel Strachey and William MacLeod's companies of Artillery and three New York Regiments. A recent study of these New York regiments suggests that differences between British regulars and American provincials may not have been as great as many historians currently believe. Officers of the Royal Regiment of Artillery and the New York Regiments were both from the middling and professional classes and private soldiers from New York were, like the rank and file of the army as a whole, "representative of the surplus labour of the Empire, from Hanover to Dublin."[39] While this situation may have been anomalous, the active cooperation of New York

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[38] Russell P. Bellico. Chronicles of Lake George, Journeys in War and Peace. (Fleishchmanns: Purple Mountain Press, 1995) pp.114-115.

[39] Edward H. Knoblauch. "Mobilizing Provincials for War: The Social Composition of New York Forces in 1760" New York History Volume 78, Number 2. April 1997. p. 166.

provincials and artillerymen in the ordnance-train and artillery escorts tests the widely held view that relations between metropolitan and colonial troops during the Seven Years' War in North America were strained and acrimonious.

Finally, the story is about combined operations. In a war that was defined by amphibious offensives -- Louisbourg, Quebec, Belle Isle and Havana -- the 1760 Canada campaign is notable as one that took place hundreds of miles inland. In Chapter Four I return to Jeffery Amherst's assault on Montreal and attempt to reconstruct the events of the final campaign of the Seven Years' War in North America. At Ile aux Noix on the Richelieu River whaleboats led the first echelon of infantry ashore while the heavy guns and mortars of row-galleys and floating-batteries kept the French army from disputing the landing area. At Ile Royale, on the upper St. Lawrence River, five out-gunned British row-galleys fought and won a pitched battle against a ten-gun French brig. For the first time heavy siege-guns were in the vanguard of an advancing army. In 1760 this was unprecedented. At Ile aux Noix and Ile Royale it was decisive. On September 9th 1760, when the Union Flag of England and Scotland was raised over Montreal, it was fitting that the honour of hoisting it was given to a junior officer of the Royal Regiment of Artillery and commander of a gunboat.

-Two-

Inventing Riverine Warfare: Designs, Construction and Armament of British Gunboats

There is no judge more equitable than cannon. They go direct to the goal.

-Vauban

If Major-General Jeffery Amherst's strategy for the 1760 Canada campaign was dictated by the ancient imperatives of North American geography, the arrangement of his three army corps on the water-routes that converge at Montreal was an essay in modern amphibious warfare. Nearly all the elements of a twentieth-century conjunct operation were present in a primitive form. Amherst deployed offshore artillery platforms, close support assault vessels and even specialized flat-bottomed troop and artillery landing craft. More remarkably, Amherst's operations took place hundreds of miles inland with only peripheral help from the British Royal Navy. Artillerymen, civilian ship-wrights and an army of provincial soldiers built and manned Amherst's gunboats on lakes deep in the North American interior.

A diagram of Amherst's first attempt at wilderness combined operations in 1759, which survives in the Sir Frederick Haldimand Papers, illustrates the scope of the undertaking.[1] (fig.1.0) In the Haldimand drawing, upwards of one thousand boats carrying more than eleven thousand men, three months provisions, arms, hospital,

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[1] Sir Frederick Haldimand Papers. Queen's University Archives.[hereafter QUA] microfilm no. 951, Reel 11. "Disposition of Forces in the Boat Expedition of Sir. Jeffery Amherst down the St. Lawrence River in 1760." This diagram is incorrectly titled in the finding aid to Haldimand's papers. It is not the 1760 expedition but the flotilla on Lake George in 1759.

baggage and a massive artillery siege-train are depicted advancing down Lake George toward the French positions above Fort Carillon. This joint British-American wilderness army was larger than Major-General James Wolfe's force then besieging Quebec.[2] It was also self sufficient. Where Wolfe's army had forty-nine ships of the Royal Navy and more than 119 chartered transports, ordnance vessels and victuallers to escort, convey and sustain it, Amherst's force on Lake George was on its own.

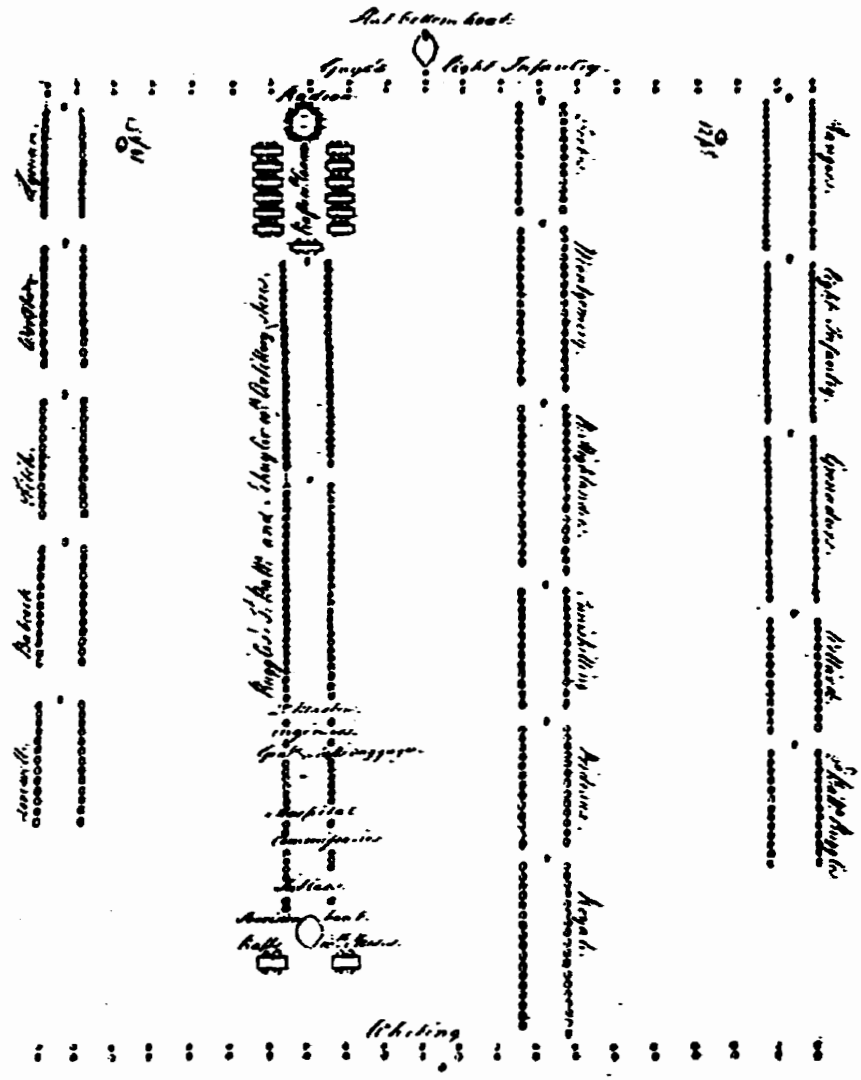

Figure 1.0

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[2] Beatson. Naval and Military Memoirs... Volume III, First Appendix. p.224.

The Haldimand drawing also offers a unique glimpse into the minds of Jeffery Amherst and his ordnance officers. Their designs for riverine warfare are reflected in the army's order-of-battle.[3] The position of the ordnance-train in a central column, screened and protected by the army, testifies to their anxiety for the safety of the most valuable and vulnerable element of the army. Without heavy artillery Amherst had little hope of taking French entrenched positions. The placement of the elite shock-troops -- rangers, light infantry, and grenadiers -- on the right flank, with British regular infantry regiments immediately to their left, in close support, indicates that Amherst planned to land the army on the eastern or right hand shore. Similarly, the position of provincial regiments on the extreme left of the formation, farthest from the intended landing site, argues that he assigned them to the mobile reserve. Provincials also manned the gunboats and were employed as labourers in the siege-train. Overall, the most significant detail in the Haldimand drawing is the placement of the Royal Artillery gunboats. Their location in the army's van confirms that tactics for riverine warfare hinged on operational water-borne artillery. At the head of the flotilla, whaleboats, row-galleys and a floating battery were sited where their guns could best play a leading role in the invasion of Canada.

Amherst's army on Lake George was formed up by battalions in four long double columns of bateaux.(fig. 1.0) The leading "flat bottom boat" was a Royal Navy landing craft of the type developed after the abortive attack on Rochefort in 1758.[4] Naval historian David Syrret describes this specially designed type as "36 ft long, 10 ft. 2 in. in

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[3] Similar diagrams of Amherst's Lake Champlain army in 1759 and the western or Lake Ontario corps of his army in the 1760 Canada Campaign mirror the 1759 Lake George order-of-battle very closely. Amherst Family Papers NAC U1350 Volume 14, microfilm number A 1827. pp. 57,85. see also William Hervey. Journals of Hon. William Hervey 1755-1814. (Bury St. Edmund's: Paul & Mathew, Butter Market, 1906) p.109.

[4] Captain-Lieutenant H. Skinner. "Proceedings of the Army under the Command of General Amherst, for the Year 1759." The Universal Magazine December, 1759. p.284. "the flat-bottomed boat...is one of them that was at the landing on the coast of France." see also Robert Beatson. Naval and Military Memoirs. Vol.II. p.167.

breadth, 2 ft. 11in. in depth amidships between keel and gunwale, and equipped with tholepins and thwarts for twenty oarsmen. It was flat-bottomed, clinker built, with bluff bows, and steered by a detachable rudder and tiller."[5] (fig.1.1) This vessel was brought over the Hudson River-Lake George carrying place in the early summer of 1759 and on July 14th fitted with a brass 3-pounder mounted as a swivel. Although Jeffery Amherst remarked that the vessel "answered very well,"[6] with an artillery piece nearly seven feet long and weighing over 1100 pounds situated in the forward part of the boat, it was probably fortunate that the vessel was flat-bottomed with bluff bows.[7] It was not particularly successful as a gunboat and in 1760 these Royal Navy vessels were used solely as troop carriers with Brigadier-General James Murray's eastern corps in the assault on Montreal.

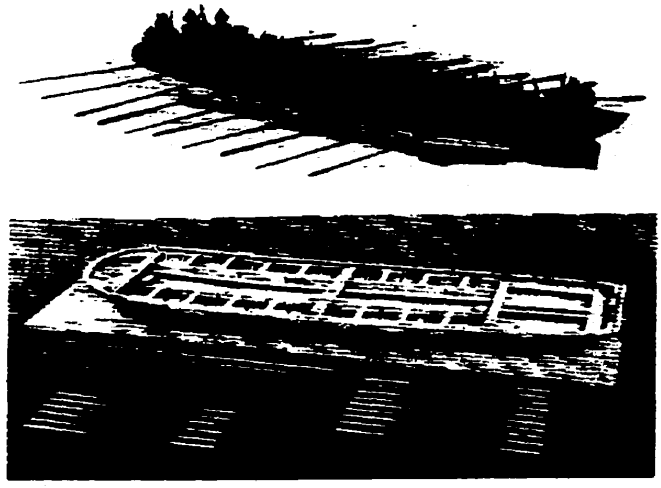

Figure 1.1

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[5] David Syrret."The Methodology of British Amphibious Operations During the Seven Years and American War." The Mariner's Mirror Vol. 58, No.3. August 1972. p. 273.
[6] Journal of Jeffery Amherst p.137.
[7] David McConnell. British Smooth-bore Artillery: A Technological Study. (Ottawa: National Historic Parks and Sites, 1988) p.47. "the collection of arms in the Tower of London contains a brass 3-pounder, cast in 1742, 6 feet 11 inches long, weighing 11cwt. 3 qr. 19lb., which is similar in design to the circa 1735 drawing and, as far as can be ascertained from a line drawing, appears to match closely the dimensions given in 1743."

The next forty-three boats, arranged two deep, line abreast and forming a forward screen, were whaleboats of Colonel Thomas Gage's 80th. Light Armed Foot, the army's advance guard.(fig. 1.0) Since control of the lake was contested by the French, Amherst wanted fast manoeuverable boats with significant firepower in his vanguard. The advance guard also contained scouts and skirmishers who were expected to clear the shoreline of ambuscades, and secure points of land and islands in advance of the main body. To help them accomplish these tasks some whaleboats mounted a 1/2-pounder swivel-gun or light mortar.

Whaleboats were the model gunboats of the Seven Years' War in North America. They were utilized in almost every action in the interior between 1756 and 1760, and with little change in design, continued to be employed during the Revolutionary War and the War of 1812. They were the rangers' vessel of choice and made up nearly 50 percent of the boats in Lieutenant-Colonel John Bradstreet's raid on Cataraqui in 1758.[8] More than two hundred took part in the 1760 Canada campaign.Whaleboats incorporated the lightness of North American bark canoes without their fragility, and the strength of European construction without excess weight. Double-ended and clinker built, they had narrow, easily driven hulls that could be paddled, rowed, sailed and portaged. Yet, they were sufficiently buoyant to carry fifteen men, their arms, and baggage and mount a small artillery piece.[9] Whaleboats were also quickly and inexpensively produced. A carpenter and apprentice could build one in about one week from prepared lumber.[10]

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[8] John Bradstreet. An Impartial Account of Lieut. Col. Bradstreet's Expedition to Fort Frontenac reprint (Toronto: Rous & Mann, 1940) p.16. "Thus we embarked on the Lake, our fleet consisted of 123 batteaus and 95 whaleboats..."

[9] Hervey. Journals. "Brigade Order Books" p.99. Hervey records "Gage's regiment (475 men including officers) to receive 32 whaleboats, and the Light Infantry of regiments (592 men including officers) to receive 40."

[10] William A. Baker. "The Whaleboat 'Middlesex': Technical Notes. Nautical Research Journal September 1983. vol 29/3. p.123.

In February 1759, Jeffery Amherst ordered Captain Joshua Loring to contract with Massachusetts Bay shipwrights to build fifty whaleboats: "28 feet in the keel, 5 feet 2 inches broad, 25 inches deep, 34 feet from stem to stern, 7 streakes of a side from the keel to the gunnel. The whole boat to be well put together and to be made light and to rowe with seven Oars besides the steering oar."[11] Amherst's description closely matches one of only two known published whaleboat plans of the period. Peter Steel's Naval Architecture published in London in 1804 depicts a whaleboat 32 ft. 9 in. long with a beam of 5 feet 2 inches. As can be seen (fig. 1.2) Steel's whaleboat is slightly higher and fuller at the bow [on the right] than the stern. This feature compensated for the weight of the ordnance mounted forward. With a length-to-breadth ratio of almost 6:1 Steel's whaleboat was remarkably like the largest type of North American bark canoe.[12] From the number of thwarts shown in the plan, this vessel, like Amherst's, rowed with seven oars.

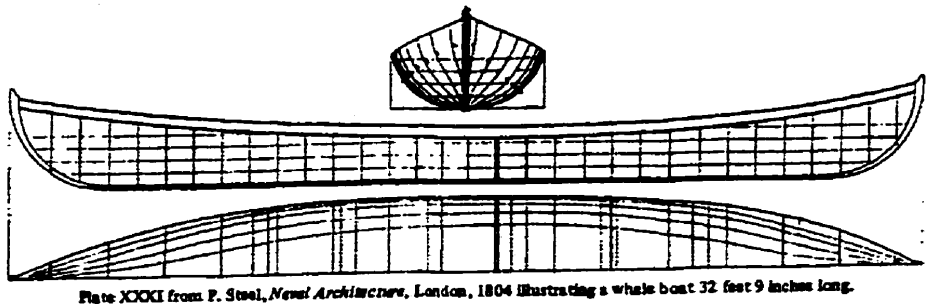

Plate XXXI from P. Steel, *Naval Architecture*, London, 1804 illustrating a whale boat 32 feet 9 inches long.

Figure 1.2

The other whaleboat plan is in Fredrik Henrik af Chapman's Architectura Navalis Mercatoria published at Stockholm in 1768. Chapman's plan of "A Greenland pinnace for

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[11] Sir Jeffery, 1st Baron Amherst: Official Papers 1740-83 WO 34/64-5, PRO 285/1-2. QUA microfilm reel no.1445. Letter from Jeffery Amherst to Captain Joshua Loring. February 15, 1759.

[12] W.P. Dunphy. "The Bark Canoes of North America". Mariner's Mirror. Vol 65. No. 1. February 1979. p.81. "The fur trader's thirty-six foot *canot de maitre*, could carry four tons of freight plus as many as fifteen crew members with all their gear."

whale-fishing" is similar to Steel's boat but shorter and beamier. (fig. 1.3) At 24 ft. 6 in. long and 5 ft. 9 in. wide, this vessel had a length-to-breadth ratio of 4.28:1 and considerably more rocker, or keel curvature, than Steel's plan, probably making it a drier and more manoeuverable vessel in rough water. Chapman's drawing also shows provision for a mast, and five or six oars. Neither vessel was fitted with a rudder but like Amherst's whaleboats, were steered with steering oars.

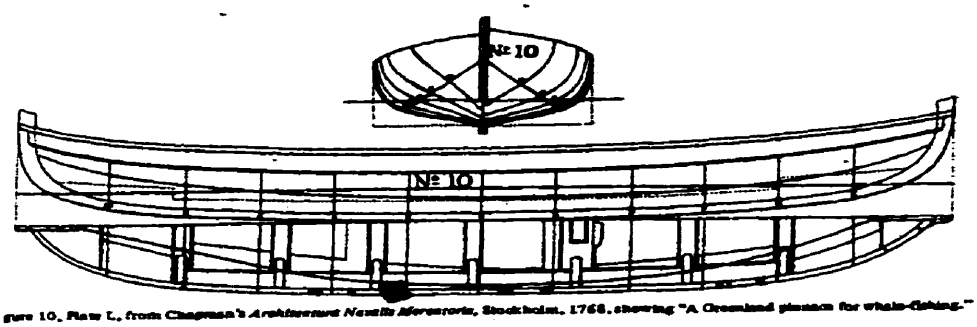

Figure 1.3

Contemporary illustrations of whaleboats in the North American interior during the Seven Years' War are as rare as published plans. In most pictures, the boats are indistinct and, therefore, of little value as evidence of their design. Two engravings, however, one from 1756 and another from 1759, are worth examining closely. Thomas Johnston's 1756 drawing of Fort William Henry, (fig. 1.4) and Captain-Lieutenant Henry Skinner's "Perspective view of Lake George," in *The Universal Magazine* of November 1759, (fig. 1.5) depict vessels similar to Peter Steel's whaleboat plan of 1804. The double-ended boats along the shoreline in Johnston's work and the boats in the lower left of Skinner's engraving appear to be clinker built and are without rudders. While the depicted vessels may be bateaux, the most common type of boat used in the interior, they closely resemble Steel's whaleboat plan.[13] These illustrations, along with Jeffery

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[13] Kevin J. Crisman. "Struggle for a Continent: Naval Battles of the French and Indian War" Ships and Shipwrecks of the Americas (ed.) George F. Bass. (New York: Thames and Hudson, 1988) p.133. Crisman identifies the vessels in Johnston's engraving as

Amherst's description and Steel's plan may indicate that the representation of a Seven Years' War whaleboat in the Canada Steamship Line's Marine Historical Collection is inaccurate.(fig. 1.6) The addition of a skeg and rudder, as shown in the Canada Steamship Collection drawing, were probably modifications of the later Revolutionary War period.

Figure 1.4

Figure 1.5

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bateaux.

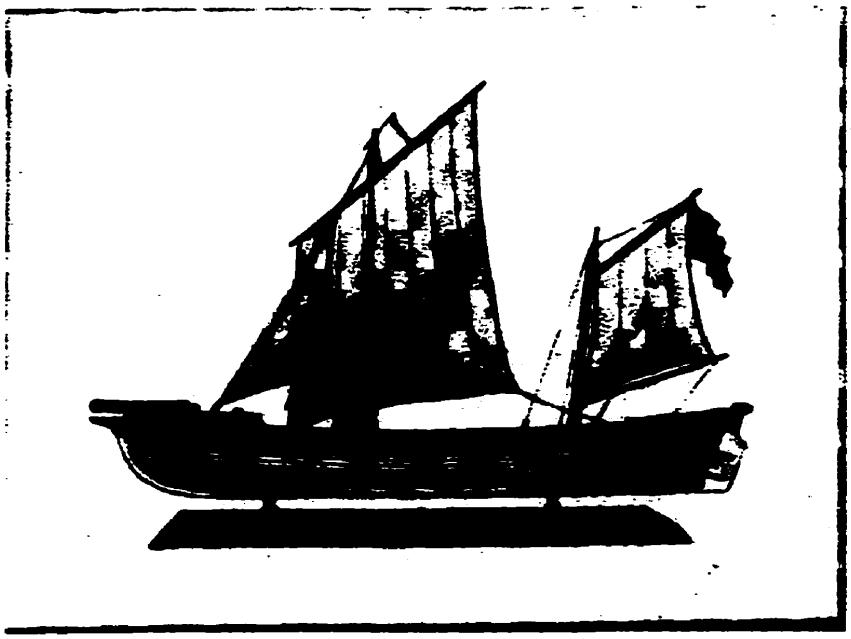

Figure 1.6

The eighteenth-century whaleboat's origins are obscure. In 1974, the late William Baker speculated the design derived from the Biscay or Basque shallop.[14] Basques were early visitors to North America, he noted, and their vessels well known along the east coast in the sixteenth and seventeenth centuries.[15] As Europe's pre-eminent whalers, Basque harpooners and their boats were also employed by the Dutch and English when they entered the whaling business in the early seventeenth-century. A detailed description of a Basque shallop found in the Bayonne municipal archives approximates Amherst's description.[16] The shallop's construction, however, creates a problem for Baker's thesis.

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[14] Baker. "The Whaleboat Middlesex" p.118. "In New England the change of type name from Biscay shallop to whaleboat may have occurred about the beginning of the eighteenth century."

[15] Ibid. "When Bartholomew Gosnold explored the the coast of New England in the *Concord* in 1602 he was boarded by natives, some in European clothing, from a Biscay shallop under sail."

