

Confederate Wooden Gunboat Construction:

Logistical Nightmare

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The Confederate States Navy built wooden gunboats throughout the American Civil War. Within Civil War literature, more research and detailed analysis of Confederate States Navy construction focuses on building of ironclad vessels. Wooden gunboat construction is largely ignored. This thesis examines wooden gunboat construction in two different areas of the Confederacy: northeastern North Carolina in Washington and Elizabeth City, and the Mars Bluff Navy Yard in South Carolina. Before presenting two Confederate wooden gunboat construction case studies, a look at Confederate industrial, manufacturing, and transportation infrastructure, from the national perspective, brings into focus the logistical limitations station commanders faced in northeastern North Carolina and at Mars Bluff more clearly. Scattered, yet interdependent, marine manufacturing and ordnance facilities, connected by a suspect transportation network, created a logistical nightmare. Historical investigation into wooden gunboat construction in Washington, Elizabeth City, and Mars Bluff, examines an overlooked Confederate States Navy building program.

CONFEDERATE WOODEN GUNBOAT CONSTRUCTION:
LOGISTICAL NIGHTMARE

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Chapter 1: Limited Historical Evaluation

Considering the amount of scholarship on the American Civil War, one area remains neglected. The number of studies directed toward the Confederate States Navy pales in comparison to literature about the armies. The perception that little documentary evidence concerning the Confederate States Navy and its activities survived the war helps suppress widespread research into an important aspect of the American Civil War.

Within the Confederate States Navy's limited historiography, scholars focus much of their attention on development of ironclads and underwater technology; operations of Confederate privateers, commerce raiders, and blockade runners are also more visible. Confederate wooden gunboat construction remains shrouded by uncertainty and limited study. While it is true naval authorities, led by Confederate Navy Secretary Stephen Mallory, preferred newer technologies to combat superior Union naval power, wooden gunboats continued as part of Confederate naval strategy throughout the Civil War. The problem is that wooden gunboat construction after 1862 lagged well behind ironclads and, therefore, has produced marginal research interest.

During the past 150 years, historians slowly began peeling away the layers surrounding Confederate ironclad construction. William N. Still's *Iron Afloat*, published in 1971, helped pave the way for more detailed studies devoted to Southern ironclad policy. He felt too many historians labeled Confederate States Navy ironclad construction as a failure for never overcoming the Union blockade. Rejecting this notion, Still argued that Confederate naval policy necessarily shifted to a defensive strategy based upon design and practicality.¹ His work provided the framework for more detailed evaluations of Southern naval stations and building

¹ William N. Still, *Iron Afloat: The Story of the Confederate Armorclads* (Nashville, TN: Vanderbilt University Press, 1971), 227.

efforts. Years later, Robert G. Elliott's *Ironclad on the Roanoke: Gilbert Elliott's Albemarle*, in 1994, and *Confederate Phoenix: the CSS Virginia* by Thomas Campbell and Alan B. Flanders, in 2001, shed light upon those specific ironclad vessels. The latter two studies detail construction, strategy, and operation of those specific ironclads.² Still's study, which included chapters on ironclad construction and those two vessels, helped spark more detailed analysis of two Confederate ironclads built during different phases of Confederate States Navy strategy.

Coupled with ironclads, Confederate underwater technological development fit into the overall Civil War historical narratives as innovations of the modern naval age. The *CSS Hunley*, lost during its final combat mission, captivated and intrigued historians. Likewise, the torpedo boat *CSS David* caused similar excitement. Robert S. Solomon's *The CSS David: The Story of the First Successful Torpedo Boat*, in 1970, and *The H. L. Hunley, The Secret Hope of the Confederacy*, by Tom Chaffin, in 2008, represent two studies of the more exotic rebel naval activities.³ The Confederate States Navy's narrative is also bolstered by studies and research centered around the exploits of Admiral Raphael Semmes and other commerce raiders.⁴ Many studies represent more romanticized topics associated with the Confederacy.

In addition to topically driven studies, in recent decades more comprehensive histories have been published attempting to tell the entire story of the Confederate States Navy, incorporating construction efforts, combat operations, and aspects of diplomacy. Raimondo Luraghi's *A History of the Confederate Navy*, in 1996, and Tucker Spencer's *Blue and Gray*

² Robert G. Elliott, *Ironclad on the Roanoke: Robert Elliott's Albemarle* (Shippensburg, PA: White Mane Publishing Co., Inc., 1994), xv; R. Thomas Campbell and Alan B. Flanders, *Confederate Phoenix: The CSS Virginia* (Shippensburg, PA: Burd Street Press, 2001), xii-xiii.

³ Robert S. Solomon, *The CSS David: The Story of the First Successful Torpedo Boat* (Columbia, SC: The R. L. Bryan Company, 1970); Tom Chaffin, *H. L. Hunley, The Secret Hope of the Confederacy* (New York: Hill and Wang, 2008).

⁴ Raphael Semmes, *Memoir of Service Afloat, During the War Between the States* (Baltimore, MD: Kelly, Piet, 1869; rep., Baton Rouge: Louisiana State University Press, 1996).

Navies, in 2006, each offer complete overviews of Confederate naval history.⁵ Although Tucker's study includes Union naval history, it focuses upon the Confederate States Navy in a complete way. He centered his overview on technological innovations developed by each side.⁶ Despite each study's inclusive nature, little time is spent on wooden gunboat construction and its associated logistical activities.

