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The War of 1812 and the Creation of the WPFA

The impetus for the creation of the West Point Foundry drew, in large part, from the outcome of the War of 1812. Though a victory for the United States, the war demonstrated that the American military establishment had several weaknesses. The origins of this poor performance dated back to the country's founding. Under the Articles of Confederation, the funding of the Continental Army depended on the individual states, which resulted in chronic shortages of pay and supplies.¹ These problems continued under the Constitution, when control of the militias, the most numerous of America's armed forces, was divided between the states and the federal government.² This reflected the belief prevalent among the faction of Anti-Federalists—those opposed to the Constitution—that a regular army was somehow a threat to republican ideals. One way this manifested itself was the view, held especially by future President James Madison, was that the army would be a financial burden to the government.³ Attention thus shifted to the militia, whose organization and fighting ability was solely dependent on the states.⁴ As a result of these beliefs, early American military policy, in many ways, neither anticipated, nor provided for, the possibility of a war on the scale of what erupted in 1812.

The origins of the War of 1812 grew out of the imperial rivalry between Great Britain and France. The United States, a trading partner to both nations, was drawn into the conflict as American ships were targeted on the high seas. The Americans responded with “economic coercion” designed to convince Great Britain to stop seizing cargo on American ships and forcing American citizens to serve in its Royal Navy.⁵ President Madison, faced with an increasingly difficult situation as many in the South and West clamored for stricter action, asked

Congress to declare war on Great Britain, a request which it granted on June 18, 1812. The American military, however, seemed ill-equipped (“woefully unprepared” in the words of in some modern scholars). It had only 7,000 scattered members of the regular army, and a navy that numbered only sixteen ships.⁶

The United States barely escaped utter defeat. The capital, Washington, D.C., had been briefly seized, with the White House set ablaze. The U.S. invasion of Canada had been turned back with barely any gains to show for the gamble. Had it not been for the British willingness to negotiate for a peace settlement after Napoleon was defeated once and for all, the new nation might not have survived its infancy.⁷ Once the Treaty of Ghent was signed, the United States government regrouped to assess what had gone wrong. In the end, the United States government adopted a new ground force policy that would in the future supply a sufficient number of men. As important was the professionalizing drive undertaken at the U.S. Military Academy of West Point.⁸

One of the most glaring shortcomings was the fact that only two cannon foundries were operating in the United States during the course of the war.⁹ President James Madison aimed to remedy this situation by ordering the creation of four other foundries: one in Georgetown, one in Richmond, Virginia, Pittsburgh, Pennsylvania, and in the Hudson River Valley.¹⁰ The West Point Foundry was chosen as the Hudson River Valley site.

Frances Dunwell, in her chapter on the West Point Foundry in *Hudson River Highlands*, discusses why Cold Spring was the obvious choice for the placement of a foundry. The Hudson Highlands was a natural source of iron, the nearby forests kept the furnaces running, streams provided water-power, and the Hudson River provided transportation access to rest of the country.¹¹ Perhaps the most critical of considerations was its neighbor across the river. The

United States Military Academy at West Point educated the fledging U.S. Army's officer corps, and it would later contribute to the Foundry its most influential Superintendent, Robert Parrott.¹²

Gouverneur Kemble and General Joseph Swift founded the West Point Foundry.

Gouverneur Kemble (1786 – 1875) descended from a New Jersey landowning family that ran the trading company of Gouverneur and Kemble in New York City. While he was stationed in Spain, Kemble studied industrial production in Europe. He gained valuable military experience during the Barbary Wars as Assistant Naval Agent to Commodore Stephen Decatur.¹³ He formed his partnership with General Joseph Gardner Swift in 1817 to construct the West Point Foundry. The business was incorporated as the West Point Foundry Association on April 18, 1818. Its first superintendent was William Young, an immigrant from Northern Ireland who was experienced in foundry work.¹⁴ Their first contract was with the Department of the Navy for the construction of armaments. Kemble recorded the specifics in his diary:

32-42 cannon @ \$125 per ton (2240 lbs); 36-32 cannon @\$125 per ton (2240 lbs); 24-32 cannonades @ \$135, 130 tons round shot @ 5 cents per lb; 60 tons grape shot @ 8cents per lb, 60 tons st. shot? @ 5 ½ cents per lb; and Turning & Chuggling Guns \$8 per ton.¹⁵

The Early Years

That the Industrial Revolution was strongest in England provided no great obstacle to those who ran the Foundry. The WFPA provided clothing, living quarters, and an education for its apprentices, many of whom were brought over from the United Kingdom and Ireland, where the Industrial Revolution had produced the workers most skilled in iron works.¹⁶ However, bringing the laborers over did present a challenge, since Great Britain was not keen to share its economic dynamism with anyone. Therefore, the WFPA had to resort to subterfuge to smuggle laborers, as well as their specialized knowledge, to the United States. In a letter to Foundry chief Gouverneur Kemble, William Young wrote of his recruiting experiences in England and Ireland:

There is a considerable interested excited at this point by the supposed departure of some workmen in the cotton manufacturing line that will require all the ingenuity of my friends and self to evade the strict enquiries that are made at every ship leaving the Country. for so far I have succeeded fully equal to my most sanguine expectations.¹⁷

So many of the new recruits were Irish Catholics that Kemble built the Chapel of Our Lady, the first Catholic Church in the area to accommodate their religious needs.¹⁸ Those young men who sought an apprenticeship at the foundry signed a certificate not unlike the one drawn up for Arthur Naylor or Thomas Lloyd, both Cold Spring residents. Arthur's term of service was for five years at a graduated pay scale. For the first year he was paid 62 ½ cents/day; for the second year 75 cents/day; for the 3rd year 87 cents/day; and for the 4th and 5th years 100 cents/day. Thomas signed onto work for the Foundry when was sixteen years old, providing the consent of his mother before he could be contracted. His work was that of a finisher, with compensation being dispensed: 50 cents per day for the first year, and 50 cents plus "such an advancement as shall mentioned[?] not exceeding 6 ¼ cents per day for each successive year."¹⁹

The West Point Foundry's early success came from the integration of what were heretofore separate parts of the iron-making process. The casting, blacksmithing, and machining of the metal were combined, providing the Foundry with one of the important sources of its success. Another source came from the massive internal improvements being perfected throughout the United States. Transportation to and from the Cold Spring Foundry benefited greatly from the construction of canals during the early part of the 18th century. The most important sites were: the Champlain Canal (1825), the Erie Canal (1823), the Delaware and Hudson Canal (1828), and the Delaware and Raritan Canal (1834).²⁰ These transportation links allowed for the quicker and more extensive movement of raw materials to the Foundry, as well as products to New York City, the Western territories, as well as the Caribbean, Latin America.²¹

Production at the West Point Foundry was not exclusively military of course. Early products included sugar machinery that was bound for plantations in the American South as well as the Caribbean. Other non-military products included: “box stoves, wheel patterns, plumber blocks, winged gudgeons, shafts, cranks, and flanges.”²² Just as the revolutions in transportation fed the development of the West Point Foundry, the foundry in turn fed developments in transportation. It pioneered the production of steamships, first made of wood, and later of iron.²³ The WPFA was also at the forefront of railroad locomotive production. The castings for the first American-made locomotive, the *Best Friend*, were manufactured at the foundry works in Cold Spring before being shipped to New York City for completion.²⁴

Robert Parrott and Civil War Production

Robert Parrott met Gouverneur Kemble in Washington, D.C. in 1836. Kimble, a Congressman at the time, hired Parrott to run the foundry. He could not have chosen a more fitting candidate to oversee the foundry’s course for the next forty years. An artillery officer after graduation from the United States Military Academy at West Point, Parrott spent the majority of his time in Cold Spring developing artillery for the United States military. In 1857, Gouverneur Kemble resigned from the West Point Foundry Association, leaving Parrott in charge.²⁵ Though the foundry continued production of various consumer and industrial goods, it never strayed from its original purpose as a manufacturer of weapons.