[16] Jean-Pierre Proulx. Basque Whaling in Labrador in the 16th Century (Ottawa: National Historic Sites, Parks Service, 19--) pp.31-32. "To pursue and overtake the whale, vessels are employed which are very small scantling and thus very light, called Boat in English

Biscay shallops, like most Iberian and Mediterranean boats, are thought to have been carvel built. Marine historian, James Hornell maintains that clinker built vessels are seldom found in Bay of Biscay ports.[17]

Hornell's research into medieval ship construction techniques suggests that the Norse longboat may have been the ancestor of the whaleboat. The Shetland Ness Yole, (fig. 1.7) a small, modern derivative of the Viking longboat, continues to be built and sailed in the Shetland Islands today. With the exception of the centre-line rudder and a slightly flatter sheer, the lines of these modern double-ended, clinker-built fishing boats closely resemble Steel's whaleboat plan. Hornell asserts that from medieval times until the mid-nineteenth century the majority of small vessels in Great Britain were built in the Scandinavian manner.[18] This boat-building culture, transplanted to North America during the trans-oceanic migrations of the seventeenth and eighteenth centuries, took root and flourished in the coastal fishing and whaling towns of New England. Whaleboats

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and Pirougue in French. Usually they are 7 metres in length and 1 metre 70 or 80 in breadth, with a depth of 40 to 45 cm.at the centre and over one metre at the ends, which gives them a strongly arched appearance. The frames are barely more than 1cm. and a half thick, and the planking, which is of cedar, at most 1c. thick. Sharp and tapered at the ends, but flat toward the centre, the boats is propelled by 5 oars and by a Stern Oar, a steering oar which serves as a rudder and is therfore positioned at the stern parallel to the length of the craft."

[17] James Hornell. "The Sources of the Clinker and Carvel Systems in British Boat Construction." Mariner's Mirror Vol 34. No. 4. October 1948. p. 244. " ...the clinker build is seldom seen in any port or harbour of the Bay of Biscay." For a description of clinker and carvel construction see p. 238. "A century ago all wooden vessels were built on one or other of the two systems which alone were known to British boatbuilders of that period. Either they were carvel-built, with the skin planking flush-jointed and caulked with oakum or cotton, or else they were clinker-or clincher-built with planks usually about 5 in. in width, tapered in thickness towards one edge; each plank overlapped the one below about 3/4 in., the fastenings being copper nails or rivets, clinched over washers."

[18] Hornell. "Sources..." p.239. "Until about the middle of the nineteenth century the clinker build seems to have been wellnigh universal on the east coast of Scotland and England, along much of the eastern half of the south coast of England and sporadically in Devon and Cornwall and on the Welsh coastline."

constructed for use in the North American interior during the Seven Years' War may have been built by carpenters carrying on a British boat-building tradition that dated from the Viking invasions of Britain at the end of the first millennium

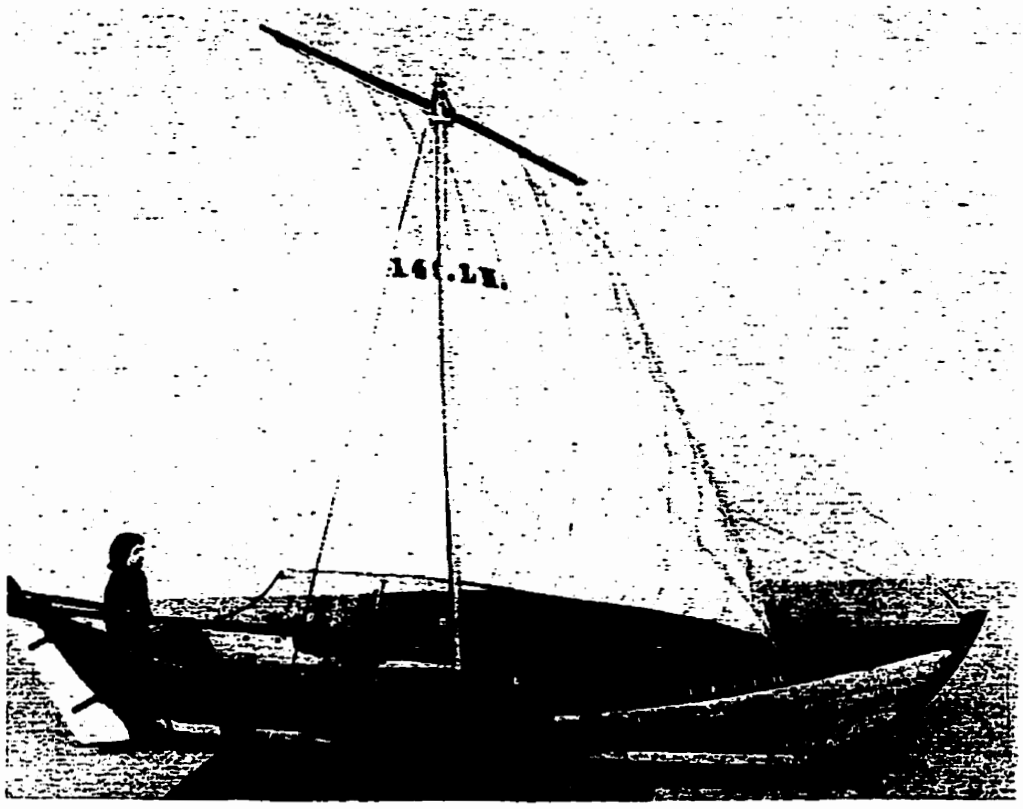

Figure 1.7.

The whaleboat's light construction, fine entry and narrow beam severely restricted the size and weight of the gun carried in the bow. Only the smallest and lightest types of eighteenth-century ordnance could be effectively mounted on board. The most obvious choice was the 1/2-pounder swivel gun. Louis Antoine de Bougainville records American rangers' whaleboats armed with swivel-guns in 1756.[19] Thirty-four inches long with a 1

[19] Louis Antoine de Bougainville. Adventure in the Wilderness: The American Journals of Louis Antoine de Bougainville, 1756-1760. translated and edited by Edward P.

1/2 inch bore and weighing about 200 pounds, when loaded with a handful of musket shot, swivels were murderous short-range anti-personnel weapons. In the spring of 1760, Amherst requested fourteen swivel-guns from the sloop *Weazel*, stationed at New York, be sent inland for use on the Lakes.

Thomas Ord's "Abstract of Guns, Mortars and Howitzers" of May 19th, 1760, and Major William Hervey's "Return of Ordnance Embarked at Oswego on August 10, 1760", suggest three other types of ordnance may have also been mounted in Amherst's whaleboats during the Canada campaign.[20] Cohorn and royal mortars were the smallest artillery pieces in service with the Royal Regiment of Artillery during the eighteenth-century. Named after Dutch military engineer Baron Menno van Coehorn, the cohorn mortar was only 13.6 inches long and weighed just 58 lbs.[21] The royal or 5 1/2 inch mortar was slightly larger being 15.2 inches long and about 140 lbs.[22] Cohorn and royal howitzers -- basically mortars designed for field service -- were considerably larger and heavier. The cohorn howitzer was 22 inches long and weighed 238 lbs while the royal was 26 1/2 inches long and weighed 448 lbs.[23] Though the royal howitzer was probably too heavy for use in whaleboats, the other three types, especially the cohorns, were ideal. In some ways they were superior to swivel guns.

Unlike cannon, mortars and howitzers had low muzzle velocities. They were not battering-pieces firing solid shot but were used to lob explosive shells and incendiary carcasses in a high trajectory.[24] In the British Royal Artillery their elevation was usually

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Hamilton. (Norman: University of Oklahoma Press, 1964) p.46.

[20] Amherst Papers Wo 34/52, PRO 284/2. QUA microfilm reel no. 1437. "Abstract of Guns, Mortars, and Howitzers for Service of the Campaign by way of Crown Point." Albany , 19th May 1760. also Hervey, Journals p.57. "Ordnance Embarked at Oswego."

[21] McConnell. Smoothbore Artillery pp.113-114.

[22] Ibid. pp.115-117.

[23] Ibid. pp.137-143.

[24] McConnell. Smooth-Bore Artillery. p.307. " The carcass was an incendiary device used to set fire to buildings and shipping... Derived from the ancent 'fire ball,' the carcass was strengthened by iron ribs or an iron casing to withstand the greater charges of

fixed at forty-five degrees and the range adjusted by the weight of the gunpowder charge. Cohorns were essentially eighteenth-century grenade launchers. Aboard whaleboats they were ideal weapons for clearing hostile shorelines and covering troop landings. Loaded with incendiaries they could also be very effective against shipping. Although the downward thrust of the discharge was transmitted directly to the whaleboat's light hull, with only 4 1/2 ounces of gunpowder required to hurl a 4-lb shell over a serviceable distance, the recoil was minimal.[25] During his 1758 raid on Cataraqui, John Bradstreet recorded "an experiment was tried with a haubitzer (sic) to discover whether the batteaus would sustain the shock of a discharge, which they did very well."[26]

The number of whaleboats that carried ordnance in the 1760 Canada campaign is unknown. Certainly all of them did not. Based on the artillery returns from Crown Point and Oswego and Amherst's request for swivel-guns, a conservative estimate might be that between 15 and 20 percent of the two-hundred whaleboats that took part in the campaign mounted ordnance of one type or another.

Cruising just astern of the forward screen of whaleboats, and inside the first and fourth columns in the Haldimand drawing, are two row-galleys. (fig. 1.0) The row-galley on the right mounted a 12-pounder brass cannon measuring 9 feet 6 inches and weighing

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gunpowder. It was filled with an inflammable composition which was ignited by the flash of the service charge, the resulting flames spewing forth from a varying number of vent holes. Depending on its size, a carcass burned from three to eleven minutes and its fire was very difficult to extinguish."

[25] Ibid. Appendix C. p.393.

[26] Bradstreet. Impartial Account p.17. see also Adrian B. Caruana. The History of English Sea Ordnance 1523-1875. Vol II. The Age of the System 1715-1815. (Rotherfield: Jean Boudriot Publications, 1997) p. 477. "It is known that Cohorn and Royal mortars were embarked on board ships for the use of landing parties in the Seven Years' War (Priddy's Hard Archive), and the entirely reasonable suggestion has been made that when these were transported from ship to shore they would have been mounted in such a fashion to be usable."

almost 4500 pounds. The one on the left carried a 10 foot, 5400 pound, brass 18-pounder.[27] Their placement on the forward flanks of the flotilla suggests that Amherst had two offensive roles in mind for these vessels. They had to be capable of moving ahead quickly to support the advance guard if strong opposition was encountered enroute and also give supporting fire to cover infantry landings. In a defensive action they would fall back to protect the ordnance train. To accomplish these missions, row-galleys had to be fast and manoeuverable to meet waterborne threats, and of relatively shallow draft and heavy construction to move inshore and clear landing sites with their heavy guns.

As oared fighting vessels, British row-galleys were not as successful as whaleboats in executing the dual escort and assault functions Jeffery Amherst intended for his gunboats. Despite a number of design modifications made during the course of the war, the contradictory demands of speed under oars and maximum fire-power were never fully resolved in row-galley designs. The root problem, of course, was the tremendous weight of the siege-gun they carried. Since rowing is an oscillatory motion, the galley's entire mass had to be re-accelerated slightly with each stroke. If all the rowers' exertions were absorbed in overcoming hydrodynamic drag, loss of speed resulted since the galley would continue to decelerate during the recovery part of the stroke.[28] Under oars alone, the heavier the galley the slower its maximum speed. The problem was compounded by placing the gun in the forward part of the vessel. Not only did the galley's bow have to be fuller and therefore less streamlined to accommodate the weight of the gun, but compensatory ballast had to be added aft to maintain the vessel's trim. The need for ballast effectively doubled the weight the boat had to carry. Sea-trials of the replica Revolutionary War gondola *Philadelphia II* on Lake Champlain in 1992 clearly

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27 McConnell. Smooth Bore Artillery pp.35-37.

28 John F. Guilmartin, Jr. "The Early Provision of Artillery Armament on Mediterranean War Galleys" Mariner's Mirror Vo. 59. No.3. August 1973. p.267. see also footnote 21. p. 280.

demonstrated the enormous physical exertion required to row a heavy eighteenth-century gun-boat. John Raymond Bratten records "the crew found it difficult to make progress sweeping against even a gentle breeze."[29] Rowing the vessel two miles against the wind physically exhausted the crew.

The 1760 campaign row-galleys did not rely solely on oar-power. Lieutenant Thomas Davies' contemporary illustration of a row-galley indicates they also had a simple but effective sail plan.[30] (fig. 1.8) Captain John Montresor's "dimensions and description of certain row boats" confirms the row-galleys had "a four inches broad and five inches deep keel and carried two shoulder of mutton sails."[31] The efficient fore-and-aft sail plan, prominent keel and the presence of a marked dead-rise from the keel to the turn of the bilge in both examples suggests row-galleys sailed well. Amherst's Lake Ontario corps travelling north-east from Oswego also had the prevailing wind and current to help propel its heavy row-galleys. Lieutenant-Colonel Haviland's Lake Champlain corps travelling northward from Crown Point had the prevailing wind in its favour at least half of the time. If British army commanders had to count solely on the power of provincial troops to move the galleys, they would have been of little utility as escort vessels. Short bursts of speed under oars were possible but any sustained effort would quickly deplete the crew's strength.

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[29] John Raymond Bratten. The Continental Gondola *Philadelphia* unpublished dissertation, Texas A&M University, 1997. p.245.
[30] R.H. Hubbard. (ed.) Thomas Davies c. 1737-1812: An Exhibition Organized by the National Gallery of Canada. (Ottawa: National Gallery of Canada, 1972) figure 8. "A Galliot."
[31] William Clements Library. Gage Papers, American Series. Volume 101. Gage to Haldimand 4.2.71.

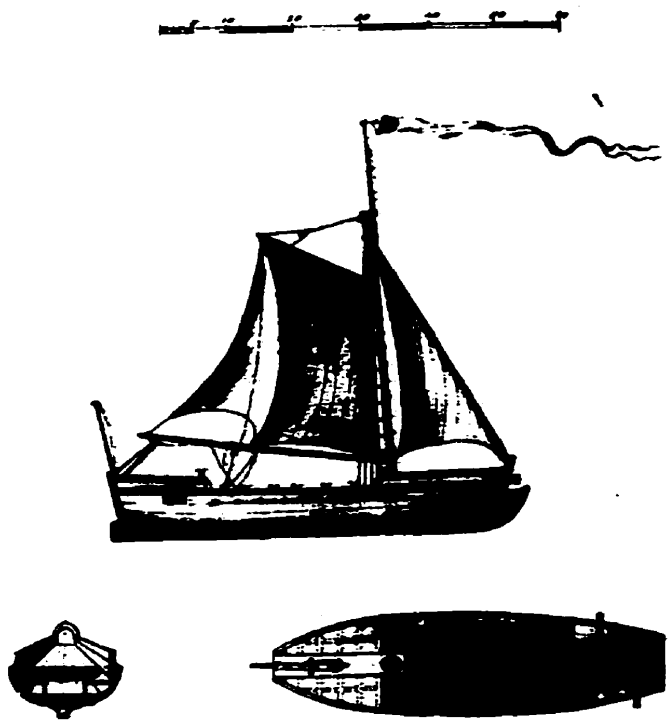

Figure 1.8

The design of 1760 Canada campaign row-galleys probably derived from the sixteenth-century ocean-going pinnace. From the French *pinasse* and Latin *pinus* meaning a pine tree or something constructed of pine, pinnaces were typically light, square-sterned, with narrow beams, between 20 to 60 tons burthen and propelled by sails and oars.[32] J.E.G. Bennell states the pinnace class, specifically designed for naval use, dates from 1586. In that year seven pinnaces between 39 and 70 tons were built for the navy. "Crews were about 30-45 men, and armaments generally comprised pieces of the saker, minion and falcon types."[33] The saker was a 6-pounder cannon about 9 1/2 feet long and weighing 2500 pounds. The minion weighed about 1500 pounds and the falcon about 700

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[32] William Baker. Colonial Vessels. p.53.
[33] J.E.G. Bennell. "English Oared Vessels of the Sixteenth-Century" Mariner's Mirror Vol. 60 No. 2. May 1974. p.179.

pounds.[34] "As would be expected in craft of narrow beam, these small boats carried their armament forward."[35] An illustration of the pinnace *Virginia* on a 1607 map of George Popham's Sagadahoc colony at the mouth of the Kennebec River shows a vessel not unlike Lieutenant Davies' plan of a North American row-galley.[36] (fig. 1.9)

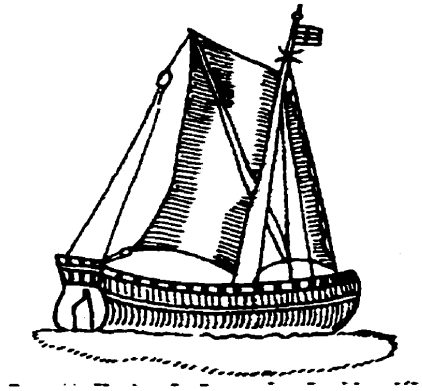

Figure 1.9

Massachusetts Governor William Shirley's letter to Commodore Augustus Keppel of May 20, 1755, contains the first record of row-galleys built in the American interior during the Seven Years' War.[37] Two twenty-ton, schooner-rigged row-galleys, forty feet on the keel, rowing with fourteen oars and mounting swivel guns were built that year in Oswego.[38] They acted as survey and reconnaissance vessels until captured by the French in 1756. The fact that they ventured to the northern coast of Lake Ontario, and one was taken only after a long chase, attests to their sailing capabilities. Two other "galliots", probably similar to the Oswego boats, were captured by the French at the fall of Fort

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[34] Harold L. Peterson. Round Shot and Rammers (Harrisburg: Stackpole Books, 1969) p.14.
[35] Bennell. "English Oared Vessels..." p.183.
[36] William Baker. Colonial Vessels pp.60-61.
[37] NAC, MG12; PRO: ADM 1/480. Microfilm reel no. B-1353. Letter from Governor Shirley to Augustus Keppel, May 20, 1755.
[38] Carol MacLeod. Tap of the Garrison Drum: The Marine Service in British North America 1755-1812 (unpublished typescript, Parks Canada Historical Research and Records Unit, 1970) p.14.

William Henry in 1757. These vessels were reportedly constructed by Captain Nathaniel Meserve's company of carpenters. According to Colonel James Montresor each was hurriedly fitted with a single 6-pounder cannon when it was learned the French were about to invest the fort.[39] No other information of their design remains extant, but if these early Lake George galliots were indeed constructed by Meserve, a highly respected Maine shipwright, it is plausible they too were built to sail.[40]

A very different kind of row-galley emerges from the journal of Captain Samuel Cobb, a ship-carpenter from Falmouth Neck, Maine. In an entry dated August 23, 1758, Cobb wrote: "I went to cutt crucket timber for a row galley of 40 ft long 15 feet wide 5 feet deep to carry 12 pounders in the Stern and 5 swivels on a Side to go with 24 oars".[41] Cobb's dimensions indicate a squat vessel only 2.6 times as long as it was wide with an internal capacity of about 3500 cubic feet or 37 tons burden and rowing twelve oars per side. Both Davies' and Montresor's boats, like pinnaces, were much narrower in relation to their overall length. Distinct from the other vessels, Cobb's row-galley also carried the heavy artillery piece, or perhaps pieces, in the stern. Another row-galley built on Lake George in 1759 also mounted its ordnance aft. In an article published in the November 1759 issue of *The Universal Magazine*, Captain-Lieutenant Henry Skinner reported on

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[39] James Montresor. Journals of Col. James Montresor 1757-1759. (New York: Collections of the New York Historical Society, 1881) p. 38.

[40] Dictionary of American Biography p.577. "Nathaniel Merserve turned his carpentry training to good account in the siege of Louisbourg in 1745, when, as lieutenant-colonel of Moore's New Hampshire regiment, which he had helped to raise, he constructed sledges for the transportation of artillery across Cape Breton marshes. In compensation for his services he was selected, through the instrumentality of Sir Peter Warren and Sir William Pepperell, to build a British frigate, one of the rare occasions when the British navy employed colonial shipyards. This vessel, the *America*, 44 guns, was launched from Portsmouth in 1749."

[41] Samuel Cobb. "Journal of Samuel Cobb," The Bulletin of the Fort Ticonderoga Museum Vol XIV, Summer 1981, Number 1. p.24.

July 7 he "mounted an 18-pounder iron in the stern of a proe; fired her; she recoiled about half a foot, but rolled much in the water."[42]

From Cobb's journal and Skinner's report it is unclear whether Lake George galleys fired their stern-guns broadside or over the rudder-head like later eighteenth-century Swedish and Danish gunboats.[43] On Cobb's fifteen foot wide vessel, it is possible two guns may have been placed side-by-side to fire over the stern. The weight of the guns mounted in the vessel's after extremity could have been ameliorated somewhat by long recoil slides. While one gun was in firing position, the other was some distance further forward being charged. After the first had fired and recoiled, the second could then be brought into firing position with breeching tackle. If the guns were fired broadside, the probable arrangement was one gun per side, positioned like the small guns mounted aft in Davies' drawing and on the *Philadelphia.* If only one gun was mounted in the stern, as Captain-Lieutenant Skinner's report suggests, it may have been mounted on a fixed carriage and fired over the rudder head.

We can only speculate why row-galleys built on Lake George in 1758 and 1759 did not utilize forward-firing, centre-line guns. Colonial shipwrights and artillerymen may have been experimenting with galley design and gun positioning in these years. Perhaps on the relatively short and narrow confines of Lake George a wide, stable, gun platform to cover the army's landings was a more important consideration than speed. Mounting ordnance in the stern may have also been an attempt to coax a little more manoeuverability from these stubby vessels by allowing a finer forward entry. If Cobb's description is accurate, Lake George galleys were heavier, rowed with more oars and

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[42] H. Skinner. "Proceedings of the Army..." p.268.