Research devoted to strictly wooden gunboat construction and related logistics remains limited. The few historians that researched wooden gunboats and the efforts to build them are scattered within the technologically driven Confederate historiography. Some recent research has generally been broad, incorporating the entire Civil War naval story. Other studies that attempted to narrow their focus into regional perspectives remained within a technologically driven historiographical thread.

Only four studies specifically devote serious time and research to wooden gunboat construction. All four studies are questionable if considering a specific historiographical path; however, all four distance themselves from the usual Confederate naval perspective. These histories are scattered over a 110 year period beginning in 1887 and ending in 1996. While many decades separate them, each adds significantly to a neglected area of Civil War history.

Thomas Scharf, a former Confederate Midshipman, published *History of the Confederate States Navy* in 1887. His comprehensive study looked at the Confederate States Navy as a whole.⁷ Instead of merely putting a memoir together, Scharf attempted to present the entire Southern navy story. From the beginning, the author argued that the Union won the war based

⁵ Raimondo Luraghi, *A History of the Confederate Navy* (Annapolis, MD: Naval Institute Press, 1996), xi.

⁶ Spencer C. Tucker, *Blue and Gray Navies: The Civil War Afloat* (Annapolis: Naval Institute Press, 2006), xxviii.

⁷ J. Thomas Scharf, *History of The Confederate States Navy: From Its Organization To The Surrender Of Its Last Vessel. Its Stupendous Struggle With The Great Navy Of The United States; The Engagements Fought In The Rivers And Harbors Of The South, And Upon The High Seas; Blockade- Running, First Use Of Iron-Clads and Torpedoes, And Privateer History* (New York: Fairfax Press, 1877), 8.

upon its superior naval strength and that its armies were consistently outclassed and outfought for four years. The discrepancy between Union North versus Confederate South's naval strength compelled Scharf to write a history explaining the Confederate States Navy's overlooked, and outmatched, contributions to "the cause."

Scharf's study was comprehensive and generally praiseworthy. He detailed each geographic region within the Confederacy, recounting naval activities in each. He described blockade running operations, commerce raiding, and naval technological innovations. Of special significance to Scharf were the joint military operations of the Union army and navy, arguing that their combined strength was too much for the Confederacy to handle. As a former Confederate naval officer, Scharf did not conceal his generally praiseworthy opinion of his former employer and brothers in arms. He felt that, in spite of the economic and industrial disparities, Confederate naval officials did more with less, especially in the pursuit of new technology. The author's emotional attachment clouded an objective view of the Confederate States Navy. Regardless of the study's tone, Scharf began a Civil War historiographical thread. Though offering little detail in ship construction, the author's overview attempted to present a complete record of events, operations, and construction efforts of the Confederate States Navy.

Decades passed before William N. Still published *Confederate Shipbuilding* in 1969. Still's study did not focus on combat operations of the rebel navy, but rather he analyzed systemic influences affecting Confederate warship production, focusing on three areas: facilities, material, and labor.⁸ Through vigorous research, Still successfully argued Confederate competence in constructing warships. Though not a comprehensive study as neither combat operation nor Confederate activities overseas are included, Still's research provided groundwork for more research and effectively splintered the historiography of the Confederate States Navy.

⁸ William N. Still, *Confederate Shipbuilding* (Athens, Georgia: University of Georgia Press, 1969, 23, 47, 61.

It was splintered because he did not specifically focus on one shipbuilding program over another. Despite more documentary evidence favoring ironclad production, Still laid the foundation for comprehensive shipbuilding research, regardless of which program might be investigated.

In 1988, Maxine Turner's *Navy Gray: A Story of the Confederate Navy on the Chattahoochee River* represented the next step in an embryonic historiographical thread. Turner focused her attention upon a forgotten and overlooked area within Civil War research.⁹ Emphasizing Confederate naval activities in the Apalachicola River system, Turner offered a substantive look at a forgotten area of Confederate naval history. The author detailed all aspects of life, meticulously describing the area's historical development economically, socially, and politically. Successful description enabled Turner to articulate the river system's place within the overall structure of Confederate naval operations.

The genius behind Turner's study is its originality. The author purposely devoted primary research to an overlooked area. Focus on regional Confederate naval activities included a substantive look at the construction and repair of the *CSS Chattahoochee*, a wooden gunboat. Since Scharf's study opened the door and Still's laid the foundation, Turner's look at the Confederate States Navy in interior Alabama and Georgia offered promise for more wooden gunboat research.

John M. Coski's *Capital Navy*, in 1996, followed a framework similar to Turner's. Coski offered a complete overview of the James River Squadron including combat and construction.¹⁰ Coski's emphasis inevitably covered ironclad construction, as four were built in and around Richmond; but he detailed local operations offering insights into all construction, including

⁹ Maxine Turner, *Navy Gray: The Story of the Confederate Navy on the Chattahoochee and Apalachicola Rivers* (Tuscaloosa, Alabama: The University of Alabama Press, 1988), xv.

¹⁰ John M. Coski, *Capital Navy: The Men, Ships, and Operations of the James River Squadron* (New York: Savas Beatie, 2005), viii.

wooden gunboats. Coski's organization mirrored Turner's look at the Chattahoochee River. It might be a stretch to include *Capital Navy* in this historiographical evolution, but the similarities in structure to Turner's study and the complete nature of Coski's depiction of Confederate naval construction made it a useful research aid.

