

ABSTRACT

Michael P. Coogan WAR CAREER OF THE UNION GUNBOAT *LOUISIANA* AND THE FALL OF FORT FISHER. (Under the direction of Gordon P. Watts, Jr.) Department of History, East Carolina University, 1997.

The purpose of this thesis is to historically document the career of the steamer *Louisiana*. The procurement and utilization of this vessel typified steps taken by the Union Navy to implement the blockade of North Carolina. A case study of the *Louisiana* provides an understanding of how naval tactics developed to support the blockade and interdiction of coastal eastern North Carolina's maritime trade. Chapters one through three chart the career of the U.S.S. *Louisiana*, a commercial steamer turned gunboat, from her construction and use in the Gulf of Mexico to her tactical employment during four years of war. Beyond describing early American iron ship construction techniques, specifically those used by Delaware's Harlan and Hollingsworth Company, the first part of this study focuses primarily on the Union naval build-up in 1861, the U. S. Navy's purchased auxiliary fleet, and specific tactics utilized by the navy in restricting Confederate blockade running and military operations in North Carolina.

The *Louisiana* also played a unique role during the war since the navy selected her for a questionable powdership

mission in 1864. The remainder of the study, chapters four and five, examines the bizarre attack on Fort Fisher, North Carolina. Although the use of fireships was not uncommon throughout naval history, the *Louisiana* provided the first and last example of a floating bomb launched at a fortified coastal position. On 24 December 1864, in an attempt to end blockade running through the Cape Fear River, the Union launched a joint operation against Fort Fisher, a massive Confederate earthen fort that protected the new entrance to the Cape Fear River. In addition to describing the technology and tactics employed in the powership operation, chapter five also reevaluates a Senate Joint Committee hearing concerning the December failure.

A great deal of controversy surrounded the powership's location in relation to Fort Fisher as well as to her ultimate fate on Christmas Eve, 1864. The epilogue outlines two decades of survey and archaeological investigation to relocate the powership *Louisiana*, which culminated in an expansive study during the summers of 1994-1995.

WAR CAREER OF THE GUNBOAT *LOUISIANA*
AND THE FALL OF FORT FISHER

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Dedicated to Americo D'Agostino, Celia D'Agostino,
and Kathleen Coogan

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CHAPTER I

Introduction: A Purchased Union Fleet Blockades North Carolina

"The public vessels and the public yards, in their capacity of construction and repair, were, however, totally inadequate to the demands that are now pressing on this branch of government, and the department was compelled to resort to the commercial marine to make good the deficiency."

Report of the Secretary of the Navy
Gideon Welles to U. S. Senate, 2
December 1861

Shortly after Confederates bombarded Fort Sumter on 12 April 1861, President Abraham Lincoln called for 75,000 volunteers to serve in the Federal army. In addition, he announced a naval blockade of all Southern ports from South Carolina to Texas. This first official blockade proclamation issued on 19 April was temporary, however, because North Carolina and Virginia also planned to secede from the Union. By 27 April 1861, the Union strategy for closing Southern ports now included the inland and coastal waters of North Carolina and Virginia as far north as Washington itself. Encompassing a total of 3,549 miles of coastline and demanding the closing of at least 180 major harbors and inlets, the blockade posed a massive tactical and logistical challenge for the small U. S. Navy.¹

¹Richard S. West, Jr., Mr. Lincoln's Navy (New York: Longmans, Green, and Company, 1957), 45. By 16 July 1861, President Abraham Lincoln issued a proclamation concerning internal and coastwise intercourse. See APPENDIX A.

The navy's commissioned vessels numbered seventy-six by December 1861, but during the first nine months of the war, sixty-four were either in ordinary at various navy yards or returning from foreign stations. As a result, the Union maintained only twelve home squadron vessels, four being in northern ports, to enforce the blockade.² To legitimately establish such a massive blockade, the Union desperately needed to expand the navy. President Lincoln, Secretary of the Navy Gideon Welles, Secretary of State William H. Seward, and other high ranking officials of the U. S. government realized the U.S. Navy required a monumental shipbuilding or purchasing program. At the very least, the navy needed hundreds of vessels to effectively constrict Southern shipping, patrol Southern waters, and assist the army in joint operations.³ To construct a large fleet in

²U. S. Congress, Senate, "Report of the Secretary of the Navy," 37th Congress, Second Session, Senate Executive Document No. 1, 2 December 1861, 10-13. Hereinafter cited as *Senate Executive Document No. 1*.

³Realizing the complexity of such a blockade, Secretary of the Navy Gideon Welles and Assistant Secretary of the Navy Gusavus Vasa Fox turned to Alexander Dallas Banche, superintendent of the Coast Survey, for advice on establishing a blockade. Banche formed the Blockade Strategy Board comprising Samuel F. du Pont (later the commander of the South Atlantic Squadron), Major J. G. Barnard of the Topographical Service, Commander Charles H. Davis, and Gusavus Fox. The Board met periodically in Washington. Issues ranging from vessel types and ordnance to the topography of the Confederate coastline allowed the formation of strategy as well as the tactics necessary to

the early months of the war presented an impossible task owing to time, money, and yard limitations. Instead, the navy turned to purchasing commercial vessels that were quickly fitted with guns, troops, or supplies and immediately pressed into service. Between May and December 1861, the U. S. Navy's purchasing system quickly and cheaply acquired sound commercial vessels to augment the aging old navy.⁴

Before the Civil War, the government's purchasing system involved the practice of "inviting proposals, receiving sealed bids, and awarding contracts to the lowest bidder."⁵ Welles dismissed the old system as overly time consuming and favored using single commercial agents

facilitate the successful management of the blockade. See John D. Hayes, ed., Samuel Francis du Pont: A Selection from His Civil War Letters, v. I (Ithaca, New York: Kingsport Press, Ltd., 1969), lxviii; William M. Fowler, Jr., Under Two Flags: The American Navy in the Civil War (New York: Norton & Company, 1990), 53-54.

⁴Gideon Welles seemed agitated at the undue stresses placed on the Navy after Lincoln's blockade proclamation. He felt, "The demand for vessels, and for particular classes of vessels . . . was sudden, and often came when it was not anticipated by the government or by myself, and when still less could the extent of the demand be foreseen." U. S. Congress, Senate, "Report of the Secretary of the Navy," 37th Congress, Second Session, Senate Executive Document No. 15, 14 January 1862, 5. Hereinafter cited as *Senate Executive Document No. 15*.

⁵Richard S. West, Jr., "The Morgan Purchases," U.S. Naval Institute Proceedings, United States Naval Institute, XX (January, 1940), 75.

stationed at individual ports to purchase the necessary vessels. He contended that using a system in which several agents operated in the same port "would be weakened by division, and the public interest greatly prejudiced by their inevitable competition with each other in the same market."⁶ Moreover, Welles, as well as his most important agent, George D. Morgan, believed naval officers were excellent "judges of vessel condition," but failed miserably at the cutthroat business of buying used merchantmen.⁷ An officer unfamiliar with the inner workings of the business only invited chicanery. For example, vessel brokers often charged at least 10 percent commission on government transactions. Moreover, naval agents, assigned by the government, often misappropriated funds.⁸ This lethal combination ultimately acquired inferior vessels and subsequently made the officers, excluding those not involved in fraudulent behavior, look foolish. As a result of problems in the old purchasing system, Welles stationed an agent in each port, issued orders directly to the agent for the type and number of vessels needed, and dispatched

⁶Senate Executive Document No. 15, 4-5.

⁷Ibid., 5-6; West, "The Morgan Purchases," 74-75.

⁸See Letters relative to the purchase of the "William Badger" and "Roman", Senate Executive Document No. 15, 17-19.; West, "The Morgan Purchases," 74.

government funds to pay the sellers.

George D. Morgan's purchases in New York and Connecticut harbors exemplify the U. S. Navy's purchasing system. Although New York contributed most of the vessels purchased between April and December 1861, several other ports contributed vessels, especially Philadelphia and Boston.⁹ Acting under temporary orders issued by the navy, Morgan negotiated leases and purchased a few vessels in May and June 1861, but started buying in earnest by mid-July. He continued as the sole agent in New York and Connecticut until the end of November 1861.¹⁰ During almost eight months as a U. S. Navy purchasing agent, Morgan received a 2.5 percent commission per purchase directly from the seller instead of the Federal treasury. Albeit 7.5 percent lower than what agent's often demanded, 2.5 percent represented the usual mercantile brokerage of the time.¹¹ Despite his relatively low commission rate, which he often waived to cut prices, Morgan earned an immense sum on the ninety-one vessels he purchased. His income during the six month period reached at least \$70,000.¹² According to Morgan's 4

⁹*Senate Executive Document No. 1, 126-131.*

¹⁰*Senate Executive Document No. 15, 6-8*

¹¹*Ibid., 11-12; West, "The Morgan Purchases," 75, 77.*

¹²Many New York contractors estimated Morgan's earnings

January 1862 report, he saved the government approximately 25 percent on the vessels he purchased.¹³ In reality, when viewing the prices collectively, the asking price for the ninety-one vessels amounted to \$4,215,600 and Morgan negotiated the collective figure down to \$3,400,342 for a savings of \$815,258 or roughly 19 percent.¹⁴ Regardless of the 6 percent discrepancy, Morgan purchased ninety-one mechanically sound steam and sailing vessels at bargain prices in under eight months.

After receiving a vessel order from Welles, an inspection board, consisting of a naval constructor, ordnance officer, and engineer, traveled by steam tug throughout the harbor inspecting vessels. In most cases, the board concentrated on buying steam vessels of moderate size and draft. Such vessels, capable of navigating shallow inlets and coastal inland waters, remained a key in interdicting North Carolina's coast throughout the war. Other vessels targeted for purchase included sailing vessels, steam-tugs, and ferry-boats, as well as myriad

as high as \$95,000. Such high figures, coupled with the fact that Morgan was Secretary Welles's brother-in-law, seemed fraudulent and prompted Congressional investigations. See *Senate Executive Document No. 15*; West, "The Morgan Purchases," 77.

¹³*Senate Executive Document No. 15*, 12.

¹⁴*Ibid.*, 22-25.

other vessels fitting the navy's immediate needs.¹⁵

Using public advertising and personal notification, the board contacted the owners of targeted vessels. During the inspection process, all three board members made decisions concerning steam-powered vessels, while only the naval constructor and ordnance officer reviewed sailing vessels. When inspecting a steam vessel, the engineer reassured the inspection board that her boiler, engine, drive train, and associated machinery passed inspection. Unless economically feasible, the navy balked on any mechanically inferior vessel that required extensive refitting or overhaul. If a vessel successfully passed hull, machinery, and general inspection, the board contacted the government agent stationed in the port, such as Morgan, and negotiations began for purchasing the vessel in question.

The importance of the vessels purchased between May and December 1861 cannot be overstated. Given the magnitude of Lincoln's seemingly unworkable blockade proclamation, the acquisitions proved indispensable. By December 1861, the U. S. Navy consisted of 76 old navy vessels with a combined

¹⁵*Senate Executive Document No. 1, 3-4, 14-16; Senate Executive Document No. 15, 9; West, "The Morgan Purchases," 76; Fowler, Under Two Flags, 52; David B. Tyler, The American Clyde: A History of Iron and Steel Shipbuilding on the Delaware from 1840 to World War I (University of Delaware Press, 1958), 21, 23.*

weight of 105,271 tons carrying 1,783 guns, 137 purchased vessels weighing 71,297 tons and mounting 518 guns, and 52 newly constructed warships weighing 41,448 tons and bearing 256 guns.¹⁶ While steam engines drove approximately half of the old navy's seventy-six warships, the fleet's sailing men-of-war still carried the most armament--1,321 out of 1,783 guns.

Given the nature of blockades and naval combat in the decades prior to the Civil War, naval strategists recognized the advantages of steam power, rifled, shell-firing ordnance, and iron construction. During the Civil War, these factors proved critical in moving vessels effectively from station to station, giving chase to blockade violators independent of wind and weather, and providing improved firepower.

In the 1840s and 1850s, the U. S. Navy gradually incorporated steam power, iron construction, and heavy ordnance into the old navy. Although steamers were first used during the 1846 war with Mexico, their importance was not fully appreciated. Similarly, two important European wars, the Crimean War in 1854 and the Franco-Austrian War in

¹⁶Owing to overworked yards, most of the fifty-two warships listed as "newly constructed" still sat on the ways, but were in "rapid progress towards completion," in December 1861. As a result, fifty-two is a tenuous figure. *Senate Executive Document No. 1*, 13-14.

1859, provided examples where navies successfully exercised shell-firing artillery, heavy cast-iron smooth-bore ordnance, and ironclad warships.¹⁷ Despite not actively participating in either of these European conflicts, U. S. naval strategists understood the importance of new warships and ordnance types developed overseas.

Once the Civil War began in 1861, the navy acknowledged, based on previous conflicts, the necessity of iron, all weather, heavily armed warships. Unfortunately, the old navy did not contain enough vessels possessing these characteristics. The navy's ideological change from wooden, sailing men-of-war to ironclad, steam-driven warships is exemplified by the vessels constructed during the war years. During the first nine months of the war, most of the navy's fifty-two newly constructed warships possessed steam power, shallow hulls, and iron construction. This reflected the need for new, more powerful steamers. Unfortunately, northern shipyards labored mostly with preparing the old navy for action and, not surprisingly, vessel construction slowed.¹⁸

¹⁷Bern Anderson, By Sea & By River: The Naval History of the Civil War (New York: Alfred A. Knopf, 1962), 7-9; James Russell Soley, The Blockade and the Cruisers, [Campaigns of the Civil War, v. VII] (New York: A. S. Barnes & Company, 1963), 1-3.

¹⁸*Senate Executive Document No. 1, 14.*

Since many of the old navy warships proved inadequate for blockade duty and the new ironclads required extensive building time, purchased commercial vessels filled the navy's immediate needs. Of the 137 commercial vessels purchased early in the war, 79 were steamers and they carried 335 of the combined 518 guns.¹⁹ Representing an opposite trend from that seen in the pre-war fleet, this newly purchased auxiliary force exemplified the U. S. Navy's embrace of steam over sail power. While New York contributed three-quarters of the purchased vessels, Philadelphia, Boston, New Bedford, Providence, and a number of Connecticut ports²⁰ also supplied vessels (See Table I).

Instead of organizing one massive flotilla under a single command, however, the Strategy Board combined the old navy and newly purchased vessels and divided them into four separate commands. These groups comprised the North and South Atlantic Squadrons and the East and West Gulf Squadrons. The additional 137 vessels purchased during the first six months of the war entered action as soon as yard facilities could arm and man them.²¹ Although participating

¹⁹Ibid., 13.

²⁰The Connecticut ports included: Mystic, Norwich, New Haven, and New London.

²¹Although the 137 vessels purchased between May and November 1861 proved especially helpful in establishing the

TABLE I

Number and Type of Vessels Purchased by the U.S. Navy
Between April and December 1861

Vessel Type	Port Where Purchased				
	N.Y.	Phila.	Boston*	Prov., RI	Conn.
Side-Wheel Steamer	31	4			
Screw-Steamer	32	2	4	1	3
Auxiliary Steam Bark			1		
Ship	7	1	2	2	1
Bark	11	2	4		
Barkentine	1				
Schooner	20	5			
Brigantine	2				
Total*	104	14	11	3	4
Percentage	76%	10%	8%	2%	3%

*Contains two ships purchased in New Bedford, Ma.

*One vessel appeared in the records with an unknown port. As a result, the total number equals only 136 and the percentage only equals 99 percent.

Source: *Senate Executive Document No. 1, 126-132.*

mainly in the North and South Atlantic squadrons, the new auxiliary navy served in both Gulf theaters as well.

Several major southern ports, including New Orleans, Mobile,

Union blockade, 418 (313 steamers) purchased and chartered vessels ultimately contributed to the effort. Soley, The Blockade and the Cruisers, 17-18.

Savannah, Charleston, Wilmington, and the Chesapeake Bay, to name only the most important areas--became primary arenas for U. S. Navy operations. Despite the vast theater of war stretching from Texas to Virginia, the newly purchased fleet operated mainly in blockading and occupying North Carolina.

Strategically, North Carolina proved a critical part of the Confederate war effort. The complex system of rivers, sounds, and canals, which covered the eastern third of the state, allowed excellent trade and communication within the state itself and with Virginia as well. Likewise, this area also contained the Wilmington and Weldon Railroad, a major north-south lifeline between the Army of Northern Virginia and war material arriving from the south. Shortly after the war started, Union military strategists realized the importance of North Carolina's sounds and railroads.

A number of joint army-navy operations, beginning at the end of 1861 and continuing into spring 1862, involved attacks on eastern North Carolina.²² Fort Hatteras, which guarded heavily used Hatteras Inlet, fell to joint forces 29 August 1861 allowing the Union navy to penetrate the Outer

²²John G. Barrett, The Civil War in North Carolina (Chapel Hill, North Carolina: The University of North Carolina Press, 1975), 31-32.; Hugh T. Lefler and Albert Ray Newsome, The History of a Southern State - North Carolina (Chapel Hill, North Carolina: The University of North Carolina Press, 1973), 458-45.

Banks and invade North Carolina's sounds. By 7 February 1862, just before another joint attack on Roanoke Island, the Union fleet stationed in North Carolina waters included thirty-three warships. At least twenty-five were commercial vessels purchased between May and December 1861 by Morgan and other government agents. The *U.S.S. Chippewa*, a newly constructed screw-steamer, old navy warships sloop of war *Jamestown* and screw-steamer *Mystic*, plus five apparently chartered vessels²³, completed the North Carolina blockade contingent.²⁴ The navy's purchased and rented fleet actively participated in most North Carolina battles from the first engagement at Hatteras to the capture of Fort Fisher and the fall of Wilmington in January and February 1865.

Despite the weak state of the navy in 1861, over five hundred warships ultimately enforced the blockade by war's

²³Although the U. S. Navy actively purchased and chartered vessels, the U.S. Army also acquired troop transports, cargo vessels, etc. For example, between April 1861 and March 1862, the army chartered 282 vessels and purchased another forty. See U. S. Congress, Senate, "Letter of the Secretary of War," 37th Congress, Second Session, *Senate Executive Document No. 37*, 27 March 1862, 1-15.

²⁴Official Records of the Union and Confederate Navies in the War of the Rebellion (Washington, D. C.: U. S. Government Printing Office, 1880-1927; hereinafter cited as O.R.N.), series I, 6: 603.

end.²⁵ Until newly constructed vessels joined the fleet, Welles's purchased navy provided the essential bridge between the old navy and the ironclads of the future. By 1865, according to J. R. Soley, the Union navy effectively captured or destroyed 1,504 vessels of all classes--taking 1,149 prizes, 210 being steamers. Of the remaining vessels, the navy burned, sank, or drove ashore 355, 85 of them steamers.²⁶

Although the blockade was initially a "paper" one, the ability of vessels to leave or enter the major ports of the South became increasingly difficult as the war entered its third and fourth year. In 1861, the blockaders captured or destroyed not more than one in ten blockade runners--a tempting statistic for the adventuresome Southern or European businessman. Even a year later the chances of capture were still an enticing one in eight. By 1863, 1864, and 1865, however, the blockade tightened and the chance of capture dropped to one in four, one in three, and eventually one in two respectively.²⁷

²⁵Soley, The Blockade and the Cruisers, 17-18; Dudley W. Knox, A History of the United States Navy (New York: G. P. Putnam's Sons, 1948), 275-276.

²⁶Soley, The Blockade and the Cruisers, 44.

²⁷Carroll Storrs Alden and Allan Westcott, The United States Navy: A History (New York: J. B. Lippincott Company, 1943), 272.

Despite the gallant effort by blockade runners during the war, inflation in the South skyrocketed and Confederate armies were often left without essential goods such as blankets, shoes, medicine, and other war material. The export of "King Cotton"--some 2,000,000 bales marketed abroad in 1860--dropped to an insignificant 13,000 bales by 1865.²⁸ The cotton business, although certainly the South's most important industry, was not alone in feeling the effects of the Union blockade. Thomas R. Crawford, owner of a turpentine and rosin industry in Beaufort, North Carolina and Darien, Georgia, received the following letter from his son, J. D. Crawford 22 July 1861:

everything looks very discouraging in your line of business, though some seem to think the blockade will be raised this fall if it is not you had as well hang up [the business] in my opinion[.]²⁹

Most importantly, however, the success rate for running the blockade represented only part of the South's logistical battle. Even if blockade runners succeeded in delivering war material to Wilmington or any Confederate port, this represented merely the first step in a complex logistical system. After delivery, war material required

²⁸Ibid., 272-273.

²⁹J. D. Crawford, Personal Correspondence to Thomas R. Crawford, 22 July 1861, James C. Galloway Collection, box #121.1, Joyner Library, Manuscript and Archives Division, East Carolina University.

transportation via rail or road to the Confederate armies.³⁰ The South's transportation system, particularly the railroads, remained ineffectual for much of the war. For example, railroads were not located in strategically important areas, lines lacked continuity because of different rail gauges, and the South did not possess the manufacturing infrastructure to initially build or replace railroad supplies.³¹ Robert C. Black considered the "initial shortage of rolling stock, and an increasingly effective Federal blockade" critical to Confederate defeat.³²

³⁰North Carolina's road system was notoriously inefficient, even since colonial times. See Hugh T. Lefler and William S. Powell, Colonial North Carolina: A History (New York: Charles Scribner's Sons, 1973), 168-171. Although plank roads improved the situation during the 1840s and 1850s, these disappeared due to costly upkeep, the Panic of 1857, and railroad competition. By 1860, and throughout the war, North Carolina's road system deteriorated and failed to improve until the 1880s. See Lefler and Newsome, The History of North Carolina; Capus Waynick, North Carolina Roads & Their Builders (Raleigh, North Carolina: Edwards & Broughton Company, 1952), 21-26.

³¹Robert C. Black, The Railroads of the Confederacy (Chapel Hill, North Carolina: The University of North Carolina Press, 1952), 294-295; For a general discussion on the link between blockade running and the Confederate rail system see, Francis B. C. Bradless, Blockade Running During the Civil War, and the Effect of Land and Water Transportation on the Confederacy (Salem, Massachusetts: Essex Institute, 1925).

³²Black, Confederate Railroads, 294.

Robert Browning contended that one factor causing the Wilmington blockade to be less effective:

was the poor positioning of vessels during the entire war. The navy concentrated many vessels in the sounds of North Carolina, in Virginian waters, and at Charleston; when in reality more were needed at Wilmington.³³

On the contrary, attacking Virginia's and North Carolina's inland waters helped the struggling blockade. By positioning warships within the sounds and participating in joint army-navy raids into eastern North Carolina, the U. S. Navy hampered an otherwise secure logistical link between North Carolina and Virginia.

Since North Carolina's coastal geography often magnified the difficulty in stopping illegal Confederate trade at the Outer Banks, the Union required a unique strategy. As a result, the blockade in North Carolina consisted of two "zones" or areas of operation. Beyond stationing blockaders off the coast, or outside the Outer Banks, to restrict blockade running, the navy positioned warships in the sounds themselves. Federal campaigns launched against eastern North Carolina aimed at interdicting the sound region, including inland trade,

³³Robert M. Browning, "The Blockade of Wilmington, 1861-1865" (M.A. Thesis, East Carolina University, 1980), 178.

shipbuilding³⁴, army operations, and Rebel logistics in general. Once occupied, eastern North Carolina acted as a Union base for additional raids southward, caused Confederate troop movement away from Virginia, and ultimately caused the evacuation of Norfolk, Virginia, a critical port since the war's commencement.³⁵

Regardless of Union efforts to maintain a strict blockade, however, there exists no doubt that blockade runners represented the "lifeline" of the Confederacy and contributed significantly to the Rebel war effort.³⁶ Nevertheless, the question remains: How would the Confederacy have fared had there been no blockade? How much would unrestricted maritime trade have contributed to the Confederate war effort, especially if England and France had

³⁴William N. Still, Confederate Shipbuilding (Columbia, South Carolina: The University of South Carolina Press, 1987), 75-81; William N. Still, "The Shipbuilding Industry in Washington, North Carolina," East Carolina University Publications in History, v. V, (Greenville, North Carolina: East Carolina University Publications, 1981), 37-38. Current research indicates that most Confederate shipbuilding in North Carolina ended after 1861. See Michael P. Coogan and Sheridan R. Jones, "A Statistical Analysis of North Carolina Shipbuilding" (Unpublished Paper, East Carolina University, 1995). See APPENDIX G.

³⁵Lefler and Newsome, The History of North Carolina, 458.

³⁶Stephen R. Wise, Lifeline of the Confederacy: Blockade Running During the Civil War (Columbia, South Carolina: The University of South Carolina Press, 1988), 226.

openly supported the Rebel cause? In a sense, the blockade never required complete effectiveness, it only had to constrict Southern commerce.

To separate and analyze the Union blockade of North Carolina without considering Rebel logistics as a whole invites misinterpretation of the blockade's importance. The blockade was not decisive by itself, but when merged with a poor Confederate transportation system, a depleting manpower problem, and the capture of ports via Federal joint operations, the synergistic effect slowly devastated North Carolina economically and militarily.

Owing to George Morgan and other government purchasing agents, the navy transformed commercial vessels into a potent auxiliary force. When combined with the old navy and newly constructed ironclads, the fleet helped restrict Confederate shipping, disrupted Rebel logistics, and greatly assisted the army in joint operations against North Carolina.

CHAPTER II

Harlan & Hollingsworth Builds the *Louisiana*

"The Wilmington firm of Betts, Harlan & Hollingsworth began making railroad cars and repairing engines and fell, almost by accident, into the iron shipbuilding business. Through the years it built up a reputation for producing good quality cars and vessels, the latter noted for durability and speed."