[43] R.C. Anderson. Oared Fighting Ships (London: Percival Marshal, 1962) p.97. "the gun-yawl carried a single heavy gun aft, usually a 24-pr. This was mounted on a fixed carriage, so the recoil of the gun drove the whole boat forward at each discharge and made it necessary to use the oars to get back in position."

carried more armament than the vessels that participated in the 1760 Canada campaign. Whatever the reason for their peculiarity, row-galleys built for use on Lake George in 1758 and 1759 were apparently much more like small floating-batteries than the nimble, sailing gun-boats later built on Lake Champlain and Lake Ontario.

John Dies, the man Jeffery Amherst called the "most skilled mill-wright in the colonies," was responsible for building, and perhaps also designing the galleys that took part in the 1760 Canada campaign. Dies went north from Albany to the Lake George front with forty-five carpenters in June 1759.[44] After the capture of Fort Carillon in July, he repaired and operated the sawmill there for a time and then built and refitted row-galleys at the King's Dockyard on Lake Champlain. In 1760 he supervised the construction of the row-galleys at Oswego and in 1761 built the first British vessels on Lake Erie.[45] Dies was on intimate terms with many powerful men in British North America. He forwarded artillery stores and advice about boat design to William Johnson at Lake George in 1755 and figures prominently throughout the war in the correspondence of Colonel James Montresor, the British army's chief engineer and Colonel George Williamson, the commander of the Royal Regiment of Artillery. Dies was evidently a talented manager and gifted journeyman but as no draughts of his war-time labours have come to light, little more is known about the physical characteristics of his 1760 row-galleys. Their armament, an ambiguous description of the forward gun-mount, and an off-hand comment by Colonel Williamson that they "were something like Folkestone cutters but not so strong," are all that have been found.[46]

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[44] James Montresor. Journals of Col. James Montresor June 3rd, 1759. p. 75. "Mr Dies went to Lake George with 45 carpenters."

[45] Amherst Papers WO34/64-5, PRO 285/1-2. QUA microfilm reel no.1445. Letter from Joshua Loring to Jeffery Amherst. June 11,1760. "I shall leave Mr. Dice, Mr Gleden, a Cap'n of one of the company of Boston carpenters and the eight men I had from Col. Bradstreet to build the six boats for carrying the brass twelve pounders." see also Carol MacLeod. Tap of the Garrison Drum p.61.

[46] George Williamson. Williamson Family Papers NAC microfilm reel no. A-573. Letter

Four row-galleys on Lake Ontario in 1760 mounted heavy brass 12-pounder cannon. The fifth carried an 8-inch howitzer. These guns were taken from the parapets of Fort Ontario at Oswego.[47] On Lake Champlain, Lieutenant-Colonel Haviland's row-galleys mounted iron 18-pounders. As noted earlier, the brass 12-pounder weighed 4,500 pounds. An 8-inch howitzer was 3 feet 4 inches long and weighed about 1,600 pounds.[48] An iron 18-pounder was 9 feet long and weighed over 4600 pounds.[49] These enormously heavy siege-guns had powerful recoils and required strong restraining tackles, fastened to iron eye-bolts in the galley's stem, to absorb and control the shock of discharge. Since the gun was mounted forward where excess weight was most disadvantageous, shipwrights strove to make the gun-mounts strong but also as light as possible. This made the forward gun-mount the boat's most vulnerable component. In 1760, one failed during an engagement between the British galleys and a French brig.

The design of the critical forward gun-mount on Amherst's galleys remains unknown. John Montresor's description that the gun was "to run in grooves on an occasional carriage," could mean it was mounted on a garrison carriage like many British gun-boats on Lake Champlain during the Revolutionary War, (fig. 1.10) or on a horizontal sled like the Continental gondola *Philadelphia.* (fig. 1.11) Though the fact that the row-galleys' guns were taken from the parapets of Fort Ontario may indicate they were mounted on wheeled carriages, the gun-sled was a simpler, cheaper, more sea-worthy mount. Given what we know about the sailing characteristics of the 1760 row-galleys and Colonel Williamson's remark that they were something like Folkestone cutters, it is likely the more stable sled mount was utilized. Mounting the gun on a sled

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from George Williamson to Lord Ligonier. August 26th, 1760.
[47] Ibid
[48] MacConnell. British Smooth-Bore Artillery p.144.
[49] Ibid. p.77.

lowered its centre of gravity, making it less likely to topple when the vessel heeled under sail.

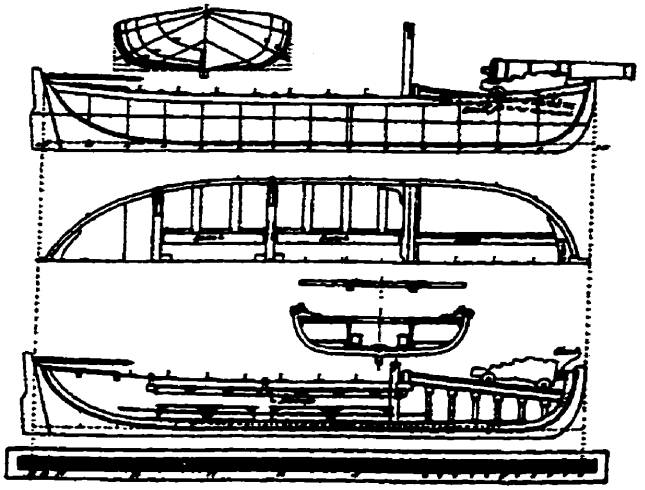

Figure 1.10

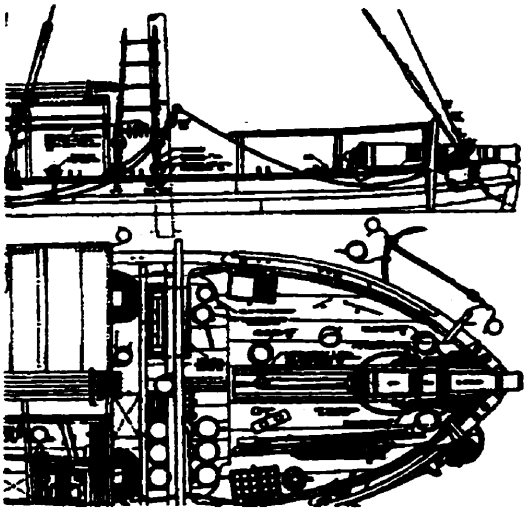

Figure 1.11

With the exception of some vessels built on Lake George in 1758 and 1759, the term row-galley appears to be a misnomer. Evidence suggests the row-galleys of the 1760

campaign were primarily sailing vessels. Mounting a fixed, forward-firing centre-line gun, oars were used to align the vessel to its target and take evasive action in battle rather than propel it. Oars were useful as an auxiliary source of propulsion in calm weather and in winding or constricted passages; however, without the ability to sail, it is difficult to conceive how Amherst's row-galleys travelled from Oswego to Ile Royale in a week without utterly ruining the health of the provincial troops who manned the oars.

Floating-batteries were Jeffery Amherst's largest and most powerful gun-boats. In the Haldimand drawing, the floating-battery *Invincible* is situated at the head of the second column, followed closely by thirteen rafts carrying field artillery. (fig. 1.0) Captain-Lieutenant Skinner's report to *The Universal Magazine* in November 1759 records the *Invincible* "made all the signals and carried four 24- pounders, and four 12-pounders, with a large detachment of artillery."[50] The total weight of its guns was an incredible 39,000 lbs.[51] Its position just ahead of the artillery rafts indicates a primary function to shepherd the valuable and vulnerable siege-train.[52] *Invincible* was the army's floating redoubt. Placed at the head of a column, it was also well situated to add its weight of shot to support infantry assaults, oppose enemy vessels and pound fortified positions ashore.

Floating-batteries were unique American hinterland contributions to naval architecture. Ponderous, ungainly and crudely constructed, they were the antithesis of the

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[50] Skinner. "Proceedings of the Army..." p.286.
[51] McConnell. Smooth Bore Artillery p.31. "About 1750 Glegg copied into his notebook detailed dimensions, according to the mensuration of 1743, of a brass 24-pounder of 9 feet 6 inches, weighing 52 hundredweight, 1 quarter, 12 pounds."
[52] Skinner. "Proceedings of the Army" p.286. "At 8 o'clock at night the signal was made to bring to, on which all boats brought to in great order; the rafts were made fast to the Radeaux, and were in the greatest danger, as the wind blew very hard, and there run a high sea, and, had the Radeaux tripped her anchor, we must have all gone on shore in this situation."

shipwright's art. Contemporaries wryly referred to these angular creatures as Ord's arks, floating castles, or arks of redoubt. Flat bottomed, seven sided -- fourteen if one counts all its plane surfaces -- propelled by sails and oars -- more often towed -- the floating battery was a peculiar vessel. Colonel Henry Champion, a provincial officer from Connecticut, who witnessed the construction of the floating-battery *Land Tortoise* at Lake George in 1758, drew a sketch of it in his diary with the notation: "the name of this creature is Tail and End, or Land Tortoise."[53] Despite jibes about their unlovely aspect, floating-batteries were marvels of wilderness innovation and exceptionally effective escort and assault craft. The British relied on their heavy armament to accomplish both tasks. No other French or British vessel in the North American interior during the Seven Years' War came even close to matching their firepower. The *Ligonier*, Lieutenant-Colonel Haviland's flagship on Lake Champlain in 1760, fittingly named in honour of John, Viscount Ligonier, Master-General of Ordnance, mounted six 24-pounder heavy brass cannon and one thirteen-inch mortar. A single broadside from this floating monster could shatter the hull of any ship the French dared to send against it. Flat bottomed and drawing about two feet of water, it was also a stable gun platform that could be manoeuvered close inshore to cover assaults and pound fortified positions.

John Dies was responsible for first suggesting vessels of this type. Despite his unschooled English, Dies' letter to William Johnson, commander of the Lake George theatre of operations in 1755, deserves to be quoted at length. The vessel he describes closely matches floating-batteries built on Lake George and Lake Champlain in the last years of the war in North America. On August 19, 1755, Dies wrote:

> To favour your landings I Think the Folowing Method would be of Greate uce, I would build two or att Least one, Flatt In the Same Mannor as the Ship

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[53] Russell P. Bellico. Sails and Steam in the Mountains: A Maritime and Military History of Lake George and Lake Champlain (Fleishmanns: Purple Mountain Press, 1992) p.77

> Carpenters build Their Flatts by Which They Creen [careen] the Vessels, The Bottoms are made of Squar'd Loggs 8 or nine Inches Thick and as Broad as they Can be had, to Mak the fuer [fewer] Joints, and as Long as the Floate is Intended, These are Fastned together by a Square piece of Timber, Notched Down about half the thickness across the Endes of the Bottom Pieces, and Pind or Trunnel'd to Gether, the Sides of this Flatt should be raised high enough for a Breast work to Cover the Men, with portholes cut In them att a proper height, and all so holes to Run oars out through, In Such a Floate *you might mount some of your field peices*, Man'd with 40 or 50 Men It Seems to me a thing of this Sort might be of Servis to Cover the armey when Landing [54]

Though none of Dies' floates were built that year, in September 1758, after Major-General James Abercromby's disastrous attempt against Fort Carillon in July, Captain Thomas Ord of the Royal Regiment of Artillery resurrected the idea and began to build the *Land Tortoise*, the British army's first floating artillery battery.

Captain Samuel Cobb's company of carpenters began work on the "raddow" on September 18, 1758.[55] By the third week of October the vessel, "50 feet long, 19 wide, 6 deep, and going with 26 oars" was complete, and on October 20 it was launched. Two days later, as the camp at Lake George was being evacuated for the winter, Captain Ord ordered Cobb and his men to sink the untried vessel in forty feet of water to keep it from falling into French hands. The vessel's presumed submerged location was duly noted in expectation of raising it the following spring. However, during a hurried night-time scuttling operation something went wrong. Instead of settling to the bottom in relatively shallow water, the *Land Tortoise* drifted off station and came to rest more than one-hundred feet below the surface. It was not seen again until 1990 when its angular features

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[54] The Papers of Sir William Johnson (ed.) James Sullivan. (Albany: The University of the State of New York, 1921) Vol. 1 p.863. "Letter from John Dies to William Johnson. August 19, 1755."

[55] Samuel Cobb. "Journal..." p.28." Began to work for Captain Ord who Commands the train on a boat Called the Raddow..."

appeared on the printer of a side-scan sonar of the Lake George Bateaux Research Team led by Joseph Zarzynski.[56]

When the scuttled battery could not be located in the early summer of 1759, newly promoted Major Thomas Ord assumed the French had raised and taken it northward to their camp at the foot of Lake George. He therefore set about to build another. The *Invincible* was completed and launched by mid-July. On July 20, Major-General Jeffery Amherst recorded "a little mistake in the height of the Port Holes of the Radeau, but she will do. Fired every gun out of her to try."[57] Mounting four 24-pounders, four 12-pounders, and manned by artillerymen and provincials, the following morning the *Invincible* took its place at the head of a column and led the army to the landing place above Fort Carillon.

Within two weeks of their departure from the head of Lake George, Amherst's army had taken Fort Carillon and was encamped fifteen miles further north at Fort St. Frédéric on Lake Champlain. Realizing Amherst was bringing up heavy artillery to initiate a formal siege, French Brigadier François-Charles de Bourlamaque had withdrawn his garrisons northward. Neither Fort Carillon nor Fort St. Frédéric could withstand a siege for long, and knowing that if his army was trapped the way to Montreal would be wide open, Bourlamaque destroyed both posts and withdrew to Ile aux Noix at the head of the Richelieu River. There, in a field fortification bristling with one hundred cannon and surrounded by a morass of drowned land, he turned, dug in and waited for Amherst.

In the end the French waited a full year before being assailed at Ile aux Noix. Perhaps a little surprised by his easy victories and not willing to over-reach his already dangerously extended supply line, Amherst halted at Fort St. Frédéric to consolidate his

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[56] Russell P. Bellico. Sails and Steam in the Mountains pp. 81-85. see also Russell P. Bellico Chronicles of Lake George pp.114-115.
[57] Jeffery Amherst. Journal... p.141.

gains. Within days work began on a new British fortress adjacent to the ruins of the French fort. Fort Carillon, renamed Fort Ticonderoga, was ordered rebuilt and two small ships, *Duke of Cumberland* and *Boscawen* and a massive new floating-battery, *Ligonier*, began to take shape.

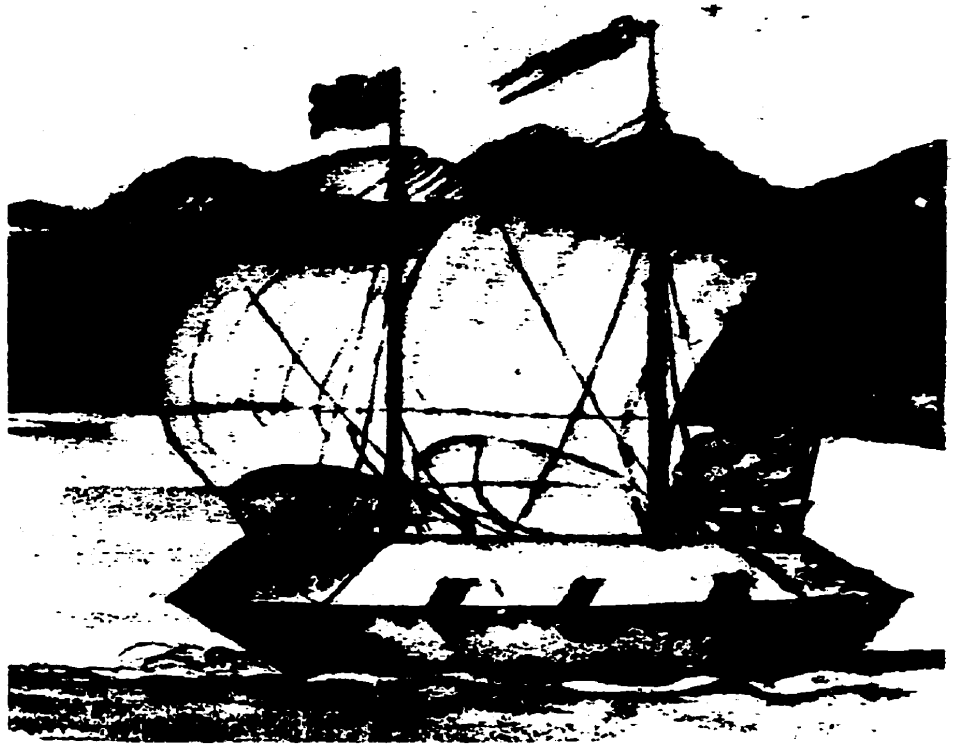

Figure 1.12

Once again Major Thomas Ord of the Royal Artillery supervised the construction of the floating-battery. The *Ligonier*, his third and final creation, was by far the most powerful. Launched on September 29, 1759, it was "84 feet long & 20 feet broad on the Platform, where the guns run out she is 23 feet, & to carry six 24-Pounders."[58] A water-colour of the *Ligonier* sweeping past Crown Point under full sail, painted by Lieutenant Thomas Davies in 1759, now hangs in the United States' Library of Congress. (fig.1.12) Davies' illustration shows a vessel similar to the *Land Tortoise* and *Invincible* but much

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[58] Ibid. p.174.

larger. If Davies is accurate, the *Ligonier* carried two masts, each with a square sail and sweep-ports for at least thirty-four oars. Unlike the earlier floating-batteries, but consonant with Amherst's description, it also appears to have had two decks, or at least a raised platform above the gun-deck in the bow and stern. The figures in the forward and after ends of the vessel in Davies illustration appear to be conning the vessel from this raised vantage point. The three open gun-lids on the port side indicate a vessel pierced for six guns.

By October 11, 1759, Amherst was ready to continue the offensive. The *Ligonier*, with Major Ord in command and Amherst on board and flanked by four row-galleys mounting howitzers and 12-pounders, led the invasion flotilla down Lake Champlain.[59] With a fair southerly wind the boats advanced all night and part of the following day until the weather turned and strong north winds forced them to take shelter in Ligonier Bay on the west side of the lake. Heavy winds continued for five days and the temperature began to drop below freezing. While the army was embayed, Captain Joshua Loring in the *Duke of Cumberland* and Lieutenant Alexander Grant in the *Boscawen* ranged ahead and captured three French vessels. On October 18, the wind abated and as the army prepared to advance, Amherst received dispatches that Quebec had fallen. Surmising he would now be facing the entire French army at Ile aux Noix, and with winter fast coming on, Amherst abandoned the offensive and returned to Crown Point. The ships and row-galleys were laid up at the Kings Dockyard at Fort Ticonderoga for the winter. The *Ligonier* was decommissioned and towed to the head of a bay adjacent to Ticonderoga. Finding that he "could not by any means get the Radau sunk," Major John Campbell, commanding at that post, moored it under the protection of fort's guns and there it remained frozen in for the next six months.[60] In December Thomas Ord returned to Fort

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[59] Amherst Family Papers U1350. volume 14. NAC microfilm A1827. p.57.
[60] Amherst Papers WO 34/50, PRO 283/1. QUA microfilm reel no.1435. Letter from Major John Campbell to General Jeffery Amherst.

Edward and Albany for the winter. In slightly more than one year he had built three floating-batteries, commanded two and become the acknowledged expert on their handling and deployment. Not coincidentally, in the same period, he advanced from Captain to Major to Lieutenant-Colonel.[61] In the late summer of 1760 he again commanded the *Ligonier* at the battle of Ile aux Noix.

In 1990, when Ord's lost *Land Tortoise* was discovered resting upright on the bottom of Lake George and perfectly intact after two hundred and thirty-two years, a major underwater archaeological survey was initiated. Philip Lord, senior archaeologist for the New York State Museum, called the find "one of the most significant maritime artifacts that has been discovered."[62] In 1991 and 1992, surveys conducted by divers of the Lake George Batteaux Research Team under the direction of marine archaeologists Robert Cembrola and D.K. Abbass measured all the frames, planks and stanchions on the vessel including their exact locations and spacing. At the same time the vessel was extensively photographed by an underwater video camera. In addition to confirming contemporary descriptions of floating-battery design, construction and armament, details not previously known were brought to light.

Perhaps the most interesting discoveries concern the arrangement of the onboard artillery. As can be seen in the line-drawing of the *Land Tortoise* (fig. 1.13) the guns were mounted asymmetrically. The port side is pierced for four guns and the starboard for three. This staggered arrangement permitted the guns to be fired simultaneously by allowing space for their recoil.

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[61] W.H. Askwith. List of Officers of the Royal Regiment of Artillery p.2.
[62] Russell P. Bellico. "Ghost From the Depths" American History Illustrated p.70.