Even with recent strides in Confederate wooden gunboat research, other regions involved remain neglected. Two areas, eastern North Carolina during the first year of the war and northeastern South Carolina on the Great Pee Dee River during the Confederate Navy's reorganization through the end of the war, have been ignored. Upon closer examination, logistical limitations faced in these two areas mirror other, more studied, commands. Problems faced by commanders and shipbuilders constructing ironclads were similar to those faced by wooden shipbuilders, despite material and design differences.

This thesis will first present a brief overview of the establishment of the Confederate States Navy. Following that initial overview, two separate building programs will be covered: the ironclad program and the wooden program. Between the two programs, shipbuilding facilities and industrial capabilities of the Confederacy will be addressed. By presenting the two programs simultaneously, logistical problems experienced by both programs will be brought into focus. After describing the Confederate States Navy's wooden gunboat program, two case studies will be detailed. One chapter will focus on the CSS *Peedee*; the other will center on wooden gunboat construction in eastern North Carolina during the war's first year. These chapters will demonstrate the logistical problems faced by shipbuilders at the local level. Through presentation of Confederate wooden gunboat construction at both national and local levels, it will be shown that the wooden gunboat program's logistical problems mirrored those of ironclad production.

Chapter 2: Establishing a Navy Department

Establishment of the Confederate States Navy occurred amid confusion and uncertainty. Seven states seceded from the Union during the three month period from December 1860 through February 1861. Those seven states; South Carolina, Mississippi, Florida, Alabama, Georgia, Louisiana, and Texas, began their transformation from members of the United States into pieces of what they hoped would become a new independent, internationally recognized country.¹¹ On February 8, 1861, southern leaders and delegates from those states met and agreed upon a provisional government of the Confederate States of America.¹²

With the Confederate government formed on paper, leaders charged with its direction began establishing a functional government. Institutions and areas of governance started to take shape and the Confederacy began readying itself for any potential hostility the United States might unleash. The possibility of armed conflict was real and Confederate authorities began forming a national military force. The provisional government formed a committee to take care of naval affairs on February 14, 1861. Resolution number fourteen, as it was listed, suggested all men familiar with naval affairs be included in its creation; this proclamation was the first official reference to a Southern navy. A week later, on February 21, 1861, the Provisional Confederate Congress created the Confederate States Navy, officially including the department within the executive branch.¹³

To lead the Confederate government, delegates in Montgomery elected Jefferson Davis as the first President. Davis filled available cabinet positions quickly. For Navy Secretary, the President chose Florida's Stephen R. Mallory, a former United States Senator with experience in

¹¹ William N. Still, *The Confederate Navy: The Ships, Men, and Organization, 1861-1865* (London: Conway Maritime Press, 1997), 3.

¹² *Acts and Resolutions of the First Session of the Provisional Congress of the Confederate States, 1861* (Montgomery: Barrett, Wimbish & Co., Printers and Binders, 1861), 4.

¹³ *Acts and Resolutions*, 7, 16-17.

naval affairs. While serving in Congress, Senator Mallory sat on the Senate Naval Affairs Committee and studied the configuration and organization of many of the world's contemporary navies. Some southerners opposed the president's appointment as Mallory received lukewarm support from the Committee of Naval Affairs. Despite the opposition, Mallory filled the position with confidence and energy, though having little executive experience.¹⁴

Confederate States Navy Department

From the beginning, the naval department was placed in a subservient position to the Confederate War Department within Davis's administration. Faced with a significant frontier, President Davis, a former army officer and United States Secretary of War, placed greater emphasis on land based military capabilities and defense. The President thought of the navy sparingly as politics and public opinion focused his energies elsewhere, chiefly on the Confederate Army. Unlike the War Department, Secretary Mallory and the Confederate Navy Department were left largely unmolested by presidential intrusion and micromanagement. Mallory had considerable freedom in developing the new Southern Navy, but received little help or encouragement from other departments preoccupied by prospects of land invasions from the north.¹⁵

Mallory faced a tremendous challenge building a modern navy from scratch. The secretary had no working navy, not even a staff to whom he could delegate responsibility. He submitted a report to the Provisional Confederate Congress outlining the command structure and organization of a navy that included four Captains, four Commanders, thirty Lieutenants, five Surgeons, five Assistant Surgeons, six Paymasters, and two Chief Engineers. Within this report, the secretary asked for a total of \$2,065,110 for the navy's first fiscal year ending February 1862.

¹⁴ Joseph T. Durkin, *Confederate Naval Chief: Stephen R. Mallory* (Chapel Hill: University of North Carolina Press, 1954), 130-135.

¹⁵ Spencer C. Tucker, *Blue and Gray Navies: The Civil War Afloat* (Annapolis: Naval Institute Press, 2006), 8.