David B. Tyler, The American Clyde

On 10 July 1861, the U. S. Navy's Philadelphia purchasing agent acquired the screw-steamer *Louisiana* as part of the Union's new auxiliary blockade fleet formed at the end of 1861.³⁷ While New York contributed 76 percent of the newly acquired commercial vessels, the Philadelphia area (i.e. Delaware River and Bay) also supplied an additional fourteen vessels, or 10 percent of the vessels purchased in the first year of the war. Six of the fourteen were steam driven. One of the six steamers purchased was the *Louisiana*, an iron-hulled, screw-steamer built in Wilmington, Delaware, by Harlan and Hollingsworth. Although originally constructed for trade, she characterized the commercial vessel-type purchased by the navy for blockading North Carolina.³⁸ To fully understand the kind of vessel

³⁷Proof of Ownership of a Ship or Vessel to Be Enrolled, Vessel Enrollment Records, Vol. E-47, Record Group 41, National Archives.

³⁸Senate Executive Document No. 1, 3-4; West, "The Morgan Purchases," 76.

the *Louisiana* represented, a working knowledge of early British and American iron shipbuilding, roughly from 1800 to 1860, as well as a brief history of the Harlan and Hollingsworth Company, is necessary.

British iron shipbuilding began approximately twenty years before American shipyards first experimented with the new material. Shortly after 1800, British shipbuilders demonstrated the usefulness and durability of canal boats manufactured entirely of iron.³⁹ By the 1820s and 1830s, when Americans first launched iron boats, large numbers of iron river and canal steamers, either constructed in England or in France, regularly operated on the Thames, Mersey, Shannon, Clyde, and Seine Rivers. In addition, iron sailing and steam vessels built in British yards, such as the *Aaron Manby* constructed in 1821, navigated the English Channel. In 1839, J. & M. Laird of Birkenhead, England, built the *Robert F. Stockton*. The screw-propelled *Stockton* was the first iron-hulled vessel to cross the Atlantic Ocean. During the 1840s, British iron-hulled sailing and steamships regularly traded to the East and West Indies.⁴⁰

³⁹John Grantham, Iron, as a Material for Ship-Building (Liverpool, England: Lack and Addison, 1842), 6-7.

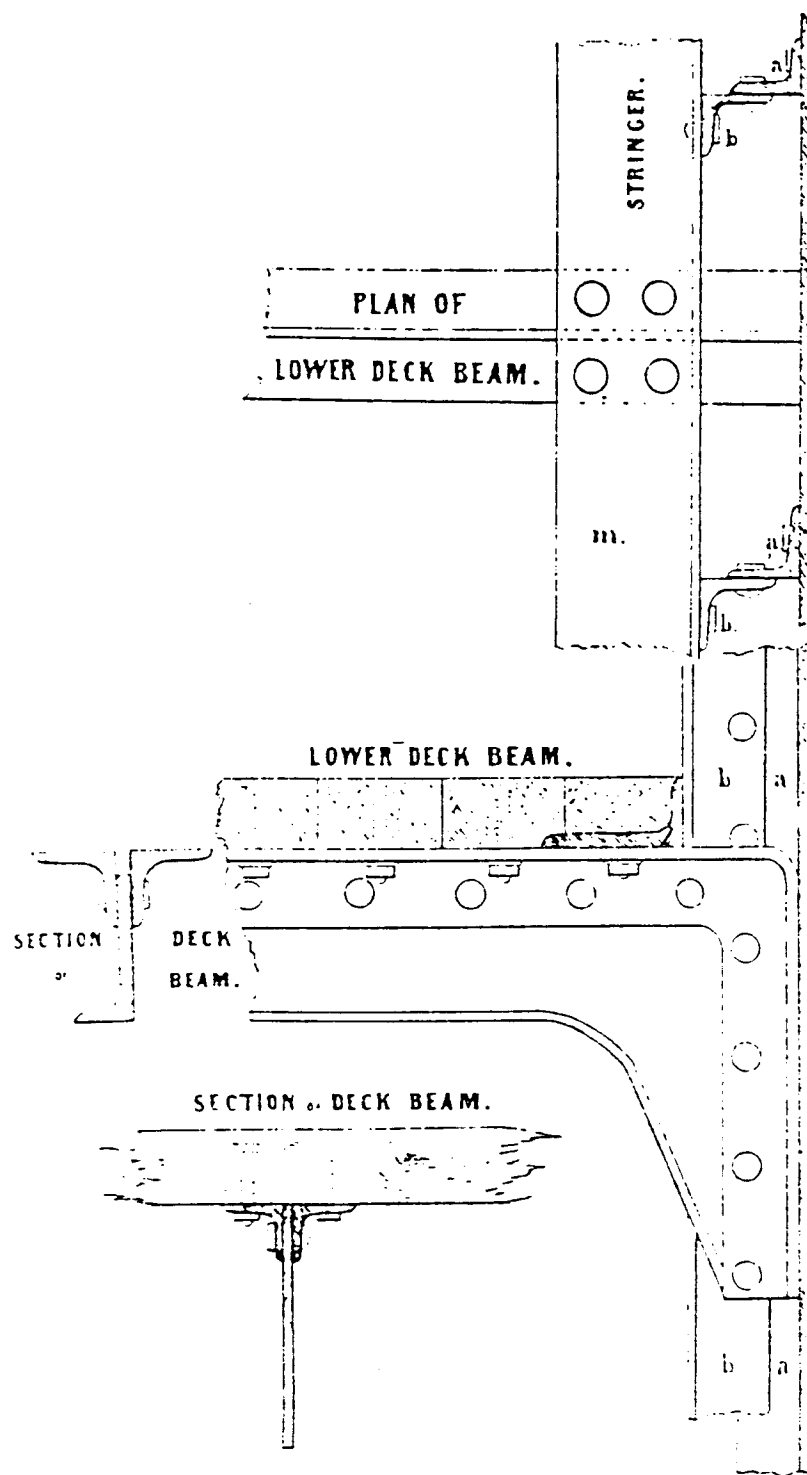
⁴⁰Grantham, Iron, 6-9.

Between 1840 and 1860, a number of innovative iron construction techniques developed in British shipyards. Owing to myriad problems, some methods faded from use, while others, such as angle iron framing, lapped hull plating, and double riveting, gained general acceptance. By the 1840s, British iron shipbuilders, working on military and commercial vessels, regularly constructed iron hulls using angle iron. For example, a vessel's internal components, including frames, deck beams, and stringers, consisted of 'L' angle iron riveted together to form these various parts (See Figure 1). All other internal components however, such as covering-boards, waterways, decks, stanchions, bulwarks, cabins, masts, etc., remained wooden.⁴¹

British shipbuilders used two different plating techniques in manufacturing iron hulls. One method, the single riveted flush joint, or carvel plating technique, gained notoriety as the superior iron hull plating method. This method involved butting iron plates together, placing a second plate behind the seam formed by the first two plates, and riveting the back plate and hull plate assembly together (Figure 2, A). Initially, British shipbuilders considered this method superior in strength and sailing quality.⁴²

⁴¹Ibid., 12-13, 20-21, plates 1, 2, 5.

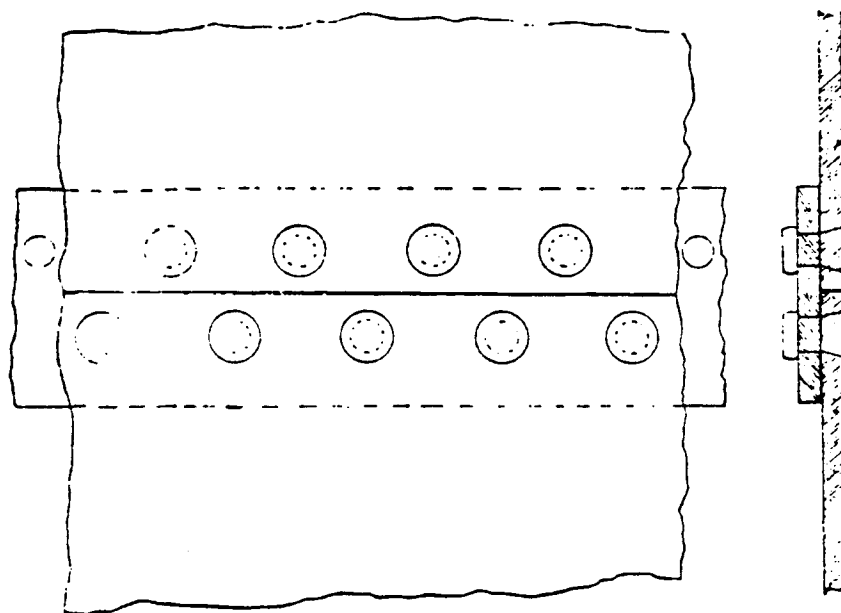
⁴²Ibid., 12-15.

Figure 1:⁴³

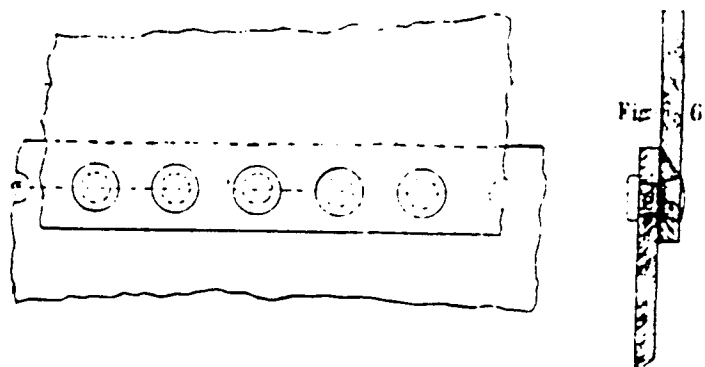
⁴³Grantham, Iron, plate 2, Figures 1, 2, and, 7.

Figure 2:⁴⁴

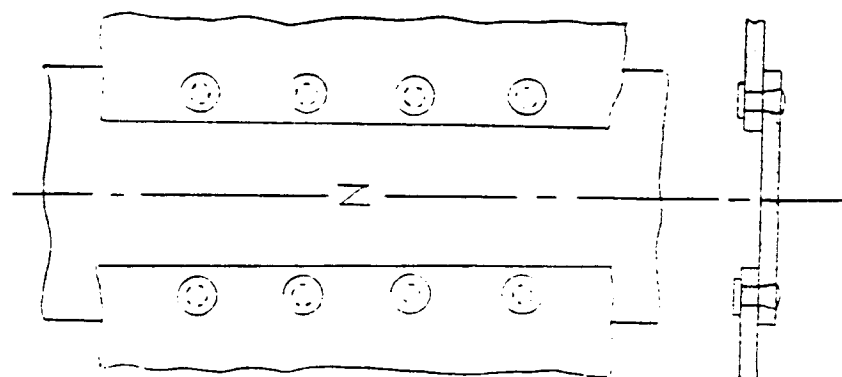
A



B



C



⁴⁴Ibid., Plate 3, Figures, 1, 2, 5, and, 6.

Although the carvel method gained early acceptance, the single riveted lapped joint, or "clinker" plating technique, eventually replaced the carvel method as the preferred plating technique.

"Clinker" hull construction, including the in-and-out and lapped joints, involved lapping hull plates over one another and directly riveting them together without the use of a second back plate (Figure 2, B, and C). Beyond reducing labor costs, this method involved less materials, both in rivets and plating, and correspondingly reduced the vessel's overall weight. Moreover, the single riveted

lapped joint sustained greater horizontal and vertical strain and produced less direct rivet strain under pressure compared to the flush joint.⁴⁵ For example, when plates riveted with flush joints are driven inwards, such as when a vessel's hull is stoved-in by an object, the plate edges sustain all the force. As a result, plate edges in a flush joint will tear in the direction of the rivet holes. In the lapped joint, however, no tearing will occur under such pressure, and although the plates will bend, the lapped,

⁴⁵Ibid., 15-16; J. H. Morrison, "Iron and Steel Hull Steam Vessels of the United States," Scientific American Supplement, No. 1556, 28 October 1905, 24929; British iron building methods accepted during the 1840s were still considered mechanically sound by the end of the 1850s. See Andrew Murray, The Theory and Practice of Ship-Building, (Edinburgh, Scotland: Adam and Charles Black, 1861), 74-76.

riveted joint will remain intact.⁴⁶

Rivet properties, including rivet size, length, and position, as well as single versus double riveting, represented an important aspect of a vessel's overall hull strength. The edges of iron plate, where holes are bored to accept rivets, represented the weakest area in iron hull construction. Whereas the plate itself will bend in response to an applied force, plate edges will tear before the rivets themselves break. Beginning in 1838, experiments indicated that once workers punched holes in an iron plate, overall strength dropped to one half, even after two plates were single riveted together. Double riveting however, increased the ratio to 2/3 of the original strength.⁴⁷ Between 1840 and 1860, angle iron construction, overlapping hull plating, and double riveting, characterized Britain's commercial and military iron vessels. Meanwhile, on the other side of the Atlantic Ocean, American shipbuilders were just producing their first iron hulled steamers.⁴⁸

During the early decades of the nineteenth century,

⁴⁶Grantham, Iron, 17.

⁴⁷Murray, Practice of Ship-building, 76; Grantham, Iron, 15-16.

⁴⁸Morrison, "Iron and Steel Hull Steam Vessels of the United States," No. 1555, 21 October 1905, 24919-24920; Tyler, The American Clyde, 5.

iron and steam caused a revolution in America's time-honored wooden shipbuilding. A new breed of nontraditional shipbuilders, including machinists, engineers, and boilermakers, developed iron shipbuilding techniques. Engineers and machinists became important because steam engines, boilers, and iron fabrication complicated customary "by the eye" wooden shipbuilding carpentry. Much like engineers and machinists, boilermakers, owing to their understanding of steam and iron, frequently turned to marine engine work and also entered into the field of iron ship construction.⁴⁹

A number of American boilermakers, namely John Elgar and Jesse W. Starr, experimented with iron construction and ultimately produced iron canal boats. In 1825, Elgar launched America's first iron boat, the *Codorus*, on Pennsylvania's Susquehanna River. Similarly, Jesse Starr, a Philadelphia boilermaker, launched an iron barge on the Delaware River in 1829. By 1840, Americans produced at least a hundred iron barges. Pittsburgh, Pennsylvania, produced most of these, and they operated primarily in Pennsylvania's western canals.⁵⁰

⁴⁹Tyler, The American Clyde, 3-4.

⁵⁰Ibid., 4-5; Alexander Crosby Brown, "Notes on the Origins of Iron Shipbuilding in the United States," (M.A. Thesis, College of William and Mary, Williamsburg, Virginia,

During the 1830s, Britain contributed a number of America's iron vessels. John Laird, of Birkenhead England, manufactured six completed river steamboats, disassembled them, and shipped them to Maryland, Georgia, and South Carolina. Between 1834 and 1839, a number of American shipbuilders reassembled the steamers.⁵¹ Reliance on imported British vessels ended, however, after American shipyards recovered from a depression in 1837. The first iron-hulled steamers produced in America, not including the Elgar and Starr experiments in the 1820s, were the *United States* by New York's West Point Foundry in 1838 and the *Valley Forge* by Pittsburgh's Washington Works in 1839.⁵²

During the mid-1840s, the United States government contracted shipbuilders in Boston, New York, Richmond, and Pittsburgh to produce small, iron steamboats, both paddlewheel and propeller driven, for the Revenue Marine Service. Most of these were overpriced however, costing

1951), 92-94; Charles H. Cramp, "Sixty Years of Shipbuilding on the Delaware River," Proceedings of the Numismatic and Antiquarian Society of Philadelphia (Philadelphia, Pennsylvania: Franklin Printing Company, 1907), 180; Morrison, "Iron and Steel Hull Steam Vessels of the United States," No. 1555, 21 October 1905, 24919.

⁵¹Morrison, "Iron and Steel Hull Steam Vessels of the United States," No. 1555, 21 October 1905, 24919; Tyler, The American Clyde, 5.

⁵²Tyler, The American Clyde, 5.

approximately \$85,000 each, and considered failures because of poor hull construction and inadequate machinery.⁵³

Between 1845 and 1860, Delaware River shipyards, namely Reaney, Neafie & Company, Pusey & Jones Company, Moses Starr & Sons, and Harlan and Hollingsworth, replaced New York and Pittsburgh shipbuilders as America's foremost iron vessel producers.⁵⁴ All four of these shipbuilders constructed iron hulls, but Reaney, Neafie & Company and Harlan and Hollingsworth also produced the boilers and engines necessary to manufacture completed iron steamboats. Consequently, the Delaware River Valley acquired the nickname "American Clyde," because vessel production mirrored Scotland's thriving Clyde River industry.⁵⁵ With the addition of Philadelphia's Captain R. F. Loper, and Swedish inventor John Ericsson, these companies developed new engine types. They also improved vessel propulsion systems by adopting Loper's and Ericsson's newly invented propellers.⁵⁶

⁵³Morrison, "Iron and Steel Hull Steam Vessels of the United States," No. 1556, 28 October 1905, 24928-24929.

⁵⁴Morrison, "Iron and Steel Hull Steam Vessels of the United States," No. 1557, 4 November 1905, 24943-24944.

⁵⁵Tyler, The American Clyde, x.

⁵⁶Ibid., 7.

Harlan and Hollingsworth, a company founded on the banks of the Christina River, in Wilmington, Delaware, in 1836, proved only slightly different from traditional Delaware Valley boilermakers and wooden shipbuilders who experimented with iron vessel construction. Instead of evolving from boilermakers or wooden shipwrights, Harlan and Hollingsworth, one of America's first iron shipbuilding companies, initially focused on building railroad cars. Beginning in 1836, Mahlon Betts, a carpenter by trade, and Samuel N. Pusey, a machinist by trade, assembled rail cars in the "Old Pusey Building" at the corner of Front and Tatnall Streets in Wilmington.⁵⁷ A year later, Samuel Harlan, an expert cabinetmaker and construction foreman, joined as a firm member and the company name changed to Betts, Pusey, and Harlan. Under Harlan's leadership, construction included all necessary wood fabrication techniques to produce quality car bodies. Harlan's exacting nature and insistence on a high standard of work was well known throughout the industry. For example, when he noticed a small wood defect on a finished railroad car, he exclaimed, "There is but one style of car that shall go out

⁵⁷Henry T. Gause, SemiCentennial Memoir of the Harlan and Hollingsworth Company: The Official History of the Concern (Publisher Unknown, 1886), 129, 134.

of these shops . . . and that is a perfect one!"⁵⁸ During and after the 1840s, Harlan's insistence on quality craftsmanship culminated in the company's reputation as fine shipbuilders, especially river steamboats.⁵⁹

Desiring to expand their business to include marine work, Betts and Pusey moved their machine, smith, boiler, and fitting-up shops into a new, larger building complex on West Street near the Philadelphia, Wilmington, and Baltimore Railroad. In 1841, Elijah Hollingsworth purchased Mr. Pusey's interest and the company subsequently became Betts, Harlan, and Hollingsworth. Before joining Betts and Harlan, Hollingsworth worked as a machinist and foreman at Baldwin Locomotive Works in Philadelphia, Pennsylvania.⁶⁰

With the addition of Hollingsworth's boiler and engine expertise, the company began marine engine work in 1843. The first marine job included fitting out the wooden steamer *Sun* with a new engine cylinder and assorted machinery

⁵⁸Ibid., 145.

⁵⁹Tyler, The American Clyde, 7, 13.

⁶⁰William H. Collins, "History of Bethlehem's Wilmington Plant: Formerly the Harlan & Hollingsworth Corporation," History of Bethlehem's Shipyards: Advance Copies of Papers to be Presented at Annual Meeting, Nov. 11-12, 1943 (New York: The Society of Naval Architects and Marine Engineers, 1943), No. H-21, 1.

parts.⁶¹ Expecting to increase their marine work to include hull construction, the company leased a launching berth from the Wilmington Whaling Company along the Christiana River.⁶² This berth, which included two launching ways, accommodated vessels up to six-hundred tons. By 1843, approximately 150 workers labored in the shops, but the most important employee was "Old Betts," a large, black mare used to transport iron plate and bar from the West Street machine shop to the company's leased shipyard.⁶³

In 1844 the company manufactured its first three iron steamboats, the *Ashland*, *Ocean*, and *Bangor*. These represented three of the first iron, steam-driven vessels produced in the United States. The *Bangor*, because she was the first transoceanic, propeller steamer produced in an

⁶¹Ibid., 1; Gause, SemiCentennial Memoir of the Harlan & Hollingsworth Company, 212.

⁶²Wooden shipbuilders Thomas Young, William Thatcher, and Abner Thatcher, of the Wilmington Whaling Company, leased the facilities to Betts, Harlan, & Hollingsworth. Prior to 1851, the Wilmington Whaling Company provided all the joiner work and ship carpentry for the company's steamers. See Gause, SemiCentennial Memoir of the Harlan & Hollingsworth Company, 212-213.

⁶³Tyler, The American Clyde, 7; Collins, "History of Bethlehem's Wilmington Plant," 1; Surprisingly, Old Betts survived a tornado that killed two iron workmen and destroyed H. & H.'s shipyard in 1844. Although wedged under collapsed timbers, she was otherwise unhurt. See Gause, SemiCentennial Memoir of the Harlan & Hollingsworth Company, 221-223.

American yard, received a great deal of attention. Betts, Harlan, and Hollingsworth built the *Bangor* in eight months and her construction consisted of iron bar ribs secured to a "clinker" style hull using iron clamps.⁶⁴

Mahlon Betts retired in 1849 and the company's name subsequently became Harlan & Hollingsworth (H. & H.).⁶⁵ By 1851, H. & H. ended their lease with the Wilmington Whaling Company, and purchased their own facility at the foot of West Street. The new yard included a pair of wooden shears for masting vessels as well as a number of launching ways. Throughout the 1850s, H. & H. rapidly acquired new waterfront yards, expanded existing machine shops, and built new wharfs, carpenter sheds, boiler shops, office buildings, cranes, and generally enlarged their facilities to manage the company's increasing business.⁶⁶

Between 1844 and 1860, Harlan and Hollingsworth steadily increased the volume of their shipbuilding while continuing to build railroad cars. The following statistics document the company's overall growth (See Table II):

⁶⁴This style of framing will hereinafter be cited as clamp-over-bar; Ibid., 215-221; Tyler, The American Clyde, 8; Collins, "History of Bethlehem's Wilmington Plant," 1-2.

⁶⁵Harlan and Hollingsworth hereinafter abbreviated to H. & H.

⁶⁶Gause, SemiCentennial Memoir of the Harlan & Hollingsworth Company, 239-240.

TABLE II

Harlan and Hollingsworth's Growth

Year	Average # of Employees	Average Weekly Wages	Gross Business
1836	20	\$ 50-100	\$ 6,580.79
1838	45	\$ 307	\$ 63,374.44
1842	120	\$ 190.44	\$ 40,531.45
1850	225	\$1,200.00	\$159,742.18
1855	280	\$1,800.00	\$293,662.18
1860	630	\$3,850.00	\$580,427.44

Source: Collins, "History of Bethlehem's Wilmington Plant."

The expanding nature of H. & H. illustrated in Table II corresponded nicely to the company's aggregate vessel tonnage produced during the 1840s and 1850s. For example, in the nine year period from 1841 to early 1850, H. & H. produced a total of only 3,400 tons. Conversely, in 1851 alone, the company's output was 1,770 tons. Vessel construction continued on a similar basis for each year between 1851 and 1860. As a result, during the 1850s, the company generated five times the vessel tonnage as was produced during the 1840s.⁶⁷

Owing to Harlan & Hollingsworth's increase in iron shipbuilding during the 1850s, the company's gross business nearly quadrupled by 1860. The company's gross business in 1860 (Table II) encompassed three categories of work:

⁶⁷Ibid., 237-238.

General repairs, railroad car building, and iron shipbuilding. General repairs to railroad and vessel machinery represented \$22,108.79 of the company's total work. While still an important facet of the company's overall business in 1860, income from building railroad cars amounted to \$101,792.75. Shipbuilding now superseded general repairs and car building and accounted for \$456,525.90 in gross revenue, or almost 80 percent of H. & H.'s income.⁶⁸ In only twenty-four years since the company's founding in 1836, H. & H. changed drastically from only building railroad cars to concentrating mostly on iron shipbuilding.⁶⁹

Harlan and Hollingsworth began construction on the

⁶⁸Collins, "History of Bethlehem's Wilmington Plant," 2; Gause, SemiCentennial Memoir of the Harlan & Hollingsworth Company, 233-234.

⁶⁹Harlan and Hollingsworth continued iron and steel vessel production during and after the Civil War. In 1917, Bethlehem Shipbuilding Corporation, Ltd., purchased H. & H. and by 1926 shipbuilding and railroad car production ended when the company transferred to miscellaneous fabrication and machinery work under Bethlehem Steel Company. Overall, H. & H. built 500 vessels between 1843 and 1926--mostly sea or river-going passenger and freight steamers, as well as a number of ferryboats. They also built an additional 400 fifty-foot tank lighters and invasion barges during World War II. Christopher Baer, Harlan and Hollingsworth Corporation, Accession 1699, Shipbuilding: Harlan and Hollingsworth file, Underwater Archaeology Unit, Division of Archives and History, North Carolina Department of Cultural Resources, Kure Beach, North Carolina; Collins, "History of Bethlehem's Wilmington Plant," 3-5.

Louisiana in 1860, under contract by Stephen and James M. Flanagan. The relationship between H. & H. and Stephen Flanagan actually originated as early as the 1840s. The *Ocean* and the *Ashland*, the company's first two steamboats, formed the first line of steamers to run, via the Atlantic Ocean, between Philadelphia and New York in 1844. In November 1844, the *Ashland*, owned by Philadelphia's George W. Aspinwall, steamed to Troy, New York, carrying a load of coal. She returned to Philadelphia with barley and grain loaded in Albany, New York, by Stephen Flanagan. After additional open ocean trips between Philadelphia and New York in 1844, the business venture ended. Nevertheless, during 1845 and 1846, Stephen Flanagan managed a similar line between Philadelphia and New York through the Delaware and Raritan Canal.⁷⁰

Fourteen years later, in 1860, Flanagan, and his brothers James M. and Daniel Flanagan, ordered three vessels from H. & H. The first two, the *Adriatic* and the *Champion*, were identical 120 ton, steam-driven tugboats.⁷¹ Both

⁷⁰Very similar to the purchases made in 1861 after the Civil War broke out, the U. S. Navy purchased the *Ashland* and the *Ocean* in 1846 for service during the war with Mexico; Gause, SemiCentennial Memoir of the Harlan & Hollingsworth Company, 231-232.