A survey of articles in the *New York Daily Times* (later renamed the *New York Times*) reveals several instances of the foundry fulfilling its military purpose. In 1850, the West Point Foundry constructed the massive engine for the water pump for the Dry Dock at the Brooklyn Navy Yard in New York City—which the *Times* referred to as one of the largest in the country.²⁶ In 1854 the West Point Foundry Association participated in a bidding war with seven other

manufacturers for construction contracts in “six new steam frigates.”²⁷ A year later, the WPFA completed “portions of the steam machinery” for the *USS Merrimac*, which would be scuttled at the outbreak of the United States Civil War and later resurrected as the Confederate ironclad *CSS Virginia*.²⁸ In 1856, they manufactured the cannon for the frigate *Niagara*.²⁹ In 1857 and 1858, the foundry took contracts for component parts of two frigates destined for service in the Russian Imperial Navy.³⁰

The foundry came into its own during the American Civil War. An anonymous author wrote of his experiences visiting the foundry after the surrender of the Confederacy. He stated that this “military establishment” had produced the guns that have “done duty in our forts, on our gunboats, and in our grandly moving armies. . .”³¹ The author provides a riveting account of the testing of the artillery, in the end summarizing what were the ultimate destinations of these weapons:

The precipitate banks of Crow Nest are the target of the experimental trial, the distance fired being two thousand yards. Two huge bared sports, with deep indentures in the rocks, attest the accuracy of the range and the force of the firing. At all hours of the day for the past four years the firing of these guns have awakened fearful echoes among those environing heights, oftentimes sounding like the roar of a terrible battle.³²

Superintendent Parrott’s largest contribution to the development American military power was through his namesake, the Parrott Gun, a technologically sophisticated rifled artillery piece. It was constructed from “superior strength wrought iron” that allowed for more gunpowder to be used.³³ The projectile to be used with the cannon was also pioneered by Parrott. One of the first successful operations employing wide-scale use of the Parrott Gun was on April 10, 1862 during the Union siege of the Confederate Fort Pulaski, near Savannah, Georgia. The fort withstood two days before finally succumbing to the sustained bombardment. Historian Jack Coombe narrates the actions of the second day:

The next morning, the bombardment began in earnest, with the heavy rifled projectiles beginning to have an effect, creating breaches in the eastern walls. The Union gunners unerringly concentrated their fire on those breaches, with a storm of shells that widened them and through which more shells poured through, causing significant damage. The officers' quarters were destroyed, timbers were scattered all over the parade ground, the parapet walls were shattered on the southeast side, and the powder magazine was penetrated.

It soon became apparent that the fort was in danger of exploding from its own powder supply. Colonel Olmstead [the Confederate Commanding Officer] called a meeting of his commanders and it was decided to capitulate, rather than having the entire fort blown to pieces with all of its personnel.³⁴

The foundry produced multiple versions of the Parrott. The variations of his gun could fire shells from ten-pounders all the way up to 300-pounders.³⁵ A "Veteran Observer" writing in the *New York Times* discussed at length the production at the West Point Foundry. He was amazed both at the various ranges at which a Parrot Gun can fire (anywhere from 600 yards to 8,453 yards on average), as well as the rate with which the foundry could produce these weapons.³⁶ He recounted how the 100 pound cannon could be made at a rate of one per day, and the shells for most of the cannons made "at the rate of about 10,000 per week."³⁷ By the time the American Civil War had ended, the West Point Foundry had produced more artillery pieces than all of the foundries of the Confederate States of America combined. All tolled, this included 1,574 individual pieces of varying calibers. Of the three major cannon foundries in the Northern states, the West Point Foundry in Cold Spring, New York was by far the most productive.³⁸

Post-Civil War Decline

After the end of the Civil War, demand for cannon by the United States government declined, and the foundry began its path towards eventual closure. As this new period began, Robert Parker Parrott, the man who had defined the West Point Foundry as the supplier of Union artillery, passed away in 1877. In a memorial written for him, Frederic De Peyster delivered the following address:

His large-hearted benevolence, pure life, and laudable public spirit, had endeared him to all, and the grief which the news of his death occasioned was no less heartfelt than it was universal. Identified for a period of forty years with the village and vicinity of Cold Spring. . . his sudden taking away. . . was to nearly all of his fellow-citizens like the loss of a dear friend.³⁹

