"One such place in North America": New York, Boston, and Halifax as British Naval Bases, 1743-1783

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Bien que Halifax était le chantier naval britannique le mieux équipé en Amérique du Nord tout au long du XVIIIe siècle, ce n'était pas le seul port d'attache de l'Escadron de l'Amérique du Nord. Boston a tenu ce rôle de 1747 à 1757 et de 1770 à 1775 et New York de 1776 à 1783. L'expérience de la marine dans ces ports et sa recherche d'une base permanente en Amérique, mettent en avant les avantages et les faiblesses des villes portuaires de New York et de Boston. Seule, la cartographie systématique a permis au port de New York d'accueillir les grands navires, et dépit de cela, la plupart des officiers navals n'appréciaient point le port.

The early years of the main British naval base in North America, at Halifax, Nova Scotia, has been thoroughly studied, most notably by Julian Gwyn. But, as Gwyn notes, while Halifax was the best-equipped British naval yard in America throughout the eighteenth century, it was the center of naval activity only for a few years prior to 1783. The Royal Navy's experience in its other main American ports — New York and Boston — has been far less well studied, nor has its search for a long-term home, which led ultimately to the base at Bermuda in 1818.

The navy's experience in these other ports, and its analysis of various places

See Julian Gwyn, Ashore and Afloat: The British Navy and the Halifax Naval Yard before 1820 (Ottawa, 2004); Julian Gwyn, Frigates and Foremasts: The North American Squadron in Nova Scotia Waters, 1745-1815 (Vancouver, 2003) and Julian Gwyn (ed.), The Royal Navy and North America: The Warren Papers, 1736-1752 (London, 1973). See also W.A.B. Douglas, "Nova Scotia and the Royal Navy" (unpublished PhD thesis, Queen's University, 1973). Only British operations in the Delaware River have received concentrated attention; see George Comtois, "The British Navy in the Delaware, 1775 to 1777," American Neptune XL, no. 1 (January 1980), 7-22. Some of the American and French ports have gotten greater attention; see William Fowler, "The Business of War — Boston as a Navy Base, 1776-1783," American Neptune XLII, no. 1, 25-35; and Henry J. Yeager, trans., "The French Fleet at Newport, 1780-1781," Rhode Island History XXX, no. 3 (July 1971), 87-93. Thomas Truxes writes masterfully about the social and economic interactions of the army and navy in New York in the 1760s, but does not cover the navy's operations in the harbor in great detail; see Thomas M. Truxes, Defying Empire: Trading with the Enemy in Colonial New York (New Haven, 2008).

where it might place a headquarters, highlights several things. First, it serves as a reminder that inertia plays a major role in administrative decisions; had actual operations been the only consideration, the naval base at Halifax would likely have been abandoned soon after the end of the war in 1763. Second, it points out that Boston played a greater role in naval operations than Halifax, both before and after the Seven Years' War. Finally, the navy's experience in New York highlights not only the shortcomings of that port but also the extent to which knowledge and experience could turn an impossible harbor into a merely difficult one.

A Naval Base for America

The overseas naval base was, for the Royal Navy, an eighteenth-century innovation that it embraced only reluctantly. The Royal Navy's massive dockyards in England — at Chatham, Portsmouth, and Plymouth — had served it well during the long naval rivalry with Holland. Ships serving in distant waters could rely on colonial or friendly ports for water, provisions, and naval stores; and small-scale repairs could be conducted with supplies on board. Thus, ships "based" at one of the English naval bases were sent on long voyages, or might even be "stationed" to remain in and around a specific foreign port; but they would return to England at least every two or three years for the refitting or overhaul that required a naval base's facilities.²

This pattern faced a challenge as Spain and France replaced Holland as England's main naval rival in the late 17th century, and the focus of warfare shifted from the North Sea to the Mediterranean and Caribbean. These warm waters fostered the shipworm, *teredo navalis*, which ate away at ships' hulls and made it necessary to expose the ship's hull for a thorough scraping down every year — a frequency that was not always feasible if the process involved returning to England. Although this process — called "careening" — could be accomplished for a small ship on a beach at low tide, it was easiest when specially-built facilities allowed the ship to be pulled over while still afloat. One type of facility was another ship, retired from service and turned into a stationary "careening hulk"; but the best solution was a purpose-built careening wharf.³

It was the need to careen regularly that forced the Royal Navy to begin investing

² "Refitting" took place every two and a half to four years and required several months. Roger Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815* (Cambridge, England; and New York, 2011), 153-155.

For the importance and difficulty of careening, see Duncan Crewe, Yellow Jack and the Worm: British Naval Administration in the West Indies, 1739-1748 (Liverpool, 1993), 2-10 and 213-215; Daniel A. Baugh, British Naval Administration in the Age of Walpole (Princeton, NJ, 1965), esp. 343-345; and J. G. Coad, The Royal Dockyards, 1690-1850: Architecture and Engineering Works of the Sailing Navy (Aldershot, U.K., and Brookfield, VT, 1989), 1-21 and 305-314. The increasing cost and complexity of maintaining a global naval presence demanded dramatic changes in government finance and administration, but this author has found no evidence that decisions about specific bases in America were driven by financial capacity. The standard text on this is John Brewer, The Sinews of Power: War, Money, and the English State, 1688-1783 (New York, 1988).

in forward bases; one historian has written that "during the eighteenth century the decision to construct a careening wharf was tantamount to a decision to establish a [naval] base." Although the terms "station," "base," "headquarters," and "rendezvous" were all used to indicate somewhat different strategic and servicing functions, these generally qualified as what could be termed an operating base — a place from which a fleet or squadron is able to maintain operations for an extended period.⁵

The first overseas base was on the Mediterranean island of Minorca in 1708; the Caribbean soon followed, with bases at English Harbour, Antigua, and Kingston, Jamaica built in 1728-29.⁶ Kingston became the main Royal Navy base in the western hemisphere: during the 1739-1744 war with Spain, 14 of the 28 ships stationed in the colonies were assigned to Jamaica, including eight large "ships of the line" of 50 guns or more that were designed to take part in set battles against other European navies.⁷

⁴ Baugh, British Naval Administration in the Age of Walpole, 344.

⁵ During the period under discussion, the terms "station," "base," and "rendezvous" were all used to mean different but overlapping levels of a port where ships were assigned and from which they were provisioned and commanded. In some cases, a naval station might simply be the port around which a single ship was assigned to cruise; but this clearly did not indicate a significant investment in that location. But there was a clear difference in function, if not in terminology, between a location to which a ship was assigned and a more elaborate station that might include naval facilities, multiple ships, and a senior commanding officer. According to W. A. B. Douglas, a naval base had strategic importance while a "naval station" had only regional importance; but he also points out that "it was the presence of large numbers of ships of the line which spelled the difference between a naval base and a naval station." According to Commodore Alexander Colvill, "rendezvous" was essentially the same as a headquarters for the squadron. (See Douglas, 214, 260, and 364.) Nonetheless, Bernard Brodie, focused on mid-twentieth-century naval practice, distinguishes between a fleet's "operating base" where it is regularly supplied and fueled, and its "home' or 'dockyard' base," where major repairs are carried out. This seems to conform more to the American situation in the eighteenth century; although Halifax had more extensive repair facilities than Boston or New York after 1757, and major overhauls could still only be conducted in England, the ports of Halifax, Boston, and New York seem all to have served effectively as the command, provisioning, and basic repair locations for the North American Squadron between 1757 and 1783, and thus acted as that command's operating base. Bernard Brodie, A Layman's Guide to Naval Strategy (Princeton and Oxford, 1942), esp. 170-171. I am indebted to an anonymous reviewer for these distinctions and sources.

Richard Harding, *The Emergence of Britain's Global Naval Supremacy: The War of 1739-1748* (Woodbridge, U.K. and Rochester, NY, 2010), 44-46; Baugh, *British Naval Administration in the Age of Walpole*, 325, 347-355; and Coad, *Royal Dockyards*, 306-307. For the early thinking on forward basing in the Mediterranean, see John Ehrman, "William III and the Emergence of a Mediterranean Naval Policy, 1692-4," *Cambridge Historical Journal* IX, no. 3, 269-292; for the provisioning of the Navy, both at home bases and overseas, see Christian Buchet, *The British Navy, Economy, and Society in the Seven Years War*, Anita Higgie and Michael Duffy, trans. (Woodbridge, U.K., 2013).

Warren to Burchett, 14 September 1739, in Gwyn (ed.), *Warren Papers*, 15-16. "A List of Ships at Sea Pay in September 1739, with their stations," in Herbert W. Richmond, *The Navy in the War of 1739-48* (Cambridge, 1920), 1:261-264. For a discussion of ship sizes in the

The Navy's needs in an operating base were widely understood. It needed to be able to supply ships with provisions and naval stores; allow for the kind of repairs that were necessary on an annual basis, such as careening; and, ideally, provide a local source of sailors to maintain the strength of crews. But, the most basic criterion was it had to have a safe harbor with a deep channel, open throughout the year. Naval vessels were, by far, the largest ships afloat; a medium-sized warship was larger than the largest merchant ship. And they were getting larger all the time: by the 1730s, the Navy was desperately trying to deepen the entrance to its base at Chatham, England, in the Thames Estuary, to accommodate the largest ships. (By 1773, it had given up, with the Admiralty reporting that "the port is not so useful as formerly from the increased size of our ships.")

New York and Boston, 1743-1757

In the first forty years of the century, the North American coast merited little attention, with its largest ship being one 40-gunner in the Chesapeake. The other colonial ports merited one small "station ship" to protect commerce from pirates. These would sail from England for a tour of several months or a year, and either return home or use expensive commercial facilities for winter servicing. During the war with Spain, the North American station ships began to winter in the Caribbean. Only when it became increasingly clear that France would enter the war did the Admiralty in London begin thinking about a location for a naval base in North America, especially to assist a potential attack on the French fortress at Louisbourg, on Cape Breton.

period, see Baugh, *British Naval Administration in the Age of Walpole*, 191-202, 226-7, 235. For more on the West Indies bases, see Baugh, *British Naval Administration in the Age of Walpole*, 326-330 and 347-355; and Crewe, *Yellow Jack and the Worm*, 228. Note: dates prior to 1752 are given in the Julian calendar.