⁷¹H. & H. built a third tugboat, the *S. F. Dupont*, for S. & J. M. Flanagan in 1862. Weighing in at 160 tons and

measured sixty-five feet in length, fifteen feet in breadth, six feet in depth and were probably intended for canal service as towboats.⁷²

The third vessel ordered by the Flanagan brothers, H. & H.'s seventy-first hull, was the *Louisiana*, an iron-hulled, screw-propelled steamer. Her length was 147 feet on deck and 140 feet at the load line with a forward and aft draft of seven feet. Her molded beam measured twenty-seven feet and her depth of hold was eight feet with a depth between bilge and spar deck equaling fifteen-feet, six-inches. The *Louisiana's* tonnage equaled 353.45 tons and her loadline displacement was 438 tons.⁷³

The *Louisiana's* iron construction consisted of an interesting mix of fabrication techniques. Her hull plating mirrored contemporary British techniques while her framing, and the method by which her frames were attached to the hull, was not characteristically British or American. For example, the *Louisiana's* frames were not made of angle iron,

measuring 80' x 18' x 8'6," she was slightly larger than the *Adriatic* and the *Champion*.

⁷²Gause, SemiCentennial Memoir of the Harlan & Hollingsworth Company, 379-380.

⁷³John F. Frazer and others, ed., "Particulars of the Steamer *Louisiana*," Journal of the Franklin Institute, Third Series, Vol. 41, Whole No. Vol. 71, (Philadelphia, Pennsylvania: Franklin Institute, 1861), 179.

but consisted of iron bars three inches wide by 3/4 inch thick. These iron bar frames were spaced sixteen inches on center, and probably secured to the hull plating by wrought iron clamps riveted over the bars, a technique referred to as clamp-over-bar. Angle iron construction, predominant in British vessels built between 1840 and 1860, was not all that uncommon in American steamers either. Several early American steamships, such as the *United States* (1838), the *Valley Forge* (1839), the *Michigan* and *Allegheny* (1843), and the *John Stevens* (1845), possessed angle iron construction.⁷⁴ Apparently, the clamp-over-bar framing technique used in the *Louisiana's* construction was standard in H. & H. built steamers during the 1840s and 1850s. Other H. & H. vessels exhibiting clamp-over-bar framing include, the *Ashland*, *Ocean*, and *Bangor*, all of which were built during the 1840s, and the *Curlew*, which H. & H. launched in 1856.⁷⁵

While the *Louisiana's* framing did not imitate

⁷⁴Morrison, "Iron and Steel Hull Steam Vessels of the United States," No. 1556, 28 October 1905, 24928, 24930; No. 1557, 4 November 1905, 24943.

⁷⁵Murray, Pracitce of Shipbuilding, 77, 94-95; Grantham, Iron, 10-21; Gause, SemiCentennial Memoir of the Harlan & Hollingsworth Company, 216, 230; Christopher Olson, "Curlew Site Investigated," Stem to Stern (Greenville, North Carolina: East Carolina University Program in Maritime History and Nautical Archaeology), Vol. 10, Winter 1995, 19.

established British or American iron construction practices, the method used in assembling her hull plating appeared to be "current" according to British and American standards. Her hull construction consisted of nine strakes of iron plate from keel to gunwale that measured $3/8$ inch thick near the keel and narrowed to $5/16$ inch thick near the gunwale. At what point the strakes changed in thickness from $3/8$ to $5/16$ inch is not known. These plates were double riveted to each other using $5/8$ inch diameter rivets, probably in the "clinker" fashion, according to similar British and H. & H. techniques used during the 1840s and 1850s.

Her hull construction also included eight fore-and-aft keelsons, or bilge stringers, in place of a single keelson. The stringers were shaped like 'T' iron and measured fourteen inches high by $3/4$ inches thick.⁷⁶ John F. Frazer described them as 'T' shaped, but failed to specify whether they were single, forged pieces of iron or if they were composed of two iron bars clamped together to form a 'T' shape. As a result, whether these keelsons were forged angle iron, or were simply consistent with H. & H.'s clamp-over-bar framing technique, is not known. The *Louisiana's* keel, which measured only four inches in depth, probably

⁷⁶Grantham, Iron, 13-19; Murray, Practice of Shipbuilding, 74-79, 94-99; Frazer, "Louisiana Particulars," 179.

resembled the four inch, hollow, semi-circular keel discovered on the *Curlew*.⁷⁷

The *Louisiana's* machinery, located in a thirty-five foot engine and boiler room, consisted of one "independent steam, fire, and bilge pump," one boiler, one steam engine, and one propeller shaft.⁷⁸ The inverted, direct-acting engine weighed 43,334 pounds, possessed a thirty-two inch diameter cylinder, and a two-foot, four-inch stroke with a cut-off at half-stroke. The engine's maximum steam pressure equaled thirty pounds and generated eighty-four revolutions per minute at that pressure. Her return-flue boiler contained two furnaces, twenty-six flues, and measured eighteen feet in length by seven-feet, nine-inches in breadth by seven-feet, three-inches in height, not including the smoke chimney which was three feet in diameter and thirty-three feet in height. The boiler, when fully loaded with water, weighed 35,760 pounds, possessed a grate surface of thirty-four square feet, a heating surface of 843 square feet, and consumed approximately 560 pounds of fuel per hour. The *Louisiana's* four bladed propeller, probably of R. F. Loper's design, measured eight-feet, two-inches in

⁷⁷Olson, "Curlew Investigated," 19.

⁷⁸Frazer, "Louisiana Particulars," 179.

diameter, four feet in length, and possessed a fifteen foot pitch.⁷⁹

By December 1860, Harlan and Hollingsworth finished building the *Louisiana*, tested her machinery and sailing qualities, and delivered her to Stephen, James, and Daniel Flanagan. On 2 January 1861, the Flanagan brothers registered her in the port of New Orleans, Louisiana, with Robert Kirby as her master. Stephen and James M. Flanagan, both Philadelphians, each owned 7/16 of the *Louisiana* while the final 2/16 share belonged to Daniel Flanagan of New Orleans, Louisiana.⁸⁰ Although constructed in Wilmington, Delaware, and primarily owned by Philadelphians, the *Louisiana* was not intended for east coast trade. By February 1861, she had moved to New Orleans and operated in the Gulf of Mexico between Louisiana and Texas. With only three months remaining before the outbreak of war and the corresponding Union naval build-up, however, the *Louisiana's* commercial life proved short.

⁷⁹Ibid., 179.

⁸⁰Temporary Proof of Ownership of a Ship or Vessel to Be Registered, Vessel Register Records, Record Group 41, National Archives, Washington, D. C.

CHAPTER III

U. S. Navy Tactics Used in Blockading North Carolina

"The blockade is intended to interdict all trade whatever with the country blockaded by the North Atlantic Blockading Squadron from the Piankatank River, Chesapeake Bay, southward to South Carolina."

S. P. Lee, Acting Rear-Admiral, Commanding
the North Atlantic Blockading Squadron

Many histories chart the building, maintenance, and use of the Union blockade during the Civil War. Although numerous sources exist, few have developed the importance of tactics employed in confronting the Confederate army, navy, and civilian population.⁸¹ Most histories focus solely on the exciting adventures of notorious blockade runners or highlight a few of the better known open-water naval duels, such as the *C.S.S. Alabama* versus the *U.S.S. Kearsarge*.⁸² After discussing great naval battles and the lives of a few daring businessmen, however, Civil War maritime historians may question exactly how the Federal navy exercised the blockade on a daily basis.

⁸¹See Virgil Carrington Jones, The Civil War at Sea, 3 vols. (New York, New York: Holt, Rinehart, Winston, 1960-62); Anderson, By Sea and by River; Fowler, Under Two Flags; West, Mr. Lincoln's Navy. See additional general histories of the U. S. Navy listed in the Bibliography.

⁸²For example, Dave Horner, The Blockade Runners: True Tales of Running the Yankee Blockade of the Confederate Coast (New York, New York: Dodd, Mead, 1968); William Morrison Robinson, The Confederate Privateers (New Haven, Connecticut: Yale University Press, 1928).

Realizing that much has been written on blockade running and the closing of major North Carolina ports, such as Wilmington, research must now focus on naval tactics used in the sounds of eastern North Carolina. An effective way to investigate inland water operations along the North Carolina coast is to analyze, in detail, a particular Union vessel that served in that sector. By examining the war career of the *U.S.S. Louisiana* a number of Union tactics are revealed. Although the author understands the *Louisiana* is only a single vessel out of hundreds operating along the Atlantic coast, her length of service and combat experience exemplified Union operations during the war, especially in the sounds of North Carolina.

The *Louisiana* did not begin her career as a Navy vessel, nor was she purposely built for service as a warship. Under contract by the Flanagan brothers, Harlan and Hollingsworth built the *Louisiana* for coastal trade in Southern rivers and the Gulf of Mexico. In early February 1861, New Orleans became the home port for the *Louisiana*. After her December 1860 trial, she moved to the Gulf of Mexico to begin service under Daniel Flanagan's ownership; understanding that Philadelphia's Stephen L. and James M. Flanagan jointly controlled 14/16 of the new steamer. With Robert Kirby as the *Louisiana's* master, she began a regular

trade run between New Orleans and ports along the Texas coast.

On 26 February 1861, the *Louisiana* arrived in New Orleans from Lavaca, Texas. At the wharves of Goldenbow and Lesparre, crews unloaded 253 bales of cotton, 121 cow hides, and 46 sacks of pecans to a number of New Orleans receiving companies.⁸³ Between 10 February and 7 May 1861, the *Louisiana* made six round-trip voyages between New Orleans and Texas. During that time, she visited three main Texas ports, Lavaca, Indianola, and Saluria, but the usual run was between New Orleans and Lavaca. Although Texas imports to Louisiana included pecans, turtles, and sundries, the three primary cargoes consisted of cotton, hides, and cattle. Louisiana exports, which were produced in the Atchafalaya River and Bay area, but shipped from New Orleans, included molasses, candles, sugar, bacon, groceries, whiskey, salt, coffee, sundries, and general merchandise. The most common goods shipped from Louisiana onboard the *Louisiana* included corn and flour.⁸⁴

When the war began on 12 April 1861, the *Louisiana* was

⁸³The Times Picayune, New Orleans, Louisiana, 26 November 1861.

⁸⁴The Times Picayune and The Daily True Delta, New Orleans, Louisiana, 10 February to 7 May 1861.

only five months out of Harlan and Hollingworth's Wilmington, Delaware, shipyard. Although she successfully completed six round-trip voyages between Louisiana and Texas in early 1861, April and May brought decreasing exports and imports as well as a Union blockade.⁸⁵ As a result, Daniel L. Flanagan quickly sold his remaining 2/16 share of the *Louisiana* to Stephen and James Flanagan in May 1861.⁸⁶ On 11 May, the *Louisiana* departed New Orleans in ballast, rounded Key West, Florida, on 16 May, and proceeded to Philadelphia where she arrived on 23 May 1861.⁸⁷

At a time when the navy purchased every available iron, steam-driven vessel on the Atlantic seaboard, the *Louisiana* remained only a short time on the Delaware River. After being in ordinary from 23 May to early July, a government agent stationed in Philadelphia purchased the *Louisiana* for \$35,000 on 10 July 1861.⁸⁸ By August, 1861, she was refitted, commissioned, and serving as a blockade vessel off the Virginia coast.

⁸⁵Ibid., May to June 1861.

⁸⁶Proof of Ownership of a Ship or Vessel to Be Enrolled, Vessel Enrollment Records, Vol. E-47, RG-31, National Archives, Washington, D. C.

⁸⁷The Philadelphia Inquirer, 23 May 1861.

⁸⁸Senate Executive Document No. 1, 128.

When the Confederates captured Norfolk, Virginia, in early 1861, southeastern Virginia and northeastern North Carolina became an important logistical lifeline for the Confederate armies in northern Virginia: Supplies entered the sounds of North Carolina via Hatteras and Ocracoke inlets, passed through the Dismal Swamp Canal, as well as the Albemarle and Chesapeake Canal, and eventually reached Confederate armies in Virginia by rail.⁸⁹ In addition to the flow of supplies entering North Carolina, Rebel commerce raiders stationed in northeastern North Carolina at Hatteras and Ocracoke preyed on Union vessels passing along the Atlantic coast. The Navy Department realized that continued Rebel commerce raiding coupled with the effective logistical link between North Carolina and Virginia made eastern North Carolina a primary target for invasion.

A joint amphibious operation against eastern North Carolina proved advantageous to the Union war strategy in a number of ways. First, by occupying the region, Confederate commerce raiders could no longer use the area as a base of operations. Second, by stationing Union warships in the sounds and deploying army units throughout the region, Federal forces effectively disrupted the Confederate supply

⁸⁹Daniel Ammen, The Atlantic Coast (Wilmington, North Carolina: Broadfoot Publishing Company, 1989), 163-164.

line to Virginia. Finally, and perhaps most importantly, after Federal army and navy forces remained in eastern North Carolina, the Union created an additional, secondary front south of Virginia. This was important for two reasons. Not only did a strong Union presence in eastern North Carolina threaten Richmond with an attack against its rear, but Rebel units needed to move south from Virginia to guard against further Union encroachments into the Carolinas. Ultimately, this decreased the size and strength of the Army of Northern Virginia--a critical factor to the Army of the Potomac in the battles of Virginia, Maryland, and Pennsylvania.

Fort Hatteras, guarding Hatteras Inlet, was the first target in the campaign against North Carolina. The fort, and subsequently Hatteras Inlet, fell to a joint operation under the command of Flag-Officer Silas H. Stringham and Major-General Benjamin F. Bulter 28 August 1861.⁹⁰

In January 1862, the *Louisiana* entered North Carolina's sounds, and although she failed to participate in the August 1861 attack against Fort Hatteras, she entered action 7 February 1862 against Roanoke Island--the second objective in the Union strategy against North Carolina. Under the command of Flag-Officer L. M. Goldsborough and Major-General Ambrose E. Burnside, the joint operation against Roanoke

⁹⁰Ibid., 167-169.

Island and the small Rebel fleet, nicknamed the "Mosquito Fleet" owing to its size, proved a complete success. The *Louisiana*, Alexander Murray commanding, shelled Confederate artillery batteries on the island and supported Federal infantry during the amphibious landing.⁹¹

After the battle of Roanoke Island, the *Louisiana* remained in North Carolina's sounds where she served the entire war until her destruction 24 December 1864 off Fort Fisher, North Carolina, in a failed attempt to close Wilmington to blockade runners.⁹² Although the December assault proved a blunder, Fort Fisher and Wilmington eventually yielded to a second joint army and navy assault in January 1865. As a result, the last open port to Confederate commerce fell into Union hands.

Although constructed for commercial use, the *Louisiana* incorporated much of the technology favored by the U. S. Navy during the mid-nineteenth century. Her iron hull and screw propulsion foreshadowed the technology that would alter the course of the Civil War and propel naval architecture into the twentieth century. The *Louisiana's*

⁹¹Ibid., 178-188.

⁹²For a detailed discussion on the 24 December 1864 attack on Fort Fisher, see Chapter IV and V as well as, O.R.N., Series I, 11: 207-245.

low displacement of 295 tons and eight-foot draft often allowed her to navigate in relatively shallow water. In addition, her artillery complement of one eight-inch gun, three thirty-two pounders, and one rifled twelve pounder gave her the firepower to enforce the blockade.⁹³

Understanding that shallow-drafted vessels could navigate the inlets into North Carolina's sounds, the Navy Strategy Board convened and issued a series of reports. In the third report, dated 16 July 1861, the board recommended the obstruction of North Carolina's inlets by sinking hulks as a means of restricting navigation.⁹⁴ Confederate traffic

⁹³Although the *Louisiana* was initially armed with four 32-pounders, her armament changed several times throughout the war. Additional armament included a 12-pounder howitzer, which became standard for small boat operations, as well as a six-inch or eight-inch gun in place of a 32-pounder. Owing to a seemingly chronic lack of large ordnance, most gunboat commanders complained that they lacked guns with enough power and range to adequately engage the enemy. See, O.R.N., Series I, 6: 194.

⁹⁴The third report, one of five issued by the board, entitled *Coast of North Carolina, Its Sounds and Inlets*, endorsed the idea of sinking stone-filled hulks in the major inlets leading into the sounds. The Board believed this would stop traffic completely or at least restrict movement in and out of the sounds. Unfortunately, of the twenty-two hulks purchased, only three were ever used to block a North Carolina Inlet--all three at Ocracoke. Much to the chagrin of the naval planners, blocking one inlet was a total failure. The Confederates either found a new channel to enter the obstructed inlet or found an altogether different entrance into the sounds. O.R.N., 12: 198-201.; Hayes, Samuel Francis du Pont., 103-104; Arthur Gordon, "The Great Stone Fleet of the Civil War," Great Naval Battles of the Civil War, v. 1, n. 1, 1994, 52.

was not checked at the inlets, however, especially during the first two years of the war when obstructions were not in place and the Union fleet was lacking in numbers. As a result, the navy positioned ships in the sounds themselves to enforce the blockade. After clearing the outer banks with the victory at Hatteras Inlet, Union vessels operated according to specific instructions periodically distributed by the Navy Department. For example, the navy established detailed guidelines for the launching and landing of boats, the chasing of blockade runners, the positioning for night and day anchorage, collision prevention, the capturing of prizes, refueling, resupplying, and repairing.⁹⁵

When analyzing the movements of the *U.S.S. Louisiana* during the war, several distinct obstacles and tactics emerge. Problems such as geographical and weather conditions, Confederate resistance, and logistical difficulties hindered the effectiveness of the *Louisiana* and other blockaders operating in North Carolina's sounds. Individual vessels, which operated according to previously issued guidelines, developed small boat and joint operations to alleviate many blockading problems.

Traditional artillery duels with Confederate warships

⁹⁵For a more complete listing of both blockading strategy instructions and blockading tactical instructions,

represented only a small fraction of the *Louisiana's* total engagements. During four years as a member of the North Atlantic Blockading Squadron, the *Louisiana* exchanged artillery rounds with an enemy vessel only once. While stationed off Newport News, Virginia, 14 September 1861, the Rebel steamer *Patrick Henry* approached from up the James River late in the afternoon and bombarded the *Louisiana's* position. After surviving the initial shelling, Lieutenant Murray got the *Louisiana* underway and positioned her to respond. Two shells from the *Louisiana's* 6-pounder, later replaced with larger ordnance, scored direct hits, but inflicted no serious damage. A land battery and two additional Union vessels, the *U.S.S. Savannah* and the *U.S.S. Cumberland*, joined the fray before the Confederate steamer retired from the engagement. The army battery scored a hit, but the *U.S.S. Savannah's* firing proved inaccurate and the *U.S.S. Cumberland's* rounds fell short of their mark.⁹⁶

The creeks, rivers, and sounds of North Carolina presented problems quite different from those experienced by blockaders stationed elsewhere along the Atlantic coast. Shallow water, narrow waterways, and high river banks

see APPENDIX B and APPENDIX C.

⁹⁶O.R.N., Series I, 6: 208-209.

presented serious obstacles for vessels attempting to operate in eastern North Carolina. As early as 16 July 1861, the Blockade Strategy Board issued a report on the condition of North Carolina's inlets including water depth, the location of bars, and the presence or lack of obstructions in each case.⁹⁷ Although covering almost all the entrances into North Carolina's inland waters, this report presented no information on the condition of the sounds and rivers once beyond the outer banks. As a result, further reconnoitering fell to individual vessels as they advanced into various riverine areas.

When Second Assistant Engineer J. L. Lay returned to the *U.S.S. Louisiana* after an assignment up the Tar River, North Carolina, he reported on the condition of the water.

The river is navigable for vessels drawing 5 or 6 feet of water as far as Yankee Hall (about 9 miles above Washington). From there up . . . in order to pass . . . would require a vessel not drawing more than 4 feet. Three miles this side of Greenville is a bar extending from both sides of the river . . . the greatest depth of water found was 3 1/2 feet. Above that is another bar, which I also sounded and found at the greatest depth 3 feet . . . At Boyd's Ferry, on the port side passing up, the bank varies in height from 5 to 35 feet and extends about one-fourth of a mile, and as vessels in descending are compelled to approach that shore, affords an excellent protection to the enemy.⁹⁸

⁹⁷Ibid., 12: 198-201.

⁹⁸Ibid., 8: 205-206.

Engineer Lay continued his report with additional water soundings and more detailed information on the Tar River's surrounding topography.⁹⁹

Lay's report introduces the problem of shallow water combined with high river banks experienced by Union blockaders maneuvering in narrow waterways. Shallow water not only restricted the operating range of Union vessels, but high river banks granted excellent protection to Confederate infantry and artillery. Firing on Yankee ships from positions as much as twenty feet above deck-level, Rebel guns could deliver plunging fire at close ranges. Unable to adequately turn in the narrow creeks and rivers and further plagued by shallow water, Federal vessels often became easy targets for entrenched Confederate guns. By 22 August 1862, Secretary of the Navy Gideon Welles:

had no faith that light-draft gunboats would be a safe and reliable means of frontier river-defense. They might be auxiliary and essential aids to the army, but they cannot carry heavy armament, are frail, and in low stages of the water, with high banks which overlook the river, would not be effective and could hardly take care of themselves, though in certain cases, and especially in high water, they might greatly aid the army.¹⁰⁰

⁹⁹Ibid., 8: 206.

¹⁰⁰John T. Morse, Jr., Diary of Gideon Welles: Secretary of the Navy Under Lincoln and Johnson, with an introduction by John T. Morse, Jr. (Boston: Houghton Mifflin Company, 1911), 1: 90.

Further complicating the problem of shallow, narrow, high banked waterways was the formation of the Confederate Submarine and Torpedo Service. Developing various impact and electrically detonated torpedoes during the war, this service not only engaged in the mining of North Carolina's waters, but also obstructed waterways by driving piles or sinking hulks.¹⁰¹ The combination of mines, piles, and sunken obstructions placed in strategic locations only increased the threat to Union vessels.

Since North Carolina's sounds introduced a multitude of problems not experienced elsewhere along the coast, the North Atlantic Blockading vessels developed a unique set of tactics. By far the most important and successful tactic used by Union vessels stationed in North Carolina was the dispatching of small boats. Continuous post duty or shallow water often limited operating ranges for the navy's larger vessels.¹⁰² To effectively interdict Rebel activity, small

¹⁰¹For a complete and excellent source on the Confederate Submarine and Torpedo Service, see Milton F. Perry, Infernal Machines: The Story of Confederate Submarine and Mine Warfare (Louisiana State University Press, 1965).

¹⁰²Due to the limited number of vessels stationed in the sounds and the problem of towns being close by land, but far by sea (for example, Washington and Plymouth, North Carolina) the ability of blockaders to leave one post in support of a second would leave the first in the dangerous predicament of attack by land. For example, if Union vessels left Plymouth unprotected to support ships at the

boats, dispatched from anchored gunboats, such as the *Louisiana*, regularly patrolled areas inaccessible to larger vessels. For example, crews dispatched from the *Louisiana* typically consisted of fifteen or twenty-man teams in oared launches. Usually armed with Sharp's carbines, pistols, swords, and possibly supported by a small artillery piece placed on the launch, these "hunter-killer" expeditions were quite successful in narrow and shallow waterways. Beyond burning Confederate vessels in the sounds, these expeditions often captured and incorporated prizes into the U. S. Navy, reconnoitered Confederate positions, and captured or destroyed Rebel supplies. During the war, the *Louisiana* launched several missions into Core Sound, Tranter's, Pungo and Goose Creeks, Rose Bay, and the Tar [Pamlico] River.¹⁰³

On 9 November 1862, when J. L. Lay, second assistant engineer on the *Louisiana*, led a joint operation up the Tar River

with the following forces: The steamer *North State*, mounting one 24-pounder howitzer and 6 men from the Marine Artillery; a Launch with one 12-Pounder howitzer and 17 men from the steamer

besieged town of Washington, the Confederate army could quickly withdraw their forces from Washington and advance on Plymouth. This area of North Carolina was particularly difficult for the U. S. Navy to protect.

¹⁰³O.R.N., Series I, 8: 204-206, 656-657; 9: 34, 198; 10: 162, 154-155, 570.

Chasseur; a flatboat and 17 men of the First North Carolina Regiment, in charge of Lieutenant [John B.] McLane, and 14 men from this ship with a howitzer, in care of E. A. McDonald, gunner.¹⁰⁴

This motley collection of army and navy forces burned a bridge, captured ten prisoners, and temporarily secured the town of Greenville, North Carolina. Moreover, the mayor of Greenville peacefully surrendered the town almost without casualty--one marine died after a Confederate sniper fired on the expedition.¹⁰⁵

Since the launching of small boats represented the usual tactic for patrolling eastern North Carolina, the navy rarely patrolled the region with larger gunboats. In most cases, the Union's larger vessels remained anchored at strategic locations throughout the sounds. Towns such as Washington, Plymouth, and New Berne remained important resupply, repair, and refueling centers. Except for Wilmington, the Navy Department positioned warships at all of North Carolina's important ports within the sounds. Vessels usually maintained continuous post duty at a particular home port and only left a station when in retreat, for repairs, for refueling, or if on patrol.

Union gunboats stationed in the sounds of North

¹⁰⁴Ibid., 8: 205.

¹⁰⁵Ibid., 8: 204-206.

Carolina mostly functioned as floating bases and launched small boat operations to patrol the region. The *Louisiana*, normally anchored at Washington, North Carolina, directly participated in short "hunt and destroy" cruises, but usually dispatched small boats instead. The *Louisiana* occasionally cruised the Pamlico River and would ordinarily rotate with various other steamers, usually the *U.S.S. Valley City*, every two or three weeks.¹⁰⁶ In addition, in November 1862, the *Louisiana* captured the schooner *Alice L. Webb* in Rose Bay, North Carolina, without the use of small boats.¹⁰⁷ In most cases, however, small boat operations proved critical to successfully finishing such "hunt and destroy" operations.