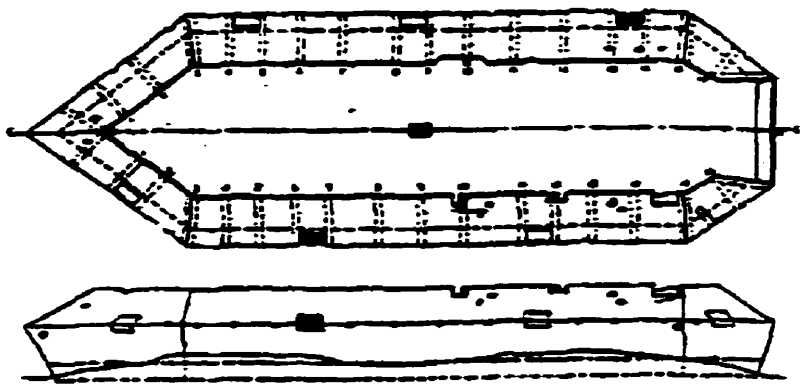

Figure 1.13

Based on the location and height of the gun-ports, historian Gary Paine posits that the *Land Tortoise* may have been designed to mount 24-pounder cannon on naval or garrison carriages.[63] (fig. 1.14) While this is a credible hypothesis, the vessel's internal dimensions and the height of the gun-ports do not exclude the possibility that 24-pounders on larger field carriages were meant to be carried.[64] (fig. 1.15) In this regard the lack of an upper bulwark at the stern is an intriguing detail. It may be a clue to how the heavy guns were taken on board. The vessel had only to be rowed into shore stern first, the single stern section detached or lowered, and the guns mounted on field carriages rolled on or off. In addition to performing escort and assault duties, the *Land Tortoise* may have been a primitive artillery landing craft. The advantages of such a

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[63] Gary Paine. "Ord's Arks: Angles, Artillery, and Ambush on Lakes George and Champlain," American Neptune volume 58, Number 2. Spring 1998. p.118." The close match between the heights of the cannon port and a 24-pounder naval carriage makes this particular armament a strong possibility for what Ord intended when the *Land Tortoise* was constructed."

[64] Ibid. "The distance between the upper edge of the port to the sole is 49.5 inches, and the distance between the lower edge of the port to the sole is 31.5 inches...Based upon the height of the wheel, axle tree, and cheek piece, a naval carriage made to support a a 24-pounder cannon was approximately thirty-eight inches...A field carriage for a 24-pounder was nine feet in length and about 44 inches in height."

system are immediately obvious and as we have seen in John Dies' letter to William Johnson, consistent with his original concept.

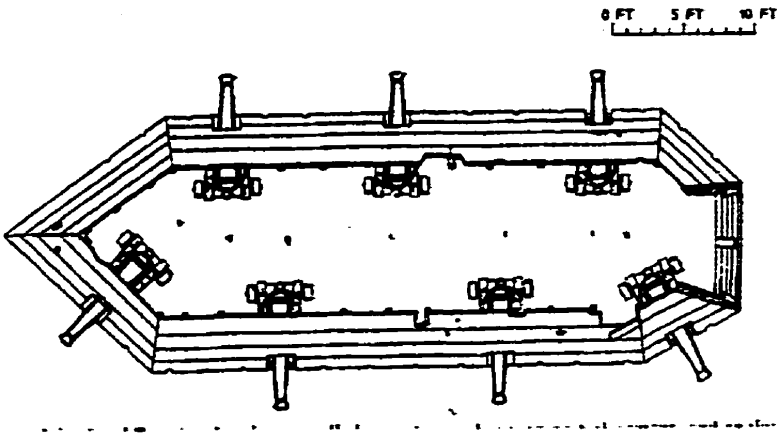

Figure 1.14

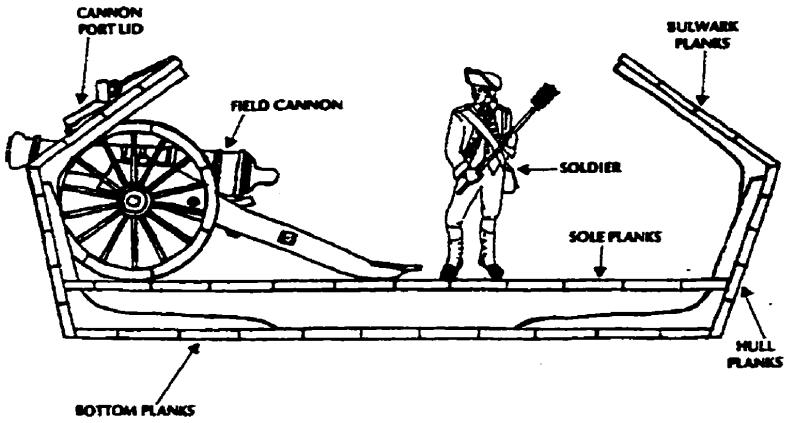

Figure 1.15

The archaeological surveys also revealed a single mast, twenty-six rowing ports -- that probably doubled as musket loop-holes -- and two small viewing ports in the forward upper bulkwark. These were used by artillery officers to direct the vessel's fire without exposing themselves to the enemy. The inward sloping upper bulwarks were well designed to protect the vessel's interior from plunging fire by deflecting musket shot. The

Land Tortoise, like the *Ligonier*, was built from heavy oak and pine planks.[65] Its construction was modeled on John Dies' description to William Johnson in 1755.

Despite their crude construction and awkward appearance, floating batteries were sophisticated and practical vehicles. Their poor sailing qualities were more than made up for by fire-power. No French vessel and few land batteries in the North American interior could match the *Ligonier's* weight of metal. Moreover, the possibility that field guns were rolled on and off by means of a stern ramp made floating-batteries maritime innovations of the first order. Fredrik Henrik af Chapman, the most prolific and imaginative marine architect of the eighteenth-century, did not begin designing such vessels for the Swedish army until 1764. Ord's floating-batteries were more than simply inexpensive wilderness substitutes for conventional war-ships. Archaeological fieldwork reveals they were unique water-borne fortifications capable of conveying, firing and perhaps, rapidly discharging the army's most powerful ordnance.[66]

In Technology and War historian Martin van Creveld explains that "the essence of invention consists of an act by which existing elements are wrenched out of their accepted frameworks and put together in new combinations."[67] British gun-boats in the North American interior during the Seven Years' War were such inventions. By exchanging harpoons for swivel guns and light mortars, whaleboats designed to hunt whales on the oceans of the world were adapted to hunt men in the wilderness. Row-galleys fitted with howitzers and cannon were sixteenth-century naval pinnaces

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[65] Amherst Papers WO34/64-5, PRO 285/1-2. QUA microfilm no.1445. "Crown Point, 27th August, 1759, Wanted For Radeau."

[66] Colonel H.C.B. Rogers. The British Army of the Eighteenth Century. (London: George Allen & Unwin Ltd, 1977) p.141. also see Webster. Journal of Jeffery Amherst p.158. "... the best thing to be done, as the boats we have will not carry the 24-pounders on this lake, is to build a sort of Radeau."

[67] Martin van Creveld. Technology and War. (London: Collier, Macmillan, 1989) p.219.

resurrected on remote American lakes. Floating-batteries were trace Italienne forts fitted with oars and sails. "From water level, the entire vessel looked like a detached, elongated bastion surrounded by a massive water filled ditch -- the lake itself."[68] But British gun-boats were more than simply innovative vessels. A water-borne artillery escort and assault force built to support wilderness campaigns was itself an invention. By combining elements of the artillery siege-train, traditional Anglo-American shipbuilding skills and eighteenth-century military science, Amherst's 'mechanical fellows' invented a weapons system that in the hands of Royal Artillery gun-detachments and provincial army crews wrested control of the continent from the French and influenced the way Europeans made war in North America for the next one hundred years.

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[68] Paine. "Ord's Arks..." pp.114.116.

-Three-

Serving the Train:
Provincials and the Royal Artillery

Imagination must always keep ahead of proof as an advanced detachment to spy out the land.
-A.M. Hocart

As American provincials trickled into Albany in preparation for the 1760 summer campaign, Lieutenant-Colonel James Robertson of the 60th Regiment of Royal Americans described the colonials he saw casually assembling for war. In a letter to John Calcraft, his regimental agent in London, he wrote: "the provincial Troops this Year have been raised late, are very bad, worse than Usual...they are sufficient to work our Boats and drive our Waggons."[1] Robertson's unvarnished assessment of provincial martial capabilities was almost certainly shared by every British regular line officer in North America. By European standards provincials were bad soldiers.[2] At a time when regular infantrymen required at least two years of drill before they were deemed fit for service, provincial recruits raised for a single summer campaign were hopelessly untrained.[3]

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[1] John Shy. Toward Lexington: The Role of the British Army in the Coming of the American Revolution (Princeton: Princeton University Press, 1965) p.100.
[2] Fred Anderson. A People's Army: Massachusetts Soldiers and Society in the Seven Years' War (Chapel Hill: University of North Carolina Press, 1984) p.viii. "Judged by the timeless standards of military professionalism, the provincials seemed merely to be what the British said they were: bad soldiers." see also Fred Anderson. "Why did Colonial New Englanders Make Bad Soldiers? Contractual Principles and Military Conduct during the Seven Years' War" William and Mary Quarterly Series 3/38. 1981. p.413. "To Loudoun and those like him, the provincials looked like incredibly bad soldiers and , given their professional perspective on the matter, the New Englanders *were* bad soldiers."
[3] J.A. Houlding. Fit For Service: The Training of the British Army 1715-1795 (Oxford: Clarendon Press, 1981) pp. 294-295. also pp. 160-161. "Throughout the eighteenth century the drill practised in each regiment consisted of five main elements known as the 'manual exercise', the 'platoon exercise', the 'evolutions', the 'firings', and the 'manoeuvres'. The 'manual exercise' was the long, slow, and detailed sequence of

Many provincial troops were unacquainted with even the most rudimentary exercises of European warfare. Some arrived at the annual summer rendezvous barely familiar with firearms. On one occasion in 1758, a company of particularly inept recruits accidentally killed a fellow soldier while being drilled in platoon-exercises.[4] Provincial officers were better, but in the eyes of many professional soldiers, respectable colonial burghers and prosperous farmers with little experience and less training in military affairs led their men poorly.

In 1760, Jeffery Amherst assigned most provincial regiments to the army's long logistical lifeline. If he could not turn short-term recruits into trained infantrymen in two or three months, he could at least utilize their labour. As auxiliaries, they garrisoned frontier forts and forwarded supplies from the settled areas of British North America to the mobile fronts in the interior. Only 6,800 of the best provincial soldiers, about one third of the number raised in the colonies that year, accompanied the regular army to Montreal. Nearly half of these men were designated "for service of the Artillery."[5] Commanded by their own officers, under the direction of artillerymen, they were

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movements endlessly drilled into the private soldier whereby he learned, by the numbers, how to load and fire his firelock, to perform the bayonet drill, and to do a variety of ceremonial movements such as clubbing or saluting with his piece. The 'platoon exercise' was that essential core of the manual used in volley-firing, which, unlike the manual, was performed very quickly and to only a few words of command or commands relayed by the drums. The simple 'evolutions' were the short, precise movements done on the spot in rank and file, such as left-turns, about-turns, and opening and closing the rank and file intervals. The 'firings' comprised the quite complicated systems and sequences according to which fire was given and controlled--standing, advancing and retreating--by sections of the line told off into a varying number of fire-divisions, and groups of fire-divisions. Finally, there came the elaborate and extensive repertoire of close-order linear 'manoeuvres'.

[4] Anderson. A People's Army p.76.

[5] Hervey. Journals "Embarcation Return from Oswego" p. 56. see also "Brigade Order Books" Saturday, August 9, 1760. p.104. see also Beatson. Military Memoirs Vol. III. First Appendix. p. 263. In the 1760 campaign 2,857 provincial soldiers served with the ordnance train.

employed at the end of oars in the ordnance-trains. A few hundred of them manned row-galleys and floating-batteries. New York's 1st, 2nd, and 3rd regiments, under Colonels Bartholomew le Roux, Isaac Corsa and Nathaniel Woodhull were assigned to Colonel George Williamson's 167-man artillery detachment on Lake Ontario. Colonel Christopher Harris' 1st Rhode Island regiment assisted Lieutenant-Colonel Thomas Ord's 110-man artillery detachment on Lake Champlain.

It is generally understood that during the Seven Years' War in North America, relations between American provincials and British regulars were antagonistic. The image of arrogant British officers abusing American rustics is standard fare in films and novels about colonial North America. Like most myths, the notion has some basis in fact. Relations between New England provincials and British regulars were often strained. Diaries of Massachusetts' soldiers are replete with references to "Godless regulars" and in the correspondence of British officers, New Englanders are regularly depicted as "lazy and undisciplined." But the attitudes of fifth generation Puritans and upper-class British officers were not representative of colonial-metropolitan encounters during the war. The cooperative interaction of provincials and the Royal Regiment of Artillery in the 1760 Canada campaign is a useful corrective to the popular image of estranged allies.[6] Cooperation was more common than is usually recognized and essential to Amherst's plans for the conquest of Canada.

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[6] Many interpretations of the Seven Years' War in America conclude relations between metropolitan and colonial troops were hostile. See Eugene I McCormac. Colonial Opposition to Imperial Authority during the French and Indian War (Berkeley: The University Press, 1911) Alan J. Rogers. Empire and Liberty: American Resistance to British Authority 1755-1763. (Berkeley: University of California Press, 1974) p.63. Douglas Edward Leach. Roots of Conflict: British Armed Forces and Colonial Americans 1677-1763. (Chapel Hill: University of North Carolina Press, 1986) p. IX. "...friction caused by the presence of British regular forces prior to 1763 was an important contributing factor in the coming of the American Revolution." see also Anderson. A People's Army.

Given the central role artillery was to play in his plans for riverine warfare, Amherst could not conform to the standard eighteenth-century practice of relegating the dregs of the army to the ordnance-train.[7] Weak troops and irresolute officers serving with the water-borne artillery escort would be disastrous. Gunboats were key elements in his plans for the invasion of Canada and had to be managed aggressively. Similarly, the transport batteaux that carried disassembled field pieces, supplies of powder and shot, and all the mountings, tackles, and implements to service the guns had to be resolutely manned. Loss of Amherst's ordnance stores would silence the guns and the campaign would fail.

Experience was probably the most important reason Amherst chose New Yorkers to assist the artillery detachment of his Lake Ontario corps. In 1758 New York provincials won the approbation of John Bradstreet for their performance with Captain-Lieutenant James Steven's artillery detachment on the Cataraqui raid. In a letter to General James Abercromby, Bradstreet wrote: "there is no reluctance or want of Spirit in the Yorkers... they behave well."[8] New York troops again showed their mettle at the siege of Niagara in 1759 where they were assigned to the train under Captain Samuel Strachey. After the fall of that place, Captain Allan MacLean wrote to Lieutenant-Colonel Frederick Haldimand that, "they [New Yorkers] conduct themselves here most bravely."[9] In both engagements artillery was responsible for British success and it was

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[7] Douglas William Marshall. The British Engineers 1714-1783 (unpublished Ph.D.dissertation, University of Michigan, 1976) p.75. Marshall maintains that pioneers, that is troops assigned to assist artillery trains, were considered the 'scum of the army'. see also J.W. Fortescue. A History of the British Army (London: Macmillan, 1910) Vol.I. p. 219.

[8] William G. Godfrey. Pursuit of Profit and Preferment in Colonial North America: John Bradstreet's Quest (Waterloo: Wilfred Laurier University Press, 1982) p. 127. "Sickness, Discontent, Disertion, Reluctance and want of Spirit...hath prevail'd throughout the whole of the Provincial Troops ordered to serve this way, except the Yorkers."

[9] Brian Leigh Dunnigan. Siege-1759: The Campaign Against Niagara (Youngstown: Old Fort Niagara Association Inc., 1986) p.50.

the New Yorkers who manhandled the guns and mortars up the Mohawk River and across Lake Ontario.

But more than two successful wilderness campaigns with the Royal Artillery made New Yorkers prime candidates for service with the train in the Canada campaign. In 1760, the people of New York were British North America's most enthusiastic imperialists. The lure of land, trade and security on the province's north-west frontier made Amherst's projected plans for "the compleat reduction of Canada" popular with all levels of New York civil society. Enthusiasm for the campaign was reflected in the overwhelmingly volunteer army New York placed at Amherst's disposal.[10] New York raised its full quota of troops in 1760. Amherst requested 2,680 officers and men and the province provided 2,607.[11] While the contributions of Connecticut and Massachusetts flagged in the last year of the war in North America, "sufficient rewards in cash and status bought the active cooperation of every level of New York provincial society."[12]

Good wages and the chance of windfall profits set New Yorkers on the road to Canada in 1760. Private soldiers in New York regiments were well paid for their time with the train. For six months hard labour they received twenty-six pounds, five shillings New York currency, a hat, a coat, a pair of buckskin breeches, two shirts, two pairs of stockings, a pair of shoes and a blanket. This was twice an average farm worker's annual wage.[13] At a time when two pounds bought fifteen acres of good land in New Hampshire, six months military service represented the purchase price of a small wilderness farm. The possibility of plunder was also a compelling motive for New

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[10] Edward H. Knoblauch. "Mobilizing Provincials for War: The Social Composition of New York Forces in 1760" New York History. Volume 78, number 2, April 1997. p.171.
[11] Ibid. p.158.
[12] Ibid. p.172. For the number of Connecticut troops raised in 1760 see: Harold E. Seleskey. War and Society in Colonial Connecticut. (New Haven: Yale University Press, 1990) p.168, Table 5.4. For Massachusetts see Gipson. The Victorious Years p.445.
[13] Ibid. p. 157. "Wages and bounty together were roughly equivalent to two years' pay for six months work."

Yorkers to enlist in 1760. Stories of looting Cataraqui in 1758 undoubtedly circulated in the taverns of New York, and Montreal was a far richer prize

New York's rank and file were a much more heterogeneous group than the soldiers of some other colonial forces. "Only about a third of the men (32.4 percent) raised for the regiments of 1760 were native-born New Yorkers. The rest were migrants from other colonies or from across the Atlantic."[14] This stands in marked contrast to Massachusetts regiments which were more than 80 percent native-born.[15] New York recruits were also generally older and less financially secure than their counterparts in Massachusetts and because their ties to America were recent, faced a more uncertain future than the sons of long-established New England yeomen.[16] The urgent need to secure a livelihood made these New York recruits amenable to hard work without complaint and less concerned with contractual principles than Yankee brethren.[17]

Amherst was also fortunate in the provincial officers who led this compliant body of mercenaries. They, too, were persuaded by British silver to war against Canada. Including table money, Colonels le Roux, Corsa and Woodhull each earned two hundred and fourteen pounds New York currency plus a pound for every man they enlisted for six months service. If we allow for the exchange rate between New York currency and sterling, their salary was about equal to a Major's in the Royal Regiment of Artillery.[18]

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[14] Ibid. p.164.
[15] Anderson. A People's Army. p.232. Table 13.
[16] Knoblauch. "Mobilizing Provincials..." p.165. "The average age of 2,380 men whose ages were recorded was 26.26-years-old," by contrast the average age of Massachusetts troops was 23 years old. Anderson. A People's Army p.230, Table 9.
[17] Fred Anderson explains that Massachusett's soldiers felt justified to desert or mutiny if their terms of service were altered. see Anderson "Why did Colonial New Englanders Make Bad Soldiers? Contractual Principles and Military Conduct during the Seven Years' War."
[18] Askwith. List of Officers. "Daily pay of officers, non-commissoned officers and private men of the Royal Regiment of Artillery." p. 216. A major received fifteen shillings daily or about one hundred and thirty eight pounds sterling for six months. Using a conversion rate of 1.7 this was equivalent to two hundred and thirty four pounds

"This amount of money was not enough to attract the most prosperous gentlemen of the province, but it was sufficient to attract those whose connections and prospects were not as lofty."[19]

Commissioned officers of New York regiments were not from the highest ranks of colonial society. Scions of the great merchant and land owning families, the de Peysters, de Lanceys, Alexanders and Livingstons, who held regimental commissions in the militia were conspicuously absent from the provincial field army. Provincial officers were more representative of "the middling sort of people" in New York society, whose access to the trans-Atlantic world of empire was mediated by their social and financial betters.[20] Bartholomew le Roux was a respectable New York silversmith, Nathaniel Woodhull a well-to-do Long Island farmer. "The captains -- Clinton, Schuyler, Yates, Swartwout, DeForest, and Middagh -- were freeholders, local traders, and jurymen in their counties. They held local civil offices but, like the colonels, had no direct trans-Atlantic connections."[21] To these men, military service in the provincial force mobilized for the conquest of Canada was an opportunity for advancement. A commission in the provincial officer corps was a lucrative prize. It enhanced local status and enriched estates by allowing rights of patronage. A commissioned officer could dispense as well as pocket government largesse. Men who offered twenty-six pounds for a summer's work were undoubtedly very popular in colonial New York.

New York currency.

[19] Knoblauch. "Mobilizing Provincials for War." p.156.

[20] Keith Wrightson. "Sorts of People in Tudor and Stuart England," The Middling Sort of People: Culture, Society and Politics in England, 1550-1800. ed. Jonathan Barry and Christopher Brooks. (London: MacMillan Press, 1994) p.49. In the later seventeenth and eighteenth centuries the term 'middle sort of people' was routinely adopted as an established mode of summing up the tradesmen, manufacturers, and farmers who occupied the middle ground in the hierarchies of wealth, status and power.

[21] Knoblauch. p.170.

New York provincial officers were not professional soldiers. Their skills in the arts of war were probably only a little better than those of the men they commanded. They were, nonetheless, capable, enterprising men. Fifteen years later many of them played important roles in the American colonies' fight for independence. Colonel Nathaniel Woodhull was destined to become a Brigadier-General and in 1775 president of the New York Provincial Congress. Lieutenant George Clinton became a Major-General, first governor of the State of New York and Vice-President of the United States. Major Philip Schuyler later commanded the Northern Department of the Continental Army. During their time with Amherst's train, these men learned important lessons about waging European warfare in the wilderness. As commander of the Northern Department in 1775, for example, Philip Schuyler's first act was to build a squadron of gunboats on Lake Champlain.[22]

Whatever their political stripe in 1775, New York's provincial officers were fully committed to the Empire and Amherst's invasion of Canada in 1760. Rewards of British silver and patronage were consistent with getting ahead and climbing the social ladder, activities they wholeheartedly embraced. Significantly, they made their most important contributions to the campaign, not as intrepid light infantrymen or wilderness-wise rangers, but as steady, reliable co-managers of Amherst's ordnance-train. Enlightened self-interest and a practical worldview allowed them to cooperate amicably with like-minded "mechanical fellows" of the Royal Regiment of Artillery, the military branch of the Ordnance Office.[23]

Throughout the eighteenth-century the Ordnance Office was the most powerful corporation in the British empire. Only the Royal Navy with its hundreds of ships and

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[22] Russell P. Bellico. Sails and Steam in the Mountains... p.121.
[23] Gary Nash. The Urban Crucible: The Northern Seaports and the Origins of the American Revolution. (Cambridge: Harvard University Press, 1986.) p. 193. "New Yorkers...looked self-interest in the eye and made no apologies for it."

massive, industrial naval bases could match its financial resources and political influence. Administered jointly by the King and Parliament through five nominees sitting as the Board of Ordnance,[24] the Office had its own treasury, framed its own financial estimates, built and manned all the fortifications in Britain and the colonies and supplied the army and navy with the most powerful weapons of eighteenth-century warfare. By 1760, "a vast treasure was locked up in its munitions and a great sum was expended annually on their maintenance."[25] After the phenomenal expansion of the Empire at mid-century, the Ordnance Office became responsible for surveying and mapping the newly conquered regions and in later years administered Crown lands. The Ordnance Office also loaned the army and navy a highly skilled cadre of technicians to man the artillery equipments it supplied. The Royal Regiment of Artillery was the Ordnance Office's executive arm in the field and aboard bomb-ketches of the Royal Navy.