The development of cheaper processes in producing steel meant that the government opted for it over the continued support of iron. In 1878, the West Point Foundry petitioned the government for money to continue producing armaments. The plea was written on behalf of the managers of the West Point Foundry and the South Boston Iron Co., and was directed to the United States Congress in the hope that they would pass the necessary appropriations to keep their company running. In it, the managers write:

For the past ten years our works have been comparatively idle, and we have been compelled to submit to a very great aggregate loss in order to maintain the expensive plants upon which the Government absolutely depends at present for the proper defence [sic] of its coasts and ships of war.⁴⁰

After outlining the dire straits of their financial situation, and reminding Congress of the great role both organizations played during the Civil War, the appeal continued: “We earnestly hope that Congress will not leave the country defenceless [sic], nor compel us to submit to a sacrifice that must indirectly, at least, affect the immediate interest of all the people.”⁴¹ The managers attached several documents to their appeal, including letters of support from the U.S. Ordnance Agency, as well as a copy of President Grant’s message to Congress calling on them to provide for a suitable defense.⁴² The petition was rebuffed, however, by the Foundry Board, based in Washington, D.C., which had determined that the West Point Foundry lacked the ability to produce steel weapons.⁴³

Once this determination had been made, the Foundry was more or less on its way to financial ruin. The Foundry Company accrued debt to the Parrott estate after he had died in 1877.

Many of the debts could not be settled. In 1897, the West Point Foundry site was purchased by J.B. and J.M. Cornell. The site was soon expanded, with provisions made for the production of iron and steel for construction, castings, and armament ordnance. The renewed activity, however, was short-lived. By 1912, the Cornells took apart their additions, and the Foundry was in receivership, with much of the physical infrastructure deteriorating. In 1920 the Astoria Silk Works purchased the property, but failed to use it. It was purchased for the last time by the Deuterium Corporation in 1960, before its designation as a National Register Site in 1973.⁴⁴

Renovation and Restoration—The Foundry Today

Contemporary study of the West Point Foundry is currently being undertaken by the Putnam County Historical Society & Foundry School Museum in Cold Spring, New York. The Historical Society and Museum purpose is to:

collect and preserve historical and cultural materials pertaining to the Philipstown area, the West Point Foundry, and Putnam County, and make these materials available to the public. To fulfill this mission, the society maintains and administers the Foundry School Museum, archives, a library of genealogical records; provides regulated public access to its collections; and plans, develops, and presents informational and educational programs for the public.⁴⁵

In order to aid researchers interested in charting the history of the West Point Foundry, an archives was founded in January 2000. It is divided into two collections, the West Point Foundry Collection and the Fred C. Haida Collection. Both contain papers and records related to the management of the Foundry site at all stages of its history. The Fred C. Haida is especially helpful to those seeking prints and photographs from the Foundry.⁴⁶

The West Point Foundry Collection provides many avenues of research for those seeking to learn more about the West Point Foundry site. It contains the correspondence and financial notes for Gouverneur Kemble, William Young, and Robert Parker Parrott. The Parrott correspondence is especially useful in that it includes information on both the business and

creative (development of new ordnance) sides of his work. The General Accounting series of documents provides various examples of Foundry transaction records, including orders for ordnance from the West Point Military Academy, as well as balance (profit/loss) sheets, invoices, and shipping lists.⁴⁷ A series is also dedicated to the employees at the West Point Foundry site including indenture contracts, recordings of wages, identity papers, as well as writings by the employees themselves.⁴⁸

Working along side them is Scenic Hudson, an environmental organization dedicated to the protection of the Hudson River Valley which owns the site where the Foundry once stood. Another key partner is Michigan Technological University's Industrial Archaeology Program, which has been retained to conduct archaeological investigations in preparation for an interpretive program at the site. Together, all three are working to develop a comprehensive survey of the former Foundry site and its history. The survey is currently taking advantage of the best available technology to build an electronic map of the site. They are also using radar and laser technologies to discover the exact locations of buried items.⁴⁹

Conclusion

The continuing work of the Putnam County Historical Society, Scenic Hudson, and Michigan Technological University underscores the importance of the West Point Foundry site to our collective history. Begun as a war factory, it developed into an example of the strength of the Industrial Revolution in the early years of the United States. It took advantage of the many internal improvements that made many businesses successful. It employed hundreds of newly arrived immigrants as well as many from the surrounding counties. During the American Civil War it was the main arsenal for the Union, providing the firepower necessary to end the rebellion of the Confederate States of America. The Foundry Association lingered for a few decades after

the war ended, though it never was able to maintain the same degree of activity. Its final closure, however, did not end interest in the site. For future generations that are interested in how commerce developed and directed the course of history in the United States, there remain few better sites than the West Point Foundry.