As previously alluded in the expedition to capture Greenville in November 1862, the *Louisiana* not only functioned as a single naval unit, but also participated in joint army-navy operations throughout the sounds. Most engagements involved the shelling of enemy artillery batteries on shore or launching small boats to assist in the landing of troops and the capturing of enemy positions. For example, the *Louisiana* assisted Federal infantry in the

¹⁰⁶Ibid., 10: 86-87, 122, 152, 323-324.

¹⁰⁷Ibid., 8: 204.

bloodless capture of Washington, North Carolina, 21 March 1862. Six months later, the *Louisiana* was the deciding factor against Confederate infantry attempting to retake the town.¹⁰⁸ According to Major-General J. G. Foster, U. S. Army, as the Confederate infantry poured into town, "The gunboat *Louisiana*, Captain Renshaw, U.S. Navy, rendered most efficient aid, throwing her shells with great precision, and clearing the streets, through which her guns had range."¹⁰⁹

Much like amphibious operations in World War II, the *Louisiana* also provided close support for landed Union infantry by shelling Confederate troops and artillery positions. The *Louisiana* participated in several major battles for control of eastern North Carolina in which she provided close support--the battle for Roanoke Island February 1862, the capture of Edenton 11 February 1862, the capture of New Berne 13-14 March 1862, and two battles at Washington 6 September 1862 and 31 March to 16 April 1863.¹¹⁰

¹⁰⁸Ibid., 8: 6-9.

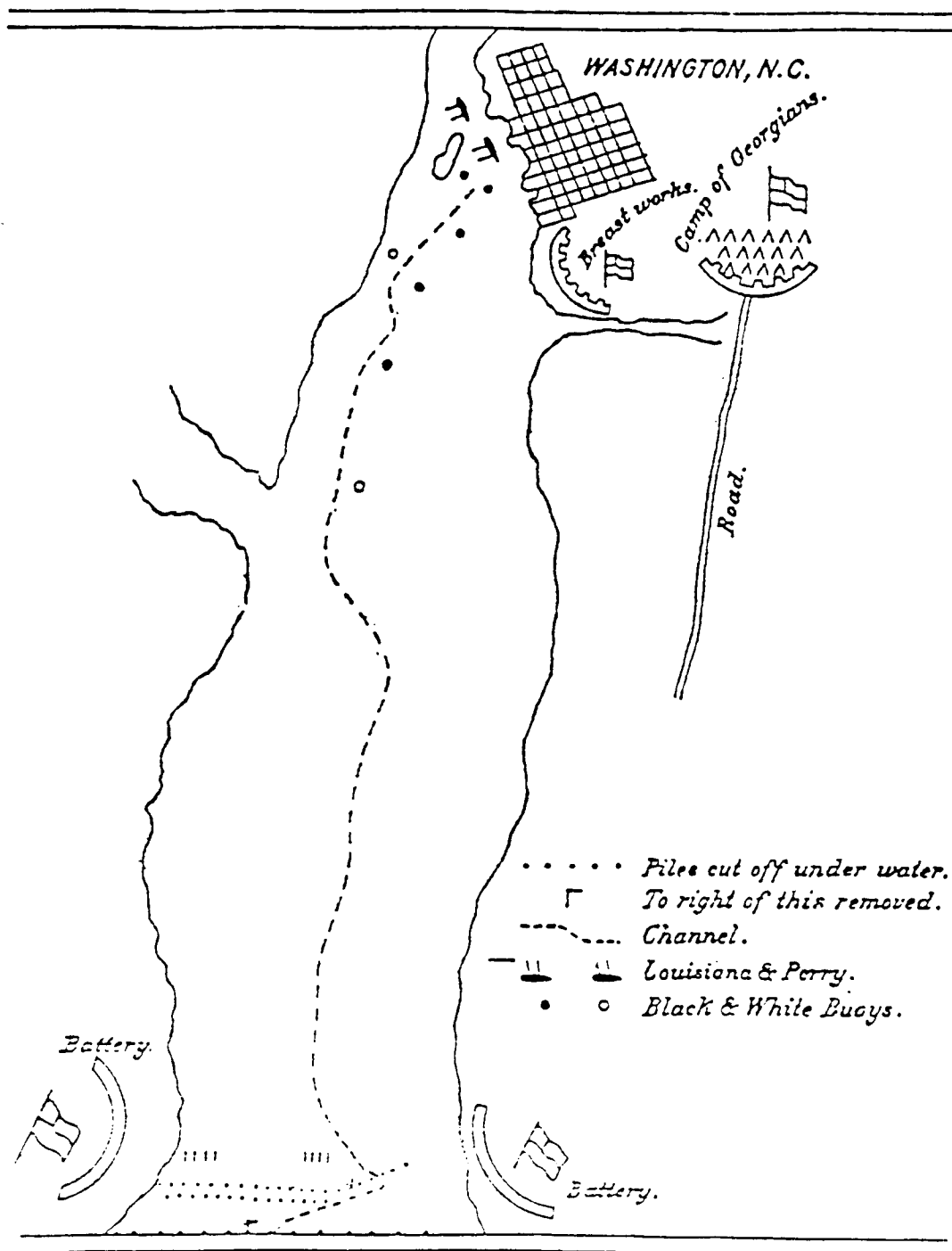
¹⁰⁹Ibid., 8: 8.

¹¹⁰Ibid., 6: 608-609, 637-639, 550-558, 581-594; 7: 108-120, 150-153; 8: 6-9, 650-700, 10: 154-155, 11: 207-273; The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies, Series I, 9: 236-237, 269-270; 18: 5-7, 213, 224, 241; 33: 312; 42: 977-980, 988-993 (Washington, D. C.: Government Printing Office, 1880-1901).

In all these actions, the *Louisiana* avoided water obstructions, Confederate torpedoes, and weathered the combined force of Rebel land-based artillery and small arms fire. Moreover, she effectively delivered rounds from her five guns in support of Union troops and fellow blockaders.

Between 31 March and 16 April 1863, the Confederates attempted a third time to retake Washington, North Carolina. This particular battle exemplified all the problems associated with blockading the sounds of North Carolina. Strong winds blowing out of the northwest decreased the water depth in the Pamlico River to only a few feet and made for difficult navigation. Below Washington, at a narrow point in the river, the Confederates maintained fortified artillery positions on Hill's and Swan's points and had erected a line of piles across the river between the two positions (See Figure 3). Not only did the *Louisiana* come under heavy Confederate gunfire, but reinforcements could not pass the obstructions and batteries downstream because of shallow water and accurate Rebel artillery.

The situation became critical when infantry reinforcements and resupply vessels could not reach the forces engaged at Washington. Steadily consuming their stock of food and water, as well as depleting their shot and

Figure 3:¹¹¹¹¹¹O.R.N., Series I, 7: 152.

powder lockers, the *Louisiana*, *Commodore Hull*, and *Ceres*, were badly in need of resupply. Consequently, they failed to support the troops fighting to hold the town. Union commanders realized that disabling the Rebel batteries at Hill's and Swan's points was essential before relief could arrive. Nevertheless, not until the second week of April did the navy dispatch idle vessels from throughout the sounds to engage the Confederate batteries and push supplies through to Washington. In the mean time, Federal forces used small boats to ferry supplies to the beleaguered *Louisiana* and her fellow blockaders.¹¹² Again, the tactical use of oared launches in the defense of Washington, North Carolina, demonstrated the importance of small boat operations during the war.¹¹³

Although the *Louisiana* cooperated extensively with the U. S. Army in joint operations, she also participated in a few unique maneuvers involving Virginia citizens. While stationed off Chincoteague Inlet, the *Louisiana* dispatched a force of small boats to investigate "a steam sawmill at the mouth of Swans Cug [Gut] Creek [that] was getting out lumber

¹¹²Ibid., 8: 656.

¹¹³For a complete and more detailed account of the March 31 to April 16 1863 battle at Washington, North Carolina, See O.R.N., Series I, 8: 649-700.

for the construction of a battery to resist the advance of the Federal troops, and also a floating battery to attack the *Louisiana*."¹¹⁴ Now-commander Murray instructed Lieutenant A. Hopkins, who commanded the expedition, to destroy the mill and any vessels the Confederates might have stationed in the creek. Besides the officers and twenty-five men from the *Louisiana*, the expedition consisted of five volunteers from Chincoteague Island. After destroying the mill, the party burned one schooner and two sloops in Swans Gut Creek. Apparently, the five volunteers from Chincoteague Island were not regular U. S. Army or Navy personnel, although Commander Murray was "fully persuaded of the fidelity of these islanders, and would recommend their being armed and organized to assist in suppressing the insurrection on this peninsula."¹¹⁵

Participating in joint navy-civilian operations, the *Louisiana*'s crew often gathered information throughout eastern North Carolina. Beyond the vast amount of wartime correspondence generated by the U. S. Navy, crew members often communicated with the civilian population. For example, in November 1861, Commander Murray received word

¹¹⁴Ibid., 6: 366.

¹¹⁵Ibid., 366.

from Francis Johnson, a citizen of Nashville on Chincoteague Island, who, ". . . can and will afford valuable information about everything."¹¹⁶

The capturing of prisoners also provided excellent intelligence on Confederate movements. Acting Lieutenant R. T. Renshaw, commanding the *Louisiana* in December 1862, received valuable information on the Confederate ram C.S.S. *Richmond* under construction at Norfolk, Virginia.¹¹⁷ This information was critical to the successful blockading of North Carolina's inland waters. Since Norfolk fell to Confederate forces early in the war, the Dismal Swamp and Albemarle/Chesapeake Canal, both connecting Norfolk with North Carolina, became important logistical waterways. Once blockade runners delivered material to Wilmington, goods moved northward either by rail or through the canals of eastern North Carolina. Unless the navy could obstruct or blockade these waterways, materials would flow northward to Norfolk, Virginia, and then on to the Confederate army in northern Virginia.

An additional threat came from Confederate rams under construction in Norfolk. If the canals remained opened or

¹¹⁶Ibid., 442.

¹¹⁷Ibid., 8: 282-283.

lightly defended, rams could steam south to play havoc with North Carolina. As a result, the U. S. Navy needed to maintain a strict blockade in the Albemarle Sound.¹¹⁸ Overall, captured information and active citizen support greatly eased the difficult situation of blockading North Carolina's waters.

Logistics in the sounds was simply a matter of retaining possession of numerous bases throughout the region. Once the navy secured Washington, Plymouth, Beaufort, and other coastal hamlets in the sounds, the U. S. Army constructed receiving areas to accommodate incoming materials. After these depots were in place, resupply vessels arrived periodically from the North to deliver necessary supplies. For example, once Union transports cleared the outer banks, war material, whether it was ammunition, food, coal, or any other war equipment, was off-loaded onto various resupply vessels or stored at selected bases. If lightering occurred, the resupply vessels then distributed the material throughout the sounds according to

¹¹⁸The Confederates were building ironclad rams and gunboats in the Norfolk and Dismal Swamp areas. O.R.N., Series I, 6: 631-633; 7: 307, 753; Ashby Dunn Elmore, "Military and Naval Operations in the Region of the Albemarle Sound, 1862-1864" (Master of Arts Thesis, East Carolina University, 1971).

need.¹¹⁹ Beyond their role as holding areas for incoming supplies, these bases also functioned as repair facilities for damaged vessels. In early February 1863, Commander A. Murray received word from J. L. Lay regarding repair facilities at Washington, North Carolina.

I made an examination of the foundry and blacksmith's shop located here and am satisfied they can be made serviceable. If necessary to make this a point for repairing vessels in these waters some workmen and tools will be required, also coals and an assortment of iron. I also examined the engines and boilers in several of the unemployed mills and find they can be put in running order.¹²⁰

Unfortunately, these local repair shops could not repair severe engine, boiler, or structural problems and were limited to making minor adjustments or providing basic maintenance. Since most bases in the sounds only provided limited facilities, the navy regularly dispatched seriously damaged vessels to Hampton Roads or Baltimore for extensive repairs.¹²¹ A breakdown in this complex logistical and repair system could easily result from the combination of shallow water, Confederate obstructions, and determined Rebel resistance. In desperate resupply situations, such as

¹¹⁹O.R.N., Series I, 6: 335-336; 8: 649-700; 9: 174.

¹²⁰Ibid., 8: 501.

¹²¹Ibid., 6: 470-471; 8: 501, 516; 9: 162, 174; 10: 31, 320, 323.

the two week battle at Washington, North Carolina, in April 1863, Union vessels relied on small boats or launches to deliver supplies.

Two important tactics are evident after analyzing the Union blockade of North Carolina--the *Louisiana*, as well as the U. S. Navy, could not have blockaded the sounds without small boat and joint operations. Moreover, beyond the actual battles involving these tactics, the U. S. Navy's complex logistical system relied on lightering, army-secured bases for resupplying, and small boats to distribute war material.

Nevertheless, many blockade runners successfully escaped the coastal blockade and delivered contraband to North Carolina. As a result, the task of halting distribution fell to army and navy forces actively occupying North Carolina's sounds. The *U.S.S. Louisiana*, and dozens of similar vessels, collaborated with the U.S. Army to blockade North Carolina. The resulting Union victory in 1865 depended heavily on small boat operations as well as this remarkable interservice marriage.

Despite the Union navy's limited success in blockading eastern North Carolina, as well as the large number of warships stationed off the Cape Fear River, Wilmington remained open to blockade runners until the end of 1864.

Wilmington's importance to the Confederate war effort cannot be overstated. Both the southern people and the Rebel army relied almost solely on the goods entering through the Cape Fear River on board blockade runners. General Robert E. Lee sent word to Colonel William Lamb, commander of Fort Fisher, which guarded the entrance to the Cape Fear River, that "Fort Fisher must be held [against Union capture], or he could not subsist his army."¹²² By November 1864, Union strategists realized that closing Wilmington to incoming supplies was of paramount importance toward ending the war.

¹²²William Lamb, The Battle of Fort Fisher, North Carolina, Reprinted from "Battles and Leaders of the Civil War" (Wilmington, North Carolina: The Harriss Printing & Advertising Co., 1900), 1.

CHAPTER IV

The Scheme to Destroy Fort Fisher

"Great risks have to be run, and there are chances that you may lose your life in the adventure; but the risk is worth the running, when the importance of the object is to be considered and the fame to be gained by this novel undertaking, which is either to prove that forts on the water are useless or that the rebels are proof against gunpowder."

Rear-Admiral David D. Porter to Commander A. C. Rhind, in charge of the *U.S.S. Louisiana*

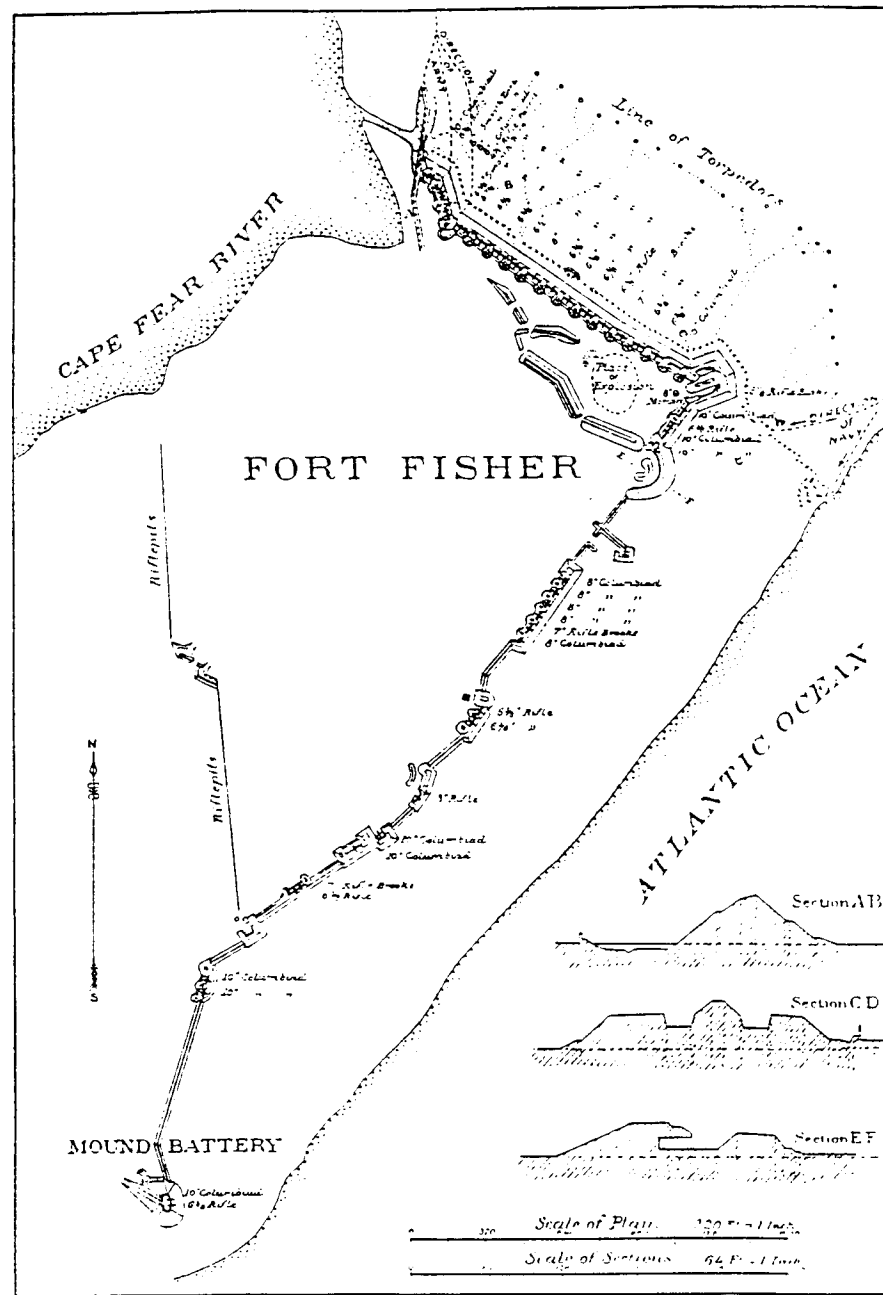
As early as 1862, Secretary of the Navy Gideon Welles proposed a joint army-navy expedition to capture Wilmington, North Carolina, but since part of his strategy called for deep drafted ironclad warships entering shallow New Inlet, the operation was postponed.¹²³ By late summer 1864, however, Wilmington's importance had increased considerably. Outside of Charleston, South Carolina, Wilmington was now the South's last major port open to blockade runners and represented a critical logistical lifeline for the Confederacy. As a result, Union strategists realized the necessity of capturing Wilmington to help end the war but, Fort Fisher, the largest and most important of several earthen fortifications erected in the region, guarded the Cape Fear River and New Inlet. Only by capturing Fort Fisher could Union forces hope to enter the river and capture Wilmington.

¹²³O.R.N., Series I, 8: 301, 420.

Although never defended by more than 1,000 men, Fort Fisher was a formidable structure. By December 1864 the fort's construction consisted of an inverted 'L' configuration. The fort's land face side, or the side facing northeast, consisted of fifteen huge earthen mounds approximately 30 feet high and 25 feet thick with bombproofs constructed inside. These bombproofs, or the hollow interior of the earthen mounds which were supported by timbers, afforded excellent protection from artillery bombardment.¹²⁴ Twenty seacoast artillery pieces guarded the land face side of the fort as well as a nine foot high palisade fence constructed of sharpened pine logs and buried land mines. The fort's sea face wall, or the long side of the 'L' facing southeast, consisted of similar structures as seen on the land face, but was strengthened by a colossal 150-pound Armstrong battery as well as a sixty-foot-high artillery emplacement at the south end of the fortification named Mound Battery, or Battery Lamb (See Figure 4).¹²⁵

¹²⁴Rod Gragg, The Confederate Goliath: The Battle of Fort Fisher (New York, New York: Harper Perennial, 1992), 18.

¹²⁵For a complete description of Fort Fisher's construction and armament see, William Lamb, The Battles of Fort Fisher, Southern Historical Society Papers, v. XXI, 255-290; Lamb, The Battle of Fort Fisher, North Carolina, 1-8; Gragg, Confederate Goliath, 19-21.

Figure 4:¹²⁶

PLAN AND SECTIONS OF FORT FISHER.

¹²⁶William Lamb, Plan and Sections of Fort Fisher, "The Defense of Fort Fisher," Battles and Leaders of the Civil War, vol. IV, part II. (New York: The Century Company, 1888), 645.

Overall, the sea face wall contained twenty-four pieces of heavy artillery making the fort's total armament forty-four heavy guns. Capturing or destroying Fort Fisher by naval bombardment and land assault was essential to the Union's campaign strategy against Wilmington.

On 20 September 1864, Rear-Admiral David D. Porter met with Gideon Welles and Assistant Secretary of the Navy Gustavus Fox to discuss various strategies toward capturing Fort Fisher. According to Porter, Rear-Admirals Lee and Farragut both considered Fort Fisher almost impregnable, and declined to lead the expedition. Lee felt 50,000 men could not take the fort and Farragut believed "we had not ships in the Navy to do anything with it."¹²⁷ Porter, however, agreed to command the naval contingent, but wanted a fleet of the heaviest frigates mounting at least 300 guns and an army force of 13,000 men with fifteen field guns and entrenching tools.¹²⁸ Porter and Fox eventually met with General Grant on 22 September, who agreed to provide the necessary army forces to complete the joint operation. During October 1864, while Porter massed his fleet at Hampton Roads, Major-

¹²⁷U. S. Congress, Hearing (Senate Library), Joint Committee on the Conduct of the War, Fort Fisher Expedition, 12 January 1856, 38th Congress, 2nd Session (Washington, D. C.: U. S. Government Printing Office, 1865), 88-89.

¹²⁸*Ibid.*, 89.

General Benjamin F. Butler presented his unorthodox strategy for capturing Fort Fisher.

The initial idea to destroy Fort Fisher using a floating bomb actually began in Erith, England, in October 1864. Between Woolwich and Erith along the Thames River, two powder magazines and two barges containing powder detonated; the explosion killed eight or nine people and wounded many others. According to Richard Delafield, General and Chief Engineer of the Engineer Department:

There were three distinct explosions--the first on board the barges, which tore asunder the large magazine, which later caused the smaller one to explode. Of these magazines not a single stone remained upon one another. The barges were split into fragments and hurled in the air . . . no damage was done beyond the 20 acres on which the magazines and houses were built other than breaking some panes of glass and doors.¹²⁹

In addition to the Erith incident, Delafield presented eleven additional examples where a large quantity of black powder exploded in a confined space. In all eleven cases, however, ranging from 1807 to the 1860s, he indicated that no substantial damage resulted from any of the

¹²⁹Richard Delafield to Charles A. Dana, esq., 18 November 1864, box no. 186, folder: Nov. 1864, "Discussion of Proposal to Destroy Forts Caswell and Fisher," HL: Engagements of Ships and Naval Forces with Land Forces 0-1865, RG 45, Office of Naval Records and Library Subject File, U. S. Navy, 1775-1910, 30-31, National Archives, Washington, D. C.

detonations.¹³⁰

Major-General Benjamin F. Butler, who reexamined the facts surrounding Erith, proposed bringing a large mass of explosives, via a ship, close to Fort Fisher and instantaneously detonating the vessel as a means of destroying the fort. In the first week of November 1864, while on a trip to Washington, D. C., Butler presented his powdership idea to President Abraham Lincoln, Secretary of the Navy Gideon Welles, and Major-General H. W. Halleck. Between 2 and 16 November, several military departments and ordnance experts investigated the proposed powdership experiment.¹³¹

The army's opinion of successfully attacking a large earthen fortification with a powdership was less than enthusiastic. Grant stated that "[the powdership] was referred to the chief engineer, General [Richard] Delafield, and he thought it would have about the same effect on the fort that firing feathers from muskets would have on the enemy."¹³² Indeed, on 18 November, General Delafield

¹³⁰Ibid., 16-50.

¹³¹Benjamin F. Butler, Butler's Book: A Review of his Legal, Political, and Military Career (Boston, Massachusetts: A. M. Thayer & Company, 1892), 775.

¹³²Joint Committee on the Conduct of the War: Fort Fisher Expedition, 12 January 1865, U. S. Congressional Hearings, 41st-73rd Congress, 51.

reviewed the physics surrounding powder detonations as well as the ability of vessels to approach Fort Fisher. He considered

The explosion of a vessel load of gunpowder at the nearest point it can approach Fort Caswell or Fort Fisher can produce no useful result toward the reduction of those works, and that no such vessels as are proposed to be so loaded can be navigated and placed at the nearest points to these forts.¹³³

Owing to Delafield's discouraging report and General Grant's corresponding pessimism, the army dismissed the powdership scheme as a senseless waste of materials.