The money provided salaries, funds for repair to the Pensacola Navy Yard, and the purchase or construction of ten steam gunboats.¹⁶

A few days after Mallory's first report, the Confederate Congress made accommodations for a working navy department. With the act, published March 16, 1861, legislators created the organizational framework all officers and personnel would follow. The offices of Orders and Detail, Ordnance and Hydrography, Medical Supply, and Clothing and Provisions were created to complete the administrative structure. Six companies of marines were authorized. Rank and pay, as well as rules regarding leave, resignation, and retirement for all commissioned and noncommissioned officers were outlined.¹⁷

The four main offices within the navy department, along with the Marine Corps, functioned much like the United States Navy. Although following a similar organizational framework, the navy department compressed several separate offices found in the United States Navy into one of the four established by the first Confederate legislative acts. Unlike the United States Navy, the Confederate States Navy had no independent offices for construction, maintenance, or engineering. This organizational deficiency extended to shore installations. Aspects of repair and construction as well as the navy yards where maintenance took place were assigned to the Office of Ordnance and Hydrography. Matters of equipping vessels, including the acquisition of coal, went through the Office of Orders and Detail. Mallory helped streamline this organizational deficiency in 1863 by creating the positions of Chief Naval Constructor and Engineer in Chief who reported directly to him.¹⁸

¹⁶ Stephen Mallory to 1st Provisional Confederate Congress, March 12, 1861, *Official Records of the Union and Confederate Navies in the War of the Rebellion* ser. 2 vol. 2, (Washington: Government Printing Office, 1931), 44-50; Hereinafter cited *ORN*.

¹⁷ *Acts and Resolutions*, 66-72.

¹⁸ Tom Henderson Wells, *The Confederate Navy: A Study in Organization* (Tuscaloosa, Alabama: The University of Alabama, 1971), 4.

Despite being quite small in comparison to the War Department, the Confederate States Navy had no shortage of capable men seeking leadership positions. Mallory appointed Lawrence Rousseau, Josiah Tattnall, Victor M. Randolph, and Duncan N. Ingraham as the first Confederate Navy Captains. For the rank of Commander, the secretary extended commissions to Ebenezer Farrand, Thomas W. Brent, Raphael Semmes, and Henry J. Hartstene. Those eight men constituted the first senior Confederate naval officers, but they had no navy to command.¹⁹ While waiting for ships and fleets to be constructed and equipped, some staffed command positions in the different bureaus during the department's first months. Of those eight senior officers, Captain Lawrence Rousseau briefly commanded the Office of Orders and Detail in August 1861.²⁰ Captain Duncan N. Ingraham commanded the Office of Ordnance and Hydrography until November 1861.²¹

Although having administrative freedom and a familiar organizational structure, Mallory faced a multifaceted problem organizing the Confederate States Navy. The only navy he possessed existed on paper. Quickly turning laws and proclamations into a functioning navy department proved difficult. Considering the proximity of the enemy, the length of the Confederate coastline, and the lack of an industrial base, Mallory needed to assess and implement naval directives quickly, before hostilities between the Confederacy and United States began. Unfortunately for Mallory, the prospects of an extended peace, enabling implementation of a comprehensive plan to produce a navy, evaporated April 12, 1861.

That evening, in Charleston, South Carolina, hostilities commenced between the Confederacy and United States. Under orders from General P. G. T. Beauregard, Southern forces opened fire on Fort Sumter. In response to this overt act of aggression, President

¹⁹ Raimondo Luraghi, *A History of the Confederate Navy* (Annapolis, MD: Naval Institute Press, 1996), 15.

²⁰ Wells, *The Confederate Navy*, 13.

²¹ *Ibid.*, 46.

Abraham Lincoln issued a proclamation calling for 75,000 troops from all states to quell hostilities.²² In response, southern states still debating the question of secession made their choice. Four states, Virginia, North Carolina, Tennessee, and Arkansas, affirmed their support of the Confederacy, seceding within weeks of President Lincoln's proclamation. Despite the welcome addition of those states, especially Virginia, Secretary Mallory had to establish a navy with a war raging around him.

Assembling a Navy: State Navies, Confiscation, and Purchase

With a departmental framework and new officers, Mallory set out to obtain ships. Three options existed for the navy secretary. First, he could confiscate, purchase, and fit out vessels in Confederate waters. Second, purchasing and building ships overseas in European yards seemed attractive, and could possibly cement alliances with established maritime powers. Third, Mallory could implement a domestic shipbuilding program at yards throughout the South. With naval technologies quickly evolving during the mid-nineteenth century, Mallory could go in two directions with the third option, a wooden or iron plated fleet. All three options were put to use by Mallory's department.

The confiscation and purchase of existing vessels occurred almost immediately. Even before the Confederate government was formed, seceding state governments acted. After passing the Ordinance of Secession, leaders in Charleston mobilized state defenses, including a small naval force. Governor Francis Pickens acted quickly to quell fears of an amphibious invasion. The South Carolina legislature provided funds for coastal defense forces. The South Carolina Navy consisted of two small vessels that patrolled Charleston Harbor. Later, in early January 1861, state leaders appropriated funds for the construction of "three propeller driven

²² An Official Presidential Address of Abraham Lincoln, April 15, 1861, *The Collected Works of Abraham Lincoln Volume IV 1860-1861* (New Brunswick, New Jersey: Rutgers University Press, 1953), 331-332.

ships” for \$150,000. These ships would help guard Charleston, Beaufort, and Georgetown from invasion.²³

Throughout the South, as states left the Union, state legislatures and governors acted to provide for defense of their state borders. Different southern states approached naval defense with varying degrees of urgency. Georgia followed a path similar to South Carolina, forming a state navy consisting of two purchased steamers. In addition to purchasing vessels to convert into warships, Georgia appropriated money to build three new ships.²⁴