The Royal Artillery was unlike any other regiment in King George II's forces. Established by royal warrant in 1716, by the time of the Seven Years' War it was the most modern and professional regiment in the army.[26] Commissioned officers of the artillery were formally schooled and advanced by merit and seniority. The system of purchasing a commission was unknown. George Williamson entered the regiment as a cadet matross

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[24] A. Forbes. A History of the Army Ordnance Services. (London: The Medici Society Ltd. 1929) pp. 96-98. The five nominees that made up the Board of Ordnance were the Master-General who acted as chairman of the Board, the Lieutenant-General who was in charge of military branch, the Surveyor-General, who examined all purchases and manufactures, the Keeper of Stores, who was responsible for quantity of stores as the Surveyor-General was responsible for quality, and the Clerk of Deliveries who was the issuing officer.

[25] Ibid. p. 94.

[26] James W. Hayes. The Social and Professional Background of the Officers of the British Army 1714-1763. (University of London: M.A. Thesis, 1956) p.218. "Professionalism may be defined as being at two levels. At the lower it simply implies a career in a particular branch of public life, in the sense of an occupation for life. At the higher level, professionalism is more than a mere occupation. It becomes something more inspired, and entails a degree of interest which impels scientific study and practice of whatever branch of service is concerned."

in 1722 and proceeded step by step through the grades so that by 1757 he was a lieutenant-colonel with rank of colonel in America.[27] Thomas Ord enjoyed a faster, though no less arduous, rise through the ranks. He entered as a cadet gunner in 1731 and had reached the rank of lieutenant-colonel twenty-eight years later, just one year prior to the assault on Montreal.[28] Many of the younger artillery officers in the Canada campaign attended the Royal Military Academy, which opened at Woolwich in 1741. They passed examinations in geometry, algebra, trigonometry, conic sections, mechanics, fortification, land drainage, survey and leveling, gunnery, fireworks and artillery materiel before joining a company as lieutenant-fireworkers.[29] Unlike the "pedestrian, uninspired and largely uninformed professionalism of the regular army," artillerymen knew their business well.[30]

"The aristocracy and upper gentry did not find the technical services an attractive route of entry to the army."[31] The notion that an officer should be qualified by technical knowledge was derided by the English ruling class. "Qualities valued in an officer were the qualities valued by the country gentry: courage, physical toughness, a determination to stand up for one's rights, a touchy sense of honour. Almost the only acquired skill highly regarded was horsemanship, and that was taken for granted."[32] People from the middle ranks of British society were of another mind. They regarded a purchased commission in a regular line regiment a poor bargain. Though they coveted the enhanced social standing an officer's commission conferred, more profitable ways of employing capital and talent were available. A much better choice for an ambitious young man of

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[27] W. H. Askwith. List of Officers. p.2.
[28] Ibid.
[29] O.F.G. Hogg. The Royal Arsenal: Its Background, Origin and Subsequent History (London: Oxford University Press, 1963) pp.349-350.
[30] Hayes. Social and Professional Background... p.218.
[31] Douglas Marshall. The British Military Engineers p.143.
[32] W.J. Reader. Professional Men: The Rise of the Professional Classes in Nineteenth-Century England (London: Weidenfeld and Nicolson, 1966) p. 74.

moderate means was to seek a place in the military branch of the Ordnance Office. In time, with hard work and due diligence, he could expect to receive the status and emoluments of a senior officer without any initial capital outlay. With careful management and wise investments, twenty-five years of service could be parlayed into a respectable estate.

The service records of David Standish, John Williamson, Thomas Davies, Nathaniel Connor and Samuel Strachey, the five artillerymen who commanded row-galleys on Lake Ontario in 1760, suggest, that like their counterparts in New York provincial regiments, artillery officers who took part in the Canada campaign came from modest backgrounds.

David Standish joined the artillery in 1744 as a matross, the equivalent of a private. He spent eleven years progressing through the ranks before being promoted to lieutenant-fireworker in 1755. During the Seven Years' War he moved rapidly through the junior officer grades. By 1760 he was a first lieutenant and commander of a row-galley.[33] John Williamson joined as a matross in 1752 and spent three years in the ranks before being admitted to Royal Military Academy as a cadet. He was promoted lieutenant-fireworker the same year soon after the news of Braddock's defeat reached Britain. By 1760 he, too, was a first lieutenant in command of a row-galley.[34] Entering the officer corps through the ranks, as these two men did, was fairly common in the artillery but not the route a gentleman would choose.

Thomas Davies and Nathaniel Connor were also from the middling ranks of British society. They were appointed to the Royal Military Academy during the first years of the war. The military branch of the Ordnance Office was expanding at that time and opportunities for young men of modest means were unprecedented. Davies spent only

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[33] Askwith. List of Officers p. 7.
[34] Ibid.

one year at his studies before he was appointed a lieutenant-fireworker and second in command of the 3rd Regiment of Foot's battalion guns. By 1757 he was a second-lieutenant in command of an artillery detachment aboard the bomb ketch *Grenado*. In 1760 he was a first-lieutenant and commander of a row-galley.[35] Connor was rushed off to war even more rapidly. After only three months at the Academy he was assigned to a company and one year later bound for America.[36] As their pay increased with each yearly promotion, these ambitious young officers must have viewed the war as a fast track to profit and preferment. First-lieutenants in the Royal Artillery earned the respectable sum of five shillings per day with the agreeable prospect of doubling that amount when promoted to command a company.

Samuel Strachey, the senior row-galley commander on Lake Ontario was the oldest officer and only captain in Amherst's Lake Ontario artillery escort. He was appointed to the Royal Military Academy as a cadet-gunner in 1742. Strachey spent two years there before joining a company ordered to Flanders. A year later he was at the battle of Fontenoy. For the next ten years his progress through the junior officer grades was slow but in the early years of the Seven Years' War he moved upward. By 1757 he was captain of a company in North America and in 1759 commanded the train at Niagara. After twenty-eight years as an officer in the Royal Artillery, Captain Samuel Strachey was approaching middle age when he was killed at the siege of Havana in 1762.[37] His death, like his life, went unnoticed in the *Gentleman's Magazine*.

The social and professional backgrounds of officers of the Regiment of Artillery and New York provincial officers were remarkably similar, so similar, it is difficult to

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[35] Ibid. see also C.P. Stacey. "Lieutenant-General Thomas Davies: Soldier, Painter and Naturalist" R.H. Hubbard. (ed.) Thomas Davies c. 1737-1812: An Exhibition Organized by the National Gallery of Canada (Ottawa: National Gallery of Canada, 1972) pp. 44-70.
[36] Askwith. List of Officers. p.7.
[37] Ibid. p. 4.

credit that antagonism between provincials and regulars was as general as many historians maintain. Culturally, officers of New York regiments and the Artillery were more alike than not. Both were drawn from the middling ranks of the Empire and motivated by monetary gain and prospects of social advancement. Colonel George Williamson's letter to his wife, in December 1757, in which he advises Mrs.Williamson to "put what money You can into the stocks while it is under 90 for the first knowledge of a Cessation of Arms will raise them greatly,"[38] could have as easily been written by a provincial colonel to his wife. Artillerymen and provincials were eager to profit from the war and they recognized early that cooperation was the key to ensuring victory.

The rank and file of New York regiments and the Artillery enjoyed friendly relations as well. This was due, in large part, to wage parity. A private soldier in a New York regiment earned twenty-six pounds five shillings New York currency and a uniform for his time with the army in 1760. An artillery mattross received about the same amount. His annual pay was fifteen pounds sterling, or twenty-five and one half pounds New York currency and a free uniform every eighteen months.[39] On the other hand, after the costs of his uniform and equipment were deducted, a private soldier in a British line regiment received only about nine pounds sterling or fifteen pounds New York currency annually.[40] With such wage disparity between provincials and line regulars, it is not

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[38] Williamson Family Papers . NAC microfilm reel no. A-573. " Letter from Colonel George Williamson to Mrs. Williamson. December 17, 1757."

[39] Askwith. List of Officers. p. 216. "Daily pay of Officers, non-commissioned officers and private men of the Royal Regiment of Artillery." also see A. Forbes. A History of the Army Ordnance Services. p. 111. "Off-reckonings were unknown in the Royal Regiment of Artillery and officers had neither the opportunity or incentive to sweat an income from the backs of their men by furnishing shoddy or insufficient clothing. Indeed the men were well paid and well treated in comparison with those of the army."

[40] John Childs. Armies and Warfare in Europe 1648-1789. (New York: Holmes and Meier Publishers, 1982) pp. 62-63. "...the English soldier received 9 pence *per diem*, of which he was usually left with 6 pence after meeting his off-reckonings. With what was left of their diurnal remuneration soldiers had to buy such essentials as supplementary food, tobacco, drink, polish, pipeclay and hairpowder."

difficult to understand why their relations may have been strained. This irritant was absent between artillerymen and provincials.

The sheer size of the ordnance train also argues that New Yorkers and artillerymen cooperated. Moving the train and manning the artillery escort were the most physically demanding and potentially dangerous tasks in the army. Alienated officers and disaffected troops could not have accomplished them successfully. Forty-five heavy artillery pieces and more than three hundred tons of ordnance stores shipped in two hundred bateaux accompanied the army from Oswego in 1760. Each boat was inventoried, numbered and assigned a place in a double column that in calm weather extended for well over a mile. Signals for rowing, halting, and landing were made by flags from a row-galley in the van and repeated along the length of the column. Each boat carrying a dismantled field piece and its five-man detachment of artillerymen was followed closely by those transporting the gun's equipage and allotment of powder and shot. In effect the artillery train was comprised of a number of mixed metropolitan and colonial gun teams under the command of a junior officer or senior NCO. These gun teams were, in turn, organized into batteries under more senior officers. On Lake Ontario, ultimate responsibility for the guns rested with George Williamson but he delegated much of his authority to New York field officers. Colonel Nathaniel Woodhull's journal of the Canada campaign makes it clear that New Yorkers identified with the heavy artillery in a way that was almost proprietary.[41] The efficient conduct of the ordnance-train from Oswego to Montreal, and the timely erection of siege batteries on the islands adjacent to Ile Royale, attest to colonial-metropolitan goodwill.

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[41] Nathaniel Woodhull. Journal. p.258. "The New York Regiments were ordered to march by the fort with all *their* artillery in the evening." also p. 259. "We spent the 26th in loading *our* cannon into the batteaux again..." The use of possessive pronouns in Woodhull's journal is indicative of his attitude.

Row-galleys also required the active cooperation of New York provincials and artillerymen. Though command of these gunboats was invariably invested in the senior artillery officer aboard, they were effectively co-managed. Enroute, experienced watermen from Long Island Sound and the lower Hudson River sailed and rowed the vessels.[42] For much of the voyage from Oswego to Montreal, artillerymen were little more than interested on-lookers. The vessels' routine handling and navigation were in the capable hands of provincial seamen. During an assault artillerymen took over and row-galleys became floating gun-platforms that manoeuvred at the command of the gunners. Since the forward-firing gun could only be aimed by traversing the entire vessel, accurate, rapid fire required the coordinated efforts of five artillerymen at the gun and thirty provincials at the oars. The successful outcome of the action between five row-galleys and the French brig *Outaouaise* near Ile Royale in August 1760, in which the row-galleys fired 118 rounds to the brig's seventy-two, bears this out. One Anglo-American discharge every two and a half minutes for over two hours affirms a high degree of colonial-metropolitan cooperation

There is every indication that relations between Colonel Christopher Harris' Rhode Island regiment and Lieutenant-Colonel Thomas Ord's artillery detachment on Lake Champlain were also amicable. With a downturn in privateering profits in the last year of war in North America, many Rhode Islanders without sea-berths took up the bounty and enlisted in the provincial regiment. Colonel Ephraim Williams of Massachusetts thought the men from Rhode Island very much like New Yorkers.

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[42] Knoblauch."Mobilizing Provincials for War." p. 168. One hundred and forty-five men, or 6.1% of the men listed in the New York muster rolls for 1760 were seamen. see also Gary Nash Urban Crucible pp.149-150. "New York stood first among the northern seaports as a centre for the sea marauders...by 1759 New York's privateers had thoroughly cleared the seas of French vessels." With a downturn of privateering profits in the last year of the war in North America, it is probable that in 1760 many New York privateers enlisted in the provincial regiments.

"Wicked and profane...nothing to be heard among a great part of them but the language of Hell," he wrote.[43] Lack of piety may have excluded them from concourse with God's elect, but it did not disqualify men well acquainted with handling heavy ordnance from service with Haviland's train. Like New Yorkers they were assigned to the gunboats because of their experience.[44] On board the floating battery *Ligonier*, Rhode Islanders handled the sails and sweeps and could serve the guns if needed.

Though no first-hand account of the interaction of provincials and artillerymen on board the *Ligonier* has been found, the vessel's operation, and, to some extent, the attitudes of the men, can be sketched from what archaeological fieldwork reveals about Ord's floating batteries. In much the same way as historian Laurel Ulrich contextualizes artifacts and working space to describe daily activities in a colonial kitchen, by looking at the floating battery's design and the weather conditions encountered enroute to Ile aux Noix, we may catch a glimpse of life on the *Ligonier* during the first few days of the Canada campaign.[45]

The ordnance train's most powerful asset was commanded by Lieutenant-Colonel Ord. With six heavy-brass 24-pounders and a 13-inch mortar on board, *Ligonier*'s artillery detachment was probably about forty men: five per gun, five with the mortar and officers in proportion. There were certainly more provincials on board. With only thirty-four rowing-ports, the three-hundred ton *Ligonier* required at least two men per oar to make even minimal headway. Thirty-four men at the oars could not even begin to move the

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[43] Francis Parkman. Montcalm and Wolfe. (Boston: Little Brown, 1884) Viking Press 100th Aniversary Edition. p. 171.

[44] Malcolm MacLeod. French and British Strategy in the Lake Ontario Theatre of Operations. (University of Ottawa: unpublished Ph.D. dissertation, 1974) p. 263. Massachusetts governor Thomas Pownall's report to Jeffery Amherst in 1759. "This amphibious kind of Service seems adapted to the provincials especially those of New York and Rhode Island accustomed to privateering and Batteauing."

[45] Laurel Thacher Ulrich. Good Wives: Image and Reality in the Lives of Women in Northern New England. 1650-1750. (New York: Oxford University Press, 1980) pp. 13-34." The Ways of Her Household."

vessel. The sixty provincials detailed to ship the guns three days before the army set out from Crown Point may have sailed as crew.[46]

With one hundred men aboard, the *Ligonier's* eighty-four by twenty foot gundeck was congested. Even if we allow for the raised platforms in the bow and stern that Jeffrey Amherst refers to in his journal and Thomas Davies depicts in his illustration, there was only slightly more than ten square feet of deck space per man. Overmanning was common on wind-driven ships of the day. The ninety-foot brig *Duke of Cumberland* carried 130 men and the eighty-foot sloop *Boscawen* 110. But their crews had little to do when underway. The flat-bottomed *Ligonier,* on the other hand, sailed abysmally. It had to be rowed except when the wind was dead astern.

Moving the ponderous three-hundred ton floating-battery against the wind was a Herculean task. Within six hours of their departure from Crown Point on August 11, the men on board *Ligonier* were so fatigued they had to anchor or be swept southward. Despite the assistance of six bateaux, they had progressed less than six miles. For the next two days the wind remained northerly and one hundred weary, frustrated men, straining at the oars in the stifling confines of the floating battery's gundeck endured conditions that would have surely ignited any latent antipathy. Yet, we hear no report of dissension on board. The experience severely tested the men's strength and morale but because the hardship was shared equally between metropolitans and colonials, it did not incite division.

Before dawn on August 14, the wind backed to the south-west and the crew of the *Ligonier* unfurled the sails at last. As the floating-battery began to gather way, oars were shipped and provincials and artillerymen climbed into the rigging and onto the bulwarks to breathe fresh air and exult. They caught up with Haviland at Ligonier Bay, twenty-eight miles from Crown Point, and from there it was clear sailing. The wind remained

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[46] Paine. "Ord's Arks." p. 112.

southerly for the next two days as the *Ligonier* plowed steadily northward, leading Haviland's corps to Ile aux Noix. Two hundred miles to the west, on the upper St. Lawrence River, a screen of whaleboats and five row-galleys were shepherding Amherst's Lake Ontario corps through the Thousand Islands. In the last week of August 1760, the distant report of cannon and red glows in the night sky to the south and west of Montreal, presaged Amherst's long anticipated assault on Montreal. In the last unconquered town in New France, even the stoutest hearts must have quickened. The "compleat reduction of Canada" had begun.

The success of the 1760 Canada campaign was due, in no small measure, to metropolitan and colonial cooperation. Military spending and generous British subsidies to underwrite provincial war-time expenses were especially important in maintaining this cooperative ethos. Unprecedented quantities of British specie circulating in cash-starved colonial societies made war against Canada popular with a wide cross-section of the population. Then, as now, war was good for business.[47] In Jeffery Amherst's crucially important ordnance-trains, practical, self-interested officers from the middling social ranks of the Empire shared values that made cooperation on an operational level possible. They stood to profit from the successful outcome of the campaign and learned quickly that collaboration was the surest route to victory.

The size of the ordnance-trains that were deployed in the wilderness during the last campaign of the war in North America also argues in favour of metropolitan-colonial cooperation. The enormous task of moving massive smooth-bore artillery and hundreds of tons of ordnance stores through a hostile, uncharted country demanded it. With less

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[47] Gary Nash. Urban Crucible. p. 149. "British expenditures in the northern colonies in 1760 alone were £1,344,309, and spending for the entire war topped £5 million. To this must be added anothere £1.4 million that Parliament granted in subsidies to the colonies for their war effort." also p. 152. "New York and Philadelphia basked in wartime prosperity that extended from lowly labourer to princely merchant."

than three hundred artillerymen in the two wilderness corps, Williamson and Ord had to rely on their fellow officers in the New York and Rhode Island Regiments if the trains were to move. That they did so with such expedition speaks unequivocally to unity of purpose. The exemplary handling of the corps' artillery escorts reiterates the point. Metropolitan and colonial interaction in Amherst's ordnance-trains during 1760 Canada campaign was spirited and cooperative. When we recall that nearly half the provincial soldiers who accompanied the regulars to Montreal served the trains, it is not an exaggeration to say that colonial-metropolitan accord was common in Jeffery Amherst's army.

-Four-

The Assault on Montreal

The Cannon Crackt as tho the Heavens & Earth was Coming together.

-Sergeant David Holden
August 27, 1760

To defeat the French North American army in 1760, Jeffery Amherst planned an ambitious strategic envelopment of the last major unconquered French settlement in Canada. Three amphibious British army corps, departing from Quebec on the lower St. Lawrence River, Crown Point on Lake Champlain and Oswego on Lake Ontario, would advance west, north and east on the water-routes that converge at Montreal. The outnumbered French army, kept off balance by the coordinated attacks and unable to reinforce any of their fronts for fear of weakening another, would be forced to fall back on their centre. As the French retreated toward Montreal, the British columns would link up and pull the noose tight. Encircled, with all avenues of retreat and succour blocked, the French army would either yield or be destroyed.[1]

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[1] Amherst Papers. WO 34/52, PRO 284/2 QUA microfilm reel no.1437. Letter from Jeffery Amherst to William Haviland. June 12, 1760. "Montreal is now undoubtedly the Sole Object to Compleat the Glory of His Majesty's Arms in these Parts, the Reduction of all Canada depending entirely on the Fall of that Place; The Enemy must of Course Center their Whole Force for the defence of it, and will be Obliged to Guard the Avenues to keep Us at as great a distance as they can. I therefore intend to Advance on them by their three Avenues, Namely, from Quebec up the River St. Lawrence, from Lake Ontario down the River St. Lawrence and from Crown Point by the Isle au Noix; that I may force them to divide their Troops, which will Weaken them in every Part, and that I may press on them as nearly as maybe by those Routes at the same time."

The plan was elegant but required a nicety of timing and coordination that belied its simplicity. Separated by hundreds of miles of wilderness, for most of the summer the three British-American columns would have little or no contact. If one was checked or delayed and could not make the rendezvous, the French, operating on ever-contracting interior lines of communication, might combine and defeat the assault piecemeal. Keenly aware of this possibility, Amherst urged his subordinate commanders to press the French with vigour tempered with prudence. To William Haviland, the junior corps commander, Amherst wrote: "You will not begin to play any artillery against the Place [Ile aux Noix], till You are so prepared as that You may be almost certain of subduing it by Your fire, as any Failure on our Side may greatly Encourage the Enemy, and we should lose time instead of gaining it."[2] The assault on Montreal was to be methodical. It would not miscarry because of rash, unsupported attacks.