On 18 November, J. G. Benton, commanding the Navy Washington Arsenal, issued a report of his own on the proposed powdership. Disagreeing with Delafield's report, Benton separated his report into three sections: first, the probable effect of an explosion on the enemy's works: second, the disposition of the powder on board the vessel:

¹³³Richard Delafield to Charles Dana, Proposal to Destroy Forts Caswell and Fisher, 13-15. Delafield discussed the destructive force of both weather formations and powder explosions. He stated that a tornado, which destroys wooden buildings and unroofs others, contains a force equal to 46.1 pounds per foot, moving with a velocity of 97.5 miles per hour. He also discussed a discharging 42-pounder gun as having a force equal to 36,420 pounds on the square inch, but given an air space of 14 inches or 42 inches, the force decreases to 15,850 pounds and 6,470 pounds per square inch respectively. In 1856, after the latest coast survey, a vessel drawing twelve feet of water could only approach to within 950 yards of Fort Fisher. Given the loss of force with distance in Delafield's examples, he believed no amount of powder could produce enough force to damage Fort Fisher's earthworks.

and third, the means of igniting large amounts of powder. Assuming the amount of powder on board was fixed at 200 tons and the distance from Fort Fisher set at only 100 feet, Benton believed, "the work will be seriously damaged by the explosion of its [Fort Fisher's] principal magazines, and the traverses and bombproofs may be shattered or overturned."¹³⁴ To detonate a large mass of powder on board a vessel, Benton stated:

The greatest explosive effect is produced by powder when it is confined in a space equal to its own volume. The powder to be used, therefore, should be taken out of the barrels and placed in a timber box just sufficient to hold it. A box of 19 feet linear dimensions, I think, will be large enough to contain 400,000 pounds or 200 tons; or an oblong box 10 feet high, 20 feet wide, and 32 feet long will suffice to contain it. The effect of the explosion would be the greatest, I think, if this box be placed above and near the surface of the water, or nearly on a level with the object [Fort Fisher]. It would be well to have the powder box well covered up with sand bags as a protection against the enemy's fire, and to confine the gases until the combustion is more nearly completed than it would be if fired in the open air or under ordinary pressure.¹³⁵

Finally, Benton proposed two or three Beardslee magneto-electric machines for igniting the powder.¹³⁶

William N. Jeffers, Lieutenant-Commander in charge of

¹³⁴O.R.N., Series I, 11: 214.

¹³⁵Ibid., 214.

¹³⁶Ibid., 214.

the Navy Ordnance Yard, Executive Department, also produced a report on 23 November based on magazine explosions at Sebastopol in 1855 and at Erith. Jeffers's report mentioned the necessity of a shallow draft vessel, powder storage above the waterline, sandbags to cover the powder, clockwork mechanisms to ignite the powder, and a range from the target no greater than 500 yards.¹³⁷

Despite the lack of army support, navy officials, following Benton's and Jeffers's favorable reviews on 18 and 23 November 1864, accepted Butler's powdership brainstorm. Moreover, as indicated by Rear-Admiral Porter's 17 December 1864 instructions to Commander A. C. Rhind, officer in charge of the powdership, the admiral wholeheartedly supported the operation. Exuding his confidence concerning the powdership's success, Admiral Porter stated:

The effect of the explosion will be simply very severe, stunning men at a distance of three or four hundred yards, demoralizing them completely, and making them unable to stand for any length of time a fire from the ships. I think that the concussion will tumble magazines that are built on framework, and that the famous Mound will be among the things that were, and the guns buried beneath the ruins.¹³⁸

By 23 November, Assistant Secretary of the Navy G. V. Fox assembled a six man team to devise a concrete plan and

¹³⁷Ibid., 215.

¹³⁸Ibid., 222.

make final preparations for selecting a powership.¹³⁹ The committee, lacking Delafield's (i.e. the army's) critical insight, followed Benton's and Jeffers's optimistic belief in the powership's success.

Charles L. Price and Claude C. Sturgill, authors of *Shock and Assault in the First Battle of Fort Fisher*, asserted that Admiral Porter, after accepting the powership operation, "picked the *Louisiana*, an old, worthless flatbottom steamer, which drew only six feet of water,"¹⁴⁰ In reality, the *Louisiana*, built in 1860 by Harlan and Hollingsworth, represented an iron vessel only four years old--certainly far from retirement age. In addition, although flatbottomed, the *Louisiana* actually drew eight feet of water instead of six feet. Finally, the navy selected her for the dubious powership operation not because she was "worthless," but because the *Louisiana*

¹³⁹Ibid., 215. The following officers met at Captain Wise's residence to make the final powership preparations: General Dyer, Colonel Maynadier, Major Benton of the Washington Arsenal, Lt.-Commander Aulick, Lt.-Commander Jeffers of the Washington City Navy Ordnance Yard, Lt-Commander Ives, and Capt. H. A. Wise himself, Chief of the Ordnance Bureau, U.S. Navy, Washington, D.C. After debate, the committee issued a report dated 23 November 1864. See APPENDIX D.

¹⁴⁰Charles L. Price and Claude C. Sturgill, "Shock and Assault in the First Battle of Fort Fisher," The North Carolina Historical Review, Vol. 47, No. 1, (January 1970), 30.

represented a vessel ideally suited for the navy's purpose as indicated by the committee's 23 November report (See APPENDIX D, *Proposition 4*).

During October and November 1864 the *Louisiana* continued to operate in the Pamlico and Neuse Rivers of North Carolina with New Bern as her base of operations. Her last recorded engagement occurred 17 November 1864 when she visited Washington, North Carolina, and reported that Rebel forces had abandoned town and probably evacuated all of the Pamlico region falling back toward Greenville, North Carolina.¹⁴¹ By 19 and 20 November, G. V. Fox and Admiral Porter exchanged a series of telegrams which indicated, although not always clearly¹⁴², that Porter chose the *Louisiana* for the powdership operation. On 20 November 1864, at 11:30 p.m., Porter sent the following telegram to G. V. Fox:

Don't let General Butler stop his explosion [the powdership] on our account . . . I think the *Louisiana* will do for our purpose. Have ordered her from the sound to Beaufort, [North Carolina], to take out everything but her boilers and

¹⁴¹O.R.N., Series I, 11: 82.

¹⁴²When communicating via telegram, commanders used various codenames for the powdership. Beyond "his explosion," G. V. Fox used the name "blow up" in a telegram dated 20 November. For example, "The general will hold on to the 'blow up' until the Stromboli arrives from New York." O.R.N., Series I, 11: 78.

machinery. The material [powder] had better be sent to Beaufort at once.¹⁴³

Porter followed his telegram to Fox with a dispatch to W. H. Macomb, commanding North Carolina's sounds, to send the *Louisiana* to Beaufort and to report if she could stow 300 tons of powder without drawing more than eight feet of water. To allow such stowage, however, Porter instructed Macomb to make his calculations based on the eventual removal of all her provisions, masts, guns, anchors, and everything else considered useless for the powership operation.¹⁴⁴ Apparently, Macomb considered the *Louisiana* fit for duty and capable of berthing 300 tons of powder. He probably notified Admiral Porter accordingly, because by 11:30 p.m. on 20 November 1864, Porter issued a telegram to G. V. Fox describing the *Louisiana* as the navy's choice for the powership plan.

Before launching her against Fort Fisher, however, the *Louisiana* required substantial refitting to transform her into the powership and repairs to ensure her seaworthiness. Consequently, on 23 November Porter issued a short dispatch to Macomb instructing him to forward the *Louisiana* from

¹⁴³Ibid., 78.

¹⁴⁴Ibid., 79. It is important to remember that Navy records listed the *Louisiana* as only 295 tons and drawing eight feet of water at that weight.

North Carolina to Hampton Roads, Virginia, for necessary repairs.¹⁴⁵

Apparently, after the *Louisiana* arrived at Beaufort, she failed to discharge her excess coal, provisions, masts, guns, anchors, and other equipment not necessary for her last mission. According to Porter's 20 November dispatch, he instructed Macomb to off-load the *Louisiana*'s excess materials save her boiler, machinery, and 40 tons of coal. For unknown reasons, however, the crew failed to empty the *Louisiana*'s stores and she subsequently returned to New Bern, North Carolina. Despite the Beaufort miscalculation, the *Louisiana* left New Bern on 29 November and steamed for Hampton Roads, Virginia, for refitting.¹⁴⁶

On 30 November, the *Louisiana* rounded Cape Hatteras and by 1 December she attempted to dock at Norfolk's ordnance wharf, but not without difficulty. The tugboat *U.S.S. Cactus* ran across the *Louisiana*'s bow while she moved toward the wharf. Owing to *Cactus*'s poor maneuvering, the *Louisiana*'s commander failed to avoid the ensuing collision. Damage from the accident appeared minimal; the *Louisiana*

¹⁴⁵Ibid., 83.

¹⁴⁶Deck Log, U.S.S. *Louisiana*: 27 December 1863 To 18 December 1864, RG 24, Naval Records, National Archives, Washington, D. C.

only lost her port anchor stock. Now without power, however, the river swept her down across an unknown schooner's bow and carried away its jibboom and the *Louisiana's* stern rail as well. The chain reaction finally ended when the *Louisiana* collided with a transport steamer. Once again, damage to the *Louisiana* proved slight; she only lost her 2nd cutter in the mishap.

After the bruising arrival at Norfolk's ordnance wharf, the *Louisiana's* crew immediately discharged all her guns, ammunition, and ordnance stores. Once devoid of five cannon and all her munitions, she steamed to the Gosport Navy Yard to undergo the dismantling and refitting process.¹⁴⁷ Between 1 and 4 December, the *Louisiana* remained at the Gosport Navy Yard while her crew made the necessary alterations allowing her transformation into the powership. Gangs of workmen removed her masts, stores, provisions, and so forth. On 2 December, Admiral Porter dispatched the following telegram to G. V. Fox:

I have just seen General Grant. He can only send 5,000 [Union troops]. He depends upon the *Louisiana*; she is at the [Gosport Navy] yard. Will you send an order to work on her night and day? Admiral Smith has ordered no night work. [H. A.] Wise better send everything at once.¹⁴⁸

¹⁴⁷Louisiana Deck Log, 1 December 1864.

¹⁴⁸O.R.N., Series I, 11: 119.

Now working around the clock, crews continued to remove the *Louisiana's* equipment. Meanwhile, the Navy appropriated 300 tons of black powder to transform her into a floating bomb. Captain H. A. Wise, Chief of the U.S. Navy Ordnance Bureau, ordered the ordnance steamer *U.S.S. Baltimore* to leave New York Harbor and steam to Washington, D. C. When she arrived at the Union capital, William N. Jeffers of the Navy Ordnance Yard and Major T. J. Rodman, U. S. Army, went onboard the *Baltimore*. Both men were responsible for supervising the stowage of powder in the *Louisiana*. In the meantime, ordnance crews prepared a barge containing 250 barrels of powder and Birney Fluid.¹⁴⁹ During the first week of December, the *Baltimore*, with barge in tow and Jeffers and Rodman on board, departed for Norfolk to load the powdership *Louisiana*. In addition, a vessel named the *Stromboli* arrived at Norfolk sometime in the first week of December with eighty torpedoes and two Beardslee clock movements ultimately intended for the powdership.¹⁵⁰

On 3 December the *Louisiana* was still anchored at the Gosport Navy Yard undergoing alterations. Crews continued to strip the vessel by discharging her water tanks and

¹⁴⁹A highly flammable liquid.

¹⁵⁰O.R.N., Series I, 11: 119 and 124 respectively.

stores. After noon on 3 December, work proceeded unabated as carpenters began construction on a wooden, upper deck seventy feet in length by twenty-two feet in width and eight feet in height. The new deck house extended forward from her smoke-stack, over her boiler compartment, and ended close to her bow.¹⁵¹ Crews constructed the house from three-quarter inch wood, covered it with canvas, and waterproofed the completed structure with paint.¹⁵²

According to Jeffers's and Benton's instructions, a large portion of the powder would be stowed above the waterline in the deck house. To ensure no water entered the areas slated for powder stowage, all such areas needed waterproofing--wetted powder would ensure failure. As a result, crews added light grating on the spar deck and battens or furring around the hull to protect the powder from water leakage and to prevent contact with the iron hull, which had a tendency to form condensation.¹⁵³

Owing to the necessity of getting the *Louisiana* within

¹⁵¹Louisiana Deck Log, 3 December 1864; "Story of the Powder-boat," Galaxy Magazine (January, 1870), 79. Taken from Naval History of the United States: Extracts from Various Magazines, 1860 to 1912, Mariner's Museum Library, Norfolk, Virginia. For a comparison of the pre-powdership Louisiana and the powdership Louisiana, see Figures 4 and 5.

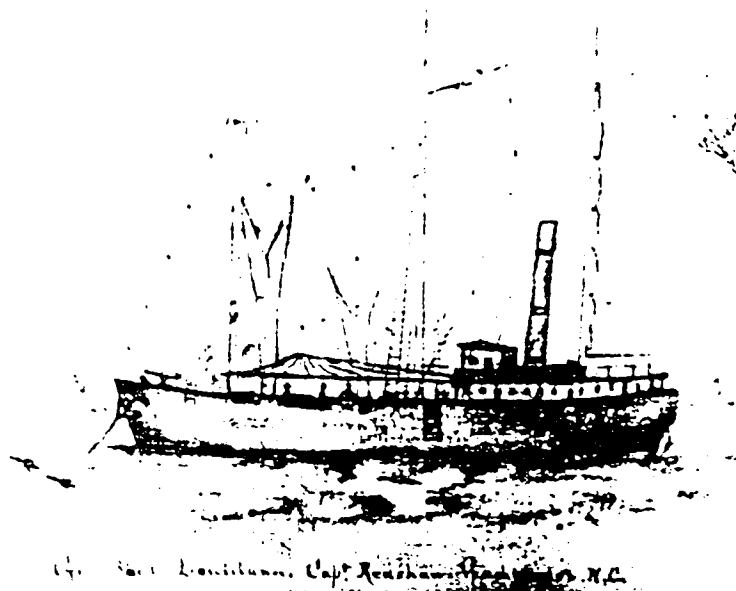
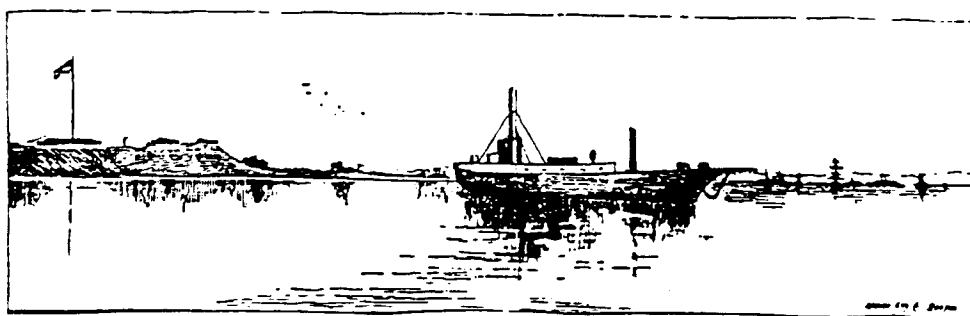
¹⁵²O.R.N., Series I, 11: 234.

¹⁵³Ibid., 234.

a few hundred yards of Fort Fisher, she required a blockade-running appearance. Therefore, crews constructed a false, canvas smoke-stack supported by iron hoops. In addition, workers attached painted, canvas screens to close in her sides and side-lights as well as a coat of whitewash to complete her transformation (Compare Figures 5 & 6)¹⁵⁴ If the *Louisiana* appeared to the Confederates as a distressed blockade-runner attempting to reach safety under the fort's guns, the ruse would be complete. If indeed her appearance deceived the fort's inhabitants, the powership would steam as close to Fort Fisher's walls as the vessel's draft would allow.

By late 3 December, crews completed the alterations and most of the men transferred to the *U.S.S. Lacony* stationed nearby. Acting Ensign George Leonard now commanded the reclassified *Ord* [Ordnance] *Ship Louisiana*. At 1:30 p.m. on 4 December, a tugboat towed the powership out of Gosport Navy Yard and alongside the receiving ship *U.S.S. St. Lawrence* to receive a new crew. After the *St. Lawrence* provided the necessary men, the *Louisiana* proceeded downriver and at 5:00 p.m. anchored near Craney Island,

¹⁵⁴"Story of the Powder-boat," 79-80.

Figure 5:¹⁵⁵Figure 6:¹⁵⁶

¹⁵⁵Union Gunboat Louisiana, sketch by Cpl. James Calby, Company F, 24th Massachusetts Infantry, Washington, North Carolina, 1862. Fred Mallison Collection, Museum of History.

¹⁵⁶Powderboat Louisiana off Fort Fisher, Butler, Butler's Book, 788.

Virginia.¹⁵⁷

Once positioned off Craney Island, the powership awaited the experiment's key ingredient--gunpowder. Determining exactly when the powership arrived at Craney Island and when crews stowed powder onboard remains a mystery. For example, the *Louisiana's* deck log contained no entries between 5 and 11 December 1864. At some point during this seven day period, the powership received close to 200 tons of gunpowder. Furthermore, according to the deck log, the *Louisiana*, after construction crews completed her alterations, departed Gosport Navy Yard and anchored off Craney Island around 5:00 p.m. on 4 December. Given the deck log's entry, the powership awaited powder stowage as early as 4 December. Several dispatches conflict with the 4 December log entry. On 7 December, Porter dispatched a message instructing George Leonard, the powership's new commander, to move her to Craney Island. Two days later, on 9 December, Porter issued orders to T. W. Sheer, commanding the *U.S.S. Wyandotte*, to guard the powership at its new

¹⁵⁷Louisiana Deck Log, 3 and 4 December 1864. Interestingly, the *Louisiana's* log is written in pencil after 4 December 1864 and under the name United States Ord Ship *Louisiana*, commanded by Acting Ensign George Leonard. Between 5 and 11 December, no entries exist in the log--crews probably loaded powder sometime during these days.

mooring.¹⁵⁸ If Leonard stationed the powdership off Craney Island as early as 4 December, why is Admiral Porter's first dispatch three days late and why did he wait five days to assign protection? Nevertheless, sometime during the second week of December, crews, under Jeffers's and Rodman's direction, transferred powder from the *U.S.S. Ordnance Steamer Baltimore* to the powdership *Louisiana*.

Obviously, fire represented a common concern for all officers and crew involved in stowing powder. Admiral Porter instructed Leonard to take extreme caution during the hazardous loading process. The powdership's crew received strict orders against building fires of any description while other crews stowed powder. Owing to the danger of accidental powder detonation, crews cooked all their daily meals on adjacent hulks anchored nearby. In addition, Porter recommended that Leonard "wet the decks frequently [and] take great care that . . . men have no opportunity to get drunk, and adopt such precautions as may be necessary for the safety of the vessel."¹⁵⁹

The *Louisiana*'s machinery and hold areas consisted of the following components: boiler, engine, and coal bunker

¹⁵⁸O.R.N., Series I, 11: 152-153 and 217-218 respectively.

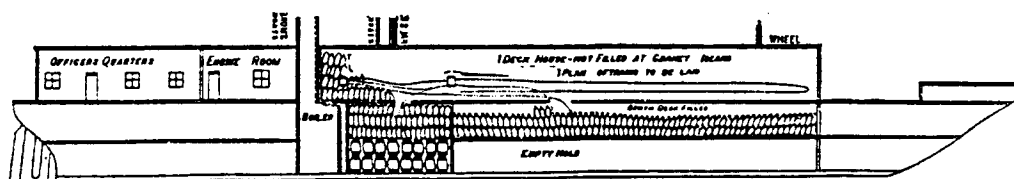
¹⁵⁹*Ibid.*, 152-153.

comprised the after third of the vessel, separated by a double bulkhead from the forward hold areas. The *Louisiana* contained several holds in addition to the newly added wooden deck house. Jeffers explained the configuration as follows (See Figure 7):

The space below the spar deck available for stowage was divided by a bulkhead extending athwart the vessel, forward of the boiler bulkheads, into two parts--one, the after hold, used formerly as an additional coal bunker, about 15 feet in length, 22 feet wide, and 10 feet in depth from the spar deck to the keelson, accessible by a hatch 4 feet square; the space forward of this, formerly the berth deck, about 40 feet long by 22 feet wide and 4 1/2 feet deep under the beams, with a hold beneath it of the same dimensions. Access to this was obtained by a hatch of 4 by 5 feet.¹⁶⁰

According to *Story of the Powder-boat*, crews stowed powder in full barrels with their heads knocked out as well as in fifty pound bags. To guard against water leakage, powder stowage in the first two tiers included headless, wooden barrels, instead of powder bags (See Figure 7). According to *Proposition 4* listed in the 23 November report, the committee advised crews against filling the *Louisiana's* main hold--this insured powder stowage above the waterline to ensure the explosion directed outward and not into the

¹⁶⁰Ibid., 233.

Figure 7:¹⁶¹

water.¹⁶² After situating the barrels, crews added powder bags completely filling the berth deck and coal bunker up to their respective hatches; by 13 December, 185 tons of powder were in place.¹⁶³ The newly constructed deck house remained empty, however, until the powder ship arrived at Beaufort later in December.¹⁶⁴

On 12 December 1864, the *Louisiana's* deck log changed from that of the *U.S. Ordnance Ship Louisiana* back to the *U.S. Steamer Louisiana*. The next morning, on 13 December, Acting Master W. Chase relieved Acting Ensign Leonard as commander. Shortly thereafter, a new crew, consisting of four officers and thirteen crew, boarded the *Louisiana*.¹⁶⁵

¹⁶¹Powdership *Louisiana*, "Story of the Powder-boat," 82.

¹⁶²*O.R.N.*, Series I, 11: 216.

¹⁶³*Ibid.*, 235.

¹⁶⁴"Story of the Powder-boat," 81-82.

¹⁶⁵*Louisiana Deck Log*, 12-13 December 1864.

Finally, at 9:00 a.m. on 13 December, the *U.S.S. Sassacus* towed the *Louisiana* out to sea and two days later, on 15 December, she arrived at Beaufort, North Carolina.

Beaufort constituted the final staging area and powder stowage point for the *Louisiana* before the navy launched her against Fort Fisher. Around noon on 15 December, the *Louisiana* came alongside the ordnance schooners *William Allen* and *M. Small*, where crews loaded powder until 4:00 p.m. The next day, on 16 December, she continued to take on powder from the ordnance schooners, but with 30 additional tons added for a total of 215 tons of black powder, she reached her 8 foot load line.¹⁶⁶ Since the powership was 85 tons short of powder, four-fifths of the space in the deck house remained empty.¹⁶⁷ On 17 December, the *Louisiana*, now stowed with as much powder as she could safely transport, anchored off Shackleford Banks where her crew raised the false smoke stack and stowed three days rations for the voyage to New Inlet, North Carolina.¹⁶⁸ Admiral Porter chose A. C. Rhind to lead the powership to its final destination and instructed him, after calling for volunteers, to choose

¹⁶⁶Ibid., 15-16 December 1864; O.R.N., Series I, 11: 235.

¹⁶⁷Ibid., 235.

¹⁶⁸Louisiana Deck Log, 17 December 1864.

his own officers and crew. The final crew consisted of Rhind, three additional officers, and eleven enlisted crew.¹⁶⁹

According to the original plans, Jeffers, Benton, and others approved Beardslee's magneto-electric devices as the best means of firing the powder. Although mechanical failures plagued Beardslee's apparatus during testing at Norfolk, Virginia, committee members preferred a device capable of rapidly exploding a large mass of powder. Attached to several wires woven throughout the vessel, Beardslee's machine would explode all the powder instantaneously.¹⁷⁰ If the powder-ship's fuse system failed to ignite the powder spontaneously, the initial blast would scatter most of the powder before it had a chance to burn completely, thus decreasing the overall destructiveness of the explosion. To ensure success in the event Beardslee's machines failed, the committee's *Proposition 3* also called for clockwork and additional fuses as a backup.¹⁷¹ William Jeffers considered the Beardslee electric devices unreliable

¹⁶⁹O.R.N., Series I, 11: 218; For Rhind's officer and crew selection see, O.R.N., Series I, 11: 227; "Story of the Powder-boat," 80-81. For names of the Louisiana's final crew see APPENDIX E.

¹⁷⁰O.R.N., Series I, 11: 216.

¹⁷¹*Ibid.*, 216.

and chose instead, to use a clockwork arrangement, a slow match, and a kindling fire to explode the powership. He described the clockwork as follows (See Figure 8):

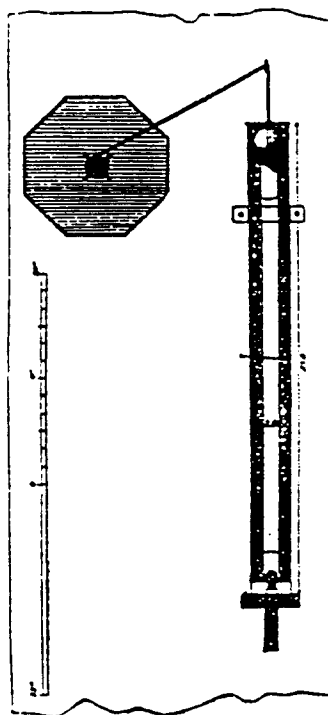
Removing the face and hands of an ordinary marine clock, I secured to the arbor of the minute hand a small cylinder with four pins set into the circumference, and equidistant; that is fifteen minutes of time apart. Three clocks were thus arranged.¹⁷²

Once Jeffers modified the clocks, he attached each one to a board and secured a copper tube next to the face. Inside each tube, he placed a two pound iron shot attached to the clock by a strand of catgut. When the clock reached a certain fifteen minute interval, depending on how far he wrapped the catgut around the clock face, the shot released, dropped down the tube, and struck a percussion cap attached to a Gomez fuse.¹⁷³ Theoretically, the crew set all three clocks identically. When the designated time arrived, all three clocks would ignite the Gomez fuses woven throughout the powership.

In addition to Jeffers's clock arrangement, Major Rodman added six slow matches and Commander A. C. Rhind

¹⁷²Ibid., 235.

¹⁷³Ibid., 235-236. Much like percussion caps, the Gomez fuse consisted of an India rubber tube or case filled with fulminating powder. Since a mile of Gomez fuse burned in four seconds, ordnance experts chose the fuse as a means of igniting all the Louisiana's powder instantaneously. See Butler, Butler's Book, 801-802.

Figure 8:¹⁷⁴

contributed a candle system. Originally, Rodman placed matches in wooden tubes, lined with lead or zinc, in the vessel's cook house (See Figure 9). He also attached Gomez fuse to the tubes, but the matches proved useless because they failed to burn through the wooden tubes. As a result, he abandoned the tubes altogether and laid the matches by themselves. Adding to Jeffers's and Rodman's systems, Rhind slung a board hung by its four corners in the cook house. On top of the board he set five candles, cut to burn for an hour and forty-five minutes. In the bottom of each candle

¹⁷⁴Marine Clock, Butler, Butler's Book, 802.