Unlike actions taken by South Carolina and Georgia leaders to protect important ports, Mississippi’s state leaders charted a different course. Preoccupied with an expansive river frontier, state leaders in Jackson favored land based shore installations with heavy artillery. A small coastline bordering the Gulf of Mexico mattered little, as the western border took precedent. Bolstering the Mississippi River’s protection, Louisiana seized forts at the river’s entrance and secured two revenue cutters. During February 1861, state run naval forces were absorbed into the Confederate States Navy.²⁵ Upon his appointment, Secretary Mallory acquired a small navy consisting of ten ships mounting fifteen guns.²⁶

Mallory accepted the few vessels state governments mustered. Any ship able to float and carry armament was welcomed. As the Confederacy’s borders broadened through mid-1861, the state navies of Virginia and North Carolina sold seven vessels to the Confederate Navy for coastal defense. In addition to absorbing state navies, the Confederate Navy converted eight

²³ Luraghi, *A History of the Confederate Navy*, 5; Specifics Associated with the formation of the South Carolina Navy can be found through messages given by Gov. Francis Pickens to the state legislature in the South Carolina state archives.

²⁴ *Ibid.*, 7.

²⁵ Luraghi, *A History of the Confederate Navy*, 7.

²⁶ J. Thomas Scharf, *History of The Confederate States Navy: From Its Organization To The Surrender Of Its Last Vessel. Its Stupendous Struggle With The Great Navy Of The United States; The Engagements Fought In The Rivers And Harbors Of The South, And Upon The High Seas; Blockade- Running, First Use Of Iron-Clads and Torpedoes, And Privateer History* (New York: Fairfax Press, 1877), 24-25.

more ships for naval service, including the CSS *Sumter* and CSS *McRae*.²⁷ Understanding that construction efforts at both public and private yards would take time to set in motion, Mallory instituted a second purchasing initiative overseas.

Great Britain, and its shipyards, was the destination of officials charged with making purchases on behalf of the Confederate States Navy. Mallory chose Georgia's James D. Bulloch as the first Confederate naval agent serving abroad.²⁸ Having extensive service in the United States Navy and knowledge of the Mississippi River system, Bulloch was surprised by his assignment. He stated:

Remembering the discussions on the subject at New Orleans, I got the impression, when summoned to Montgomery, that I was wanted about the Mississippi River defenses, and the Secretary of the Navy's laconic query, when I could start for Europe, rather surprised me. There was, however, no time for parley...The South was outnumbered in population at least five to one. In military and naval resources the disproportion was many times greater...Mr. Mallory briefly touched upon the condition of his department...A committee of naval officers were examining the few vessels at the different Southern ports, but up to that date had found only the one in Semmes had in hand which could be converted into a ship-of-war.²⁹

Mallory instructed Bulloch to purchase as many as six steam propellers overseas. If purchasing was not an option, he was to begin the process of constructing Confederate vessels in foreign yards. Building vessels was less desirable because constructing them could tangle political and diplomatic waters. With the bombardment of Fort Sumter weeks before, vessels were needed quickly. Confederate agents overseas acted cautiously, under constant surveillance by United States agents and diplomats. In addition to procuring ships, Bulloch arranged to purchase clothing, artillery, ammunition, and small arms for sailors and marines.³⁰

²⁷ William N. Still, *Confederate Shipbuilding* (Athens, Georgia: University of Georgia Press, 1969, 6-7.

²⁸ *Register of Officers of the Confederate States Navy: 1861-1865* (Washington: Government Printing Office, 1931), 25.

²⁹ James D. Bulloch, *Secret Service of the Confederate States in Europe: How the Confederate Cruisers Were Equipped* (New York: G. & P. Putnam's Sons, 1884), 44-46.

³⁰ Mallory to Bulloch, May 9, 1861, *ORN* ser. 2 vol. 2, 64-65; Frank J. Merli's *Great Britain and the Confederate States Navy* is an excellent resource concerning Confederate Navy activities in Great Britain.

Great Britain was not the only European country Mallory wished to buy or construct naval vessels in. The secretary also sent Lt. James H. North to France. The French, much like the British, had tremendous shipbuilding capabilities. In addition, the French Navy, years earlier, began their navy's transformation into an iron plated fleet. Lt. North's objective was to purchase a ship similar to the *Glorie*.³¹ If not feasible, his objective mirrored Bulloch's, establish an arrangement for constructing vessels for immediate Confederate use.³²

The purpose of securing vessels overseas was to attack the United States' commerce and merchant shipping. With a navy still in its infancy, Mallory needed scarce maritime military resources available to protect Southern ports from the United States Navy. Lacking sufficient ships, Mallory wished to use a few purchased cruisers to attack northern shipping, diverting Union vessels and supplies. While chasing Confederate commerce raiders, establishing an effective blockade would take more time. In addition, amphibious assaults from the Atlantic might be disrupted. The diversionary tactic would give Mallory and the Confederate States Navy time to import more war materials from overseas and simultaneously ship large cotton stores to foreign markets, keeping the Confederacy financially stable. Impeding Union blockading operations also meant more time implementing a domestic shipbuilding program.³³

Ironclad vs. Wooden Gunboats

Organizing a shipbuilding program within the Confederacy's borders was a daunting task. The South lacked the industrial and manufacturing capacity the Union possessed. With an economy based upon agriculture, the infrastructure for widespread shipbuilding was not available. Mallory had intimate knowledge of the operational capabilities of the current United

³¹ Ed. Robert Gardiner, *Steam, Steel, and Shellfire: The Steam Warship 1815-1905* (London: Conway Maritime Press Ltd., 1992), 53-54.