Bernard Brodie, *A Layman's Guide to Naval Strategy* (Princeton and Oxford, 1942), esp. 170-171.

Coad, *Royal Dockyards*, 13-17; quote is from an Admiralty Board report in 1773, quoted on 17. Chatham was turned into a center for shipbuilding and repair; it could handle large ships for such purposes because ships not on active duty could wait the average of six weeks for an unusually strong tide to provide enough water to clear the bottom of the river entrance. See also Roger Morriss, *The Royal Dockyards During the Revolutionary and Napoleonic Wars* (Leicester, U.K., 1983), 39-44; and Morriss, *The Foundations of British Maritime Ascendancy*, 156-157.

While fifty Royal Navy ships served in American and Caribbean waters during the war of 1702-1713, during the peacetime years of 1714-1738, there were only an average of ten ships assigned to the colonies each year, and they were smaller. See Julian Gwyn, "The Royal Navy in North America, 1712-1776," in Jeremy Black and Philip Woodfine (eds.), *The British Navy and the Use of Naval Power in the Eighteenth Century*. (Atlantic Highlands, NJ, 1989), 127-147, at 141; and Carl Ubbelohde, *The Vice-Admiralty Courts and the American Revolution* (Chapel Hill, 1960). See also Baugh, *British Naval Administration in the Age of Walpole*, 341-342; Douglas, 213-215; and Harding, *Emergence*, 46.

This pattern was a suggestion of Peter Warren as well, first suggested in early 1742. See Warren to Corbett, 20 March 1741/2, in Gwyn (ed.), *Warren Papers*, 26-28.

Although France did not enter the war until 1744, it was a participant by proxy as an ally of

Boston was, at it had always been, the busiest port in British America, so it was the logical first thought.¹³ In 1743, with war against France expected, the Admiralty Board considered locating a careening hulk — a permanently-moored ship with careening gear — in Boston harbor for American ships to use, "with a suitable establishment of men and officers."¹⁴ Writing to commander of the station ship at New York — Captain Peter Warren — for his advice, they mentioned this idea; but they also asked his opinion on "what convenience there is at New York for cleaning and refitting his Majesty's ships, [and] how large [the] ships [may be that] can clean there."¹⁵

Warren had gotten to know the city well during his tour there, even marrying the daughter of a New York merchant. He knew that New York already had some careening capacity. His predecessor as station chief, Captain Robert Long, had developed a careen at Turtle Bay, on Manhattan's East River shoreline well north of the city (now the site of the United Nations). There, probably in the late 1720s, he had turned an old ship into a careening hulk for his 20-gun ship *Seaford*; when the hulk sank, Long built a small careening wharf at his own expense, realizing he could charge the Navy for careening his ship at his own wharf. Warren continued to use this location; later, in 1750, he purchased the Turtle Bay land and careening gear from Long, by then an admiral. With these connections, Warren could be counted on to promote New York as a naval base, which he did.

The city had many good attributes. Upper New York Bay was deep, spacious, and well-protected; Henry Hudson had called it a "good harbor for all winds." Even the Lower Bay, outside the Narrows but inside Sandy Hook, was safe from severe winds and waves, and protected Perth Amboy. To get to Manhattan, a ship arriving from the Atlantic passed through a channel between Sandy Hook and the Rockaways to enter

the belligerent Bavaria, and by August 1743 the King was convinced it would enter the war directly. Harding, *Emergence*, 175-176.

¹³ Ian Kenneth Steele, *The English Atlantic, 1675-1740: An Exploration of Communication and Community* (New York, 1986), especially 295-299.

Thomas Corbett, secretary to the Admiralty Board, to Warren, 23 September 1743, in Gwyn (ed.), *Warren Papers*, 32-33.

¹⁵ Ibid.

The loss of the hulk is described in the 19 August 1734, resolution of the New York City Council that granted Robert Long ("and his heirs and assigns forever") land to build the careening wharf. See Herbert L. Osgood, Austin Baxter Keep and Charles Alexander Nelson (eds.), *Minutes of the Common Council of the City of New York, 1675-1776*, 8 volumes, (New York, 1905), 4:212-214. In 1732, Long had definitely careened in Turtle Bay; see his letter written on the "Seaford in Turtle Bay," Long to Josiah Burchett, National Archives of Britain, ADM 1/2039, 19 September 1732.

Warren mentions careening in Turtle Bay in his letter to Corbett, 8 September 1744, in Gwyn (ed.), *Warren Papers*, 35-39, see also xviii, 47-48; and Douglas, 43. For a thorough accounting of the value of Turtle Bay, see Julian Gwyn, *The Enterprising Admiral: The Personal Fortune of Admiral Sir Peter Warren* (Montreal, 1974), 47-48.

Daniel K. Richter, "From 'the Third Voyage of Master Henry Hudson,' by Robert Juet," *Early American Studies* VII, no. 2 (Fall 2009), 426-441, at 433.

Lower New York Bay. (Thus, "at the Hook" meant that a ship had arrived at the entrance to the harbor.) After crossing the lower bay, it went through the Narrows between Staten Island and Brooklyn, and entered the Upper Bay, or New York harbor proper.

The problem was that this was a very dangerous journey. The lower bay had a series of sandbars and shallows treacherous to any who did not know it well. The deepest channel required sailing precisely through the lower end of the entrance and then turning sharply northward. Such a move required the winds to cooperate; one historian has written that "a ship caught by a squall or a change of wind direction could find herself aground in a matter of minutes." And a large ship needed to wait for the high tide even to do that manoeuvre, hoping that tides and winds cooperated. 20

Recorded knowledge of the entrance evolved slowly. Although depths in New York harbor were sounded as early as 1700, they failed to locate the deepest channels. ²¹ Early in the eighteenth century, the depth of the channel was considered to be 18 feet. ²² Only at mid-century did a chart show the controlling depth to be 21 feet (3½ fathoms). ²³ A zigzag approach could find a still-deeper channel; by 1765, a traveler described the main channel as having "two or three and twenty feet" but also suggested that a secret route could accommodate a much larger ship. ²⁴ In 1781, the *Political Magazine* asserted that although charts were marked with 3½ fathoms (21 feet) as the depth of the bar, "experienced pilots declare they always found the depth 4 fathoms [24 feet]." ²⁵ In 1837, the U.S. Geological Survey would have one of its first major achievements when Lieutenant-General Thomas Gedney found an alternative route that reliably offered 23 feet. ²⁶ But these deeper channels were unknown in the 1730s, when Warren optimistically told London that "ships of fifty or sixty guns may, with care at proper times

¹⁹ John A. Tilley, *The British Navy and the American Revolution* (Columbia, SC, 1987), 84.

²⁰ "Surveys for a Naval Depot in Narragansett Bay and Newport Harbor. Communicated to the House of Representatives, 14 January 1830" in *Register of Debates in Congress* (Washington, 1826-1837), 3:463-468.

²¹ "Report of Colonel Romer on the Harbor of New-York," 13 January 1700 (1701, new style), in John Romeyn Brodhead and E. B. O'Callaghan (eds.), Documents Relative to the Colonial History of the State of New-York (New York, 1853-1887), 4:836-837; Silvio Bedini, "History Corner: Joshua Fisher and His Chart of Delaware Bay -- Part 1," Professional Surveyor XVI, no. 3 (April 1996), online at http://www.profsurv.com/magazine/article.aspx?i=1129. Silvio Bedini, "History Corner: Joshua Fisher and His Chart of Delaware Bay - Part 2," Professional Surveyor XVI, no. (May/June 1996), online at http://www.profsurv.com/magazine/article.aspx?i=1144.

The English Pilot; the Fourth Book, (London, 1698), 21 and preceding map.

See Emanuel Bowen, engraver, "A draught of New York and Perthamboy Harbour," [1750?], New York Public Library, Map Division, digital image 434401.

^{24 &}quot;Journal of a French Traveller in the Colonies, 1765, II," American Historical Review XXVII, No. 1 (October 1921), 70-89, at 81.

John Austin Stevens, Colonial Records of the New York Chamber of Commerce, 1768-1784; with Historical and Biographical Sketches (New York, 1867), 361.

Robert Greenhalgh Albion and Jennie Barnes Pope, *The Rise of New York Port, 1815-1860* (New York, 1939), 23-27.

of tide, come into the port of New York and careen pretty conveniently where I now do."27

To navy ears, this was not good news. At the time, the base at Jamaica already had two 70-gun ships that would not be able to enter New York at all. Warren's qualification of "with care at proper times of tide" was even worse: waiting for the right combination of tides and winds could prove fatal for a naval vessel rushing to (or from) a battle. And care was indeed necessary: even a 60-gun ship at the time was designed to draw up to nineteen feet, five inches of water; even if it was only partially loaded, and thus drew two or three feet less water, this was still a tight fit if the pilot believed he had only 18 feet of water. Apparently based on Warren's back-handed recommendation, naval officials in London decided against pursuing New York as any sort of naval base; the idea never seriously emerged again.

Captain Warren himself gave up on the idea and began promoting Louisbourg, the French fortress in Nova Scotia he helped capture in 1745, as the ideal American base. The need for an American base was increasingly clear; when Warren retired in 1746, he was replaced by the engineer responsible for the construction of the English Harbor careening wharf, Charles Knowles, who took over in 1746. Knowles strongly endorsed the idea of an American base, but he disliked Louisbourg — soon to be returned to the French anyway — and rejected Annapolis Royal, another port in Nova Scotia, as being too dangerous due to the tides. Ultimately, Knowles thought Boston was by far the best place for a naval base in America.

Boston was, in fact, the most obvious choice. America's busiest port, it also had the most shipping to London; until the 1740s, Boston's connections with Britain exceeded those of New York and Philadelphia put together. It was also a more convenient port to Britain than New York. Following shipping routes, Boston is roughly 160 miles closer to Britain than New York, and was, on average, ten days' shipping time

Warren (writing from New York) to Corbett, 8 September 1744, in Gwyn (ed.), *Warren Papers*, 35-39, quote at 36-37.

²⁸ Coad, The Royal Dockyards, 13-17; Morriss, Royal Dockyards, 39-44.