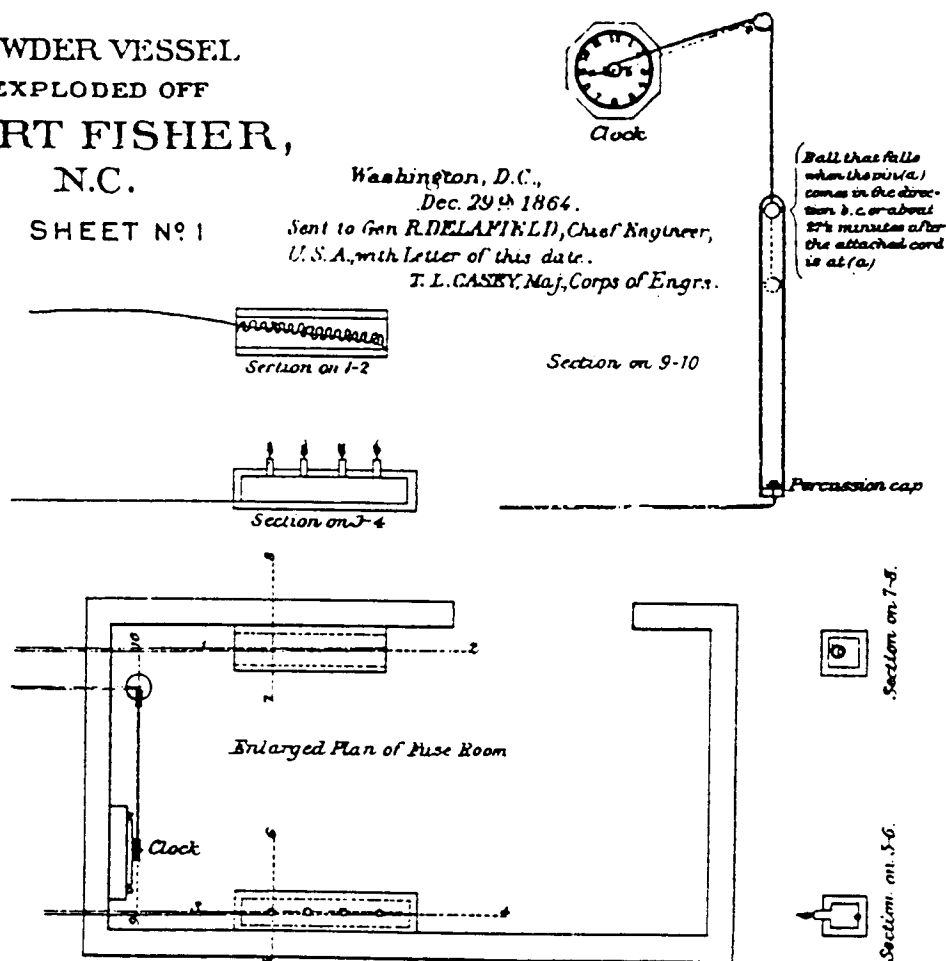
Figure 9:¹⁷⁵

POWDER VESSEL
EXPLODED OFF
FORT FISHER,
N.C.

SHEET No 1

Washington, D.C.,
Dec. 29th 1864.

Sent to Gen R. DELAPORTE, Chief Engineer,
U.S.A., with Letter of this date.
T. L. CASEY, Maj., Corps of Engrs.



he set a Gomez fuse and married the fuzes into all the others leaving the cook house (See Figure 9).¹⁷⁶ Finally, to ensure the *Louisiana* exploded and to prevent the Rebels from capturing the vessel, the crew assembled a bundle of tallow,

¹⁷⁵Powder Vessel Exploded Off Fort Fisher, North Carolina, No. 5, Plate LXVII, *Atlas to Accompany the Official Records of the Union and Confederate Armies, 1861-1865* (New York, New York: The Fairfax Press, 1983).

¹⁷⁶"Story of the Powder-boat," 83.

turpentine, cotton waste, and pine wood in her stern area. Before the crew abandoned the powership at Fort Fisher, they were instructed to light the bundle, but only after setting the clocks, lighting the slow match, and lighting the candles.¹⁷⁷

Commander A. C. Rhind, who took control of the *Louisiana* on 13 December 1864, offered a different view concerning the powder stowage and firing mechanisms. According to Rhind, he checked the powership's cargo on the 13th, but found that Jeffers and Rodman failed to place fuses in the berth deck, 'N', in the area marked 'E', or in the space marked 'F' (See Figure 10). To properly set fuses, Rhind needed to off-load all the powder previously stowed by Jeffers and Rodman and restow the powder placing Gomez fuses accordingly. Rhind's statement is as follows (See Figure 10):

The powder was stowed within the dotted lines 'E', 'M' and 'N.' The space marked 'N,' representing the berth deck, was stowed full up to the top of the hatches under 'F' and 'M,' the lower tier said to be in barrels with their heads out, upper tiers in canvas bags. The space 'M,' being the forward part of the extension of the deck house [added at Gosport], was only partially filled as represented by the dotted line, the powder there was in canvas bags. The space 'E' was entirely filled with

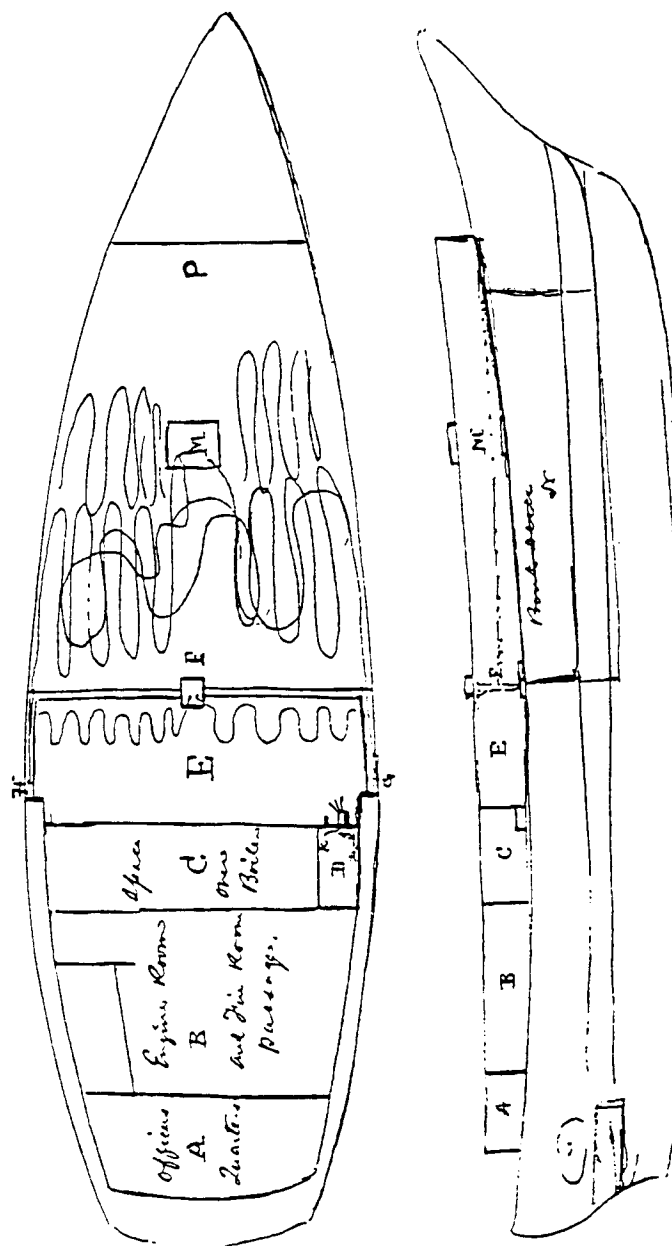
¹⁷⁷Commander Rhind and the *Louisiana*, HL - Powder Boat Explosion off Ft. Fisher, Subject File U.S. Navy, 1775-1910: 0 - 1865, RG 45, National Archives, Washington, D. C.; "Story of the Powder-boat," 83.

powder in bags as far as the bulkhead of the passage marked 'F.' A clock with two ends of Gomez fuse was placed at each end of the passage 'G' and 'H,' one fuse leading through the bags in 'E' and inserted through them and into bags in the hold at 'F,' each side; the other circulated through and in the bags in the space 'FMP' crossed married and inserted in opened bags at 'M.' In the space 'D' (formerly cook house) was placed another clock at 'I,' with the fuse inserted in cut bags in the space 'E,' reached by cutting through the double bulkhead. A fuse with five pieces of candle placed on top of a tube box was lead from space 'D' into 'E.' A fuse with a piece of slow match in a tube box was lead from space 'D' into 'E.' In the space marked 'L,' at the end of the [propeller] shaft alley, was stowed pine wood and kindling. No fuse was circulated through the space marked 'N.'¹⁷⁸

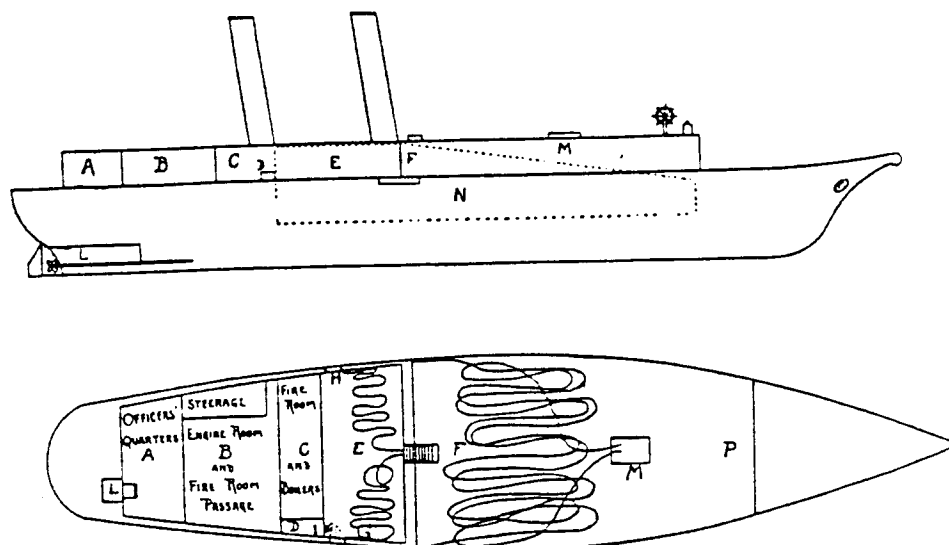
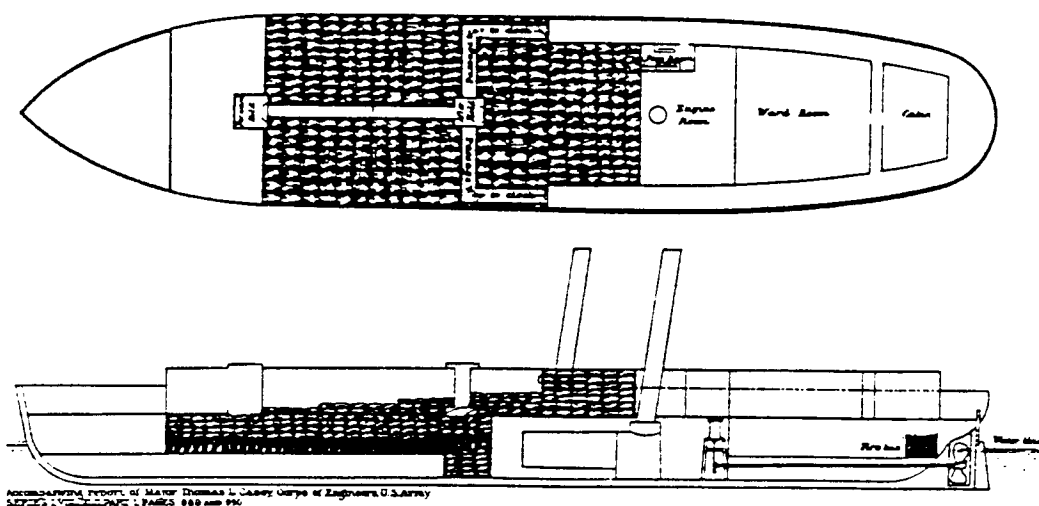
Apparently, Rhind failed to correct Jeffers's and Rodman's error owing to time constraints. Moreover, when the *Louisiana* arrived at Beaufort, North Carolina, crews loaded additional powder on 15 and 16 December as Lieutenant Preston and Commander Rhind placed the additional candles and set fuses.¹⁷⁹ Since Rodman and Jeffers did not set fuses

¹⁷⁸Commander Rhind and the *Louisiana*; An altered version of this report, both textually and artistically, also appears as Commander A. C. Rhind to Rear-Admiral D. D. Porter, 2 February 1865, *O.R.N.*, Series I, 11: 230-232. The *O.R.N.* version dismisses a good portion of the passage. Moreover, the *O.R.N.* drawing extended space 'N' to space 'C' while Rhind's original drawing ended space 'N' at the double bulkhead between spaces 'E' and 'F.' Compare Figure 10 with Figures 11 and 12. Powder stowage in area 'N' beyond the double bulkhead separating 'E' and 'F' is unlikely due to the *Louisiana*'s boiler. As a result, Figure 11 is probably incorrect while Figure 10 (Rhind's original) and Figure 12 are probably correct.

¹⁷⁹*O.R.N.*, Series I, 11: 230.

Figure 10:¹⁸⁰

¹⁸⁰Cdr. Rhind's sketch of the Louisiana, HL - Powder Boat Explosion off Ft. Fisher, Subject File U.S. Navy, 1775-1910: 0 - 1865, RG 45, National Archives, Washington, D. C.

Figure 11:¹⁸¹Figure 12:¹⁸²

¹⁸¹Louisiana Illustration, Commander A. C. Rhind to Rear-Admiral D. D. Porter, 2 February 1865, O.R.N., Series I, 11: 231.

¹⁸²Powder Vessel Exploded off Fort Fisher, North Carolina, No. 5, Plate LXVII, Atlas to Accompany the Official Records of the Union and Confederate Armies, 1861-1865 (New York, New York: The Fairfax Press, 1983).

in the spar and berth decks at Norfolk, only the powder added by crews at Beaufort contained Gomez fuses.

On 17 December, Admiral D. D. Porter instructed Commander Rhind to leave Beaufort, North Carolina, and join the fleet stationed off New Inlet. Following a break in the weather on 18 December, the tugboat *Anomon* towed the *Louisiana* over the bar at Beaufort. Around 8:00 a.m., the steamer *Sassacus* took her in tow while the *Anomon* steamed back to Beaufort. According to Acting Master's mate W. E. Wilson, who recorded the *Louisiana*'s next to last log entry, "At 9 A. M. the *Sassacus* hoisted the ensign at the fore and fired a gun; a preconcerted signal for us to get up steam. At 9:15 [we] lit fires under the boiler. At 11:30 had 13 lbs. of steam, everything working finely."¹⁸³

¹⁸³Louisiana Deck Log, 18 December 1864.

CHAPTER V

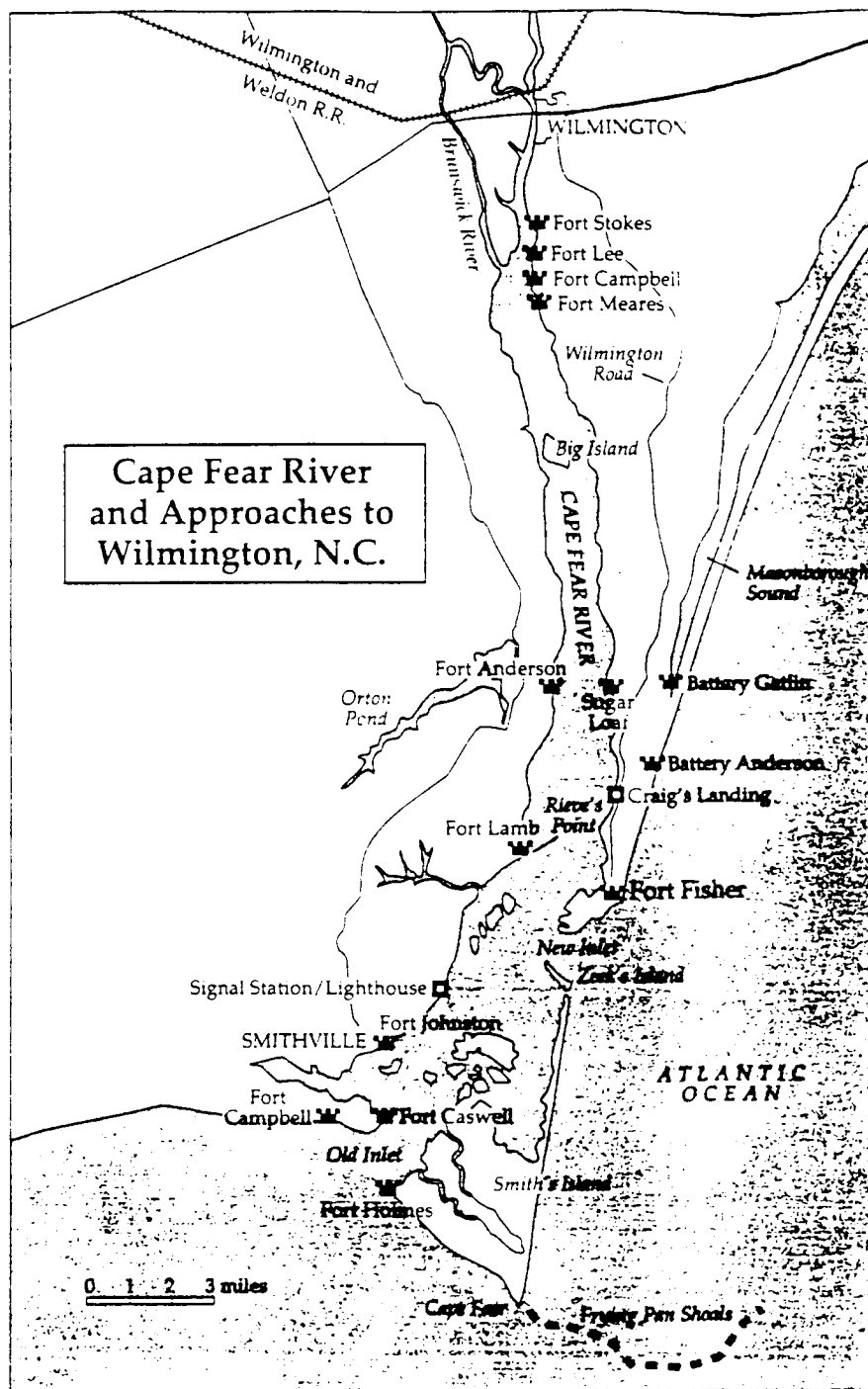
The Powdership Attack on Fort Fisher, 24 December 1864

"If we succeed it is a mere matter of who has the most powder, and as I believe it is generally conceded that we are better supplied than the rebels, we can blow them into submission. The names of those connected with the expedition will be famous for all time to come."

Rear-Admiral David D. Porter to Commander
A. C. Rhind, in charge of *U.S.S. Louisiana*

On 13 and 14 December 1864, separate army and navy flotillas, commanded by Major-General Butler and Rear-Admiral Porter respectively, departed Hampton Roads, Virginia, and planned to rendezvous off New Inlet for a joint amphibious attack on Fort Fisher. Before leaving Hampton Roads for Fort Fisher, Admiral Porter and General Butler formulated fleet schedules to reduce confusion during the joint operation. Porter informed Butler that his fleet was slower, owing to the powdership, and required twenty-four to thirty-six hours head start with the two fleets ultimately rendezvousing at Beaufort, North Carolina. Both commanders agreed that after sailing together from Beaufort, the two flotillas would ultimately meet twenty-four miles off Fort Fisher.

Since the powdership required final preparations, including additional powder and fuses, Porter's warships left Virginia according to plan on 13 December. Porter assumed only one day would be required at Beaufort to finish

Figure 13:¹⁸⁵

¹⁸⁵ Cape Fear River and Approaches to Wilmington, N. C., Gragg, Confederate Goliath, 10.

and 17 December, Butler waited off Fort Fisher for Porter to appear with the finished powership while Porter waited at Beaufort for Butler to appear with the army transport fleet.¹⁸⁶ The resulting confusion, compounded by poor weather, delayed operations until 18 December.

According to the joint army-navy strategy for capturing Fort Fisher, the navy would launch the *Louisiana* against the fort and immediately follow the ensuing explosion with a naval artillery barrage. After the naval guns destroyed any remaining guns or structures still standing after the powership explosion, Federal troops, landed before or during the barrage, would assault Fort Fisher's breastworks and capture any remaining Confederate defenders. General order No. 70, issued on 10 December, detailed Porter's preliminary instructions to the fleet.

It is first proposed to endeavor to paralyze the garrison by an explosion, all the vessels remaining 12 miles out from the bar, and the troops in transports 12 miles down the coast, ready to steam up and be prepared to take the works by assault in case the latter are disabled.¹⁸⁷

Porter informed Butler of general order no. 70 on 18 December: "I propose standing in the moment the explosion

¹⁸⁶*Joint Committee on the Conduct of the War: Fort Fisher Expedition*, 90.

¹⁸⁷O.R.N., Series I, 11: 245-246.

takes place and open fire with some of the vessels at night to prevent the enemy repairing damages if he has any."¹⁸⁸

Porter realized that positioning warships twelve miles off the coast departed from the fleet's standard blockading formation, which was just beyond the fort's guns off New Inlet and off the entrance to the Cape Fear River at Old Inlet. He anticipated that such erratic movements might excite suspicion in the fort's defenders. As a result, he instructed the fleet to remain on station during the day, showing the usual vigilance, and to position themselves twelve miles off the coast during the night. This daily fleet movement would be done from 17 December until the powdership was launched against the fort. After the explosion, the fleet stationed off Old Inlet would steam to New Inlet, except the steamers *Eolus* and *Nansemond*, which would remain off Old Inlet to blockade the Cape Fear River during the assault.¹⁸⁹

On 17 December, Porter dispatched specific instructions to Lieutenant-Commander P. G. Watmough, commanding the *U.S.S. Kansas*, concerning the launching of the powdership. Using two red lanterns as a signal, all the blockade vessels would move offshore at least twelve miles, keep together,

¹⁸⁸Ibid., 224.

¹⁸⁹Ibid., 221-222.

and run their steam down so the powdership explosion would not damage any of the warships' boilers. One tugboat or steamer would remain to assist the *Louisiana's* crew after they set the fuses and departed.¹⁹⁰ When the time came to launch the powdership against the fort, Porter's instructions to Watmough were as follows:

You [P. G. Watmough] will have a very fast-pulling boat prepared to lie close in, on a line with Fort Fisher, bearing W. 1/2 S.

Mr. Bradford, of the Coast Survey, will go in the boat and place her where the *Louisiana* can run for her.

Prepare a box with lid to hold a red lantern, well trimmed. The boat will show this lantern in a box in a direction the *Louisiana* will come from, being particular never to turn it on shore . . .

When the *Louisiana* has passed Mr. Bradford's boat, he will obscure his light, keeping it ready to show again. He will then pull out about 200 yards and wait for the party from the *Louisiana*, who will pull in his direction.

When the boats arrive, he will show his light in the box to the steamer or tug, which will flash a red lantern quickly, the boats continuing offshore.¹⁹¹

In addition to the instructions dispatched to Watmough on 17 December, Porter informed A. C. Rhind of a number of guidelines he felt essential to the powdership mission. First, Porter distrusted the clock and fuse system on board the *Louisiana*, and informed Rhind that "there may be

¹⁹⁰Ibid., 220.

¹⁹¹Ibid., 221.

something yet unthought of that will affect the clocks and fuzes, but there will be no mistake in a fire." As a result, Porter reiterated the importance of lighting a stern fire before leaving the powdership. Second, he feared a boiler explosion might end the powdership's mission prematurely, so he instructed Rhind to keep the boiler's steam down, to leave the boiler's fire doors open, and to set the boiler's safety valves properly to ensure an outlet for excess pressure. Third, Porter instructed Rhind not to leave the *Louisiana's* propeller turning when the crew left the vessel. He feared that "in a case of a rise in the water and sweeping her bow out the powder vessel might chase you to sea again, and though not overtake you, turn the laugh on us."¹⁹² Finally, Porter instructed Rhind not to run the *Louisiana* hard aground, because, although flat-bottomed, bilging the steamer might wet the powder. Instead of running the powdership hard aground, however, Porter suggested Rhind either gently ground her, or more appropriately, anchor her in the surf. In the event that the Rebels discovered the powdership scheme, anchoring instead of grounding would require that the fort's defenders use boats to board the powdership and would further delay their efforts to extinguish the stern fire or scuttle the

¹⁹²Ibid., 223.

vessel.¹⁹³

Early on 18 December, Admiral Porter dispatched a letter to General Butler informing him of the navy's plan to launch the powdership later that evening and follow the explosion with a fleet attack by daybreak on 19 December. He also indicated to Butler that the weather, although appearing favorable at the time, probably would change for the worse throughout the day.¹⁹⁴ Lieutenant-Commander K. R. Breese left the navy's flagship *Malvern* posthaste and delivered Porter's dispatch to Butler, who commanded the army transport *Ben De Ford* stationed nearby. After reviewing Porter's dispatch, Butler quickly consulted with his advisers, Major-General Weitzel and Colonel Comstock, and directed Weitzel to call for a postponement of the powdership operation.¹⁹⁵ Butler, who understood the original strategy outlined in general order number 70, felt the approaching storm coupled with his fleet's distant position off Masonboro Inlet, greatly hindered his ability to arrive immediately after the powdership explosion and land his infantry.¹⁹⁶ Although Butler informed Porter of the

¹⁹³Ibid., 223.

¹⁹⁴Ibid., 224-225.

¹⁹⁵Ibid., 224.

¹⁹⁶*Joint Committee on the Conduct of the War: Fort*

countermanded orders, the *Louisiana* had already departed for her assault on the fort. Since Butler was not in position, Porter immediately commanded J. H. Upshur, skipper of the *A. D. Vance*, to steam after the *Louisiana* and stop the operation.