³² Mallory to North, May 17, 1861, *ORN* ser. 2 vol. 2, 70-72.

³³ Mallory to Davis, April 26, 1861, *ORN* ser. 2 vol. 2, 51-52.

States Navy as well as its capacity for quick expansion. In addition to his knowledge of the United States Navy, Mallory had studied other navies of the world and knew the impact technology had on design and direction of building programs.³⁴ Steam engines, armor plating, and changes in ordnance were on the cusp of transforming the projection of naval power. Perhaps technological change in ship design was the wildcard Mallory and his small navy department could play in combating the number, economic, and industrial superiority the United States Navy possessed.

The Confederate States Navy's ship building program went in two directions. One path advocated ironclad warships, the other wanted wooden vessels. Many influential naval officers with prior service in the United States Navy contributed to the two programs. John M. Brooke, William Williamson, Catesby ap. R. Jones, John L. Porter, and Matthew Fontaine Maury were instrumental in implementing the building programs. Both vessel types, ironclad and wooden, were constructed and used by the Confederate States Navy. During the war's first year, advocates on both sides argued the strengths and weaknesses of their construction initiatives. To build a fleet, historian William Still described a three tiered approach: contract with private shipyards, construct directly in government controlled yards, and finally, send government agents to supervise building efforts at yards.³⁵

Ironclads

Ultimately, the decision regarding the allocation of resources to either program rested with Secretary Mallory. Technological innovation won the day and, from the beginning, ironclad warships were his department's priority. He described his intentions to Confederate Naval Affairs Committee Chairman C. M. Conrad. He stated:

³⁴ Durkin, *Confederate Navy Chief*, 133.

³⁵ William N. Still, *Iron Afloat: The Story of the Confederate Armorclads* (Nashville, TN: Vanderbilt University Press, 1971), 8-9.

I regard the possession of an iron-armored ship as a matter of the first necessity. Such a vessel at this time could traverse the entire coast of the United States, prevent all blockades, and encounter, with a fair prospect of success, their entire Navy...But inequality of numbers may be compensated by invulnerability; and thus not only does economy but naval success dictate the wisdom and expediency of fighting with iron against wood, without regard to first cost. Naval engagements between wooden frigates, as they are now built and armed, will prove to be the forlorn hopes of the sea, simply contests in which the question, not of victory, but of who shall go to the bottom first.³⁶

Seeing the numerical superiority of the United States Navy in comparison with his makeshift fleet of coastal defenders, Mallory proposed combating those numbers with superior ship design.

The ironclad program gained momentum after Virginia entered the Confederacy. Having expressed his preference for ironclads, Mallory saw the Commonwealth as an avenue for completing “a class of vessels...unknown to naval service.”³⁷ Richmond and Norfolk provided the infrastructure needed for ironclad construction. Norfolk possessed the South’s premier shipbuilding facility and Richmond its largest ironworks.

After Virginia’s inclusion in the Confederacy, President Davis moved the Confederate government to Richmond. Soon thereafter, Secretary Mallory and three men—John M. Brooke, John L. Porter, and William Williamson—devised plans for the South’s first ironclad. They agreed to use a partially burned steam frigate, the USS *Merrimack*, as the basis for their efforts. The steam frigate’s engines were the deciding point. It would prove difficult and costly to build suitable engines. The time it would take producing those engines domestically or abroad was not available. Porter took care of ship construction, Williamson ran the engineering aspects, and Brooke looked after the iron plating.³⁸ The conversion of the USS *Merrimack* into the CSS *Virginia* took many months before completing the ship in March 1862.

³⁶ Mallory to Conrad, May 10, 1861, *ORN* ser. 2 vol. 2, 69.

³⁷ Mallory to Davis, April 26, 1861, *ORN* ser. 2 vol. 2, 51.

³⁸ Stephen Mallory to Thomas S. Boccock, March 29, 1862, *ORN* ser 2 vol. 2, 174-176.

As Confederate ironclad construction began in Norfolk during July 1861, the possibility of expanding the program increased. At first, large scale ironclad production seemed far fetched if based on preliminary reports from Captain Duncan N. Ingraham. Mallory had sent Ingraham throughout the Confederacy in search of suitable facilities for rolling two-inch plating for armored vessels. Ingraham reported that facilities located in Tennessee, Kentucky, and Atlanta needed time to adjust their machinery to produce two-inch plate.³⁹ Although not able to help construction efforts immediately, Mallory hoped the transition could be made in the coming months to help expand ironclad construction.

As 1861 rolled along, ironclad construction expanded into the western half of the Confederacy. Recognizing the vulnerable position of the Mississippi River, local leaders in Mississippi and Louisiana ordered vessels to defend the river's length.⁴⁰ Arrangements were made to build more ironclad warships in Memphis and New Orleans. By February 1862, two ironclads were under construction in Memphis. At the other end of the Mississippi River in New Orleans, more ironclads were under construction with the CSS *Louisiana* almost complete.⁴¹ In all, a total of five western ironclad vessels were under construction by February 1862. Vessels built on the Mississippi River were intended to serve double duty, repel an invasion and also fight at sea.