Brian Lavery, *The Ship of the Line: The Development of the Battlefleet, 1650-1850* (London, 1983), 202. See appendix for a further discussion of measurements of ship drafts.

Admiralty Board to Warren, 2 January 1744/5, in Gwyn (ed.), *Warren Papers*, 44-46; see also Gwyn, *Frigates and Foremasts*, 9.

Warren (writing from Louisbourg) to Knowles, 2 June 1746, in Gwyn (ed.), *Warren Papers*, 254-259; for an overview of Warren's role in the 1745 siege of Louisbourg, see Gwyn, *Frigates and Foremasts*, 7-19; the sending of the careening gear is discussed on 14.

Warren's retirement was temporary; he returned to England in 1746, was reappointed in early 1747 to second-in-command of the Western Squadron that attacked the French off the Spanish coast, and returned to Britain finally in 1748. He died in 1752. Gwyn, *The Enterprising Admiral*, 14, 25, and Admiral Charles Knowles to the Honorable Commissioner of the Navy, National Archives of Britain, ADM 106/1044, 20 November 1747.

Knowles (writing from Boston) to Admiralty Secretary, April 30, 1747, in Daniel A. Baugh, *Naval Administration*, 1715-1750 (London, 1977), 388.

closer (52.5 days on average, versus New York's 62.0 days).³⁴ It was natural, therefore, for the captain of the naval ship stationed in Boston to call it "metropolis of America" as he did in 1752.³⁵ Any navy man would have assumed as much.

Further, Boston's harbor was superior to New York's. As early as 1621 — nine years before the town was founded — settlers from nearby Plymouth visited what would become Boston and noted "better harbours for shipping cannot be then here are." The main ship channel was narrow but deep; William Wood described Boston harbor in 1634 as "a safe and pleasant Harbour within"; it had "one common and safe entrance," which was narrow but safe; and "once within, there is roome for the Anchorage of 500 Ships." Unlike the entrance through Sandy Hook, there were no sharp turns that required good wind in the sails, so the narrow entrance was less vulnerable to the vagaries of changing weather. Nathaniel Uring, writing in 1721, noted that this helped make it a "very secure Harbour," because the fort at Castle Island stood right next to the ship channel, and "no Ships can pass by it but what the Fort is able to command." Much later — after the War of 1812 — a U.S. Navy officer would cite Boston as the best location for a naval base, to "be preferred to all the others" because of "the easy ingress and egress it admits at all seasons of the year, as was sufficiently demonstrated during the last war."

Boston had another key advantage over New York: it was less dangerous during the winter. During the seventeenth-century "Little Ice Age," Boston harbor froze over roughly every seventh year, but this became an infrequent occurrence in the eighteenth. ⁴⁰ But a more regular challenge was floating ice throughout the winter and spring. Although New York harbor itself rarely froze, the Hudson River froze every year, and ice routinely floated down to foul the harbor. ⁴¹ The threat of ice was why New York's docks were on the East River, protected from the Hudson's ice. But the East River could not

Philadelphia was a further 150 miles and an average of 66 days from London. Ian Kenneth Steele, *The English Atlantic, 1675-1740: An Exploration of Communication and Community* (New York, 1986), 59 fn 19.

Reported in the *Pennsylvania Gazette* (Philadelphia), 4 June 1752, and also in the *New York Gazette, or Weekly Post-Boy*, 1 June 1752.

William Bradford, Edward Winslow and Henry Martyn Dexter, *Mourt's Relation or Journal of the Plantation at Plymouth* (Boston, 1865), 130.

William Wood and Alden T. Vaughan, New England's Prospect (Amherst, 1977), 26.

Quoted in Nathaniel Bradstreet Shurtleff, A Topographical and Historical Description of Boston (Boston, 1872), 434-435.

[&]quot;From an officer of the US Navy to his friend, a member of Congress, dated at Washington, September 12, 1815," Niles Weekly Register, (1815-1816), 9:140-143, quote at 140. A commission established after the war to determine the ideal locations of two proposed naval bases identified Boston and Norfolk as the best harbors for the Navy; see Register of Debates in Congress, 2:1199-1200.

For an overview of colonial weather and its impacts, see Thomas L. Purvis, *Colonial America to 1763* (New York, 1999), 1-3.

In the severe winter of 1733, when Boston's inner harbor froze for three weeks and Philadephia's for three months, New York's did not freeze; however, traffic was interrupted by floating ice. Steele, *English Atlantic*, 59.

protect ships all the way to the sea: Cadwallader Colden reported in 1725 that in the winter "there is often so much Ice floathing [sic] that it is not safe for Vessels to go to sea or come in." In contrast, floating ice was less of a challenge in Boston, due to the configuration of the harbor. Thus Boston was less troubled by ice as a serious impediment to navigation than New York.

For all of these reasons, Knowles reported to the Admiralty in 1747 that "Boston is the most sure and safest place to clean a squadron" and placed a retired ship, the *Bien Aime*, as a careening hulk in Boston Harbor. The naval presence in Boston was problematic; sailors deserted, and Commodore Knowles caused massive riots when he tried to impress merchant sailors to man his fleet. But he remained convinced that Boston was the best place for a naval facility; only a few days after the riots against him, he recommended that "All American-station'd ships" should be cleaned in Boston, as the work would be done faster, better, and at half the cost of other ports. Although it was never called a naval base, and its facilities were rudimentary, Boston's careening hulk served as the effective center of the Navy in North America for the next decade.

Halifax, 1757-1763

But a careening hulk was not a full-fledged naval base, and Boston was not in the right place for the needs that would make an American base necessary. The fortress of Louisbourg had been returned to France under the terms of the 1749 peace treaty; when war with France resumed in 1755, its recapture was clearly going to be the prime naval objective of the conflict in North America. And the harbor nearest Louisbourg was not Boston, but a place called Chebucto.⁴⁶

Chebucto Harbor had come to the Navy's attention before; Captain Warren himself had mentioned it in 1739.⁴⁷ When Britain began to develop a new military colony in Nova Scotia in the 1749, Chebucto became the colony's capital.⁴⁸ Possessed of a deep harbor and easy entrance, its remote location prevented desertion because sailors

⁴² "Mr. Colden's Account of the Climate of New-York," 25 June 1723, in Brodhead and O'Callaghan (eds.), *Documents Relative*, 5:690-692.

Commodore Charles Knowles to Thomas Corbett, Boston, 30 April 1747, ADM 1/234, National Archives of Britain. See also Baugh, *Naval Administration*, 1715-1750, 388-389, and Gwyn, *Ashore and Afloat*, 5.

Denver Brunsman, "The Knowles Atlantic Impressment Riots of the 1740s," *Early American Studies* V, no. 2 (Fall 2007), 324-366.

Baugh, *Naval Administration*, 1715-1750, 345-346. Admiral Charles Knowles to the Honorable Commissioner of the Navy, 20 November 1747, ADM 106/1044, Kew, United Kingdom, The National Archives [TNA].

Douglas, 213-215; also see Gwyn, *Frigates and Foremasts*, 22-31; and Jeffers Lennox, "An Empire on Paper: The Founding of Halifax and Conceptions of Imperial Space, 1744–55," *Canadian Historical Review* LXXXVIII, no. 3, 373-412.

Warren to Josiah Burchett (secretary to the Admiralty Board), 9 July 1739, in Gwyn (ed.), *Warren Papers*, 10-13.

Douglas, 213-215; also see Gwyn, *Frigates and Foremasts*, 22-31, and Lennox, passim.

simply had nowhere to go. But its remoteness was equally a hindrance; even after the capital was named after Lord Halifax — the First Lord of the Admiralty — it did not attract naval activity away from Boston. Halifax remained an army rather than a naval center until the war broke out.⁴⁹

But the urgency of capturing Louisbourg convinced Willam Pitt — effectively managing the war as secretary of state for the southern department — that a full naval base in America was necessary. In 1755, a naval expedition sent from England arrived so late in the year that it was unable to attack the French fortress; the Admiralty wanted them to return to England to refit, but Pitt objected, arguing that ships should remain in America. As a result, several ships were left behind at Halifax during the winter of 1755-56 to allow for an early start the next year, but the commander of the impromptu base had a difficult time improvising facilities for restocking and repairs, and it was understood the experiment could not be repeated without better facilities. When a squadron left Britain for Nova Scotia in early 1757, Pitt specifically instructed them to take provisions for a long stay.

To determine the location of a potential base, Pitt consulted with a Bostonian named Joshua Loring, who was in London at the time. Loring knew Nova Scotia well from the 1744-48 war (when he had been held as a prisoner at Louisbourg) and he told Pitt that both Halifax and Boston could serve as a naval base. Significantly, Loring preferred Boston, because a usable wharf existed there already; but Pitt was focused on eliminating any delay in capturing Louisbourg. As a result, he preferred Halifax, saying that a thousand pounds could upgrade Halifax's wharf and "by this means we might be sure 2 be early enough in the Spring 2 make the Conquest of Louisbourgh." ⁵³

In September, he proposed a base at Halifax to the prime minister, who sought

⁴⁹ Gwyn, Ashore and Afloat, 6.

Richard Middleton, *The Bells of Victory: The Pitt-Newcastle Ministry and the Conduct of the Seven Years' War, 1757-1762* (Cambridge and New York, 1985), 50. Commodore Spry spent the 1755-56 winter with several ships at Halifax; the next winter, Captain Samuel Marshall spent the winter there with the 60-gun *Nottingham*. See Hugh Boscawen, *The Capture of Louisbourg, 1758* (Norman, OK, 2011), 39, 48.

Douglas, 213-215 and 253-254; Gwyn, *Frigates and Foremasts*, 28-31. As Douglas points out, Halifax during this period relied on New England and New York to supply the naval stores and provisions for a large fleet, but this shortcoming seems not to have been a major concern to officials in London.

⁵² Douglas, 289-292.