Annotated Bibliography

Primary Sources

Newspapers

New York Daily Times (New York Times) various dates

Putnam County Historical Society Archives

Secondary Sources

Books

Bell, Jack. *Civil War Heavy Explosive Ordnance: A Guide to Large Artillery Projectiles*. College Station, Texas: University of North Texas Press, 2003.

Discussion of the importance of artillery in the American Civil War. Provided some useful statistics for the wartime production of the West Point Foundry, especially in comparison to other Union foundries, as well as Confederate foundries. A few substantial sections discussed Robert Parrott, West Point Foundry superintendent, and his innovations on rifled artillery pieces and its impact on the Union victory in the war.

Brown, Jerold E., ed. *Historical Dictionary of the U.S. Army*. Westport, Connecticut: Greenwood Publishing Group, Inc., 2000.

A good introductory dictionary which covers many of the terms common to the study of military history and the United States Army. Aside from its many definitions, it includes a brief history of the United States Army, and two appendixes discussing abbreviations and acronyms, as well as an overview of rank.

Coombe, Jack. *Gunsmoke Over the Atlantic*. Westminster, Maryland: Bantam Books, 2003.

Provides overview of the various naval dimensions of the American Civil War. Used primarily for its discussion of the *CSS Virginia* which has a tangential relationship to the West Point Foundry. Also included a discussion of the Union siege of the Confederate Fort Pulaski, during which the Parrott guns were given their first combat test, and performed well.

Doughty, Robert A., Ira Gruber, et. al. *American Military History and the Evolution of Warfare in the Western World*. Lexington, Massachusetts: D.C. Heath and Company, 1996.

Survey text of American military history from the settling of the North American continent through the end of the Cold War. Its section on the War of 1812 was principally useful for its insights regarding the lack of military preparedness by the United States, as well as how narrowly the U.S. escaped defeat.

Dunwell, Frances F. *Hudson River Highlands*. New York: Columbia University Press, 1981.

Survey of the many political, social, economic, environmental, and literary and artistic aspects of the Hudson River Valley. An excellent introduction to anyone wanting to learn more about the area. Primarily used for its high-quality chapter on the West Point Foundry, which was the basis for many of the themes discussed. Dunwell uses sources from many of the historical societies in the area, and her pages are replete with illustrations, paintings, and pictures.

Dupy, Trevor N, Curt Johnson, and Grace P. Hayes, ed. *Dictionary of Military Terms: a Guide to the Language of Warfare and Military Institutions*. New York: The H.W. Wilson Company, 1986.

Similar to Brown, though this text has a wider scope, which is not limited to the United States Army.

Roberts, William. *Civil War Ironclads: The U.S. Navy and Industrial Mobilization*. Baltimore, Maryland: Johns Hopkins University Press, 2002.

Similar to the discussions in Coombe. Used primarily for its brief discussion of John Dahlgren, Commandant of the Washington Navy Yards, whose cannon designs were manufactured at the West Point Foundry.

Rutsch, Edward, Joann Cotz, Brian Morrel, Herbert Githens, and Leonard Eisenberg. *The West Point Foundry Site: Cold Spring, Putnam County, New York*. Cold Spring, New York: Putnam County Historical Society, 1979.

The most comprehensive history of the West Point Foundry, compiled by the Putnam County Historical Society in 1979. It covers the entire history of the foundry site, from its founding in the early nineteenth century to its collapse in the early twentieth. Uses many of the primary sources that can be found at the archives of the Putnam County Historical Society. Absolutely essential to any study of the West Point Foundry; is referenced in almost every section in this paper.