Brigadier-General James Murray, commanding the eastern corps, moved first. On July 15, 2,600 men from the garrison at Quebec embarked on forty chartered transports and twenty-six flat bottomed boats and proceeded up the St. Lawrence River. The flotilla was escorted by nine row-galleys, mounting 12 and 24-pounder cannon, and four ships of the Royal Navy under the command of Captain Joseph Deane.[3] Deane, an exceptionally able naval officer, handled his escort squadron to such good effect that from the beginning Murray had undisputed control of the river. British warships cruising past their doorsteps so unnerved the inhabitants of the lower

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[2] Ibid.

[3] Beatson. Naval and Military Memoirs. Vol.III. Appendix. p.263. The naval escort under the command of Captain Joseph Deane comprised *H.M.S. Penzance 40, Diana 32, Porcupine 16, Gaspee 8,* and nine row-galleys. Deane was well acquainted with the inland waters of North America having served as Captain Housman Broadley's first lieutenant on Lake Ontario in 1756. After the fall of that post he was a prisoner at Quebec for two years. For details of his remarkable escape see Beatson Vol.II. pp. 128, 384.

St. Lawrence River Valley that hundreds surrendered their arms without resistance.[4] The ability to direct the fire of more than one hundred naval guns to any point on the river's thickly inhabited shoreline was an incalculable psychological advantage that the British exploited in full.

Murray advanced slowly up river, extorting oaths of neutrality from the inhabitants while avoiding confrontations with the French troops who shadowed his fleet along the north shore. With Quebec secure and Admiral Lord Colville's fleet patrolling the eastern approaches to the Gulf of St. Lawrence, he bypassed the French batteries at Jacques-Cartier and Deschambault with equanimity. Amherst's instructions were to press the French forces on the lower St. Lawrence toward the main event scheduled for Montreal, and Murray correctly declined actions that did not further that objective.[5] As his ships slipped past the isolated outposts, their small French garrisons abandoned the defensive works and followed the fleet on foot along the river's north shore.

By August 4 the convoy was anchored below Trois Rivieres. Here, Jean-Daniel Dumas, the man responsible for Braddock's defeat in 1755, was securely entrenched with two thousand men and determined to "dispute every inch of ground

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[4] R.H. Mahon. The Life of General, The Honourable James Murray. (London: John Muray, 1921) p. 257. Mahon quotes Levis' letter to Maréchal de Belle-Isle of August 8, 1760. "The people of the country are terrified at the fleet." also see John Knox. The Siege of Quebec and the Campaigns in North America 1757-1760. First published 1769. (Toronto: Pendragon House, 1980) p. 265 "The inhabitants are terrified... it is not probable they ever saw so numerous a fleet in this part of their country."

[5] Amherst Papers. WO34/52, PRO 284/2. QUA microfilm reel no.1437. Amherst's Instructions to Murray, April 15, 1760. "You will make such disposition of the Troops under your command as you shall judge most expedient for pressing and annoying the enemy on your side... forcing them back by advancing your Corps as near as possible to Montreal, and you will try to open a Communication with the Troops that I intend shall advance by the Isle aux Noix and down the River St. Lawrence from Lake Ontario."

with us if we had made a descent."[6] Murray again declined. He would not be drawn into a fight until he was in a position to act in concert with the southern and western corps. On August 8, after sounding a channel along the south shore, Deane deployed the row-galleys as a screen opposite the town and the fleet sailed past without incident. As the British disappeared up river, Dumas had no choice but to abandon his prepared defences and follow. Levis' worst nightmare was quickly becoming reality. To the French Minister of War, Charles-Louis-Auguste Fouquet, duc de Belle-Isle, Levis wrote: "We have no means of stopping them."[7]

On August 13, with no news from Amherst or Haviland and his ships fouling, Murray halted near the mouth of the Richelieu River. Deane stationed his warships and row-galleys in defensive positions around the small island of St. Ignatius and the troops disembarked. While the men rested and the transports were cleaned, Murray sent messengers overland to Haviland announcing his arrival. Then, secure within a ring of floating artillery, he awaited the arrival of Lord Rollo's two battalions from Louisbourg and events in the south and west. From his island redoubt Murray could either strike west to aid Amherst or force a passage up the Richelieu River to assist Haviland.

The army corps descending on Montreal from Lake Champlain and Lake Ontario faced more formidable challenges than those which confronted Murray. The French had active naval forces in the interior. On Lake Champlain, Haviland was opposed by a schooner, *Vigilante*, mounting ten 6 and 4-pounders, two tartans, the *Grand Diable* and *Petite Diable* that mounted 24-pounders and at least four small rowing gunboats or *jacaubites* carrying 8-pounders. The French also had a floating blockhouse or *blagouse* moored in the Richelieu River that mounted four guns of

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[6] Knox. Siege of Quebec and Campaigns. p. 269.
[7] Guy Frégault. Canada: The War of the Conquest. p. 285.

undetermined calibre.[8] On Lake Ontario, the heavily armed, 160-ton French brig, *Outaouaise*, a similar sized schooner, *Iroquoise*, and five *jacaubites*, were in place to dispute Amherst's passage on the western water-way.[9]

Haviland and Amherst also had to overcome powerful island fortresses that controlled the southern and western approaches to Montreal. The fortifications at Ile aux Noix, on the Richelieu River and Ile Royale, on the upper St. Lawrence River, could not be by-passed. They stood astride the only routes into the French colony from the interior, and if the British were to effect their junction at Montreal, they had to be taken.

Ile aux Noix lies at the north end of Lake Champlain where the waters of the lake enter the Richelieu River. Surrounded by a morass of drowned land and situated in mid-stream, just north of a point where the river bends, it controlled all traffic from Lake Champlain. In 1759, after an initial survey by the senior engineer in the colony, Captain Jean-Nicolas Desandrouins, construction of an entrenchment circling the southern part of the island began. After the abandonment of Fort Carillon and Fort St. Frédéric in July 1759, the fortifications were expanded and improved. Early in 1760, Michel-Chartier de Lotbiniere, who built Fort Carillon, constructed a second retrenchment in the centre of the island, a horn-work to enclose the north side of the fort and log-booms to obstruct the channels on either side of the island. Louis-Antoine de Bougainville's drawing of the defensive works as they stood in August

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[8] Andre Charbonneau. The Fortifications of Ile aux Noix (Ottawa: Parks Canada, 1994) pp. 331-336. Appendix A. Ships in Service at Ile aux Noix During the Campaigns of 1759-60. Jacaubites were small gun-boats named for their inventor, French artillery officer Jacau de Fiedmont. see Dictionary of Canadian Biography. Volume IV.

[9] Ernest Green. " Corvettes of New France," Ontario History Volume 35, 1943. Williamson Family Papers. Letter from George Williamson to Lord Ligonier, Camp at Fort William 26th of August, 1760. "they had 5 Small Row Galleys with 3 of our Iron 3 Pounders / very good guns in 3 of them, the other 2 French 4's."

1760, depicts a powerful and extensive fortification. (fig.1.16) During the British siege, Bougainville held the place with eleven hundred men and over seventy artillery pieces.

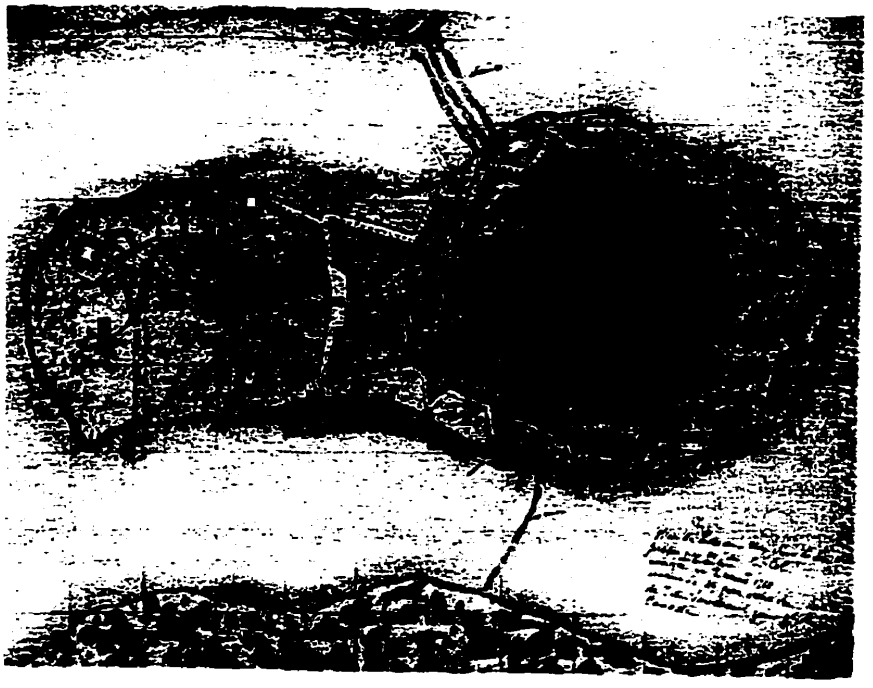

Figure 1.16

Ile Royale, located on the upper St. Lawrence river just above the Galops rapids, was also brilliantly situated to control the water approaches to Montreal.[10] After the fall of Niagara in July 1759, the Chevalier de Lévis, Montcalm's second in command, reconnoitered the site and ordered it fortified. In March 1760, Governor Vaudreuil dispatched Captain Pierre Pouchot of the Regiment de Béarn to take command at Ile Royale, and under his direction the construction effort was redoubled. Pouchot, a talented engineer who reconstructed the fortifications at

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[10] Jeffery Amherst. Journal p. 240. " I cant possibly take a better situation to command the Lake." Ile Royale, today's Chimney Island, is located just downstream of the International bridge between Johnstown, Ontario and Ogdensburg, New York.

Niagara in 1756, dug a wet ditch around the rampart, raised the parapet nine feet and constructed embrasures for thirty pieces of artillery.[11] By August he commanded a powerful defensive fortification that housed 330 men and covered half the island.[12] (fig.1.17)

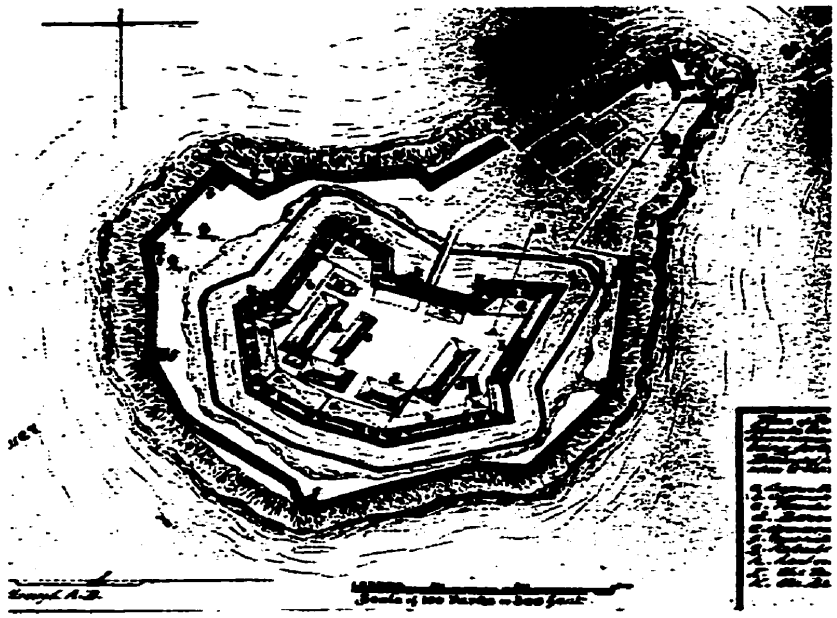

Figure 1.17

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[11] Pierre Pouchot. Memoirs on the Late War in North America Between France and England (ed.) Brian Leigh Dunnigan. (Youngtown: Old Fort Niagara Association, Inc., 1994) pp. 260-261.

[12] Williamson Family Papers. Letter from George Williamson to Lord Ligonier, Camp at Fort William 26th of August, 1760. "All around the island / except 2 places 20 yards wide each for boats / had a strong a Battis of Branches of Trees running 10 or 14 Feet into the River: this opposiiton would have made a bloody Landing: within that was a covered way badly made next a Ditch partly wet not deep with a [illegible] stockade in the midle. [diagram] running thus, & all around the Fort. the Fort not well flank'd was raised to its Cordon height with excellent well bound fascines: then fraised all around the stakes sticking out Horizontally. over this ran a General Frame of Square Timber as a Basis to build the Merlons on which were cased with square Timber dovetailed with Land ties. The Ambrazures looked on every part of the Water to annoy Boats."

Haviland's final orders from Amherst arrived at Crown Point on August 6.[13] The Lake Champlain Corps was to proceed on August 10, the same day Amherst's Lake Ontario Corps departed from Oswego.[14] Amherst instructed Haviland to invest Ile aux Noix by disrupting French communications with St. Jean and Chambly and then reduce the fortress with his artillery. Only when the French fortification was in British hands was he to continue on to Montreal.

At twelve noon on August 11, one day behind schedule, "the sygnal was made on board the Leginear Rideau upon which the army Sat Sail But with a Contarary wind."[15] By five that evening, the wind blew so hard from the north that the flotilla was forced to land. It was not an auspicious beginning. They had advanced only six miles, and the heavy, unwieldy floating batteries were lagging behind. For the next two days the flotilla toiled up the lake against a strong northerly wind. On August 12, "after roweing about 3 or 4 miles, the wind came right ahead, so that the Ligonier was obliged to anchor."[16] The rest of the fleet carried on about four miles and landed at Button Mould Bay. In two days Haviland had advanced just fourteen miles and his

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[13] David Holden. Journal kept by Sergeant David Holden of Groton Mass during the latter part of the French and Indian War (ed.) Samuel A. Green. (Cambridge: John Wilson and Son, 1889) p. 16. "August 6. An Express Came in from General Amherst to Colonel Haverland..." also see Amherst. Journal. p. 222. "July 29th. I wrote to Col Haviland and fixed the 10th August for his proceeding down Lake Champlain."

[14] Beatson. Naval and Military Memoirs. Volume II. p. 263. For details of Artillery strength see Laws. Battery Records. pp. 26-27. Haviland's 3400 man, mixed regular and provincial corps consisted of the 17th and 27th Regiments of Foot and four companies of the 1st. or Royals, the 1st. New Hampshire Regiment under Colonel Goffe, the 1st. Rhode Island Regiment under Colonel Harris and five battalions of the 1st Massachusetts Regiment commanded by Colonel Ruggles. Five companies of Rangers under Major Robert Rogers, Captain Solomon's Mahicans and a large detachement of the 3rd. Battalion of the Royal Regiment of Artillery under the command of Lieutenant-Colonel Thomas Ord completed the column.

[15] David Holden. Journal. p. 16.

[16] Massachusetts Historical Society Proceedings. "Journal of Captain Jenks." Volume 5, 2nd.Series. 1889-1890. p. 367.

artillery was nowhere in sight. The following morning, August 13, Haviland waited anxiously until he could see the *Ligonier* inching painfully up the lake, then pushed off. He dared not get too far ahead of his heavy guns, yet he could not wait. Already more than a day behind Amherst's time-table, the column had to keep moving. That day the Lake Champlain corps advanced only ten miles, less than one and a half miles per hour and the artillery batteries were miles astern.[17]

As his corps made camp at Ligonier Bay on the western shore, Haviland reviewed a situation that was becoming critical. With the oarsmen at the limit of their endurance and almost eighty miles still to go, the chances of arriving at Ile aux Noix in time to act in concert with Amherst were getting slim. Lieutenant-Colonel William Haviland undoubtedly spent a restless night. The fate of the campaign and his future as a general officer depended on successfully executing his first independent command. When first light of August 14 revealed the *Ligonier* tugging at its anchor just offshore of the encampment and a fresh southwest wind ruffling the lake, Haviland must have been enormously relieved. There was still time. Downwind, Ile aux Noix was only two days sail away.[18]

Haviland need not have worried. The northerly winds that slowed the first three days of his advance also delayed the Lake Ontario corps. On August 10 and 11, Amherst's eight hundred boats were strung out over thirty miles, between Oswego and Riviere de Sable, battling strong northwest winds and steep waves. The flotilla was in complete disarray. Many bateaux foundered in heavy swells or were smashed as their crews sought refuge on the exposed lee shore. Amherst recorded the lake was so

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[17] Amherst Papers. WO34/77, PRO 292/1. QUA microfilm reel no.1455. Colonel Haviland's Journal from Crown Point to opposite Montreal. "Aug. 13th. General beat at Seven, at Eight the Army put off, the Raddoes left behind, the wind blew so hard at north the Army was obliged to Land."

[18] Ibid. "Aug. 14th. The raddoes and sloops came up a little before day..."

rough, "several men were as sick as if they were at sea."[19] Most of the corps made Niaoure Bay before nightfall on August 12, but the bateaux had taken a fearful beating. Carpenters and caulkers were kept busy late into the night repairing the damage.

August 13 dawned clear with a favourable southwest wind. With his bateaux together for the first time since leaving Oswego, Amherst arranged them into three double columns -- regulars on the right, provincials in the centre, artillery on the left, row-galleys forming a forward screen -- and set off for the entrance to the St. Lawrence River.[20] At one o'clock, Captain Samuel Wllyamos met the flotilla with a letter from Colonel Frederick Haldimand who was encamped with the advance guard on an island some miles ahead.[21] Haldimand reported the French schooner *Iroquoise* was damaged and its guns taken out. Amherst's pleasure at Haldimand's news quickly evaporated when Captain Wllyamos further related that the two British ships, under Captain Joshua Loring, were lost in a maze of uncharted channels and could not find a navigable passage down river. Without the *Onondaga* and *Mohawk* to intercede, the row-galleys were all that stood between Amherst's unarmed bateaux and a powerful French warship. The flotilla continued on to Robertson's Bay on the east side of

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[19] Jeffery Amherst. Journal. p. 229.

[20] William Hervey. Journals. p. 109. also Jeffery Amherst. Journal. p. 229. Amherst's Lake Ontario Corps was by far the largest of the three converging forces. It consisted of 5,586 regulars, 4,479 provincials, 190 men aboard the armed snows *Onondaga* and *Mohawk* and 706 natives under Sir. William Johnson. For complete returns see Hervey Journals. pp. 56-57.

[21] Amherst's advance guard was made up of Captain Ogdens and Captain Waites companies of Rangers, Light Infantry of Regiments under his brother, Lieutenant-Colonel William Amherst, Grenadiers under Lieutenant-Colonel Eyre Massey, and the 1st. Battalion of Royal Highlanders, all under the command of Colonel Frederick Haldimand of the 60th Regiment of Foot. This detachment left Oswego on August 7, in company of two armed snows under command of Captain Joshua Loring R.N. see Amherst Journal. p. 225., Hervey Journal p. 56.

Carleton Island where Amherst called a halt. "It was ten before the last boat got in."[22] Amherst's first major hurdle, the open navigation of Lake Ontario, was behind him, but he was now in a dangerous, unknown French river and the news of Loring was troubling. Throughout August 14 and 15, as the corps picked its way through the islands at the head of the St. Lawrence River, carpenters worked feverishly to prepare the untried row-galleys for a confrontation with the French brig.[23]

The Lake Champlain front opened twenty-four hours ahead of Amherst's first encounter with the French. At 11 o'clock on August 16, five days after departing from Crown Point, Haviland's vanguard was fired on by the *Vigilante* and *Grand Diable* patrolling the entrance to the Richelieu River. The British gunboats advanced immediately. With a favourable wind the row-galleys forged ahead and opened up with their 18-Pounders. A brisk artillery duel ensued. As *Ligonier* hove into range and its heavy siege-cannon were run out, the outnumbered and outgunned French vessels fell back under the protection of the batteries at Ile aux Noix.[24] Though neither side sustained any damage in the encounter, it was a British victory. The French armed vessels had been neutralized. Bottled up below Ile aux Noix, they could not interfere with the infantry landings.

With the French vessels out of the way, Haviland wasted no time."The Ligonier with the Raddoes and Prows anchored opposite the fort and were ordered to

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[22] Amherst. Journal p. 229.

[23] Ibid. pp. 230-231. " I resolved not to wait for our Vessels if they did not find the Channel & I ordered a Hautwitzer [howitzer] on board the Row Galley that was intended for a 12-Pounder...The Carpenters worked to finish the Hautwitzer Carriage as we rowed on.

[24] Amherst Papers.Colonel Haviland's Journal from Crown Point to Opposite Montreal. "Aug. 16th. At 11 our Advance boats were fired upon by the Enemys Vessels, the Sloops, Raddoes & Proas were ordered to Advance, fired at the Enemy, and beat them back under Shelter of the Isle aux Noix." also Jenks. Journal p. 368. "After entering the Narrows, which is not more than a musket shott across, & very intricate, the enemy's schooner & reddow came out to meet us, but was drove back."

amuse the enemy with a gun every five or six minutes, while the Grenadiers, Light Infantry and Rangers were Ordered to Land & reconnoiter the East Shore."[25] Stationed in a shallow semi-circle just beyond effective range of the fort's 16-pounders, the gunboats began to pummel Ile aux Noix.[26] With British artillery fire enfilading his sally-ports, Bougainville watched helplessly as Haviland's shock troops streamed ashore beneath a barrage of mortar fire from their whaleboats. At one o'clock the beach-head was secure and the regulars and provincials began to land. By evening a breastwork was up and the troops were boiling their pots and sipping grog.[27] The whole operation took less than four hours under covering fire from Ord's gunboats.

During the night, as Haviland's troops rested on their arms, the *Ligonier* lobbed shells into the fort. One per hour was deemed sufficient to keep the garrison awake and on edge. Throughout, the French guns remained strangely silent. As the night wore on, reports began to circulate that Bougainville and his men had abandoned the works and gone off. Not a sound had been heard in the French fort since night-fall. At dawn, Haviland ordered a radeau and three row-galleys to move in and investigate.[28] Work was stopped until the truth of the report was known.