Memo entitled "Capt Loring," Newcastle House, 13 September 1757, Add Mss 32997 f 261, The British Library [BL]. Boscawen cites this memo but does not mention that Loring preferred Boston; see Boscawen, 48. For background on Loring, see Oliver Ayer Roberts, History of the Military Company of the Massachusetts, Now Called the Ancient and Honorable Artillery Company of Massachusetts. 1637-1888, 4 volumes (Boston, 1895), 2:157-158; and Robert Malcomson, "Not Very Much Celebrated': The Evolution and Nature of the Provincial Marine, 1755-1813," The Northern Mariner/Le marin du nord XI, no. 1 (January 2001), 25-37.

advice on "Mr. Pitt's suggestion to winter a Squadron in North America."⁵⁴ The decision was taken in late 1757 — first a request from the Admiralty to identify a place in Halifax harbor suitable for a careening wharf; then the agreement to winter eight ships of the line in Halifax; and finally an order from Pitt "for erecting with all Expedition at Halifax in Nova Scotia Careening Wharfs and all other Conveniences for refitting His Majesty's Ships."⁵⁵ As a further indication of his seriousness, Pitt ordered a rear-admiral (Hardy) to command the fleet over the winter at Halifax. Naval stations were commanded by commodores; naval bases were commanded by admirals. ⁵⁶

Pitt's approach worked; with an early start to the campaign year in 1758, a massive land and sea attack captured Louisbourg. Over the remainder of the war, the focus of the navy remained in and around Nova Scotia. In 1759 and 1760, the North American Squadron focused on capturing Quebec City; between 1760 and 1763, it worked to rebuff the French navy's desperate harassment of Nova Scotia and Newfoundland. Both efforts kept Halifax busy both for provisioning and repairs; in April 1759, eighteen ships were based at Halifax. Further, the experience at Halifax demonstrated its suitability for the largest ships: in 1758, it hosted the 74-gun *Dublin*, a new design that required even as much depth as a first-rate 100-gun ship. 9

When the end of the war arrived, and France conceded the permanent loss of Canada, Halifax's mission was complete. Both the Board of Ordnance and General Amherst requested a review of whether it made sense to maintain the naval presence

[&]quot;Business with Lord Mansfield &c, Claremont," 7 September 1757, Add Mss 32997, (Newcastle Papers, vol. 312), folios 256-258, BL. This item, in Newcastle's notebook, was a list of issues relating to the war, apparently notes for a discussion with Mansfield, who was Lord Chief Justice and a Privy Councillor. One item mentions "We should winter at Halifax, our Squadron" (folio 256); on folio 258 is the quote above.

Pitt to Admiralty, 27 January 1758, ADM/A/2482, National Maritime Museum; and Admiralty to Boscawen (commander in North America), 30 January 1758, ADM 2/80/70, TNA.

Douglas, 289-295. See also Gwyn, "The Royal Navy," 141-142. The precise order to winter eight ships in Halifax under Hardy is Pitt to Holbourne, 21 September 1757, in Gertrude Selwyn Kimball, Correspondence of William Pitt When Secretary of State, with Colonial Governors and Military and Naval Commissioners in America (New York, London, 1906), 1:110-111.

A. J. B. Johnston, Endgame 1758: The Promise, the Glory, and the Despair of Louisbourg's Last Decade (Lincoln, NE, 2007), 280 and 292-296.

Gwyn, Frigates and Foremasts, 31-38; "State and Condition of His Majesty's Ships & Vessels at Halifax, and in different Ports on the Continent," [April?] 1759, ADM 1/482 (part 1, folio 42), TNA.

According to Winfield, the *Dublin* drew 18'7½", which was more than the 100-gun *Royal George* (commissioned 1756, with a draft of 16'1"). See Rif Winfield, *British Warships in the Age of Sail, 1714-1792: Design, Construction, Careers and Fates* (St. Paul, MN, 2007), 5 and 58; for the *Dublin*'s sailing into Halifax harbor in 1758, see Boscawen, *Capture*, 152. See appendix for a discussion of the measurement of ship drafts.

there.⁶⁰ By then, however, inertia and habit had set in. Naval officers were increasingly comfortable in Halifax. It had purpose-built facilities and an easy harbor. Its colonial government was dedicated to supporting the British military. Its remoteness prevented desertion and conflicts with local sailors and townspeople.⁶¹ Deep, easy to navigate, and ice-free, it began to develop a reputation among navy officers as "one of the finest & best [harbors] in the World."⁶²

As a result, the commander of the North American Squadron, Commodore Alexander Colvill, argued strenuously that Halifax was precisely where the Navy should stay. Dismissing the idea that Halifax existed only for the St. Lawrence River, he argued that "our chief or perhaps our only Attention" should be "a more general and extensive use, that is a Repository of Sea and Land service stores for a Fleet and an Army." "One such place in North America," he continued, would be useful in both war and peace, by providing a base for wartime operations in America and, in peacetime, "an additional Weight to keep our own Dominions in proper subordination." Halifax, he argued, was precisely the right place: "the Coast of Nova Scotia by all accounts affords the best or rather the only Harbour in North America fit for a numerous Fleet with water for larger ships." "64

Colvill returned to London to make his case in favor of Halifax. The Navy Board, which had originally doubted Halifax's value, now endorsed it as a permanent base, citing the "convenient situation of his Majesty's yard at Halifax, its utility for heaving down ships stationed in North America, and supplying them with stores, and the preservation of the wharfs, storehouses, and other works erected there in the course of the war." Colvill's substitute as commander pushed to ensure that even ships in the

The 1761 report that was written about the base was undertaken according to instructions from the Board of Ordnance dated 23 May 1758, and an order from General Amherst dated 14 September 1760. "A Report of the Particulars of the Fortifications of Halifax, N.S.," 1761, Records of the Nova Scotia Command, RG 8, series IC, volume 1425, also reel number C-3786, Library and Archives Canada.

Warren (writing from New York) to Corbett, 8 September 1744, in Gwyn (ed.), *Warren Papers*, 35-39, quote at 36.

⁶² Edward Howland Tatum (ed.), *The American Journal of Ambrose Serle, Secretary to Lord Howe, 1776-1778* (San Marino, CA, 1940), 20-21. During the Seven Years' War, Halifax did experience one loss, of the 64-gun *Mars*, which on 24 July 1755 "ran aground & sank in Halifax harbor because an unlicensed pilot attempted to guide her in and hit a sandbar." But the lack of other similar losses suggests good pilots could easily navigate the harbor with large ships. David J. Hepper, *British Warship Losses in the Age of Sail, 1650-1859* (Rotherfield, England, 1994), 40.

The spelling of Colvill's name is often modernized to Colville, but he spelled it Colvill. Neil R. Stout, *The Royal Navy in America, 1760-1775: A Study of Enforcement of British Colonial Policy in the Era of the American Revolution* (Annapolis, MD, 1973), 29.

 [&]quot;A Report of the Particulars of the Fortifications of Halifax, N.S.," 3-4; also in Douglas, 356 7.

⁶⁵ Gwyn, Ashore and Afloat, 10.

southern colonies refit at Halifax.⁶⁶ Initially, the effort to preserve Halifax as a naval base succeeded wildly; elevated to rear-admiral, Colvill returned to Nova Scotia in 1763 with a massive new North American Squadron of twenty-one ships, to be headquartered at Halifax.⁶⁷

Halifax and Boston, 1763-1775

The new fleet of 1763, however, also arrived with a new mandate for the Royal Navy, one that would change its geographic orientation. Starting in 1763, the Admiralty asked the Treasury to give its naval officers commissions also as customs enforcement officials; in July, the secretary of state for the southern department informed all colonial governors of the new focus of the navy as enforcer of the Navigation Acts. To assist in this effort, London established a new Vice-Admiralty Court for America, to adjudicate customs violations and remove such cases from the colonial courts that never found local merchants guilty of smuggling.⁶⁸

Colvill successfully pushed for the Court to be based in Halifax — a logical location because the Navy would, effectively, be supplying the Court with its business. Efficiency would be greatest, he wrote, "by sending the Prize[s] to be tried at this Place, which would besides give great Encouragement to this young Colony, and the Produce turn to very good accounts, as Commissions for purchasing would be sent from several of the other Provinces." Colvill's arguments carried the day; the court was located in Halifax and opened for business on 2 October 1764. From a convenient place to threaten Louisbourg, Halifax had become not only the naval base for all of America but also its center of commercial justice.

But this choice provoked a backlash among the colonists: for a merchant who sought to defend his ship against charges of smuggling, it was a significant burden to travel to what John Adams called "obscure Corner of His Majestys Dominions, calld Hallifax." While even the loyal Governor Bernard of Massachusetts acknowledged the usefulness of a court with jurisdiction over all America, he noted that the resistance to it might be less "if the Court was held in the middle of its jurisdiction." Ultimately conceding that Halifax was not a good location for the Court, the Admiralty Board recommended in August 1766 that, if there was to be a single court for all of America, "New York appears to this Board much more Central & less liable to Inconvenience than Halifax."

⁶⁶ Gwyn, Ashore and Afloat, 11; Gwyn, Frigates and Foremasts, 40.

⁶⁷ Stout, *The Royal Navy in America*, 29.

Ubbelohde, Vice-Admiralty Courts, 3-54; and Stout, The Royal Navy in America, 13-55.

⁶⁹ Ubbelohde, Vice-Admiralty Courts, 52-53.

The Vice-Admiralty Court was authorized by an Act of Parliament passed April 5, 1764, and Spry was appointed in May. Ubbelohde, *Vice-Admiralty Courts*, 3-4, 49-53.

Adams quoted in Ubbelohde, *Vice-Admiralty Courts*, 55; Franklin quoted in Stout, *The Royal Navy in America*, 88-89.

Quoted in Ubbelohde, *Vice-Admiralty Courts*, 69-70.