Using the fort's Mound Battery light for a bearing, the *U.S.S. Wilderness* towed the powdership toward the fort around 10:00 p.m. Shortly thereafter, however, the Confederates extinguished the Mound Battery light and Captain Rhind, Mr. Bradford, of the Coast Survey, Mr. Bowen, the mission's pilot, and Captain Arey, commanding the *Wilderness*, decided to cancel the operation for the night; the lack of a bearing light, the darkness of the night, and the increasingly bad weather affecting their decision. Shortly thereafter, about 11:40 p.m., the *A. D. Vance* arrived and commander Upshur delivered Porter's official order to postpone the mission.¹⁹⁷ Upshur considered the delay very fortunate since, "a heavy surf was found to be rolling on the beach, and the next day, the wind freshening from the southward, a landing was perfectly

Fisher Expedition, 18-19.

¹⁹⁷Abstract Log of the *U.S.S. Wilderness*, O.R.N., Series I, 11: 229-230, 241-242.

impracticable."¹⁹⁸ Mr. Bradford, of the Coast Survey, supported Upshur's view of the situation. When he attempted to reconnoiter the fort on the evening of 18 December, he nearly capsized in his launch owing to the dangerous surf. He believed "no boat of any kind could have gone on the beach without being destroyed by the breakers . . . on the next day it was even worse, and the surf increased until the gale was at its height."¹⁹⁹

Between 19 and 24 December the poor weather off Fort Fisher intensified. Since Porter's fleet departed Beaufort on 17 December, his forces rode out the storm while Butler's army transport vessels, which left Hampton Roads on 14 December and were stationed at Masonborough Inlet, required coal and provisions. As a result, Butler's flotilla returned to Beaufort to replenish their fuel, food, and water stores. On the night of 23 December, Butler's fleet still maintained their station at Beaufort waiting for the storm to break. Similarly, Porter's fleet, including the powership *Louisiana*, waited off Fort Fisher.

On 23 December the gale force winds off North Carolina's coast finally broke and Porter instructed Commander P. G. Watmough and A. C. Rhind to proceed with the

¹⁹⁸Ibid., 227, 241-242.

¹⁹⁹Ibid., 227.

powdership mission. Porter informed Rhind that he should set the marine clocks on board the *Louisiana* to explode the powdership at approximately 2:00 a.m. on Christmas Eve. This would give the Rebels very little time to recover from the explosion or rebuild any damages to the fort before the naval barrage and army assault.²⁰⁰

Following Admiral Porter's 23 December instructions, Rhind, realizing that surf conditions were favorable for an army amphibious landing, departed with the *Louisiana* on her final mission. According to Rhind's report to Porter on 26 December, he took the powdership to within 300 yards of the beach in front of Fort Fisher, but no further since the clear night gave an advantage to Confederate pickets stationed in the fort. Although the *Louisiana* was underway on the night of the attack, the *Wilderness* towed her most of the way to the fort, hauled off, and remained close to receive the powdership's crew after they set the fuzes.

Rhind later wrote:

We started in from the station vessel, the *Kansas*, Lieutenant-Commander Watmough, at about 10:30 p.m. At about 11:30 the *Wilderness* cast off the powder boat and anchored, the latter steaming slowly ahead until she reached a point E. by N. 1/2 N. from Fort Fisher, and within 300 yards of the beach. The wind was light offshore and it was expected the powder boat would tend to the tide if

²⁰⁰Ibid., 225-226.

anchored. The anchor was accordingly let go, the fires hauled as well as possible, and the men put into the boat. Lieutenant Preston and I then proceeded to light the fuzes and fires . . . When all was fairly done, we observed that the vessel would not tail inshore, and therefore let go another anchor with short scope.²⁰¹

After the fuzes, stern fire, and anchors were set, the crew boarded an oared launch and returned to the *Wilderness*.

Moving at full speed to the fleet stationed 12 miles off the coast, all waited for the tremendous detonation of 215 tons of black powder.

At 1:40 a.m. on Christmas Eve, twenty-two minutes later than expected,²⁰² the powership finally detonated in four distinct explosions. Rhind indicated that he felt very little shock when the powership exploded. Watching from the deck of the *Wilderness*, he turned to several officers standing nearby and said, "there's a fizzle."²⁰³ When the powership detonated, one of Porter's aides, Ensign John W. Grattan, noted that "suddenly a bright flash was observed and a stream of flames ascended to a great height and spread out in an immense sheet of fire, illuminating for an instant

²⁰¹Ibid., 226, 238-239.

²⁰²Although originally instructed to set the marine clocks to explode the powership at 2:00 a.m., Rhind wound the clocks at 11:48 p.m. to go off after one and a half hours. As a result, the explosion should have occurred at 1:18 a.m., but was actually 22 minutes late.

²⁰³O.R.N., Series I, 11: 226; "Story of the Powder-

the whole horizon."²⁰⁴

Confederate accounts of the location and explosion of the *Louisiana* vary greatly from Union reports. Before the powership detonated, Fort Fisher's officer of the day reported to Colonel Lamb, commanding Fort Fisher, that a vessel was on fire about a mile north of the fort. After returning to his quarters, Lamb felt a slight shock followed by an explosion no louder "than the report of a ten-inch Columbiad."²⁰⁵ Lamb later recorded in his official diary that on 24 December "a blockader got aground near fort; set fire to herself and blew up."²⁰⁶

On 25 December, Butler questioned Major John M. Reece, a Confederate prisoner of war who commanded the Eighth North Carolina Junior Reserves at Fort Fisher, about the *Louisiana*. Reece, who surrendered to Butler's infantry on Christmas day, indicated that on the night of the powership explosion, he camped his unit on the beach about two and a

boat," 88; Gragg, Confederate Goliath, 53.

²⁰⁴ John W. Grattan Journal, 24 December 1864, John W. Grattan Papers, Manuscript Collection, Library of Congress, cited in Gragg, Confederate Goliath, 52.

²⁰⁵ Colonel William Lamb, Colonel Lamb's Story of Fort Fisher: The Battles Fought Here in 1864 and 1865 (Carolina Beach, North Carolina: The Blockade Runner Museum, 1966), 14.

²⁰⁶ O.R.N., Series I, 11: 245.

half miles north of Fort Fisher. When the powership, which he believed was a gunboat, exploded, it "jumped him and his men, who were lying on the ground, about like pop-corn."²⁰⁷

Although the explosion was felt by Confederate defenders in and around the fort and heard as far away as Wilmington, Fort Fisher sustained no damage. The explosion displaced none of the guns, failed to level any of the fort's earthen structures, damaged not one foot of the palisade fence, and killed or wounded none of the Rebel defenders. Overall, the powership operation was a complete failure and a waste of time and material.

After the explosion, which occurred at 1:40 a.m. on 24 December, Porter's fleet failed to open fire on the fort until 11:30 a.m. later that day, or almost ten hours after the *Louisiana* exploded. The naval bombardment continued until early evening on Christmas Eve and ended without Butler affecting an amphibious landing. During that time, the fort returned fire only sporadically and not at all after a short time.²⁰⁸ According to Porter's log, "In one hour and fifteen minutes after the first shot was fired not a shot came from the fort; two magazines had been blown up

²⁰⁷*Joint Committee on the Conduct of the War: Fort Fisher Expedition*, 24.

²⁰⁸O.R.N., Series I, 11: 255-256.

by our shells and the fort set on fire in several places."²⁰⁹

On Christmas day, the navy resumed the attack on the fort with a bombardment beginning at daylight. While the navy shelled Fort Fisher, Butler's transport fleet finally arrived from Beaufort and General Weitzel landed 500 men in small boats, established a temporary beachhead, and captured Flag-Pond Hill Battery north of Fort Fisher. Throughout the afternoon, while Butler's forces continued to land, Weitzel continued southward to within 150 yards of Fort Fisher to reconnoiter the position. After he ascertained the condition of Fort Fisher's breastworks, Weitzel reported to Butler that the fort's palisade fence, traverses, and guns, except one, sustained no damage.²¹⁰

Throughout Christmas day, the weather worsened off Fort Fisher and Butler's infantry, only partially landed, struggled to complete the amphibious operation. According to Admiral Porter, around 7:00 a.m. the fleet continued to shell Fort Fisher while Butler's transports arrived and landed the infantry. He dispatched Captain O. S. Glisson with seventeen gunboats to provide covering fire for the troops as well as 100 small boats to assist the army in

²⁰⁹Ibid., 256.

²¹⁰*Joint Committee on the Conduct of the War: Fort Fisher Expedition*, 72.

landing the troops.²¹¹ As the navy continued a slow, consistent barrage of the fort, "the army commenced landing about 2 o'clock . . . [but] commenced to reembark about 5 o'clock, the weather coming on thick and rainy."²¹²

Realizing that equipment and supplies were not yet on the beach, Brigadier-General Charles K. Graham, the officer in charge of the landing, informed Butler that he could not provide for his troops during the night. In addition, Butler's men would soon be unable to get off the beach owing to the increasingly dangerous surf.²¹³ Butler, who quickly reviewed the weather conditions and Graham's uneasiness, decided to postpone the assault on Fort Fisher. Since the fort appeared undamaged in any way, and given the fact that only part of his force was landed without adequate ammunition and supplies to defend themselves, Butler reembarked his units and withdrew without assaulting the fort.²¹⁴

Around 5:30 on 25 December, Porter signaled the fleet to cease firing and directed Commodore William Radford,

²¹¹O.R.N., Series I, 11: 257.

²¹²*Ibid.*, 258.

²¹³*Joint Committee on the Conduct of the War: Fort Fisher Expedition*, 23.

²¹⁴*Ibid.*, 73; O.R.N., Series I, 11: 257-258.

commanding the ironclad division, to move his warships two miles offshore and prepare to withdraw.²¹⁵ Porter later informed Gideon Welles:

On the 25th instant we again took our position within a mile of the fort (the iron vessels within 1,200 yards) without a shot being fired at us. Shelled it all day, with now and then a shot from the rebels, and stopped firing after sunset.

The army landed and reembarked, considering it impracticable to assault the place.

I shall remain here and keep shelling the enemy's works on every occasion, whenever the weather will permit.²¹⁶

By 27 December, however, those warships not relocated to Beaufort, North Carolina, to take on ammunition and stores for an immediate counterattack, returned to Hampton Roads.

Although the first assault on Fort Fisher failed, a second joint operation launched in January 1865 captured the Confederate fort. After the navy delivered two days of extremely accurate naval gunfire, which destroyed most of the fort's guns and opened large holes in the palisade fence, a two-pronged marine and infantry assault succeeded in capturing the earthworks on 15 January.²¹⁷

²¹⁵Ibid., 252.

²¹⁶Ibid., 253-254.

²¹⁷Attack Upon and Capture of Fort Fisher, January 13-15, 1865 indexed in O.R.N., Series I, 11; Gragg, Confederate Goliath, chaps. V-XII; Lamb, The Battle of Fort Fisher, North Carolina, 1-8; Lamb, Colonel Lamb's Story of Fort Fisher.

As with any military operation, however, the army, navy, and government desired an explanation for the 24 December failure. Although the first attack on Fort Fisher resulted in almost no casualties, the time and material wasted amounted to a major Union defeat. Realizing that the Senate's Joint Committee on the Conduct of the War would surely review the 24 December attack, the army and navy quickly coordinated their respective stories and gathered the necessary evidence to defend themselves. For example, by 11 January 1865, H. A. Wise, chief of the Navy Department's Bureau of Ordnance, dispatched letters to Rear-Admiral Porter, Lieutenant-Commander W. N. Jeffers, and Major T. J. Rodman, requesting a detailed report on the powdership operation, including:

The circumstances connected with the arrangement of the powder, the fuzes, and other appliances intended to secure a uniform and simultaneous explosion, together with the manner in which the plan was executed, and their impressions of the result and the effects produced.²¹⁸

Jeffers, Rodman, Porter, as well as A. C. Rhind, immediately complied with Wise's request and advanced detailed versions of the 24 December powdership attack, often supported by a number of additional officers involved with their respective

²¹⁸O.R.N., Series I, 11: 232.

commands.²¹⁹

On 12 January 1865 the Joint Committee on the Conduct of the War assembled to govern a Senate hearing on the failure at Fort Fisher, including the powdership attack. An extensive list of witnesses presented information at the hearing,²²⁰ but after reviewing numerous versions of the powdership operation, as well as the resulting army withdraw on 25 December, placing blame for the failure became a difficult proposition. Given the fact that the attack was a joint operation, a classic army versus navy competition developed almost from the beginning, particularly between General Butler and Admiral Porter, both of whom gathered evidence and supporting accounts to defend their supposed "innocence."

Since the army and navy accounts were tainted by an attempt to rid themselves of blame, Confederate statements, particularly those given by generals William Lamb and W. H. C. Whiting, provided a control by which to judge the Union accounts. Ultimately, B. F. Wade, who chaired the committee, absolved General Butler of his failure to assault Fort Fisher owing to the navy's ineffective artillery

²¹⁹Ibid., 233-240.

²²⁰See APPENDIX F.

barrage.²²¹ Evidently, since Butler was the only participant pardoned for the operation's failure, the committee considered him the only culpable party involved. After reviewing the same accounts and testimony, however, the committee overlooked the fact that the navy, particularly Admiral Porter, deserved blame for the failure.

According to Admiral Porter's official testimony, he accepted Butler's powdership scheme because "we shall never get any men until Butler goes on the expedition, and I am willing to go on any terms; I am willing to take the powder-boat to get the men."²²² Porter also claimed that although he accepted the powdership, he was unsure of the operation's potential success and had little faith the explosion would damage Fort Fisher.²²³ On this particular point, however, Porter's memory lapsed. For example, on 17 December, just before the first attempt at launching the powdership, Porter's dispatched instructions to A. C. Rhind exuded his optimism for the mission's success. Beyond insisting that his fleet station itself at least twelve miles from the powdership explosion to ensure safety, Porter thought:

²²¹*Joint Committee on the Conduct of the War: Fort Fisher Expedition*, viii.

²²²*Ibid.*, 89.

²²³*Ibid.*, 88-89.

the effect of the explosion would be very severe, stunning men at a distance of three or four hundred yards, demoralizing them completely, and making them unable to stand for any length of time a fire from the ships. I think that the concussion will tumble magazines that are built on framework, and that the famous Mound will be among the things that were, and the guns buried beneath the ruins.

I think that houses in Wilmington and Smithville will tumble to the ground and much demoralize the people, and I think if the rebels fight after the explosion they have more in them than I gave them credit for.²²⁴

Although Porter obviously intended the 17 December dispatch to bolster Rhind's confidence, the admiral's strong faith in the powership's success was undeniable.

If the attack on the fort was going to be successful, cooperation between the army and navy was essential. According to the plan, the operation was to be a joint effort in which the navy launched the powership, maintained a steady artillery barrage on Fort Fisher, and dispatched small boats to assist the army in landing infantry. Porter insisted that he effectively cooperated with the army during the operation against Fort Fisher. For example, in a 19 December dispatch, he ordered Rhind to attack with the powership only when there was little or no surf. This would give the army "no cause to say we [the navy] went to

²²⁴O.R.N., Series I, 11: 222.

work without giving them [the army] a chance to land."²²⁵

Porter contended that he provided the army with more than enough time to arrive, affect an amphibious landing, and assault the fort. According to his Senate testimony, he noticed the weather cleared somewhat on 23 December, but not enough to land troops. Finding that no army transports arrived by 5:00 p.m. on 23 December, he sent word to Butler that he planned to explode the powership at 1:00 a.m. on Christmas Eve. Porter believed his dispatch should have reached Butler in five hours, or by 10:00 p.m. on 23 December. This would give Butler enough time to leave Beaufort, where his transports were reprovisioning, and arrive off Fort Fisher by 8:00 a.m. on 24 December, or ten hours after he issued his first order and seven hours after exploding the *Louisiana*.

Seeing that Butler failed to arrive by 8:00 a.m. on 24 December, Porter postponed his naval barrage until 12:00 that same day. Given the lack of coordination between the two fleets, Porter's reliance on such precise timing proved a failure. More important, he deviated from the original strategy whereby Butler's infantry would attack directly after the powership exploded. For example, even if the army transports arrived according to Porter's schedule, as

²²⁵Ibid., 224.

presented at the Senate hearing, Butler's troops would still land at least seven hours *after* the *Louisiana* exploded.

Porter believed the joint operation against Fort Fisher failed for a number of reasons. First, Butler was stationed at Beaufort instead of with the fleet at New Inlet. Second, after the navy's intense artillery barrage, Generals Weitzel and Comstock poorly reconnoitered the fort's breastworks and guns. Third, the army failed to assault Fort Fisher on 25 December, and finally, Butler depended too much on the powership.²²⁶ Only the first of Porter's claims is somewhat valid. Given the precise timing required for such an operation, Butler should have been on the scene with his transports. In any case, if the powership was to be successful, Porter should have waited until Butler's troops were landed and in position to attack the fort. Moreover, although Porter claimed he possessed little faith in the *Louisiana's* success, the optimism exemplified in his 17 December dispatch to A. C. Rhind severely contradicts his hearing testimony.

In respect to Porter's second claim concerning the condition of Fort Fisher after the naval barrage, he was severely mistaken. Porter estimated that only 200 men in

²²⁶ *Joint Committee on the Conduct of the War: Fort Fisher Expedition*, 92, 94-95.

the fort could fire a gun and that "although the fort's guns were not dismounted, they were disabled by sand in their muzzles."²²⁷ According to General Weitzel's hearing testimony, he informed the Senate panel that the object of an artillery barrage was to disable the fort's guns and create an opening for an assaulting infantry column.²²⁸ Weitzel insisted that the navy's two days of shelling failed to meet these two objectives. After he reconnoitered to within 150 yards of the fort's breastworks, Weitzel discovered no substantial damage to the fort's palisade fence, traverses, or to any of the guns themselves, except one. He considered an attack on the fort reckless and that General Comstock, who considered a quick dash into the fort a distant possibility, agreed. After informing Butler, the three conferred and decided to delay the assault.²²⁹

The accounts of Confederate Major-General W. H. C. Whiting and Colonel William Lamb supported Weitzel's and Comstock's view. According to Whiting, despite the fact that Fort Fisher only contained 667 defenders, the fort's land face defenses were in perfect order after the navy's barrage. Although two guns were disabled on the left,

²²⁷Ibid., 90, 92.

²²⁸Ibid., 79.

²²⁹Ibid., 72-74, 85.

"nineteen guns [were] in position. Palisades [were] in perfect order, and the mines the same, the wires not having been cut."²³⁰ When Butler asked Whiting if a force of 3,000 to 6,000 men could have captured Fort Fisher on 25 December, Whiting provided the following answer:

Possible, yes; probable, no. The work was very strong; the garrison in good spirits and ready, and the fire on the approaches, the assaulting [Union] columns having no cover, would have been extraordinarily heavy. In addition to the heavy guns I had a battery of Napoleons, on which I placed great reliance. The palisades alone would have been a most formidable obstacle.²³¹

Nevertheless, Captain James Alden, commander of the sloop of war *Brooklyn*, considered a successful assault a simple matter of timing. Alden noticed that one brigade of Union infantry was nearly up to the fort and advancing in solid column. He suspected that during the naval barrage, the Rebel defenders were surely in their bombproofs for protection. At the moment the navy stopped firing, however, he believed Butler could have rapidly assaulted the breastworks and captured the fort before the Confederates manned their guns. As a result, Alden considered Butler's withdrawal a grave mistake.²³² Nevertheless, despite

²³⁰Lamb, The Battle of Fort Fisher, North Carolina, 2; O.R.A., Series I, 42: 980.

²³¹Ibid., 980.

²³²*Joint Committee on the Conduct of the War: Fort*

Porter's claim that the army prematurely abandoned their amphibious operation on 25 December, the possibility of conquering an undamaged Fort Fisher was unlikely.

Regardless of whether or not Butler actually attacked Fort Fisher on 25 December, Grant had ordered him to land and *entrench* his infantry. General Weitzel, who ultimately agreed with Butler's decision to withdraw, informed the Senate committee that "had he known Grant wanted them to entrench he would have advised Butler accordingly." and, "this is where General Butler clearly made a mistake."²³³ Weitzel also informed the committee that General Grant had no faith in Butler's military abilities. This is further supported by the fact that Grant actually place Weitzel in command of the operation's army contingent, with Butler attending purely in an advisory capacity.²³⁴

If the Union infantry had entrenched on 25 December, General Whiting felt Butler's force would never have survived between 25 December and 15 January 1865, when Federal forces made the second joint attack. According to Whiting, General Braxton Bragg's Division, which "had good position and a larger force," was present to ambush Butler's

Fisher Expedition, 60-61.

²³³Ibid., v, 80 and vi respectively.

²³⁴Ibid., 51, 74.

insufficient force during the two week period.²³⁵ Given the fact that only part of Bulter's infantry successfully landed and that those units were inadequately supplied, the decision to withdraw was a wise choice, especially since Fort Fisher remained undamaged and Bragg's infantry division had position.

General Butler also pointed to a number of mistakes contributing to the failure at Fort Fisher. Beyond the navy's delay at Beaufort, he considered Porter's refusal to run by the fort through New Inlet and the navy's failure to silence the fort's land face guns critical to the 24 December failure. Butler's first claim, that the powership delay at Beaufort caused Union failure, proved minor, however, considering the amount of foul weather as well as the confusion in both fleets as to an appropriate rendezvous area and reprovisioning schedule. According to Butler's second claim, he contended that Porter failed to flank Fort Fisher by entering New Inlet because he feared Confederate torpedoes positioned in the channel.²³⁶ The chances of successfully navigating New Inlet while Fort Fisher possessed a full complement of artillery was unlikely.

²³⁵Ibid., vi; O.R.A., Series I, 42: 980.

²³⁶*Joint Committee on the Conduct of the War: Fort Fisher Expedition*, 27.

Grant supported the this view when he considered running by the fort impossible because the channel was erratic and the water depth inadequate for the navy's warships. Captain Alden's testimony supported this view when he described the difficulty of entering New Inlet after the fort capitulated in January 1865. According to Alden, who skippered the *Brooklyn*, "after a days work, only four vessels entered [the Cape Fear River] and all had been aground at least once. 300-150 yards from the fort's sea face guns."²³⁷ If Porter had attempted to enter New Inlet on 24 or 25 December, the fleet would have passed under Fort Fisher's seaface wall and Mound Battery, the length of which mounted twenty-four heavy seacoast guns. Concerning Butler's final claim, that the navy failed to silence the fort's landface artillery, he was completely correct. Generals Weitzel's, Comstock's, Lamb's, and Whiting's testimony on the fort's condition after two days of artillery bombardment supported Butler's legitimate claim that the navy failed in this particular mission.

In regard to the powder ship itself, several different opinions existed on exactly what happened to the *Louisiana* on 24 December, including how she detonated and how close A. C. Rhind actually positioned her next to Fort Fisher. Porter believed that although the clockwork failed, based on

²³⁷Ibid., 52-53, 66-67.

the twenty-two minute delay in the explosion, the stern fire ultimately ignited the Gomez fuse. He also described the explosion as very instantaneous, and that all the powder on board probably detonated.²³⁸ Butler supported Porter's premise concerning the marine clocks, but disagreed with him on a number of other points. First, out of the 215 tons on board, Butler believed only one tenth of the powder actually exploded and that the navy failed to use Gomez fuses altogether.²³⁹ In addition, Butler insisted that Porter overestimated the likely impact of the powder ship and purposely launched the *Louisiana* against Fort Fisher to win fame for himself and the U. S. Navy. Butler informed the Senate committee that Porter

supposed he would blow the fort all to pieces [using the *Louisiana*], and be able to land with his marines and take possession of it, so that he could say to General Butler, when he got to Fort Fisher with his transports, "Here, general, this is Admiral Porter's fort, taken by him, 'his work,' won't you take it and take care of it?"²⁴⁰

Finally, beyond implicating Porter of glory-hunting, Butler asserted that commander Rhind and his crew flirted with cowardice during their mission. He based this accusation on three assumptions. First, Rhind failed to position the

²³⁸Ibid., 98-99.

²³⁹Ibid., 30-31.

²⁴⁰Ibid., 31.

powdership closer than 2/3 of a mile to the fort. Second, the crew anchored the *Louisiana* instead of running her aground. Third, the crew was afraid to work her machinery or run her propulsion once she departed Beaufort, North Carolina.²⁴¹

In response to Butler's Senate hearing testimony, Rhind reacted strongly to Butler's accusations against the *Louisiana's* final location and to the courage of her crew. Although not summoned by the committee, Rhind presented an additional report dated 16 November 1865 in which he accused Butler of perjury during the Senate hearing.²⁴² In regard to the *Louisiana's* position and her machinery, Rhind indicated that he anchored the powdership, using two kedges, within 300 yards of the beach in front of Fort Fisher and that her machinery was in perfect running order between 18 December when she departed Beaufort up to her attack on the 24th.

In his official 26 December report to Admiral Porter, Rhind indicated that, in his opinion, the powdership failed, "owing to the want of confinement and insufficient fuzing of

²⁴¹Ibid., 31.

²⁴²The following list of officers supported Rhind's statement: Lieutenant R. H. Lamson, Mr. A. T. E. Mullin, assistant engineer; Mr. J. S. Bradford, Coast Survey; Acting Master Arey, commanding the *Wilderness*, Mr. Paul Boyden, acting ensign, and the officers and crews of the *Wilderness* and *Louisiana*.

the mass [of powder]." As a result, "much of the powder was blown away before ignition and its [the explosion's] effect lost."²⁴³ The accounts given by Grattan and others, in which they heard several explosions and observed a large plume of fire, supported Rhind's assumption and disproved Porter's claim that all the powder ignited at once. In reality, before all 215 tons ignited, much of the powder probably blew skyward and ignited in midair producing several detonations and the distinctive "stream of flames" on the horizon. If this was the case, however, the marine clocks probably failed, and the Gomez fuse, which was never placed entirely throughout the vessel anyway, probably never had a chance to ignite the powder "simultaneously." Bearing in mind that the explosion occurred twenty-two minutes later than expected, the stern fire, lighted before the crew left the *Louisiana*, ultimately touched off the powder. This was supported by Rhind when he observed, "the after part of the vessel . . . enveloped in flames."²⁴⁴

Rhind also disagreed with a theory presented by Commander Jeffers, who superintended the stowage of the *Louisiana*, that Rhind may have wound the marine clocks the wrong way. According to Rhind, "as to the idea expressed

²⁴³O.R.N., Series I, 11: 226-227.