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[25] Ibid.

[26] Andre Charbonneau. The Fortifications of Ile aux Noix. p.52. "The inventory of pieces taken by the British at Ile aux Noix after the surrender counted 77, of which 14 were iron swivel-guns. Three sixteen pound guns were the largest pieces." The French livre was equivalent to 1.1 English pounds so that their 8-pounder gun was camparable to the British 9-pounder and their 16-pounder equivalent to the British 18-pounder. see B.P. Hughes. Open Fire: Artillery Tactics from Marlborough to Wellington. (Chichester: Antony Bird Publications Ltd., 1983) p. 12.

[27] Jenks. Journal. p. 368. "As soon as the signall for landing was made, we all rowed right to shore and landed in extreme good order without any molestation at all. The Ligoneir redows & prows kept a fire on the enemys fort & vessells, to feavour our landing...We then set about makeing a breast work which was compleated in a little time, as the men are in high spirits...We haveing a little rum, we made sum toddy to keep up the custom of Saturday night health."

[28] Amherst Papers. Colonel Haviland's Journal. "Aug. 17th. It was reported the french

Under cover of the early morning mist, the gunboats cautiously approached the silent fort. Muffled oars creaking against thole pins and the hiss of the gunners' matches were the only sounds to be heard. When they had crept to within pistol shot of the island, every French gun that could be brought to bear suddenly opened fire. Stunned, the British replied and hastily pulled back. The reconnaissance was a costly mistake. A floating-battery was out of action from a direct hit, Captain-Lieutenant Samuel Glegg was dead and five men wounded.[29] Haviland was not again beguiled by Bougainville. From then on the gunboats stayed back and played on the fort with their long range guns while British engineers prepared the siege.

It is not surprising that the first British casualties of the Canada campaign were from among the men who served on gunboats. As the spearhead of Amherst's invasion, they were the first to encounter the French. However, we do not know if the first to fall served with Haviland or Amherst. By a remarkable coincidence, the first two deaths occurred nearly simultaneously. Haviland's gunboats were repulsed at Ile aux Noix the same morning Amherst's row-galleys took the French brig near Ile Royale and life was lost in both actions.[30]

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had Abandoned the Island, as they had ceased firing all night, Ordered a Raddoe Commanded by Ct. Glegg & three prows to look into the fort."

[29] Ibid. "Ct. Glegg lost both leggs & five men were wounded." also Jenks. Journal. p. 368. "One of our redows going to reconitre the fort was fired on by the enemy and Capt. Glaye of the Royall Artelery was kill'd & 5 or six more lost their legs." also Holden. Journal. p. 17. "About 8 o'clock Capt. Clagg Belonging to the Train on board of a Small Artillery Rideau, bore away Towards the fort whose orders was to go on till fir,d upon, accordingly he Did & By a Six Pounder had both his Legs Shott off after which ye Capt soon Died, 5 more wounded, one of which had Both his Legs Shott off, the other 4 one Legg apiece."

[30] Both actions took place on August 17, 1760 between six and nine in the morning. Captain-Lieutenant Glegg R.A.was killed and five provincials were wounded at Ile aux Noix. Sergeant Wilkie R.A. was killed and two provincials wounded in the encounter with the brig.

By late afternoon on August 15, the entire Lake Ontario corps, less Loring's ships, were united at Haldimand's advance post about twenty-five miles upstream of Ile Royale. Expecting to reach the French fortress the following day, that night Amherst rearranged the order-of battle. Haldimand, who was ill, was relieved. Colonel Francis Grant would lead the advance guard which now included the Royal Artillery's five row-galleys.[31] Haldimand, with the 1st. Royal Highland Battalion, would head the column of regulars. General Amherst and Colonel Williamson would accompany Colonel Grant while Colonel Gage brought up the provincials and the train.

The next morning at ten o'clock the advance guard moved off with the row-galleys in the lead. The day was hot and windless and sails flapped lazily as oarsmen strained to keep the flotilla moving. By mid-afternoon they entered onto a broad waterway that stretched away to the north-east as far as the eye could see. Released from the narrow, winding passages of the upper river, the full extent of their army became apparent to every soldier in the corps. Morale soared. "Column after column of open boats massed with tunics of scarlet or green and topped with shining shakos, filled the stage; bayonets, belts and buckles flashed back the August sun, and thousands of oars rhythmically drew lacey ruffles of foam across the green satin of the waters. Here was war displayed in its most alluring disguise."[32]

It was evening before Pointe au Baril was in view. As the advance guard came abreast of the point, the French brig was sighted a few miles downstream. Amherst decided to attack immediately. It was getting late but there was no wind, an

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[31] Hervey. Journals p. 110. "Brigade Order Book Saturday August 16." The 2 companies of Rangers, Gage's, Infantry of regiments, and Grenadiers, form the advance guard under Col. Grant. The row-galleys with their proportion of artillery to row with the advance guard."

[32] Ernest Green. "Corvettes of New France." p. 34.

immense advantage he might not enjoy again. He sent word to Gage to make camp at the point and then pressed ahead with the advance guard. If the row-galleys reached the *Outaouaise* before dark they could attack the vessel while it was becalmed.[33]

The impracticality of the scheme soon became obvious. The men were tired, it was growing dark and the brig was still three miles away. Amherst abandoned the attempt and ordered Grant to make for the Indian village of Oswegatchie on the south shore. The brig fired two signal guns as the advance guard came in sight and then three more when it became clear they were encamping.[34] That night while the corps rested in their boats, artillerymen and New York pioneers deployed field-guns along the north shore of the river east of Pointe au Baril.[35] If the row-galleys failed to stop the *Outaouaise*, the massed bateaux along the riverbank would not be completely unprotected..

The camp at Oswegatchie was astir before dawn with men checking their arms and wolfing down the cold remains of supper. As the first rays of sunlight slanted across the river, they rowed out to meet the enemy. The rangers, light-infantry and grenadiers formed a line across the river while the row-galleys headed for the brig which was getting underway. An early morning land breeze gave *Outaouaise* the initial advantage. With a water-line length of eighty feet and a cloud of sails it could easily out-distance the galleys. Captain Joseph Boucher de la Broquerie's goal was to evade the British gunboats and get among the unarmed bateaux where his artillery

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[33] Amherst. Journal. p. 231. "I was in hopes to reach Swegatchi but we had no wind & it began to grow late when the advanced Guard was in sight of the Point of Baril... I directed a Camp to be marked there, & on our arriving there with the advanced Guard we saw the French Vessel a little below Swegatchie. It was impossible not to push on to try to attack as it was a calm..."

[34] Ibid. "Night came on so fast there was no attacking the Vessel so I ordered the advanced Guard to encamp at Swegatchie. On our appearance the Vessel fired two Signal Guns; so soon as She saw the Fires of the Camp she fired three more."

[35] Pouchot. Memoirs. p.301.

would have a field day. By taking out Amherst's ordnance transports he could shatter the invasion in an hour[36]

The French brig and British row-galleys engaged mid-stream. After a brief artillery exchange, the *Outaouaise* brushed past the British gunboats and slanted off toward the north shore. The row-galleys followed in a hopeless stern chase.When the French brig was in range, the British field guns sited along the shore opened up. La Broquerie calmly came about and headed back across the river. The row-galleys and now the shore batteries were left behind. Nothing but light ordnance mounted on the advance guard's whaleboats stood between his naval guns and hundreds of bateaux huddled along the shore. One more tack and the fox would be among the hens. But as the sun climbed higher, the morning breeze began to die away. Just out of range of Pointe au Baril, the brig lost way and then slowly began to drift downstream into the path of the advancing row-galleys. France's best chance of stopping Amherst had passed.

The field day now became a fight for survival. The manoeuverable row-galleys pounced on the drifting warship and pounded it remorselessly. Colonel Williamson, directing their fire from a whaleboat, urged the row-galleys to come up under the brig's stern and bow and rake the vessel's deck.[37] After firing only two rounds, the howitzer-mount on the fifth row-galley collapsed, killing an artilleryman and maiming two New Yorkers. The crippled gunboat limped away but other four continued to hound the brig.

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[36] Amherst. Journal. p. 232. "On the Vessels sailing up the River I expected she would have been at our batteaus."

[37] Williamson Family Papers. Letter from George Williamson to Lord Ligonier, camp at Fort William, 26th of August, 1760. " My business was to row from Galley to Galley and direct them how to attack with greater safety."

Captain La Broquerie had only one chance. If he could keep the row-galleys at bay until the current carried him under the fort's guns, he might save his ship. Determined to try, he doggedly fought off the British gunboats for over two hours as the brig was shot to pieces around him.[38] But the distance to the fort was too great. With three seamen dead, twelve mortally wounded and the British light infantry and grenadiers preparing to storm the vessel, La Broquerie relented.[39] His end-run around the row-galleys had almost succeeded and he had fought the brig valiantly, but now it was over. As the *fleur-de-lis* fluttered to the deck of the *Outaouaise*, the last ship of a once proud and numerous French Lake Ontario fleet fell to the British.[40]

The actions at Ile aux Noix and Ile Royale on August 17 signalled the end of the first phase of the assault on Montreal from the interior. In the week that followed, the emphasis shifted from water-borne artillery to field-ordnance. Gunboats had cleared the way for artillerymen and provincial pioneers to bring up the siege-trains and now heavy artillery in land-batteries took the lead. But the gunboats' role in the assault on Montreal was not yet over. They continued to make important contributions to the campaign during the land-based sieges of the French island fortresses.

After the bloody repulse of the reconnaissance on August 17, preparations for the siege of Ile aux Noix began in earnest. Haviland ordered redoubts erected to cover

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[38] Amherst. Journal. p. 231. " At daybreak the Vessel began to fire and Col Williamson attacked her with the five Row Galleys. She was going up the River but the wind calmed and the Row Galleys behaved very well; fired 118 Shot. The Vessel fired 72; had three men killed & twelve wounded then struck."

[39] William Amherst. Journal of William Amherst in America 1758-1760 (ed.) John Clarence Webster. (London: Butler and Tanner Ltd., 1927) p. 64. " At day break the row-gallies attacked the vessel. Our boats were ready for boarding, but after firing some time and the vessel seeing our boats row towards her, she did not chuse to hazard being boarded and struck."

[40] The *Outaouaise* was repaired and entered British service as the *Williamson* in honour of Colonel George Williamson of the Royal Artillery.

the boats, and over one thousand provincials, under the direction of British engineers, began constructing a corduroy road for the artillery.[41] Eight hundred more men were detached to cut fascines for the siege-batteries that were to be sited on the eastern shore, opposite the fort. Despite the swampy terrain and the need to build a bridge, work on the one and a half mile road and the gun entrenchments proceeded smoothly, with only intermittent interference from the French. From their stations upstream of Ile aux Noix, the floating batteries and row-galleys supplied effective covering fire for the troops working on shore.

On August 19, with work on the batteries and road well advanced, Haviland ordered the corps to shift their ground closer to the French fort in preparation for bringing up the siege-train.[42] A fortified encampment was quickly constructed in the rear of the gun-emplacements. The disassembled field-pieces on board the transport batteaux would have to be installed first. Only then could the *Ligonier* be brought to the landing site to disembark the six heavy 24-pounders. These guns, the largest in the corps' arsenal, were essential for an effective siege but Haviland dared not withdraw the *Ligonier* from action until the smaller field guns were prepared to give covering fire and the infantry were well entrenched in strong defensive positions.

The timing and methods employed in getting the ordnance ashore and installed in the batteries are obscure. Haviland's journal entrys between August 21, when the artillery first began to come ashore, and August 23, when the British

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[41] Amherst Papers. Haviland's Journal. "August 17th. 1,000 men with twelve Carpenters, Officers in Proportion Ordered with Captain Williams to make a road for the Artillery, Redoubts ordered to be erected on the right and left of the bay to cover the boats."

[42] Ibid. "August 19th. The Army ordered to move their ground towards the boom. Marched at nine Encamped at 11 & Immediately threw up works in the Front of each Corps." also Jenks. Journal p. 369. "This morning we had orders to pack up everything for to move on to the point to cover the batterys." also Holden. Journal. p. 18. "Moved our Encampment & Encampt oppisit the Fort, in about half a mile of it, in a very thick Place of woods & made a Brest work Both in front & Rear."

batteries opened fire, are single line notes that reveal nothing about when or how the ordnance was landed. Fortunately, two other diarists, Sergeant David Holden and Captain Samuel Jenks, reveal enough about the events of those two days to allow a very crude picture of the operation to be sketched.

The artillery began to land on August 21.[43] The first guns ashore were almost certainly disassembled field-pieces, hoisted out of transport bateaux by triangular gun-gyns. The train on Lake Champlain had two of these specialized lifting devices.[44] Erected in shallow water adjacent to the head of the newly constructed corduroy road, they transferred the cannon and mortars from bateaux to field carriages by simple block and tackle. Though the operation was fairly straight-forward, with more than thirty pieces of artillery to unload and then draw to the batteries, the operation was not completed until August 22.[45]

It is more difficult to determine when the *Ligonier* was withdrawn from its station and brought to the landing site to unload. Captain Jenks records that the floating-batteries engaged the fort throughout August 21 so it could not have been before August 22.[46] If Jenks is right and the *Ligonier* did not begin off-loading until early on the 22nd, artilleymen and provincial pioneers had about twenty-four hours to get the train's six heaviest guns, each weighing over three tons, out of the vessel and

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[43] Holden. Journal. p. 18. "Aug. 21. Landed Part of our Artillery."

[44] Amherst Papers. WO34/52, PRO 284/2. QUA microfilm reel no.1437. "Abstract of Guns, Mortars and Howitzers for Service of the Campaign by way of Crown Point." The gun-gyn was a simple tripod, each leg about 12 feet in length. The batteaux were floated between the legs where a lifting tackle was attached and the gun hoisted. With the gun suspended, the batteaux was removed and replaced with a field-carriage upon which the gun was lowered.

[45] Jenks. Journal. p. 370. "Fryday 22nd. We have landed all our morters & got them up to the bomb-battery, & are gitting the cannon on shore & drawing them to the batterys..."

[46] Ibid. p. 369. " Thirsday, 21st Aug. ...our redows have fired several shott on them to day."

into land-batteries before the British artillery opened fire on August 23. How this was accomplished in only one day remains a mystery. *Ligonier's* yards may have been used to hoist the guns out of the vessel, but the possibility that they were simply rolled off over a stern ramp can not be discounted. John Dies, the man who first suggested floating-batteries, thought "artillery floates" should incorporate this feature.[47]

On August 23, at seven minutes past four p.m., thirty-nine British cannon, howitzers and mortars, sited in earth and timber batteries, opened up on Ile aux Noix.[48] For the next five days and nights, under a cloud of smoke that hung like a pall over the battle, they pounded the French fort incessantly. (fig. 1.18) The din was audible as far away as Montreal.[49] At point-blank range, the heavy brass 24-pounders tore gaping holes in the French parapet and 13-inch mortar shells spewed destruction within the fort's walls. The French garrison kept under cover, husbanding their powder for the British infantry assault.

The French waited in vain. Haviland would not be lured into a frontal attack. Instead, while the British guns slammed round after round into the fort, he ordered a party of rangers, grenadiers and artillerymen under command of Colonel John Darby to establish a battery opposite the French vessels anchored north of the island. If they could take or destroy the French ships, Ile aux Noix would be isolated and must inevitably surrender.

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[47] The Papers of Sir William Johnson. p. 863. "In such a floate you might mount some of your field peices." [sic]

[48] Amherst Papers. Col. Haviland's Journal. "August 23. All Our Batterys finished About three in the Evening and opened 7 minutes after four." also Jenks. Journal p.370. "I hear the batterys opening will be preceeded first by all the drums beating a point of war, next by a band of musick, followed by all the provincials singing psalmes."

[49] Knox. Campaigns. p. 272. " A great firing of artillery has been heard, for several days and nights, by the people of the country."

On August 25, after an arduous night dragging two Royal howitzers and a 6-pounder cannon through the swamp, Colonel Darby's party surprised the French ships at dawn. In their hurry to get out of range of the 5 1/2 inch shells that rained on their deck, crewmen on the *Vigilante* cast off the anchor prematurely and the ship drifted helplessly toward the British. As it grounded on the shore, Major Rogers' rangers and Captain Solomon's company of Mahicans swarmed aboard. It was over in minutes. A French field officer was killed, an unknown number of men wounded and the captain and twenty sailors taken prisoner. After a brief skirmish the other French ships were also taken. Meanwhile, with their primary mission accomplished, the British artillerymen re-sited their howitzers and began to fire on the French fort in reverse.[50]

Figure 1.18

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[50] Jenks. Journal. pp. 371-372. "We have killd a feild officer of theirs who was on board, & have taken their commodore and about 20 men prisoners. We opened our batterys beside the wounded." For a full account of the encounter see Harrison Bird. Navies in the Mountains. (New York: Oxford University Press, 1962) pp. 113-117.

With the Lake Champlain fleet lost, Louis Antoine de Bougainville was trapped. He could either fight in forlorn hope of holding Haviland on the frontier for as long as possible or abandon the post and unite with Bourlamaque who was holding Sorel. Together, they might be able to take Haviland in the field. Bougainville held a council of war with his subordinate officers and after some hours of debate, they decided to leave. The garrison would evacuate Ile aux Noix, but only after they gave the British a warm farewell. They had to move quickly. Haviland was already shifting men and guns northward to cut off a retreat.

August 26 was the calm before the storm. As on the previous three days, the British batteries hammered away while the French guns remained relatively inactive. The following morning, August 27, after preparations for their departure were complete, the French opened fire on the British batteries with everything they had. The cannonade was vicious and sustained. Sensing they were at the crisis of the affair, the British also increased the tempo of their bombardment. Sergeant Holden recorded: "the Cannon Crackt as tho the Heavens & Earth was Coming together for Cheif [sic]of the Day."[51] At three o'clock in the afternoon, a French ball entered the British line through an embrasure and ignited a magazine. Thirty shells exploded: wreaking havoc in the entrenchments.[52] As night fell and the French fire slackened, artillerymen caught their breath and surveyed the damage. The British line was in shambles. Bougainville's parting shots had been very warm indeed. Throughout the

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[51] Holden. Journal. p. 19.

[52] Jenks. Journal. p. 372. "About 3 oclock P.M. we was alarmd by a sudden explosion. At first we thought that the enemy had opened a larg battery, but we was soon inform'd that a number of our shells & sum powder at the 12 gun battery took fire by sum accident unknown; about 30 shells burst by this means..." also Holden. Journal. p. 19. " A Ball from the Enemy Came through one of our Ambersoers & into a magazean Where was many Shells & Cartridges & Sat it on fire and Brew it up Broake about 20 Shells..."

night, French fire was kept alive by a rear guard of volunteers. By morning Ile aux Noix was deserted. New France's southern frontier gate was wide open.

Haviland spent August 28 and 29 drawing his ordnance from the batteries and loading it aboard transport bateaux. On August 30, with gunboats again in the vanguard, the Lake Champlain Corps rowed past the ruins of the fortification at Ile aux Noix and entered New France.

On the upper St. Lawrence River, preparations to invest Ile Royale also began on August 17. Within hours of the capture of the *Outaouaise*, Amherst ordered the ordnance-train forward from Pointe au Baril to Oswagatchie and two engineers, Captain Adam Williamson and Lieutenant Bernard Ratzer, accompanied by detachments of rangers and Iroquois, were sent on foot to reconnoitre the river and the French fortification. They were not only to identify suitable sites for the siege-batteries but also to determine the best way for the corps to proceed past the fort. Amherst could not begin a siege until he was entrenched below Ile Royale and ready to intercept a French relief force.[53]

The train arrived at Oswegatchie at four in the afternoon, and carpenters were soon busy repairing the damaged row-galley and the French brig. Lieutenant Patrick Sinclair of the 42nd Royal Highland Regiment and a crew mustered from the New Yorkers would man the newly christened *Williamson*. Though severely damaged, the brig was still afloat and might be of use against its former owners.