⁷³ Admiralty Office to the Rt Honble Henry Seymour Conway, National Archives of Britain,

It is unclear whether Colvill had any influence on the outcome, but despite the Navy's acquiescence, the Admiralty Court was not moved to New York. Instead, it was split into four regional courts, based in Halifax, Boston, Philadelphia, and Charleston. Although New York was a location proposed in early drafts, it lost out to Philadelphia when the Middle Region was defined as running from New York to Maryland, which made Manhattan no longer central.⁷⁴

The Admiralty Courts, however, proved to be far less important for the geography of the navy than another institution established in 1767. The American Board of Customs, created by the Townshend Acts, became the administrative center of customs collection in the colonies. The American Board was located in Boston, a decision taken by the Chancellor of the Exchequer Charles Townshend himself, apparently due to the influence of Charles Paxton, a Bostonian who was advising him on American policy and who would become one of the customs commissioners.⁷⁵

The Board became an institution that required — and demanded — protection. Even before their arrival in Boston on 5 November 1767, the commissioners had been the subject of scorn, ridicule, and opposition; their presence in central Boston made them an irresistible target of protest and riot. The rioting Americans had a willing counterpart in Paxton, immediately recommended escalation: "At present," he complained to London in February 1768, "there is not a Ship of War in the province, nor a company of Soldiers nearer than New York, which is two hundred and fifty miles distant from this place." A few days later, he wrote the prime minister's brother that "If the laws of trade are inforced [sic] in the Massachusetts Government the other Provinces will readily submit — Boston having always taken the lead in trade as well as in politicks." Within a few weeks, he directly linked the two: "unless we have immediately three or four men of war and at least one Regiment every thing will be in the greatest confusion and disorder."

CO 5/66/146, 12 August 1766. Conway had been Secretary of State for the Southern Department until May, but was at the time of this letter serving as Secretary for the Northern Department; it is unclear why they would have written to him in August. For Conway's dates in office, see John Christopher Sainty, *Officials of the Secretaries of State, 1660-1782* (London, 1973), 102.

Undated, unsigned report, [early 1765?],CO 5/216, folios 34-38, TNA; Lords of the Treasury (Grenville, North, Turner) to the King, 4 July 1765,CO 5/216/51-53. For the final disposition, see folios 54-58.

Dora Mae Clark, "The American Board of Customs, 1767-1783," *American Historical Review* XLV, No. 4 (July 1940), 777-806.

Clark, "The American Board of Customs," 787 fn 49.

American Board of Customs to the Lords of the Treasury, Boston, 12 February 1768, T 1/465/21-24, TNA.

Charles Paxton to Robert Townshend, 24 February 1768, at Boston (rec'd 12 July 1768), "Letters of Charles Paxton," *Proceedings of the Massachusetts Historical Society* Third Series, LVI (October 1922), 343-352, letter at 348-349. Robert, Viscount Townshend, was Charles Townshend's brother and Lord Lieutenant of Ireland.

Charles Paxton to Robert Townshend, 18 May 1768, at Boston (rec'd 12 July 1768), "Letters of Charles Paxton," 349. Note: it seems odd but is apparently accurate that the letters were

The interaction between the Board and Boston's patriot leaders made Boston the flashpoint of the Revolution. In June, the Board asked Commodore Hood, the naval commander at Halifax, to send a warship; Hood brought his flagship, the 50-gun *Romney*, and two smaller ships; later that year, fully eleven of Hood's total fifteen ships would be in Boston Harbor. The controversy escalated further on June 10, when the Commissioners seized the *Liberty*, a ship belonging to John Hancock. Rioting ensued, in which the commissioners' homes were threatened; the Board fled to Castle William. They requested soldiers to protect them; between September and November, troops were transferred from Halifax and Ireland to Boston, including the Twenty-Ninth Regiment of Foot. It was the Twenty-Ninth that was involved in the Boston Massacre on 5 March 1770.

Even though Gage's immediate reaction to the massacre was to withdraw troops from the city, the event focused London's attention on Boston. Rumors had suggested as early as November 1768 that orders had been given "for establishing the head quarters of both army and navy" in Boston. But it was soon after the news of the massacre arrived in London in 1770 that the Cabinet decided that the "rendezvous" of the Navy's "North American Station, should be in the Harbour of Boston, instead of that at Halifax, the better to check further violences, prevent illicit Trade, and support the officers of the revenue in the execution of their duty."

The Navy had no objections to Boston as a port; although it had been eclipsed by Halifax and New York during the Seven Years' War, it was a familiar harbor and easily admitted Hood's 50-gun flagship and, soon after, the 60-gun *Rippon* as well. 86 One navy

received the same day. For more on how the American Board lobbied London for protection and escalation, see Richard Lee Bradshaw, *Thomas Bradshaw (1733-1774): A Georgian Politician in the Time of the American Revolution* (n.p., 2011), 46-50.

Stout, *The Royal Navy in America*, 149-151; Admiralty Board Minutes, 1 September 1769, ADM 3/77/114-115, TNA.

⁸¹ Clark, "American Board of Customs," 787.

⁸² Neil L. York, The Boston Massacre: A History with Documents (New York, 2010), x-xi.

Massacre was 5 March 1770; on 11 March, the 29th moved to Castle William; on the 14th, so was the 14th. In June, the 29th was removed to New Jersey, and in August the 14th was moved to the West Indies. The 64th and 65th had already left in June 1769. See York, *Boston Massacre*, x-xi. For the increasing focus in Whitehall on Boston between the Massacre and the Boston Tea Party, see Peter D. G. Thomas, *Tea Party to Independence: The Third Phase of the American Revolution, 1773-1776* (Oxford and New York, 1991), 26-28.

⁸⁴ "Boston, November 14," New-York Gazette, or the Weekly Post-Boy, 21 November 1768.

Admiralty Board Minutes, 16 July 1770, ADM 3/77/167, TNA; Hood to Admiralty, 25 September 1770, ADM 1/483, TNA. According to a phrase of Admiral Colvill's, a "rendezvous" indicated the headquarters of the commander-in-chief. Douglas, 364.

James C. Brandow, "Memoirs of a British Naval Officer at Boston, 1768-1769: Extracts from the Autobiography of William Senhouse," *Proceedings of the Massachusetts Historical Society*, Third Series, CV, (1993), 74-93. For data on the *Ripon* and the *Romney*, see W. Laird Clowes and Clements R. Markham, *The Royal Navy, a History from the Earliest Times to the Present*, 7 volumes (Boston and London 1897), 3:12.

engineer visiting in late 1770 observed that "This Harbour is one of the finest in the Universe." When Admiral Hood's successor John Montagu arrived in September 1771 in the 64-gun *Captain*, he noted that Boston was "likely to continue" as the naval headquarters, and began to invest in facilities appropriate to a naval base, starting with a supply of naval stores and a store ship to serve as a floating warehouse. Boston continued to be the main naval base in America until the evacuation of the city in 1775, accommodating ships as large as the 70-gun *Boyne* and the 68-gun *Somerset*.

New York, 1776-1783

The decision to make New York the base of the British war effort highlighted the paradox of that city's relationship with the Navy. Due to the importance the British Army placed on Manhattan as a headquarters and the Hudson River as a strategic artery, New York was inevitably an important naval station. American leaders knew early on that the city was vulnerable to British attack because of its access to the water, and thus for British warships; in 1776, as in the English capture of Manhattan in 1664 and the Dutch recapture in 1673, a superior naval force overwhelmed land forces. But, for the Navy, New York remained one of its least-loved American harbors, which caused difficulties throughout the war.

As we have seen, Captain Peter Warren was forced to admit that large ships would be unable to enter the harbor, and even moderate-sized ships could do so only when the tides and winds were favorable. Quickly, this became a widespread opinion. In the late 1740s, Pehr Kalm, a Swedish scientist visiting America, wrote that New York had a fine harbor, but "no men of war can pass through it," and "even merchant ships of a large size" have on occasion scraped the bottom. ⁹⁰

As Kalm suggested, a good harbor pilot could make the difference between

Captain John Montresor, Gage's chief engineer, was sent to report on improvements to Castle William in Boston harbor in late 1770; he was in Boston from mid-September to mid-October 1770. Although he was an Army engineer, a portion of his work had been to map New York City and its harbor. G. D. Scull (ed.), *The Montresor Journals* (New York 1882), 408.

Stout, *The Royal Navy in America*, 153; J. Montagu to Philip Stephens, [onboard the] *Captain* at Boston, 9 November 1771, ADM 1/484/58, TNA. Other letters from Montagu to Stephens in this volume outline the difficulties he had in obtaining the store ship. Lacking careening facilities, however, Montagu routinely sent ships back to Halifax for cleaning. See "Destination of the Squadron in North America under the Command of Rear Admiral John Montagu," 2 September 1772, ADM 1/484/153, TNA.

⁸⁹ "Fleet in North America, under the Command of Vice-Admiral Graves, February, 1775," in Robert Beatson, *Naval and Military Memoirs of Great Britain, from 1727 to 1783*, 6 volumes (London, 1804), 6:26.

Pehr Kalm, Travels into North America Containing Its Natural History, and a Circumstantial Account of Its Plantations and Agriculture in General, with the Civil, Ecclesiastical and Commercial State of the Country, the Manners of the Inhabitants, and Several Curious and Important Remarks on Various Subjects, 3 volumes. (Warrington and London, 1770), 1:253.

safety and catastrophe. But another shortcoming for New York as a harbor was that the colony took a relatively lax approach to formalizing the pilot service. Although a pilot service was first established in 1693, it was not until 1731 that rules and pilotage fees were enacted. Only in 1758 did New York establish the Wardens of the Port, to manage the overall operations of the harbor. The wardens made taking pilots a requirement of entering the port; a ship over 50 tons who refused a pilot's services still had to pay half his legal rate. (New York's pilotage charges were not extreme — a bit less than half those of London — but it was a noticeable charge. In 1764, the wardens began operating a lighthouse at Sandy Hook, and they installed navigational buoys in 1771. By contrast, Boston's harbor was thoroughly sounded and charted as early as 1688, and by 1716 its main ship channel was marked clearly by a lighthouse, the first of its kind in British America. Here was a pilot of the pilot of the

When New York was chosen as the focal point for the land campaign of the Seven Years' War, and became the headquarters of the army's commander-in-chief, it inevitably became a major naval station. Transports ferried troops, packets carried orders, and special ships carried gold for the soldiers' pay; in addition, New York became one of the key points for resupplying naval vessels with provisions. But the Navy's wartime experience confirmed their negative views of New York harbor. A British sailor visiting in 1756 wrote that the Hudson River "has a bar at the mouth, which prevents the entrance of very large ships." When a new Army general arrived in New York on the 70-gun *Grafton* in June 1756, the ship had to stay outside of Sandy Hook and transfer the general to a smaller boat to make it to Manhattan; after only ten days at anchor, the

For the early history of Philadelphia's wardens, see Eugene R Slaski, *Poorly Marked and Worse Lighted: Being a History of the Port Wardens of Philadelphia*, 1766-1907 (Harrisburg, PA, 1979); for New York's, see Stevens, *Colonial Records of the New York Chamber*, 323.