²⁴⁴*Ibid.*, 227.

[by Jeffers] that the turns may have been taken the wrong way, it is not worth notice."²⁴⁵ In addition, he indicated that the clocks were common timepieces and completely unfit for such a delicate operation.

At the time Rhind anchored the *Louisiana*, "the fort was bearing W. by S. 1/2 S., breakers on shore and embrasures of the fort plainly in sight." Given this position, the powdership was located just off the northeast bastion of Fort Fisher, or where the landface wall turned south into the seaface wall. Although this may represent the original position of the powdership when Rhind and his crew departed, the *Louisiana* apparently dragged her anchors northward. This assumption is supported by Confederates who observed the powdership before she detonated. For example, Fort Fisher's officer of the day reported a burning vessel on the beach north of the fort and, according to Colonel Lamb, "I had a good opportunity to note the position of the vessel and considered her a mile from the fort."²⁴⁶ Although individuals judge distances differently, certainly Fort Fisher's commander of four years recognized the difference between a vessel burning just outside his fort's walls and one on fire a mile up the beach. Apparently, between the

²⁴⁵Ibid., 239.

²⁴⁶Lamb, Colonel Lamb's Story of Fort Fisher, 13.

time that Rhind anchored the *Louisiana* at 11:55 p.m., and the explosion at 1:40 a.m., the powership drifted approximately a mile northeast of Fort Fisher.

Regardless of her position, however, the *Louisiana's* ability to damage Fort Fisher in any way was doubtful. Even if Rhind drove the powership directly against the fort's walls, the chance of damaging an earthen structure using such an explosion was unlikely. To be successful, the *Louisiana* should have served as a diversion to confuse or stun the fort's defenders while the army assaulted.

During the Civil War, when technological advances including torpedoes, mines, heavy ordnance, iron plating, and more dependable steam propulsion changed the face of warfare, the powership scheme seems almost logical. In an attempt to capture America's largest earthen fortification without expending hundreds or thousands of lives, General Butler's powership was an innovative idea. Since his scheme failed, however, and given the fact that the army withdrew without assaulting Fort Fisher, blaming Butler for the joint operation's failure appeared clear, especially for the Senate committee. In reality, a combination of poor weather, the navy's botched timing and inaccurate artillery barrage, and misuse of the powership *Louisiana* as a diversionary tactic ultimately caused Union failure.

EPILOGUE

The Search for the powership *Louisiana*

During the early 1980s, North Carolina's Underwater Archaeology Unit (U. A. U.) designated site 0008NEI, or the eighth wreck located off New Inlet, North Carolina, as the tentative remains of the powership *Louisiana*. The wreck's pending identity rested on two factors. First, the vessel's close proximity to the remains of Fort Fisher, which seemed logical considering the powership's final destination in 1864. Second, a rough site plan, drawn in 1980, indicated similar machinery and dimensional characteristics as those seen on the historical *Louisiana*.

Funded by the National Park Service, a two-year project began in 1994 for the mapping and investigation of Confederate and Union vessels wrecked off Fort Fisher. In July 1994, East Carolina graduate students, a team from North Carolina's U. A. U., and Southern Oceans Archaeological Research, Inc., of Pensacola, Florida, initiated a joint effort to systematically map as well as determine the historical significance of several Confederate blockade runners and Union blockaders wrecked between Carolina Beach Inlet and Kure Beach, North Carolina.

During the second project year, beginning in July 1995,

the research team returned to the water off Fort Fisher to investigate the Union blockaders, including the powership *Louisiana*. The primary focus of the powership investigation encompassed three goals. First, determine the present condition of the wreckage and assess the overall degradation since preliminary surveys conducted during the 1980s. Second, positively identify the wreckage as that of the powership *Louisiana* by comparing field research to historical records and particulars, and finally, to produce as much of an overall site plan as time and diving conditions would allow.

The site is situated approximately half a mile off Fort Fisher in twenty-five feet of water. Diving conditions proved extremely difficult owing to low visibility and coastal surge. Bottom sediment consisted of a fine mud layer approximately six-inches thick with sand and shell underneath. Sponge, coral, and other concreted growth covered the exposed iron machinery.

Divers located all of the wreck's major components and established a feature-to-feature baseline. The baseline began at the propeller, extended down the propeller shaft, over the engine, and out to a towing bitt. The overall length between propeller and bitt was approximately 140 feet. During mapping, divers used the main baseline to

accurately locate all subsequent site materials and allowed for a better understanding of feature-to-feature relationships. Researchers mapped the propeller, propeller shaft, engine, and boiler in detail (See APPENDIX H).

A primary objective of the investigation involved locating the *Louisiana's* hull. If it were iron and resembled other Harlan and Hollingsworth hull construction, characterized by a unique clamp-over-bar framing technique, a significant contribution toward identifying the wreck as the powership could be made. Unfortunately, divers failed to locate any of the wreck's hull structure during a visual inspection. In addition, after using a dredge to cut test trenches, no hull remains, either iron or wooden, were located. Although the hull remained elusive, divers discovered a large debris field forward of the engine and boiler, as well as a leather boot, cutlery handles, and iron-ware ceramic shards.

At this time, the wreck's identity remains a mystery. Although designated as the *Louisiana* by U. A. U. and sport divers for at least the last twenty years, it is not the famed 1864 powership. The lack of an iron hull, inconsistencies in her machinery compared to historical data, and the presence of artifacts not consistent with a floating bomb dismiss site 0008NEI as the *Louisiana*.

The Mystic built *Twilight*, a wooden-hulled, screw-steamer built in 1865, wrecked off New Inlet, North Carolina, shortly after the Civil War. The *Twilight* was a virtual sister ship to the *Louisiana* in all respects except that she possessed a wooden hull. Her dimensions and machinery were virtually identical. In November 1865, the *Twilight*, on a voyage from New York to Wilmington, got aground off New Inlet during gale. She went to pieces and her cargo was a total loss.²⁴⁷ Given the nature of site 0008NEI's remains, the wreck is probably the steamer *Twilight*. If this is the case, however, the *Louisiana*'s location remains a mystery. Although described as a "fizzle," perhaps the powder explosion and the last 131 years of northeasters and hurricanes claimed her completely.

In conclusion, the shipwrecks located off Fort Fisher represent unique features of a significant American Civil War battlefield. Currently, the interpretative program at Fort Fisher focuses primarily on the fort's defensive role. Little has been done to make the public aware of the importance of Civil War blockade runners and the battlefield

²⁴⁷Underwater Archaeology Unit. U.S.S. Twilight History File. On File with the North Carolina Underwater Archaeology Unit, Division of Archives and History, North Carolina Department of Cultural Resources, Kure Beach, North Carolina, n.d.

nature of the waters located adjacent to the fort.

Following the fieldwork, an assessment of the surviving vessel structure and the nature and scope of the archaeological record will be developed. In addition, North Carolina will develop a management plan to ensure protection of these resources. This will include the development of one or more of the wrecks as an underwater park for sport divers as well as accompanying historical information located in nearby on the beach. Hopefully, subsequent researchers will continue searching for the mysterious powder ship *U.S.S. Louisiana*.

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APPENDIX A

Proclamation by the President of the United States concerning internal and coastwise intercourse

Whereas, in pursuance of the act of Congress approved July 113, 1861, I did, by proclamation, dated August 16, 1861, declare that the inhabitants of the States of Georgia, South Carolina, Virginia, North Carolina, Tennessee, Alabama, Louisiana, Texas, Arkansas, Mississippi, and Florida (except the inhabitants of that part of Virginia lying west of the Allegheny Mountains, and of such other parts of that State and the other States hereinbefore named as might maintain a loyal adherence to the Union and the Constitution, or might be from time to time occupied and controlled by forces of the United States engaged in the dispersion of said insurgents) were in a state of insurrection against the United States, and that all commercial intercourse between the same and the inhabitants thereof, with the exceptions aforesaid, and the citizens of other States and other parts of the United States was unlawful and would remain unlawful until such insurrection should cease or be suppressed, and that all goods and chattels, wares and merchandise coming from any of said States, with the exceptions aforesaid, into other parts of the United States without the license and permission of the President, through the Secretary of the Treasury, or proceeding to any of said States, with the exception aforesaid, by land or water, together with the vessel or vehicle conveying the same to or from said States, with the exceptions aforesaid, would be forfeited to the United States. And, whereas, experience has shown that the exceptions made in and by said proclamation embarrass the due enforcement of said act of July 13, 1861, and the proper regulation of the commercial intercourse authorized by said act with the loyal citizens of said States:

Now, therefore, I, Abraham Lincoln, President of the United States, do hereby revoke the said exceptions, and declare that the inhabitants of the States of Georgia, South Carolina, North Carolina, Tennessee, Alabama, Louisiana, Texas, Arkansas, Mississippi, Florida, and Virginia (except the forty-eight counties of Virginia designated as West Virginia, and except also the ports of New Orleans, Key West, Port Royal, and Beaufort in North Carolina) are in a state of insurrection against the United States, and that all commercial intercourse, not licensed and conducted as provided in said act, between the said States and the inhabitants thereof, with the exceptions aforesaid, and the

citizens of other States and other parts of the United States, is unlawful and will remain unlawful until such insurrection shall cease or has been suppressed, and notice thereof has been duly given by proclamation; and all cotton, tobacco, and other products, and all other goods and chattels, wares and merchandise coming from any of said States, with the exceptions aforesaid, into other parts of the United States, or proceeding to any of said States, with the exceptions aforesaid, without the license and permission of the President, through the Secretary of the Treasury, will, together with the vessel or vehicle conveying the same, be forfeited to the United States.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed. Done at the city of Washington this 31st day of March, A. D. 1863, and of the Independence of the United States of America the eighty-seventh.

By the President:

A. Lincoln

APPENDIX B

*Order of Acting Rear-Admiral Lee, U.S. Navy,
to Commander Davenport, U.S. Navy, transmitting blockade
instructions and enjoying their strict observance.*

December 2, 1862.

The blockade is intended to interdict all trade whatever with the country blockaded by the North Atlantic Blockading Squadron from the Piankatank River, Chesapeake Bay, southward to South Carolina, except the port of Beaufort, N.C., which is open to trade by the proclamation of the President.

It is necessary that sailing vessels having supplies for the army on board, passing into the sounds, should have and exhibit manifests and clearances from the custom-house at the port which they left, or quartermaster's certificates that they are in the employ of the army, or bills of lading certified by him, which papers must be carefully examined by the commanding officer of the guard boat to ascertain if they or the character of their supplies are irregular. The masters of the vessels must also certify on honor that their supplies are for the army or navy only, and that there is nothing else except the usual stores for the vessel, and the officers and crew on board.

Sailing vessels which have brought supplies to the army or navy, and which are passing out in ballast, will need no certificates, and will be allowed to pass; if, however, they carry return cargoes, it will be necessary for them to have and exhibit certificates from the general commanding the department, or from such officer or officers as he may officially designate for that duty, certifying that these cargoes are composed only of army supplies or other Government property.

As regards steamers, if the general commanding will furnish you with an official list of such as are in the regular service of the army in his department, and will agree promptly to notify you in writing of any additions to, or deductions from, this list as they may be made, such steamers will be allowed to pass in and out without stopping. Such, however, as do not appear on this list will be required to exhibit certificates or clearances as to the case of sailing vessels unless they are troop transports.

No vessel can pass in or out with merchandise except under a permit from the Treasury, War, or Navy Department, and not until such permit and her manifest have been

examined by the commanding officer of the guard vessel and either the original permit (which is much preferred) or a copy of it taken and sent in with the weekly boarding returns; in the latter case, the copy is to be certified as correct by the master of the vessel and by the commanding officer of the guard vessel, who will then note on the original the date of boarding in words with his signature.

No officer of the Army or Navy of any rank, or any person other than the Secretary of the Treasury, War, or Navy, or his assistants, can give a permit to pass a vessel in or out with merchandise or articles for traffic; and any vessel attempting to pass in with merchandise or articles for traffic without a permit, as above designated, must be warned off and the warning endorsed upon her papers, with date and signature of the commanding officer of the guard vessel. If such warning is not taken and she persists in entering, she must be detained and the facts reported to me for reference to the Navy Department. Vessels attempting to pass out with merchandise and without a permit, as above designated must be detained and the fact reported to me for reference to the Navy Department, unless they prefer to return, discharge, and go out in ballast.

Care must be taken not to allow vessels taking refuge in either Hatteras or Ocracoke inlets in foul weather to enter the sounds.

Each guard vessel will keep a boarding book and also make a weekly return in duplicate, showing the name and class of all vessels passing the guard vessels, date of passing, whether in or out, names of masters and owners, cargoes, tonnage, and whether with army or navy supplies, or, if by special permit, of what Department. The permits and certificates, or certified copies of them, must accompany these returns (duplicate copies accompanying the duplicate returns) and must each be numbered to correspond with the same number set against the name of each vessel, respectively, in the weekly return. These weekly returns must be forwarded by earliest opportunities.

Each guard vessel must keep the guard flag flying at all times.

S. P. Lee,

Actg. Rear-Admiral, Comdg. North Atlantic Blockading Squadron.

APPENDIX C

Additional blockade instructions from Acting Rear-Admiral Lee, U.S. Navy

U. S. Flagship Minnesota Off
Wilmington, N.C., September 1,
1863

Blockaders must not waste fuel by unnecessary moving about in the daytime.

Boats used for landing on the beach should be suitable for the purpose, and provided with a good kedge; a long, strong, and clear cable line, means to keep it ahead, a stern line, good oarsmen, and must be commanded by a skillful officer or petty officer. Where a vessel has been from six weeks to two months on the blockade, and needs repairs, she may, when practicable to leave the blockade, come in turn to coal and be overhauled at Norfolk.

Outside cruising and distant chasing must not be allowed, except when the blockade is so strong and close, from number and quality of vessels, as to allow one to be absent for this purpose on each side of the shoals.

Each blockader should have one spare anchor on board and two spare anchor stocks; besides these a suitable supply of spare anchors, cables, and anchor stocks will be kept at Beaufort.

The blockaders must not lie huddled together by day or night, and especially in thick weather; there must be specified day anchorages and night positions.

Vessels should weigh anchor before sunset and be in their night positions by dark, as when the draft of vessels or stage of the tide permits, escapes are made out at or near to evening twilight, without showing black smoke, and inward in the morning at daylight. The distance to be kept from the bar, the batteries, and the beach, must be regulated by the state of the weather and atmosphere and the light. When vessels anchor at night they must be underway one hour before dawn of day, so as not to expose their position, and to be ready to chase.

Each vessel will make a report on the first day of each month, giving an abstract of her log for the previous month. Unusual detention in harbor must be carefully accounted for.

Each blockader should have two good 8, 9, and 10-inch manila hawsers, the first two sizes for the smaller, and the two last sizes for the larger vessels. Each blockader must have double the usual allowance of good leads and leadlines. She must always have four good lines marked, and leads not

too light ready for use. Leadlines must be corrected daily (when wet) and then noted in the log. When underway the lead must be hove constantly. There must always be two good leadsmen, one on each side, heaving the hand lead when it can be used.

Every effort must be made to prevent collisions, the general laws of the road to pass to the right must be observed, but the vessel which has sea room on her side must not force the other into danger. Both vessels steer or stop, or back so as to avoid a collision or running into danger (see all the directions printed in the boat code signal book).

When a prize is taken, the duplicate list of the vessels, officers, and crews entitled to prize money must be promptly made out and transmitted through me, and must state not only the name of the vessel but that she belongs to the North Atlantic Blockading Squadron, commanded by Acting Rear-Admiral S. P. Lee.

Each vessel must have on a deck board, in charge of the officer of the deck, accurate tables showing time of high and low water, and of moon rise and set, and of the rising and setting of the sun.

Each vessel must keep in charge of the officer of the deck a varnished sketch of the chart on a deck board, shoring the shore line, the 1,2,3 fathoms curves, the significant soundings, the positions of prominent objects, the anchorage, and a compass.

The senior officer present may, if he wishes it, station one to show a light from a position known to all the others, on which they can take bearings; the steamer should be ready to move at a minute's warning, and in the event of doing so, must lower the light.

There must be a separate deck board on which the commanding officer must every morning plainly put the distinguishing signals for the next night, which he must know are understood by the officers of the deck and forecastle, and the men to attend the light, and he must see that such arrangements are made as will ensure, under all circumstance, that the proper means are ready for making the necessary signals.

Respectfully, yours,
S. P. Lee

Actg. Rear-Admiral, Comdg. North Atlantic Blockading
Squadron

APPENDIX D

November 23, 1864

To consider the foregoing papers and discuss the subject generally, Mr. Fox, on the evening of the 23rd instant, assembled the following-named officers at the residence of Captain Wise: General Dyer, Colonel Maynadier, Major Benton, Lieutenant-Commander Aulick, Lieutenant-Commander Jeffers, Lieutenant-Commander Ives.

The following propositions were submitted and discussed seriatim:

1. To explode on board a vessel 300 tons of gunpowder for the purpose of destroying either Fort Fisher or Fort Caswell.
2. How near would it be safe for the operator to be who explodes the powder?
3. The manner of producing the explosion: Shall it be done by Beardslee's or some other battery, or by the Gomez or other fuse?
4. How shall the powder be stowed? What the character of vessel?
5. What would be the effect upon persons in the fort not injured by falling timber, stones, etc., at a distance of 800 yards?
6. Suppose 300 tons were exploded in a vessel on shore (aground) at Federal Point, what would be the effect upon the earthworks on that point and the people in them?

Proposition 1.--The discussion began with a question by General Dyer, that supposing the explosion is effected, will we gain the advantages sought?

Mr. Fox explained, in substance, that if the explosion will deprive the people in the forts of all power to resist for a period of two or three hours, ample time will thereby be afforded for the fleet to pass. The Navy must therefore be ready to move forward immediately, using light-draft vessels to lift torpedoes, etc.

The principal object in view is to silence and destroy or occupy the forts, and thus get command of

the mouth of the [Cape Fear] River and put an end to all blockade running. This will place Wilmington in the same condition as Mobile. The possession of Federal Point will give us the key to the whole position. The contemplated draft of the powder vessel will be 12 feet, and her nearest approach estimated at 450 yards.

The discussion of this first proposition naturally entered into that of all the others, and was followed during the entire interview.

Proposition 2.--The answer agreed upon to this was, that a safe distance for the operator would be 5 miles.

Proposition 3.--In considering this the probabilities of failure were kept in view, and it was remarked that the Beardslee apparatus experienced difficulties in its operations at Norfolk in removing piles. It was finally decided, however, to make use of several of these machines, with separate and distinct wires leading to different parts of the mass of powder, and at the same time to use the Gomez fuse and several arrangements of clockwork in order to insure an ultimate success.

Proposition 4.--In relation to this the conclusion reached was that the powder should be stowed as much above water as it could be with due regard to the safety of the vessel; to be put up in sacks or bags of 100 pounds each and placed in separate bins communicating with each other, the bins to be lined with tin, hermetically sealed and surrounded with bags of sand on the outsides and top.

The vessel should be a large steamer of light draft, accompanied by a small tug to bring off the crew.

Proposition 5.--The answers to this were of course only conjectural, but the opinion was that the explosion would lift the covering of the bombproofs and have a demoralizing and great physical effect upon the garrison.

And this proposition, in connection with the direct question embraced in proposition 6, was thus answered:

That the explosion would injure the earthworks to a very great extent, render the guns unserviceable for a time, and probably affect the garrison to such a

degree as to deprive them of power to resist the passage of naval vessels by the forts and the carrying of these works by immediate assault.

Finally, it was unanimously decided that, taking into consideration the great importance of the question, and the advantages to be derived from a successful result as compared with the outlay of means necessary to make the experiment, the effort should be made by exploding a mass of 300 tons of gunpowder in a vessel as near the earthworks on Federal Point as it may be possible to do.

APPENDIX E

*Officers and Crew manning the U.S.S. Louisiana
24 December 1864.*

Commander: A.C. Rhind

Officers: Lieutenant S.W. Preston,
Second Assistant Engineer A.T.E. Mullin
Master's Mate Paul Boyden

Enlisted Crew: Frank Lucas, coxswain
William Garvin, captain forecastle
Charles J. Bibber, gunner's mate
John Neil, quarter gunner
Robert Montgomery, captain afterguard
James Roberts, seaman
Charles Hawkins, seaman
Denis Conlan, seaman
James Sullivan, ordinary seaman
William Hinnegan, second-class fireman
Charles Rice, coal heaver.

APPENDIX F

*List of Witness who testified at the Senate Joint Committee
on the Conduct of the War concerning the
24 December attack on Fort Fisher:*

Henry W. Halleck, assigned to Chief of Staff of War
Dept.

D. D. Porter, (Rear Adm.) Cmdr, North Atlantic
Squadron, Union Navy.

K. R. Breese, Fleet Capt., North Atlantic Squadron,
Union Navy.

Benjamin F. Butler (Maj. Gen.), formerly involved in
expedition against Fort Fisher.

Ulysses S. Grant (Lt. Gen.), formerly involved in Fort
Fisher expedition.

Godfrey Weitzel (Maj. Gen.), Cmdr, 25th Corps, Union
Army.

C. B. Comstock (Brig. Gen.), Aide-de-Camp, Gen. Grant;
formerly with Fort Fisher Expedition.

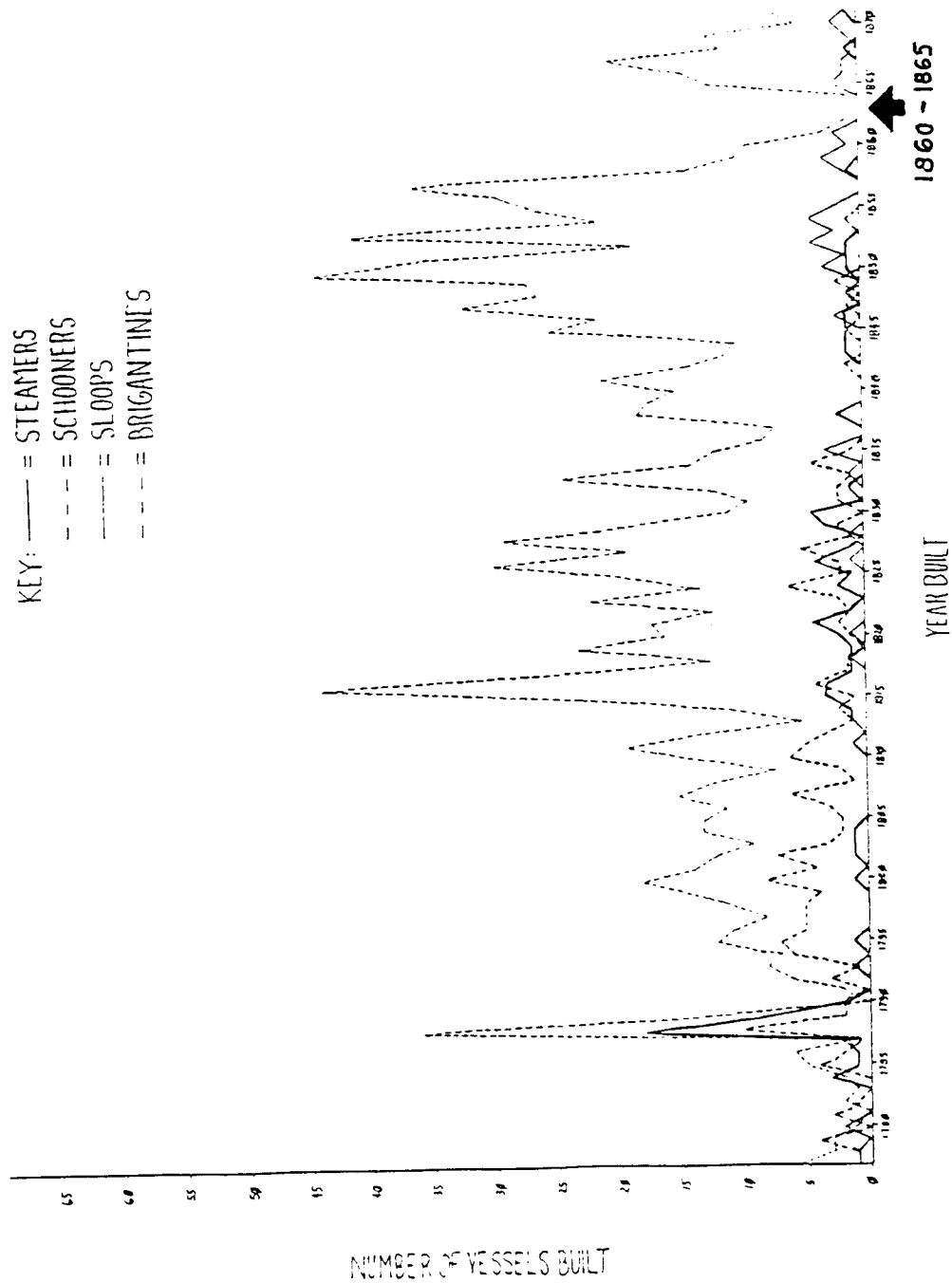
Henry A. Wise (Capt.), Chief, Bur. of Naval Ordnance.

James G. Benton (Capt.), Bur. of Ordnance, Navy Dept.

T. J. Rodman (Maj.), Army Ordnance.

APPENDIX G

Graph Illustrating Decline in North Carolina Shipbuilding During the Civil War



Source: Coogan and Jones, A Statistical Analysis of North Carolina Shipbuilding.

APPENDIX H

Site Plan of Site 0008NEI, Summer 1995