Initially, the ironclads constructed in Norfolk and on the Mississippi River were larger ships because it was hoped that, after breaking the blockade, they would operate on the open sea, possibly menacing northern ports.⁴² As the war changed over time, construction and design changed to suit a defensive strategy focusing on protecting harbors. The battle of Hampton

³⁹ Duncan N. Ingraham to Stephen Mallory, May 23 and 28, 1861, *ORN* ser 2 vol. 2, 73.

⁴⁰ Luraghi, *A History of the Confederate Navy*, 103-105.

⁴¹ Mallory to Davis, February 27, 1862, *ORN* ser. 2 vol. 2, 149-152.

⁴² Still, *Iron Afloat*, 78.

Roads, Virginia, solidified the ironclad's standing as the ship of the future, but the Confederacy no longer possessed a monopoly on ironclads. The USS *Monitor* and other Monitor-Class ironclads ended any hopes for a Confederate advantage in naval technology. Confederate ironclads continued to be built, but were designed for shallow water and defensive operations in harbors and rivers.

Wooden Gunboats

Even though Mallory preferred an ironclad fleet, he recognized the need for wooden vessels. Many officers preferred wooden vessels over ironclads. Considering the inadequate condition of industry and manufacturing facilities, some officers felt the safest, cheapest, and fastest route to a fleet rested with wooden ships. Indeed, the first ships in the Confederate States Navy, those absorbed from state navies, were wood. The wooden program consisted of three main ship classifications. In total, more than 115 wooden vessels were constructed or attempted.⁴³

The first group of wooden vessels were ordered and contracted during that first summer of the war. As plans were made for ironclads in Virginia and on the Mississippi River, Mallory arranged for wooden ships in New Orleans and Mobile to bolster Gulf coast defenses. Designed with both side-wheels and sails, these ships were less than two-hundred feet long. These ships carried up to ten large guns each.⁴⁴

The next class of wooden vessels was designed by John L. Porter. After Porter entered the Confederate States Navy in May 1861, he served in Virginia, at Norfolk's Gosport Navy Yard. In 1863, he became Chief Constructor of the Confederate Navy and served in that

⁴³ Still, *The Confederate Navy*, 43.

⁴⁴ *Ibid.*, 43-44.

capacity until the war's end.⁴⁵ Porter was initially involved with conversion of the USS *Merrimack* into the ironclad CSS *Virginia*. Along with his involvement in that project, Porter expanded his duties into other projects. He proposed building large wooden gunboats, divided into three classes during the fall of 1861. The first class was to be 110 ft. long, the second 130 ft. long, and the largest class 150 ft. long. Tying these three classes together was a ten foot hold, length, and similar propulsion systems harnessing steam and sail power.⁴⁶

These gunboats were contracted for and built in different shipyards in the Confederacy. The smallest type was built near Pensacola, Florida, but destroyed in March 1862. Two ships of the second classification were contracted near Columbus, Georgia, and Elizabeth City, North Carolina. Only the CSS *Chattahoochee* was completed by January 1863. Seven were contracted but only two were completed.⁴⁷

The last group of wooden vessels was conceived by Matthew Fontaine Maury. Maury was a veteran of the United States Navy and renowned for his scientific study and charting of the world's oceans.⁴⁸ While Maury saw the potential of ironclad warships, he felt the Confederacy's best chance at constructing a fleet rested with wooden vessels. He felt that defending home waters, including rivers and sounds, should be the Confederate States Navy's first priority. He wrote a detailed overview of his plan to construct small wooden vessels for shallow water operations in October 1861.⁴⁹

Maury's plan was simple. The craft would be 112 feet in length with a 21 foot beam and draw no more than six feet. These small crafts would protrude no more than two feet about the

⁴⁵ *Register of Officers*, 155.

⁴⁶ Building Specifications for 150 ft. Wooden Steamer, Edward M. L'Engle Papers, Southern Historical Collection, University of North Carolina, Chapel Hill; Still, *The Confederate Navy*, 45.

⁴⁷ Still, *The Confederate Navy*, 45.

⁴⁸ Francis Leigh Williams, *Matthew Fontaine Maury: Scientist of the Sea* (New Brunswick, New Jersey: Rutgers University Press, 1963), vii-viii.

⁴⁹ *ORN* ser. 2 vol. 2, 98-104; Letter to Governor Letcher, Oct. 8, 1861, Maury Family Papers, Library of Congress.

water. Despite being wooden, Maury wanted each craft armed with the newest weaponry. Rifled guns would be mounted on pivots for either side of the craft. The Maury craft would be propelled by a small steam engine rather than sail. No cabin or superstructure would be erected on the main deck. Those serving would take only enough provisions for a few days time.⁵⁰

The proposed design had many qualities Confederate authorities needed to consider. To Maury, a smaller craft able to operate in shallow waters offered the best chance for domestically built ships to combat a naval blockade. A shallow draft meant larger Union vessels would have trouble navigating shallow sounds and river systems to combat smaller vessels. Rifled guns meant greater accuracy from a longer distance. Knowing that many Union vessels mounted smoothbores, Maury sought to exploit this use of less accurate weapons before the United States Navy could counter with improved weaponry. A smaller craft with more accurate guns could combat larger, less maneuverable vessels with less accurate weapons, at a longer distance. Economically, smaller wooden vessels made more sense because they could be built quickly and much cheaper than their iron plated counterparts.⁵¹

Maury's gunboat proposal received support from some Confederate authorities. Virginia's Governor Letcher was one of the first to listen to Maury's plan. Later, other Confederate leaders warmed to the idea of a Jeffersonian fleet of vessels.⁵² Initially planned for use in Virginia's rivers and the Chesapeake Bay, Maury's plan was expanded for use throughout the Confederacy. Before Maury's proposal was official, Mallory apparently authorized construction of two medium sized gunboats in Norfolk. The gunboats, CSS *Hampton* and CSS

⁵⁰ Francis Leigh Williams, *Scientist of the Sea*, 383.