For details on New York and London's pilotage rates, see Table 1-1 in Rohit T. Aggarwala, "Not Predestination: New York Harbor and the Challenge of Philadelphia," *New-York Journal of American History* LXVII, no. 1 (2008) 24-36; see especially 34-35, fn 20.

For New York's lighthouse law, see Stevens, *Colonial Records of the New York Chamber*, 320-322. The opening of the Sandy Hook light is reported in the *Pennsylvania Gazette* of 21 June 1764.

Shurtleff, *A Topographical and Historical Description*, 566-574. For an early chart of Boston, see Philip Wells, "This Harbour of Boston," Boston Public Library, Norman B. Leventhal Map Center, 1688; available online at http://maps.bpl.org/id/m8743. The Wells map shows the entrance to Boston Harbor as having generous depths in the main harbor and four fathoms in the approach to the city next to Castle Island. Later charts increased the depths at Castle Island further; see *The English Pilot; the Fourth Book*, map after 20.

For an overall perspective on the British army and navy in New York during the Seven Years' War and soon thereafter, see Truxes, *Defying Empire*.

The other locations in North America were Louisbourg, Halifax, Charleston (South Carolina), and Quebec. See Buchet, *British Navy, Economy, and Society*, 105-132.

Edward Thompson, Sailor's Letters Written to His Select Friends in England During His Voyages and Travels in Europe, Asia, Africa, and America, from the Year 1754 to 1759 (London, 1766), 2:2.

Grafton and its companion ship left for Halifax.98

More serious events also disrupted operations during the war. In 1757, the 50-gun *Sutherland* struck ground several times in the lower bay, as did the 50-gun *Rochester* in 1762. Later that year, the *Intrepid*, a 64-gun ship, ran aground entering Sandy Hook and spent a few nights stuck on the bar. In 1764, the 32-gun ship *Juno* arrived in New York with pay for the troops in America, and ran aground in the Lower Bay; the captain blamed "the Neglegence [sic], or Ignorance, or both" of the harbor pilot. Needing repairs, the *Juno* found that the careening gear at Turtle Bay had rotted away due to a lack of maintenance. The event spurred Colvill to remind London that "Experience teaches us that the approaches to New York are very hazardous, as many of the King's Ships were, during the late War, in great danger of being lost from being ashore in that Neighbourhood." He suggested that Turtle Bay might be a good location for an emergency repair station, but not a regular base. Coming up from Sandy Hook in a storm in 1766, even the Post Office packet ship *Halifax* struck ground eight times "and sprung a leak."

Thus, the even greater focus at New York during the War for Independence created significant challenges for the navy. 105 The fleet that arrived in New York in June

Norreys Jephson O'Conor, A Servant of the Crown in England and in North America, 1756-1761, Based Upon the Papers of John Appy, Secretary and Judge Advocate of His Majesty's Forces (New York and London, 1938), 36. The New-York Mercury reported the Grafton's departure in its edition of 21 June 1756, citing it as "last Saturday." On 22 April 1758, the 66-gun Devonshire also arrived at Sandy Hook but departed without entering see Boscawen, Capture, 120.

For the Sutherland, see New York Mercury, 24 January 1757; see also Truxes, Defying Empire, 70. For the Rochester, see New York Council Minutes, volume 25 (1755-1764), 415, New York State Archives. I am indebted to Professor Thomas Truxes for both these items.

New York Gazette, 3 January 1763. The article makes it unclear when the grounding took place, but it says the ship "got off again on Tuesday," which likely means Tuesday, 28 December 1762.

Lucius O'Bryen to Philip Stephens, 12 April 1764, ADM 1/2247, TNA.

¹⁰² Colvill to Philip Stephens, 10 July 1764, ADM 1/482/368, TNA.

Historian Julian Gwyn interprets this letter as urging the Admiralty to rethink their commitment to Halifax; I think it suggests the opposite. Colvill explicitly states that his concept for Turtle Bay is "for careening ships that may get there in Distress, and also the stationed ships sometimes when it is inconvenient for them to come to Halifax." The "sometimes" suggests to me that he conceded that a single base was on occasion inconvenient, but assumed that the normal course of business would bring naval vessels to Halifax at least once a year. Gwyn, *Frigates and Foremasts*, 39.

In "a perfect storm," the *Halifax* Packet from Falmouth struck ground 8 times on the "East Bank" coming up from Sandy Hook "and sprung a leak." Scull (ed.), *Montresor Journals*, 352 (entry for 17 March 1766).

In his *The British Navy and the American Revolution*, John A. Tilley makes this point quite clearly, but does not go on to explain how the difficulties of the harbor made naval operations

1776 is often described as the largest expeditionary force Britain had ever assembled until that time. Although it totaled 130 vessels, of which eighty-one were warships and the rest transports, it did not include the largest ships of the British fleet. Its two largest men of war were of 64-guns, including Howe's flagship, the *Eagle*; with seven 50-gun and three 44-gun ships, the rest were smaller ships and sloops. After the British had captured Manhattan in September, New York inevitably became the center for that year's naval operations; over the next six months, 60 ships of Howe's squadron and eighty flatbottomed boats were repaired at New York, at a temporary navy yard established in Turtle Bay. A full naval facility was never constructed; New York was for minor repairs only, and ships were sent to Halifax, Jamaica, or England for careening and major repairs. Nonetheless, the sheer volume of work at New York made it a larger enterprise than the Halifax yard during the Revolution. 109

New York continued to be a problematic port. Ships frequently ran aground; and the 50-gun *Chatham* struck a reef in September 1776, and the *Eagle* itself ran aground briefly in November 1777. As early as August, Howe had begun thinking about where to send the fleet for the winter, because he had known "long since, that it has been ever deemed impracticable for any Ships to remain in [New York] Harbor or Sound during Winter, on account of the vast Quantities of Ice driven up and down by the Tides." The experience was quite recent: the 64-gun *Asia* and the 44-gun *Phoenix* had spent the previous winter patrolling within New York harbor, and the Phoenix's captain reported significant hull damage from the ice, with the *Asia* taking on "Sixteen or Twenty Inches of Water in Twelve Hours." Although Howe kept the *Eagle* and twenty other ships docked in the East River (probably in Turtle Bay) over the winter of 1776-77, it was not without cost: at least one ship was cut from its moorings by floating ice, and another

more complex. What follows is my attempt to demonstrate that. Tilley, 84.

¹⁰⁶ David G. McCullough, 1776 (New York, 2005), 148.

[&]quot;List of His Majesty's Sea and Land Forces, assembled at Staten Island, near New York, July 1776," Beatson, *Naval and Military Memoirs*, 6:53-54.

David Syrett, Admiral Lord Howe (Annapolis, MD, 2006), 62. See also Graves to Sandwich, London, Sandy Hook, 21 August 1781, in George Reginald Barnes and John Hely Owen (eds.), The Private Papers of John, Earl of Sandwich, First Lord of the Admiralty, 1771-1782, 4 volumes (London, 1932), 4:179-180.

¹⁰⁹ Gwyn, Ashore and Afloat, 19.

Linda Groom, A Steady Hand: Governor Hunter and His First Fleet Sketchbook (Canberra, 2012), 21 and fn 28. Groom's source is the Lieutenant's log for the Eagle, entry for 16 September 1776, ADM 51/293, TNA. For the Chatham's rating, see "List of His Majesty's Sea and Land Forces, assembled at Staten Island, near New York, July 1776," in Beatson, Naval and Military Memoirs, 6:53-54. The Eagle's grounding in 1777 is from the "Journals of Henry Duncan, Captain, Royal Navy, 1776-1782," in John Knox Laughton, (ed.), The Naval Miscellany, Vol. 1 (Publications of the Naval Records Society, Vol. 20)(London, 1902), 105-219, at 172.

Entry dated 23 August 1776, in Tatum (ed.), American Journal of Ambrose Serle, 74-75.

Captain Hyde Parker Jr. to Vice Admiral Shuldham, 25 February 1776, in William Bell Clark, William James Morgan and Michael J. Crawford (eds.), *Naval Documents of the American Revolution*, 11 volumes (Washington, 1964 onwards), 4:75-78.

driven onto rocks. He sent the rest of his 80-ship fleet to other locations such as Newport, Halifax, and Bermuda for the winter. ¹¹³ The next winter, with the Army based in Philadelphia, Howe chose Newport as his winter base. ¹¹⁴ Although the first lord of the admiralty thought a major naval base could be built at New York, and Mariot Arbuthnot, the commandant at Halifax, accused Howe of attempting to centralize all naval activity at New York, Howe clearly did not think New York would suffice. ¹¹⁵

Neither did any of his successors. Howe's replacement, Admiral John Byron, neared New York in September 1778 but decided to sail to Newport instead after nearly running aground at Sandy Hook in his 90-gun flagship, the *Princess Royal*. Arbuthnot took command in 1779, brought his fleet off Sandy Hook but did not enter with his large ships, and spent his first winter in command at Charleston, South Carolina, with much of the British navy in American waters with him there, including three 74-gun ships and his flagship, the 64-gun *Europe*. The subsequent winter, he chose Gardiner's Bay, on the eastern end of Long Island, as his base. The subsequent winter is chose Gardiner's Bay, on the eastern end of Long Island, as his base.

The more the Navy operated in New York, the more it learned to dislike the port. Two naval vessels sank in New York unrelated to enemy action: the 28-gun dispatch ship *Liverpool*, which ran aground while entering Sandy Hook in February 1778, and the payship *Hussar*, which sank after hitting a rock in Hell Gate in November 1779. The 74-gun *Royal Oak* ran aground in the East River in April 1781 and was so damaged that it

Tilley, *British Navy and the American Revolution*, 95 and 103. For the wintering of Howe's flagship the Eagle, see Tatum (ed.), *American Journal of Ambrose Serle*, 174-175; and Groom, *A Steady Hand*, 21 and fn 27. Groom's source is the Master's log for the *Eagle*, entry for 13-15 January 1777, ADM 52/1709, TNA. For the disposition of the fleet, see *Naval Documents of the American Revolution*, 7:962-965; and Syrett, *Admiral Lord Howe*, 63.