Stagg, J.C.A. *Mr. Madison's War: Politics, Diplomacy, and Warfare in the Early American Republic, 1783-1830*. Princeton, New Jersey: Princeton University Press, 1983.

History of the early political evolution of the United States, especially regarding the prioritizing of spending on armed forces. Provides an overview of the disputes among the United Kingdom, France, and the United States. Primarily takes the point-of-view of President Madison and his relations with his Cabinet and Congress. Also discusses the causes of the War of 1812, the course of the war, and the political settlement in 1815. Used primarily to discuss the shortcomings in military preparation.

¹J.C.A. Stagg, *Mr. Madison's War: Politics, Diplomacy, and Warfare in the Early American Republic, 1783-1830* (Princeton, New Jersey: Princeton University Press, 1983), 120.

²*Ibid.*, 122.

³Spending in general was a dire concern among members of both parties. Taxation, whatever its form, was known to be unpopular among many Americans. Thus, borrowing was adopted as the primary means to pay for the army and navy. Spending for the armed forces mushroomed in the early years, rising to nearly 40% of all government spending. Eventually, Republican administrations acted to curb military spending as much as possible to lessen the debt burden on an overextended federal government. *Ibid.*, 127, 130-131.

⁴A discussion of the state's mishandling of militia preparedness can be found in Robert A. Doughty, Ira Gruber, Roy Flint, George Herring, John Lynn, Mark Grimsley, Donald Howard, and Williamson Murray, *American Military History and the Evolution of Warfare in the Western World* (Lexington, Massachusetts: D.C. Heath and Company, 1996), 71.

⁵Doughty et. al, *American Military History*, 74.

⁶*Ibid.*

⁷This is not to say that there were not American successes in the war. Indeed, campaigns in the Western frontier were quite successful, especially under such skilled commanders as William Henry Harrison and Andrew Jackson. Another reason for ultimate American victory was that the British "could not find a plausible way to win it." In other words, there was nothing short of total occupation of the entire country that could have effectively resulted in an American surrender. *Ibid.*, 76-77.

⁸A discussion of the cadre system and the role of Superintendent Thayer in the development of West Point is discussed in *Ibid.*, 79-80.

⁹The other two were operating in Havre de Grace, Maryland and Georgetown, near Washington, D.C. Edward Rutsch et. al, *The West Point Foundry Site: Cold Spring, Putnam County, New York*. (Cold Spring, New York: Putnam County Historical Society, 1979), 28.

¹⁰*Ibid.*, 30.

¹¹Frances F. Dunwell, *Hudson River Highlands* (New York: Columbia University Press, 1981), 72.

¹²Parrot's influence will be discussed further in this article. *Ibid.*, 72, 75.

¹³Rutsch, 30.

¹⁴Rutsch, 32, 34.

¹⁵Kemble Diary, 1817, quoted in Rutsch, 33. Grapeshot is defined as: "a type of ammunition composed of a number of iron balls about twice the size of a musket ball or of canister shots, (*q.v.*), placed in layers—usually three separated by metal plates—inside a shell and fired from cannon. Generally used at short range against attacking troops. Grapeshot, or grape, was used in both land and naval warfare in the 18th and 19th centuries." Trevor N. Dupuy, Curt Johnson, Grace P. Hayes, ed., *Dictionary of Military Terms: A Guide to the Language of Warfare and Military Institutions* (New York: The H.W. Wilson Company, 1986), 104.

¹⁶Rutsch, 46.

¹⁷W. Young to G. Kemble, 3 April 1817. West Point Foundry Collection. Series 02-2 A-3 William Young.

¹⁸Dunwell, 73.

¹⁹Naylor certificate, provided in Rutsch report; Indenture of Thomas Lloyd, 14 April 1850, West Point Foundry Collection, Series 02-7 Employees; 02-7B Employee contracts.

²⁰Ibid., 27, 34-35.

²¹Ibid., 28.

²²Ibid., 39.

²³Ibid., 40.

²⁴Ibid., 41.

²⁵Ibid., 87.

²⁶“A Visit to the Brooklyn Navy-Yard,” *New York Daily Times*, 26 July 1855, p. 2.

²⁷“From Washington,” *New York Daily Times*, 9 September 1854, p. 8.