By mid-morning the following day, the engineers returned with sketch maps and Amherst quickly made his dispositions. The corps was split into an advance

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[53] Amherst. Journal p. 232. "I ordered out two detachments of 120 each with Indians that Capt Williamson and Lt. Ratser might go down and view the coast." Ordnance officers were commonly sent on reconnaisances because of their skills in drawing and surveying and familiarity with siege operations.

guard and two brigades. Gage's 80th Light Armed Foot, the advance guard, would go down first, followed by three row-galleys. Once past the fort, they were to secure Ile Galet while the row-galleys took up positions to support the first brigade as it passed beneath the French guns north of the fortress. Under covering fire from the gun-boats, a brigade of light infantry and regulars commanded by Amherst would take two small islands about five hundred yards downstream of Ile Royale. A second brigade under Haldimand, made up of rangers, regulars and provincials would take possession of a point of land on the south shore, upstream of the fort. From the engineers' report Amherst determined these were the best sites for the siege-batteries. (fig. 1.19) The *Williamson* and two row-galleys would assist Haldimand with supporting fire. The provincials and ordnance-train were ordered to wait at Oswegatchie.[54]

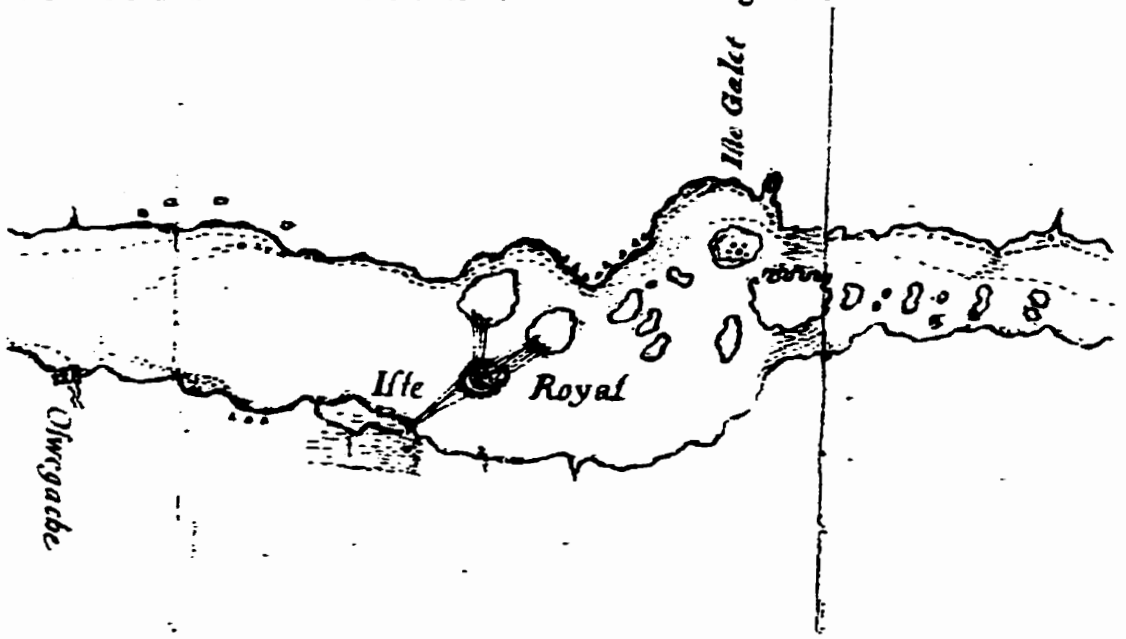

Figure 1.19

Despite withering fire from the French fortress, Amherst's investment of Ile Royale was executed as planned. Gunboats led the way. As the armed whaleboats and

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[54]Ibid. pp. 233-234.

three row-galleys leading Amherst's brigade came into range, Captain Pouchot opened up with a devastating ricocheting cannonade.[55] Gage's whaleboats scuttled past with no loss but the slower row-galleys were not so fortunate. One was holed and went down almost immediately. Two New York crewmen were killed in another that took a French ball above the water-line.[56] When the two badly mauled row-galleys reached the relative safety of the first island below Ile Royale, they anchored and opened fire with ball and canister in an attempt to drive the French gunners from the embrasures. For most of the afternoon and evening both sides kept up a sustained fire as the long line of bateaux filed past the fort. At eleven o'clock that night, a relieved but shaken Jeffery Amherst watched the last one pass Ile Royale.[57] Encamped on Isle à la Cuisse and Isle de la Magdelaine, the first brigade was at last safe from Pouchot's gunners. Haldimand took much less punishment on the southern shore. Under covering fire from the *Williamson* and two row-galleys, his brigade landed and took possession of Pointe de Ganataragoin with little loss.

At daybreak on August 19, Jeffery Amherst, George Williamson and Lieutenant-Colonel Eyre Massey surveyed the islands. Suitable sites for the siege-batteries were located and work on the approaches began. At noon *Onondaga* and *Mohawk* were finally sighted and Amherst ordered Loring to anchor within random

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[55] Pouchot. Memoirs. p. 302. "M. Pouchot had positioned 9 guns to bombard the top of the river & had sited others in the epaulement which could make the balls ricochet eleven times over the water...we fired 150 shots at them..." also Amherst. Journal. p. 233. "They cannonaded us briskly from the Fort." also William Amherst. Journal. p. 64. "...the enemy kept up a smart cannonade upon us from the Island..."

[56] Woodhull. Journal. p. 258. "As the batteaux and the Redows were passing the fort, a shot struck one of them, and a ball went thro' another, which killed two New Yorkers."

[57] Amherst. Journal. p. 233. " ...as when I passed I found the Fire pretty heavy. To avoid losing men unnecessarily I then directed the boats to follow one by one, and I staid until it was between ten & eleven at night that the last boat passed & got into the Ground intended for them."

shot of the fort next to the battered *Williamson*. That day Amherst also instructed Haldimand to begin constructing his battery at Pointe de Ganataragoin and ordered the New Yorkers and carpenters down from Oswegatchie under cover of darkness. Even with the additional fire-power of Loring's two warships he would not risk running the ordnance-train past the fort in daylight after the harrowing experience of the day before. That night, while the artillery bateaux stole past the fort, carpenters raised the sunken row-galley and towed it to safety behind Isle à la Cuisse.

On August 20, 21 and 22, while the siege-batteries were built and the balance of the corps came down from Oswegatchie, Amherst planned the assault. After an initial bombardment by his combined artillery, the three warships would close with Ile Royale and drive the French from their guns while two row-galleys led a storming party of six hundred grenadiers and three hundred light infantrymen.[58] Amherst was confident they could take Fort Lévis easily after a sustained bombardment from more than seventy cannon, howitzers and mortars.

The cannonade began at dawn on August 23 when the *Onondaga, Mohawk* and *Williamson* opened fire from their positions upstream of the island. At eight a.m., the land based siege-batteries joined in and for the rest of the morning the combined artillery of the Lake Ontario corps battered Fort Lévis. Pouchot kept his men under cover, his guns drawn back behind the merlons and the fort's embrasures sealed with specially prepared timbers. Only a handful of sentries kept the movements of the enemy under observation.[59]

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[58] Amherst. Journal. p. 236. "...as soon as I can dismount their Guns I shall run the ships in & assault the Place with the Grenadiers & I fancy I shall easily carry it." also William Amherst. Journal. p. 65. " the Grenadiers to row in with fascines and scaling ladders, in their shirts, taking only their broadswords and tomahawks."

[59] Pouchot. Memoirs. p. 305. "...at five in the morning, the three ships approached to within 200 toises of the fort & covered the entire space at the top of the river between the Isle a la Cuisse & Pointe de Ganataragoin. We judged from this that we were going to be vigorously bombarded by the ships & the shore batteries. Between

At noon, judging the French sufficiently "softened up", Amherst ordered the assault. On board the ships, canister was loaded into the guns, sharpshooters swarmed into the tops and anchors began to come up. Behind Ile à la Cuisse, nine hundred grenadiers and light infantrymen waited until the ships were on station.

The assault was a disaster from the beginning.(fig.1.20) Though the morning bombardment caused severe structural damage to the fort, it did not materially effect the garrison's ability to wage war. Pouchot's prudent tactics had preserved his men and guns. As soon as the French sentries reported the British ships getting underway, Pouchot ordered his artillerymen, Canadian gunners from the crew of the scuttled *Iroquoise*, to the guns on the north side of the fort and deployed one hundred and fifty musketeers along the shoreline.[60]

The *Mohawk* came down first. Lieutenant Phipps anchored within pistol shot and exchanged fire with the fort for forty-five minutes before a French ball stove in a plank and the ship began to take in water. With the St. Lawrence river pouring into his hold, Phipps ordered the ship's anchor cable cut and the vessel drifted out of range to run aground near Ile Galet. The *Williamson* took *Mohawk's* place and after a brief but very warm fire-fight, it too, was disabled and out of action. "An unlucky French shot" had carried away its anchor cable. *Onondaga*, the British Lake Ontario fleet's flagship, under the command of Captain Loring, fared worst of all. It grounded on a

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them, they formed a semi-circle around the fort. As a result, M. Pouchot ordered the artillery officers to move the guns of the batteries back so that they were in the cover of the merlons, thus preventing them from being dismounted. He also had the embrasures hidden with the ends of large pieces of wood cut for the purpose. They could be cleared away by simply pushing them forward."

[60] Ibid. p. 307. " The manoeuver of the ships immediately induced M Pouchot to send out 150 men & 4 officers to deploy along the epaulement. He had each ship bombarded one after the other with five guns, the only ones within reach, using ball & grapeshot. He did not respond to the shore batteries."

ledge directly under the fort and, unable to move out of range, was savaged by the French guns until it struck its flag.[61]

With jeers from his native allies and taunts from the Canadian gunners ringing in his ears, Amherst surveyed the shattered remains of his fleet and ordered the storming party to stand down.[62] From that moment the siege of Ile Royale became ruthless. Humiliated by his defeat at the hands of three hundred Frenchmen, Amherst ordered Williamson to burn them out with red-hot shot and incendiaries.

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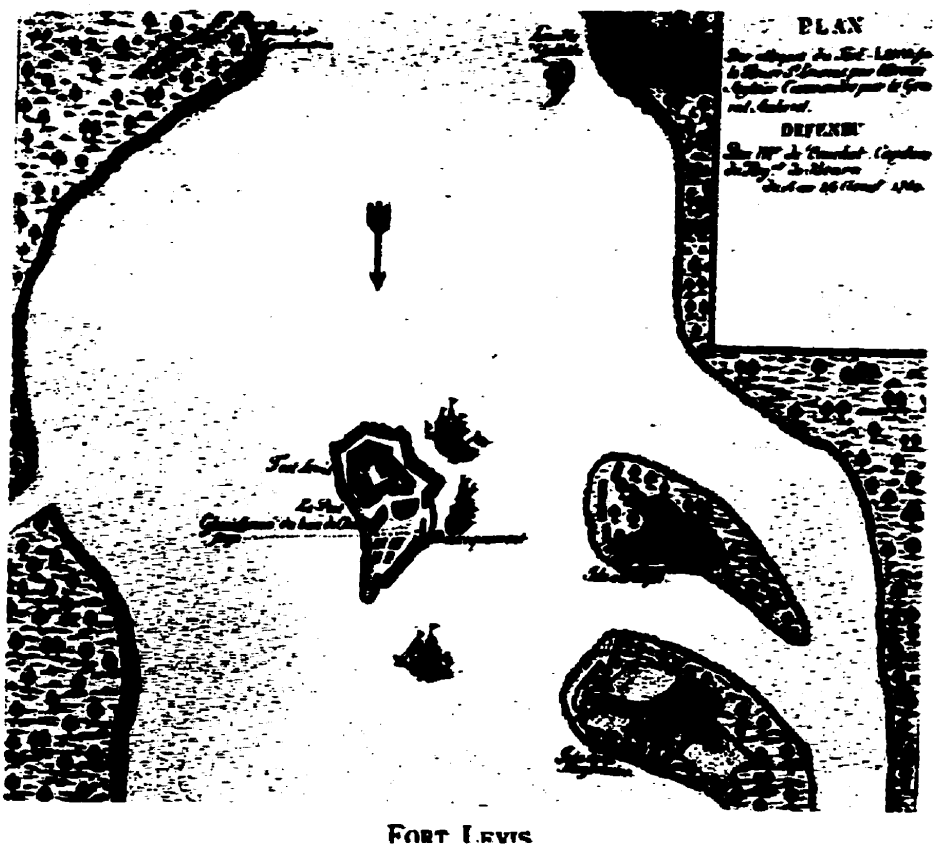
[61] Ibid. p. 308. "Despite the superiority of the enemy fire, with our five guns & musketry, we forced the *Outaouaise* & subsequently the *Onoyote* to run aground half a league from the fort, near Isles des Galots. One of them was put out of action permanently. The *Sonnontoin*, of 22 guns, which attempted to approach too close to the the fort, also ran aground. It was so badly mauled that it struck it colours". also Jeffery Amherst. Journal p. 237. "The Mohawk got down very soon, but the others not following, he lay alongside about three-quarters of an hour, & the Enemy from their first consternation recovered themselves & fired their Guns, one shot taking Place in the Mohawk, that beat in a Plank and risked her sinking. Lt. Phipps cut the Cable & got down below the Island. Then the other two Vessels arrived nearer the Fort & an unlucky shot cutting the Cable of the Williamson, Lt Sinclair was drove down the River and obliged to follow the Mohawk. The Onondaga remained in her Station & I sent Capt Abercromby on board who gave my orders that she should remain there. These Accidents determined me not to pursue my Plan without the help of the Ships, as I must have lost a great many men and perhaps miscarried."

[62] Pouchot. Memoirs. p. 311. "One thing that amused the garrison at such a serious time was that the Indians climbed up onto the trenchees & batteries to view these ships in battle. They considered them as their own, because of the names they had been given & because they had an Indian painted on their flags. They uttered the most frightful shrieks when they saw the ships so badly mauled. The English had convinced them they would make us surrender with the ships alone. When the Indians saw them drifting broadside-on before running aground, their shrieks increased in volume & they shouted obscenities at the English... A handful of Frenchmen are showing you up."



FORT LEVIS

Figure 1.20

Pouchot and his men withstood the fire storm for almost forty-eight hours. As quickly as they extinguished one fire another *pot a feu* sailed over the ramparts and started the next. The British mortar batteries expended such quantities of powder and shell during the bombardment, Williamson feared he might run short.[63] By the afternoon of August 25, with his garrison half-dead on their feet and the fort a smouldering ruin, Pouchot signalled for a truce and sent a protest to Amherst. He was deeply affronted by Amherst's conduct. "This manner of making war is only used against rebels and not against a brave garrison that does not deserve such treatment," he wrote.[64] Unabashed, Amherst replied with a surrender document and a threat. If the French did not capitulate unconditionally within half an hour, the fire-bombing

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[63] Amherst. Journal. p.239. " Aug. 25th. Our Battery continued to fire with good Success. Col Williamson began to fear his ammunition would fall short..."
[64] Pouchot. Memoirs. p. 313.

would continue as before. Pouchot had no choice but to surrender. He was completely out of ammunition. At eight p.m. on August 25, Lieutenant-Colonel Eyre Massey with three companies of grenadiers took possession of the island. The following morning George Williamson carried the Union flag through a breach in the fort's north-east bastion and hoisted it on top of the rubble.[65] Six days later, when the British batteries were levelled and the ordnance shipped, Amherst's corps streamed into the heart of New France.

After the fall of Ile Royale and Ile aux Noix organized French resistance to the invasion evaporated. As Haviland and Amherst drove ever deeper into the colony, the Canadian inhabitants and their native allies surrendered enmasse. They could do nothing to stop the British-American juggernaut converging on Montreal. Only the wild cataracts of an untamed river and the dark, silent forest stood between Amherst's two wilderness corps and the French army falling back on Montreal. On September 6, following a harrowing descent of the rapids on the upper St. Lawrence, Amherst's four double columns of bateaux, with whaleboats and row-galleys in the van, rowed unopposed across Lac St. Louis and landed on the island of Montreal.[66] To the east, Murray's corps was encamped at Pointe aux Trembles. Haviland's Lake Champlain corps was at La Prairie on the southern shore. By nightfall, when the heavy artillery was in place on the heights north of the town, the noose around the French army was pulled tight.

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[65] Williamson Family Papers. Letter from George Williamson to Lord Ligonier, Camp at Fort William August 26, 1760. "The morning after the Surrender I went in at the Breach my hands in my bosom & hoisted the Union on the Top of it."

[66] Amherst. Journal. p. 244. "...the Rapids cost us dear...We lost 84 men, 20 batteaus of Regts, 17 of Artillery, 17 whaleboats, one Row Galley, a quantity of Artillery Stores & some Guns that I hope may be recovered. also p. 245. " September 6th. At day break the General beat & in half an hour the Army was in the boats. I rowed in four Columns...we had a fine day & I rowed down to La Chine on the Island of Montreal."

-Five-

Afterword:
The Gunboat Solution

Sua Tela Tonanti[1]
-Ordnance Corps Motto

The role of smooth-bore artillery in the seaborne expansion of Europe is well documented. Carlo Cipolla points out that for more than three hundred years, beginning in the fifteenth century, European ships of trade and discovery bristled with artillery.[2] Merchant adventurers in the early modern period were well aware of the immense trading advantages conferred by a tier of cannon arrayed along the sides of their vessels, and they were not hesitant to exploit them.[3] By the middle of the seventeenth-century, when European nations began to invest in permanent navies, statecraft, in addition to trade, was often conducted from the barrel of a naval gun.

Ships armed with heavy artillery were powerful weapon systems -- the most powerful of the time -- but their efficacy was limited. They could enforce the King's edicts on the oceans of the world, but inland, their power ended. They could blockade, patrol, convey and interdict, but they could not directly effect the outcome of events

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[1] We have wrested Jove's own weapons from his grasp and hurl them ourselves.
[2] Carlo M. Cipolla. Guns, Sails and Empires: Technological Innovation and the Early Phases of European Expansion 1400-1700. (New York: Pantheon Books, 1965) p. 137. " The gunned ship developed by Atlantic Europe in the course of the fourteenth and fifteenth centuries was the contrivance that made possible the European saga...The secret of the sudden and rapid European ascendancy was... in the skill acquired by Atlantic nations in the use of the sailing ships and in their having understood that the 'sea fight in these days come seldome to boarding or to great execution of bows, arrows, small shot and the sword but are chiefly performed by the great artillery'.
[3] Ibid. p. 143. " Within a few years after the arrival of the first European vessels in the Indian Ocean it became mandatory for non-European vessels to secure sailing permits if they did not want to be blown up by European guns."

beyond the range of their guns. In 1755, British Rear-Admiral Charles Watson stated the problem succinctly. "If I can come near enough to batter...I shall make no doubt of success, but if the large ships cannot come within distance to do execution, it will be doing of nothing."[4]

During the Seven Years' War, in the North American theatre of operations, the British Royal Navy attempted to amend this deficiency and extend its reach inland by establishing a naval squadron at Fort Oswego on the southern shore of Lake Ontario. The lake was a vital transportation link in France's North American empire, and with a fleet of French ships plying its waters and stone fortresses guarding its eastern and western extremities, contemporary opinion held that only the navy, with its heavy mobile artillery, could "acquire the dominion of that navigation" for the British. In the summer of 1755, hundreds of men laboured and thousands of pounds were spent to build, arm and man seven small warships for service on the inland sea.

Despite a prodigious effort, the Royal Navy's first experiment in freshwater navigation was a dismal failure. After only two abortive cruises the squadron was captured intact when, in August 1756, Major-General Louis Joseph de Montcalm-Gozon, Commander of French forces in North America, launched a successful pre-emptive strike against Fort Oswego. Coming just one year after Edward Braddock's disastrous defeat at the Monongahela, the loss of the Lake Ontario fleet and the destruction of Fort Oswego were cruel blows to British-American morale. The British regular army, and now the highly vaunted Royal Navy, had been routed in the interior. In London, an embarrassed Admiralty Board held a hurried inquiry into the affair and after exonerating the naval officers involved, closed the book on an unfortunate episode, then washed its hands of

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[4] Jeremy Black. European Warfare 1660-1815. (New Haven: Yale University Press, 1994) p. 1.

any further responsibility for the inland waters of North America. Their departure made the need for British artillery in the interior more pressing.

After the fall of Oswego and the defeat of the Royal Navy, French confidence soared, and in concert with native allies they began raiding the western and northern borders of the British-American colonies. Sortieing from Fort St. Frédéric, Fort Frontenac, Fort Niagara, and Fort Duquesne, they drove back the frontiers of British-America one hundred and fifty miles. Areas settled fifty years previously were abandoned as farmers and their families fled eastward to safety. The ability of small French and Indian raiding parties to travel fast, hit hard and then retreat to fortified base camps made stopping them impossible. As long as the French controlled the interior waterways and their wilderness fortresses remained intact, Louis XV retained suzerainty over most of North America. Only by gaining control of their transportation routes and destroying their forts could British-Americans hope to curtail French incursions. In the autumn of 1756 a handful of officers of the Royal Regiment of Artillery in America began working on practicable ways to deploy heavy siege-guns inland.

In keeping with the values of the men who devised the gunboat solution, whaleboats, row-galleys and floating batteries were utilitarian and cost effective. Masses of expensive imported cordage, spars, sails, blocks and specialized metal fittings required by conventional ships were unnecessary. Gunboats fashioned in the wilderness were built inexpensively from materials at hand. Whaleboats and row-galleys carried single masts, and their efficient fore-and-aft sail plan required only two sails. *Ligonier* was a ponderous sailer, but in the right conditions its two simple square-sails moved the vessel at about three knots. Only the ordnance and the technicians made the long, expensive trans-Atlantic trip from Britain; all the other components, including the men who built and crewed the gun-boats, were American.

A flexible organizational structure contributed to the solution. During the Seven Years' War, the Royal Regiment of Artillery had not yet reached its fiftieth birthday and

the Royal Military Academy was not even twenty years old. There were, as yet, no prescribed rules for the tactical handling of heavy artillery.[5] Their movement and positioning was left to the judgment of the officers in the field and the dictates of the situation. Freedom of action was fertile ground for experimentation and a necessary condition for the development of a modern tactical role for artillery.

Shared values also added to the solution. New York and Rhode Island regiments cooperated with the Royal Artillery. Provincials and artillerymen looked self-interest in the eye and made no apology for it. Practical men from the middling social ranks of the British Empire understood a business-like way of making war that was funded by generous amounts of silver. "Their outlook, based on knowledge and skill, clashed head-on with the traditional aristocratic approach to war which was rooted in breeding, honour and social status."[6] The 1760 Canada campaign was not an ennobling martial adventure. The ruthless fire-bombing of Fort Lévis portended faceless technological warfare. In 1999, as smart bombs rain on Belgrade, Pouchot's protest to Amherst echoes, a cry in the wilderness.

Finally, the Royal Artillery's gun-boat solution was invention. Not only did it allow the most powerful weapons of European warfare to be safely and efficiently transported through the wilds, it placed them at the head of the army where their enormous destructive potential was best utilized. The genius of the solution was decisively demonstrated at Ile aux Noix and Ile Royale and again in North American riverine campaigns for the next hundred years. What was once a burdensome and vulnerable appendage to an army on the move became the key tactical element. In 1760 Jeffery Amherst demanded the complete surrender of Canada and the heavy, mobile artillery in his army ensured he need not take less.

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[5] Hughs. Open Fire. p. 4. "There appear to have been no printed records of the doctrine for the employment of artillery in the 18th century."
[6] Martin van Creveld. Technology and War. p. 144.

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