¹¹⁴ Tatum (ed.), American Journal of Ambrose Serle, 266.

Mariot Arbuthnot to Sandwich, 11 October 1777, in Barnes and Owen (eds.), *Private Papers of Sandwich*, 1:304-305. Lord Sandwich had suggested in late 1777 that a full naval base be built in one of colonies more central than Nova Scotia, and stated that "New York, Rhode Island, or Philadelphia" would do but that he would leave it up to Howe. See "A paper sent to Lord North on 8th December 1777 relative to the America war and urging more efforts to be made at home," in Barnes and Owen (eds.), *Private Papers of Sandwich*, 1:327; see also Piers Mackesy, *The War for America*, 1775-1783 (Cambridge, MA., 1964), 185-186.

The *Europe* did finally enter the harbor in 1781 for repairs, along with the 74-gun *Robust*. See Graves to Sandwich, 21 August 1781, in Barnes and Owen (eds.), *Private Papers of Sandwich*, 4:179-180.

¹¹⁷ Tilley, British Navy and the American Revolution, 154 and 211-212.

Hepper, British Warship Losses in the Age of Sail, 51, 57. For a detailed account of the Hussar's loss, see Bradley Sheard, Lost Voyages: Two Centuries of Shipwrecks in the Approaches to New York (New York, 1998), 13-14. The 20-gun Mercury also sank in the Hudson River near northern Manhattan in December 1777; but it is suspected that it hit an obstruction placed there by the Americans; see Hepper, British Warship Losses in the Age of Sail, 51.

was taken out of service and sent to Halifax for repairs.¹¹⁹ With large ships, the entrance past Sandy Hook and through the Lower Bay required waiting for the tides and the winds to cooperate; delays of several days were common.¹²⁰ One officer mentioned that he was glad he got in when he did, writing that the nine subsequent days would not have allowed him entrance.¹²¹ Admirals had to develop contingency plans in case their larger ships could not enter the Hook, lest they be vulnerable to attack.¹²² Increasingly, they also simply stayed outside the Hook, landing troops on the Hook itself when necessary (to march inland and ferry across to New York in small boat).¹²³

The British admiral most affected by New York harbor was Sir Thomas Graves, who took command in the summer of 1781. As he arrived off of New York in the 90-gun *London*, he was convinced that Chesapeake Bay was the place for the a naval base: "the bar of Sandy Hook and the danger from ice puts New York out of the question, so that there seems only to remain the Chesapeake; and that Hampton Roads is the probable place." Although Graves did bring the *London* into the harbor, his comment proved prophetic: the harbor twice delayed Graves in critical deployments. First, tides delayed Graves' departing New York in September 1781 to join Admiral Hood in the effort to take the Chesapeake, which ended in defeat at the Battle of the Chesapeake later that month; Hood had been prescient in choosing to remain outside the Hook. Then, after escaping that defeat and returning to New York, he began to assemble a fleet and troops to relieve General Cornwallis, trapped by the Americans and French at Yorktown. Loading delays

John Marshall, Royal Naval Biography (London, 1823), 230; see also "Journals of Henry Duncan," 188.

Entry for 6 April 1778, in Tatum (ed.), *American Journal of Ambrose Serle*, 266-270 and 281-282; see also "Journals of Henry Duncan," 161.

Digby to Sandwich, *Lion*, 11 November 1781 in Barnes and Owen (eds.), *Private Papers of Sandwich*, 4:202-203.

¹²² Admiral Howe to Gambier, 11 September 1778, ADM 4/488/443-446, TNA.

For example, Admiral Hood did not bring his fleet within the harbor in August 1781, "foreseeing great delay and inconvenience might arise from going with the Hook with the squadron under my command." Hood to Stephens, *Barfleur* off Sandy Hook, 30 August 1781, and Hood to Jackson, 29 October 1781, in David Hannay (ed.), *Letters Written by Sir Samuel Hood (Viscount Hood) in 1781-2-3* (Publications of the Navy Records Society Vol. 3) (London, 1895), 26 and 39. For this reason, some ships that are mentioned in various sources as having been to New York seem not to have entered the harbor itself but remained outside Sandy Hook. Hood did enter the harbor in the *Barfleur* the next year; see Hood to Middleton, 13 November 1782, in John Knox Laughton (ed.), *Letters and Papers of Charles, Lord Barham, Admiral of the Red Squadron, 1758-1813* (London, 1907), 32:229.

Graves to Sandwich, *London* off Sandy Hook, 20 July 1781, in Barnes and Owen (eds.), *Private Papers of Sandwich*, 4:175-177, quote at 176.

The London had been in the harbor in August 1781, and reported crossing the bar on 1 September; see London log, 1 September 1781, in French Ensor Chadwick (ed.), The Graves Papers and other Documents Relating to the Naval Operations of the Yorktown Campaign (New York, 1916), 164.

Colin Pengelly, *Sir Samuel Hood and the Battle of the Chesapeake* (Gainesville, Florida, 2009), 117-118.

ensued, and repairs at the overtaxed naval yard took longer than expected, but part of the delay was the need to get out of the harbor. One newspaper reported that the fleet would not sail until mid-October because "before the 13th of October there will be a great risk in getting over the Bar." Ultimately, it sailed on October 19, the same day on which Cornwallis signed the articles of surrender. It is no wonder that Graves's successor, Admiral Robert Digby — the final British admiral to be based at New York — stated definitively that "New York cannot be reckoned a good port for large ships." 128

Although it never grew to like the harbor, the Navy's experience in New York made its harbor much more usable. One of Admiral Howe's staff, Master John Hunter, led an effort to chart the harbor and measure the tides at Sandy Hook in 1776-1777. His research, and the increasing expertise of British pilots with New York harbor, made them more aggressive in bringing large ships over the bar: in 1756, the 70-gun Grafton had stayed outside Sandy Hook, but in July 1778, the 74-gun Cornwall entered, although it scraped the bottom several times. 129 In 1780, Admiral George Rodney brought his 90gun flagship *Sandwich* into the harbor. ¹³⁰ In 1781, the massive Spanish ship *Princessa* – captured in the West Indies and reputed to draw 26 feet of water fully loaded — entered and departed only by having its water and provisions brought over the bar in a separate ship. 131 By 1782, the two 98-gun flagships — Admiral Digby's *Prince George* and Admiral Hood's Barfleur — had both been able to "cross the bar" and dock in the East River and off Staten Island, respectively. While navigating such large ships out of the harbor was not easy, it became increasingly routine, if not always reliable; on November 13, Hood wrote that "I go to the Hook tomorrow, and hope and trust to be over the bar the 16th, as I think I shall find the water enough to cross it without risk." Although he experienced the delays common to getting large ships in and out of the Lower Bav — he did not actually cross the bar until the 22^{nd} — the fact that such a large ship could move

Quoted in Barnet Schecter, The Battle for New York: The City at the Heart of the American Revolution (New York, 2003), 358; original quote from Lloyd's Evening Post (London), 7 November 1781. Tilley describes the many reasons for delay and does not blame the harbor itself, but one letter he quotes says that not until 13 October could the fleet get over the bar at Sandy Hook. Tilley, British Navy and the American Revolution, 266-267. See also William B. Willcox, "The British Road to Yorktown: A Study in Divided Command," American Historical Review LII, no. 1 (October 1946), 1-35, esp 32.

Digby to Sandwich, at sea, 29 October 1781, in Barnes and Owen (eds.), *Private Papers of Sandwich*, 4:195-197.

Scull (ed.), *The Montresor Journals*, 507, entry for 30 July 1778; see also J. H. Owen, "Howe and D'Estaing in North America, 1778," *The Naval Review* LV, no. 2 (May 1927), 257-282, at 266.

Rodney to Stephens, *Sandwich* off New York, 10 October 1780, in *Letter-books and Order-book of George, Lord Rodney, Admiral of the White Squadron, 1780-1782* (Collections of the New York Historical Society, LXV) (New York, 1932), 1:28-31

See Graves to Stephens, *London* off Sandy Hook, 19 October 1781, in Chadwick (ed.), *Graves Papers*, 131. See also Pengelly, *Sir Samuel Hood*, 116.

Hood to Middleton, 13 November 1782, in Laughton (ed.), *Letters and Papers of Charles, Lord Barham*, 32:229.

in and out of New York harbor represented a major change. ¹³³ In September 1782, Admiral Hugh Pigot, visiting for six weeks from the West Indies, only had to wait outside the bar for a day before finding deep enough water over the bar to bring his large fleet into the harbor, including the deep-draft 98-gun *Duke* and the 74-gun *Bedford*. ¹³⁴

This advantage of experience also gave the British a strategic advantage at a critical moment in the war, when, in July 1778, French admiral Count d'Estaing intended to bring his huge fleet into New York harbor to attack Howe's weakened fleet. Howe's pilots knew that they were trapped, and vulnerable: they knew that the combination of the moon and tides that week would put 30 feet of water over the bar and thus allow d'Estaing's fleet, including its 90-gun flagship, *Languedoc*, to enter the harbor. But d'Estaing's American pilots, who had less experience bringing huge ships into New York, could not find more than 22 feet, while the largest French ships required 25 feet. Frustrated, D'Estaing withdrew, to attack Newport with its easier harbor. Later that year, d'Estaing would bring his fleet, including the 90-gun *Languedoc* and the 80-gun *Tonnant*, into Boston harbor without difficulty. But New York's fearsome navigation had, for once, protected the Royal Navy.

Although New York saw significant use in 1782 as a maintenance and provisioning point for British ships, including Pigot's fleet, the naval war shifted to the West Indies after Yorktown. By early 1782, London had ordered that no more naval stores be shipped to the yards at New York; in 1783, the New York naval yard commander auctioned off supplies not worth returning to England or Halifax, and the careening hulk was dismantled and sold off in parts. Although a massive effort — involving at least 148 transport ships — to evacuate the Loyalists and troops in the city seems to have gone off without incident, New York harbor still offered dangers to

Hood to Philip Stephens, 15 December 1782, in Laughton (ed.), *Letters and Papers of Barham*, 32:239.