²⁸“Operations in the Charlestown Navy-Yard,” *New York Daily Times*, 23 July 1855, p. 1. The *USS Merrimac* was awaiting engine overhaul in the Gosport Navy Yard in Norfolk, Virginia when the American Civil War began. Rather than have the vessel fall into the hands of the Confederacy following Virginia’s secession, the crew purposely sank the ship. Unfortunately for Union war planners, the Confederacy was able to raise the ship and refit it as a powerful ironclad. The *CSS Virginia* would go on to sink the *USS Cumberland* and the *USS Congress* before facing off against Union ironclad *USS Monitor*. Jack Coombe, *Gunsmoke Over the Atlantic* (Westminster, Maryland: Bantam Books, 2003), xi-xii, 18, 104.

²⁹*New York Daily Times*, 7 October 1856, p. 1.

³⁰The contracts were for the engines and the two Dahlgren pivot-guns. The Dahlgren title refers to Captain John Dahlgren, the “Navy’s premier ordnance expert” and later Commandant of the Washington Navy Yard. He designed numerous naval artillery pieces during the American Civil War. “Marine Matters,” *New York Daily Times*, 1 June 1857, p. 5.; “Sea and Ship News,” *New York Times*, 22 September 1858, p. 5; the quotation and subsequent discussion of Captain Dahlgren’s work can be found in William Roberts, *Civil War Ironclads: The U.S. Navy and Industrial Mobilization* (Baltimore, Maryland: Johns Hopkins University Press, 2002), 42.

³¹“The West Point Foundry,” *New York Times*, 2 July 1865, p. 3.

³²Ibid.

³³Rutsch, 87-88.

³⁴Coombe, 135.

³⁵Frances F. Dunwell, *Hudson River Highlands* (New York: Columbia University Press, 1981), 76.

³⁶“Parrott Guns-Modern Artillery,” *New York Times*, 17 September 1863, p. 4.

³⁷Ibid.

³⁸The other two were Cyrus Alger located in Boston, Massachusetts, and the Fort Pitt Foundry in Pittsburgh, Pennsylvania. Bell summarizes the statistics: "In terms of total cannon production, the West Point Foundry under Robert Parrott produced more designs of large caliber rifles and more of the actual guns and projectiles than any other manufacturer during the war." Jack Bell, *Civil War Heavy Explosive Ordnance: A Guide to Large Artillery Projectiles* (College Station, Texas: University of North Texas Press, 2003), 3, 12-13, 271.

³⁹Frederick De Peyster, "Memoir of Robert Parker Parrott," West Point Foundry Collection, Series 02-1D, Commentary & Publications, 1. Memorial for Robert Parker Parrott, 12.

⁴⁰"Memorials in Behalf of The South Boston Iron Co. and the West Point Foundry with the Data Showing the necessity of having at least two Foundries kept in perfect working order for manufacturing heavy ordinance", 3. West Point Foundry Collection, Series 02-1A Commentary & Publications, 2. Memorial for WPF and S. Boston Iron.

⁴¹*Ibid.*, 6.

⁴²*Ibid.*, 13-18.

⁴³Rutsch, 115-126.

⁴⁴*Ibid.*, 118-119, 121-126.

⁴⁵"General Information," *Putnam County Historical Society & Foundry School Museum* 2 May 2005, retrieved May 2, 2005 from <http://www.pchs-fsm.org/pchs-genlFrame.html>.

⁴⁶"Archives: Fred C. Haida Collections & West Point Foundry Collection," *Putnam County Historical Society & Foundry School Museum* 2 May 2005, retrieved May 2, 2005 from <http://www.pchs-fsm.org/pchs-collectFrame.html>.

⁴⁷*Ibid.*

⁴⁸*Ibid.*

⁴⁹ "Archaeological Research at West Point Foundry Preserve," *Scenic Hudson* 2 May 2005, retrieved May 2, 2005 from http://www.scenichudson.org/land_pres/wfpf_research.htm. See also the website for the Michigan Technological University's webpage for the West Point Foundry Archaeology Project Field School at <http://www.ss.mtu.edu/IA/IAWeb/field.html>.