Beatson, *Naval and Military Memoirs*, 5:526. See also 6:346-347, listing the ships under his command, which has the nonsensical date of 1802 (a typographical error) but is listed correctly in the table of contents as "September 1782." The ships arrived on September 6, but waited outside of Sandy Hook that night, "there not being enough water to go in," according to the sailing master of the *Duke*. On the 7th, the entire fleet entered. See the Sailing Master's Log for the *Duke*, entry for 6 and 7 September 1782, ADM 52/2272, TNA; the master notes that on the 6th they anchored outside the Hook, "there not being enough water to go in." See also the entries on the same date of the captain's logs for the *Duke* and the *Bedford*, ADM 51/284 and ADM 51/94, respectively. The *Bedford* had been with Rodney in 1780, but had not entered the harbor; see note 130, above.

Owen, "Howe and D'Estaing," 264-264; see also Tilley, *British Navy and the American Revolution*, 141-145.

Fitz-Henry Smith, *The French at Boston During the Revolution* (Boston, 1913), 12; see also Tilley, *British Navy and the American Revolution*, 153.

David Syrett, Shipping and the American War 1775-83: A Study of British Transport Organization (London, 1970), 224; for auction notices from the naval yard and careening hulk, see advertisements in the Royal Gazette (New York) on 29 January, 5 March, 18 October, and 15 November 1783.

warships: in January 1782, the 50-gun *Chatham* ran aground — again — in the Lower Bay. 138

If there was a small piece of sweet revenge, New York harbor still offered dangers to shipping. One of the new French packet ships, on its first voyage between New York and L'Orient, ran aground on its way out of New York harbor on 4 February 1784; later that year, the French frigate *La Nymphe*, also ran aground, due to relying on "a coasting pilot, who was not sufficiently acquainted with the navigation of our Bay." 139

Conclusion

The Royal Navy's experience with North American naval bases in the eighteenth century suggests some adjustments to the way historians commonly describe both the navy's location and the relative merits of the leading American ports.

First, it suggests that Boston must be recognized to have played as great or greater a role than Halifax prior to 1783. As the established base of the North American Squadron from 1747 to 1757, and again from 1770 to 1775, it played that role longer than Halifax did. Recognized by the Navy to be the best harbor north of the Chesapeake, Boston was also far more central. One of the Lords of the Admiralty described the situation to the first lord of the admiralty in 1781: "Halifax is as much out of the way as St Lucia, and New York not safe in winter." Had the American colonies not won independence, it seems likely that Boston would have become the main British naval base in the Americas, as it was, essentially, for the American fleet from 1776 to 1783. Halifax's remoteness was a key reason behind the establishment of a major base at Bermuda, beginning in 1795. 142

Second, it calls into question the relative merits of New York Harbor. In hindsight, historians have generally assumed that New York's natural advantages were key to its future emergence as the leading city of the New World. But the Navy thought otherwise, and hated the place, even though it was forced to conduct major operations there from the start of the Seven Years' War to the end of the War of American Independence.

Finally, the Navy's experience in New York during the War of Independence highlights the importance of knowledge. The importance of the Royal Navy as a driver

Charles Biddle and James S. Biddle, *Autobiography of Charles Biddle, Vice-President of the Supreme Executive Council of Pennsylvania.* 1745-1821 (Philadelphia,1883), 157 and 161.

New-York Packet and the American Advertiser, 5 February 1784; New-York Journal and State Gazette, 25 November 1784.

Constantine Phipps, 2nd Baron Mulgrave (one of the Lords of the Admiralty) to Lord Sandwich, Admiralty, 10 September 1781 in Barnes and Owen (eds.), *Private Papers of Sandwich*, 3:227-228.

¹⁴¹ Fowler, passim.

Ian Stranack, The Andrew and the Onions: The Story of the Royal Navy in Bermuda, 1795-1975 (Bermuda, 1990).

of science is widely recognized. ¹⁴³ In New York, mapping and other experience changed a hazardous, impossible harbor — suitable only for medium-sized ships in 1776 — into one that could accommodate two 98-gun men-of-war only a few years later.

Appendix: A Note on Drafts of British Vessels

The depth of water that a ship's hull extended below the surface of the water—its "draft" or "draught" — was, of course, variable not only with the ship's design and size but also with the load of men, armaments, ammunition, and provisions aboard; one source suggests that the variance was between four and seven feet depending on the size of the warship. ¹⁴⁴ In his standard reference, *British Warships in the Age of Sail, 1714-1792*, Rif Winfield uses "light" drafts, usually recorded at the ship's launch, when the ship had its guns onboard but no guns or men, no water and provisions, and no boatswain's, carpenter's and gunner's stores. ¹⁴⁵ Because the fully laden drafts changed — even over the course of a voyage as water and food were consumed — these more relevant figures are not recorded in a consistent way. While some plans for ships (such as the Establishment of 1745) specified a maximum fully-laden draft, it was widely understood that the draft of water predicted by the designer was not always achieved in reality. As a result, citing the draft of a ship requires some nuance.

Below is a table of the deepest-draft vessels I have concluded definitely entered the harbors of Halifax, Boston, and New York in the late eighteenth century. Overall, these show the trend I observe in the text: that Halifax and Boston were known to be easy for deep-draft ships to enter, but the entry of deep-draft ships into New York was at first thought impossible and then increased during the war of 1776-1783 as the Royal Navy gained experience with the harbor.

See, for example, the role of the Navy in Richard Harry Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (New Haven; 2000); James Delbourgo and Nicholas Dew (eds.), *Science and Empire in the Atlantic World* (New York, 2008); and John Gascoigne, *Science in the Service of Empire: Joseph Banks, the British State and the Uses of Science in the Age of Revolution* (Cambridge and New York, 1998).

Augustin F. B. Creuze, *Treatise on the Theory and Practice of Naval Architecture* (Edinburgh, 1840), 21.

Rif Winfield, personal electronic communication with the author, 13 August 2013.

Table 1: Deep-draft ships entering Halifax, Boston, and New York, 1755-1782

Ship (year	Guns	Action	Year	Light	Laden	Note
commissioned)	Gulis	Action	iear	draft	draft	Note
Halifax				urur	ur tirt	
Namur (1756)	90	Entered	1758	17'5"		Boscawen's flagship
Dublin (1757)	74	Entered	1758	18'7½"		Brought Amherst to America; Captain George Romney took the ship into Halifax after transferring Amherst to the <i>Namur</i>
Boston			1550	1.6161711		TT 1) 0 1:
Rippon (1758)	60	Entered	1770	16'6½"	201611	Hood's flagship
Boyne (1771)	70	Entered	1775	17'9"	20'6"	See note 1.
Somerset	68	Entered	1775		20'6"	See note 1.
(1748)						
New York	70	Unable to	1756		20'6"	Drought Loudon to
Grafton (1755)	70	cross the	1/30		200	Brought Loudon to America. See note 1.
Sutherland (1742)	50	Entered	1757	13'0"		Hardy's flagship. See note 2.
<i>Phoenix</i> (1759)	44	Entered	1775		18'9"	See note 3.
Asia (1771)	64	Entered	1775	16'6"		Enforcing blockade within the harbor
<i>Roebuck</i> (1775)	44	Entered	1776	14'1/2"		Sister ship to the <i>Phoenix</i> , although with a slightly broader beam
Eagle (1776)	64	Entered	1776	16'91/2"		Howe's flagship
Cornwall (1761)	74	Entered but scraped bottom	1778	17'0"	23'0"	In Byron's squadron. See note 4.
Princess Royal (1777)	90	Unable to cross the bar	1778	17'9"		Byron's flagship
<i>Europe</i> (1777)	64	Did not enter	1779	17'9"		Arbuthnot's flagship (1779); entered in 1781
London (1778)	90	Entered	1780	17'6"		Graves's flagship
Sandwich (1759)	90	Entered	1780	18'0½"		Rodney's flagship
Royal Oak (1771)	74	Entered but ran aground in East River	1781	17'10"		Arbuthnot's flagship (1781)
Princessa (1750)	70	Entered but only	1781		26'0"	Captured Spanish ship, arrived with Hood, sent

		after offloading				into New York for repairs. See note 5.
Bedford (1776)	74	Entered	1782	18'0"	22'5"	With Pigot. Also arrived off Sandy Hook with
						Rodney in 1780, but
						apparently did not enter the harbor then.
Duke (1778)	98	Entered	1782	18'7"		With Pigot

Notes for table:

Unless otherwise noted, light drafts are from Winfield, *British Warships in the Age of Sail*, 1714-1792; laden or design drafts are taken from Lavery, *Ship of the Line*, 174, 202, 208. Sources for each ship's activities are in the text.

- I. The *Grafton* and *Somerset* were built to 1745 Establishment designs, and the *Boyne* was built to the 1745 Establishment as amended in 1754; for all, I have used the maximum laden draft as specified in the Establishment for a 70-gun ship, which was 20'6". See Lavery, *Ship of the Line*, 174.
- II. Winfield lists no draft for the *Sutherland*, but gives 13'0" for the *Guernsey* of the same class and similar dimensions.
- III. Winfield's aft draft figure for the *Phoenix* is 18'2", but this seems to be inconsistent with his other figures, which are all unladen drafts. The captain's log of the *Phoenix* recorded a draft (aft) of 18'9" after loading men, water, and supplies in Boston in 1775, shortly before sailing for New York. Master's Log of the *Phoenix*, entry for 29 November 1775, ADM 52/1909, TNA.
- IV. Winfield lists no draft for the *Cornwall*, but gives 17'0" for the nearly identical *Arrogant*, which I have used here. The captain of the *Cornwall* noted a draft of 23' when entering New York in 1778; see J. H. Owen, "Howe and D'Estaing in North America, 1778," *The Naval Review* LV, no. 2 (May 1927), 257-282, at 266.
- V. Graves cites 26' as the *Princessa*'s draft; see note 131 in the main article.