⁵¹ *ORN* ser. 2 vol. 2, 98-104; Letter to Gov. Letcher, Maury Family Papers, Library of Congress.

⁵² Williams, *Scientist of the Sea*, 383.

Nansemond, were built to similar specifications and eventually operated on the James River.⁵³ In December 1861, the Confederate Congress authorized construction of 100 Maury gunboats with \$2,000,000 appropriated.⁵⁴ Since ironclads were still unproven, the wooden gunboat project was the most ambitious construction initiative proposed by Confederate naval authorities.

In the spring of 1862, the *CSS Virginia* and *USS Monitor* brought Maury's wooden gunboat program to a screeching halt. Ironclads would be emphasized by Confederate construction efforts. Their design was modified for service in shallower waters. Emphasizing ironclad production did not spell the end of wooden gunboat production. From March 1862 through the end of the war, more wooden vessels were completed and launched; however, they were a secondary building program.

Problems with Construction

As ships from both programs continued to be built, similar problems arose concerning their construction. Despite some material differences, each program experienced similar logistical problems throughout the war. Each program was dependent upon the same small labor force, inadequate rail system, limited industrial base, and the larger, more politically important War Department. Worse, Union advances in early to mid-1862 stagnated progress made in establishing necessary shipbuilding infrastructure. As the war unfolded, creating makeshift facilities only to see Union military advances disrupt progress exacerbated an already strained logistical nightmare.

⁵³ John M. Coski, *Capital Navy: The Men, Ships, and Operations of the James River Squadron* (New York: Savas Beatie, 2005), 26.

⁵⁴ Act Authorized by the Confederate States of America, December 23, 1861, *ORN* ser. 2 vol. 2, 117.

Chapter 3: Inadequate Infrastructure

In the decades preceding the Civil War, the economies of the southern and northern United States took diverging paths. The North expanded its manufacturing, industrial, and distribution capabilities during the first half of the nineteenth century. The South placed its economic fortunes on an agriculturally based society with less diversification. Driving this lack of diversification was the plantation system fueled by slave labor and focusing on a few profitable crops, especially cotton. These crops were shipped north and overseas for manufacture into usable products for sale in domestic and foreign markets. Both the North and South amassed considerable wealth through this system, each region reinforcing the other economically.⁵⁵

In the South, an interdependent network of production and distribution between regions hurt internal infrastructure. Shortsightedness of southern leaders confronted with enormous agricultural profit put Southern economic interests into Northern hands. The few products produced in southern cities were largely dependent upon merchant shipping based in northern ports such as New York, Boston, and Philadelphia. Southern leaders inadvertently outsourced important industrial, manufacturing, and distribution capabilities critical for wartime military production.⁵⁶ These inadequacies hurt Secretary Mallory's efforts in naval construction.

This was the reality Confederate officials faced in the development of naval forces. A non-industrial, agriculturally based economy created numerous logistical challenges. President Davis said it best while addressing a Joint Session of the Confederate Congress in February 1862:

⁵⁵ James McPherson, *Battle Cry Of Freedom: The Civil War Era* (New York: Oxford University Press, 1988), 91-93.

⁵⁶ *Ibid.*, 92.

The people of the Confederate States, being principally engaged in agricultural pursuits, were [not] provided at the commencement of hostilities with ships, ship-yards, materials for shipbuilding, or skilled mechanics and seamen in sufficient numbers to make the prompt creation of a navy a practical task, even if the required appropriations had been made for the purpose.⁵⁷

As a result, both programs, ironclad and wooden, faced similar problems launching vessels to face the Union Navy.

Despite design differences, each program relied on a small population base with limited industrial economic infrastructure. Establishing necessary facilities and maintaining those stations' operations was difficult to orchestrate. Each specific aspect of the Confederate shipbuilding complex faced the challenge of operating heavy industrial and manufacturing activities within a marginally developed economic environment. Complicating things further was an underdeveloped transportation network overwhelmed by wartime conditions.

Smaller Population and Limited Urbanization

After the southern states formed the Confederacy, economic and industrial discrepancies between the two belligerents were staggering. First, population differences made a prolonged war favor the Union. Union states had a total population of more than twenty-two million people while the Confederate States had a little more than nine million. Second, driving that population discrepancy further were three and a half million slaves within the rebellious states' total population. Slavery strained the skilled workforce available to fight and work in wartime industry.⁵⁸ It was not that slaves themselves lacked certain skills, as many of them were artisans and contributed labor to Confederate efforts, but the financial lifeline of the Confederacy rested on exporting cotton. Slaves maintained the plantations and continued large scale crop

⁵⁷ Jefferson Davis to the Confederate Congress, February 25, 1862, *War of the Rebellion: Official Records of the Union and Confederate Armies*, ser. 4 vol. 1, (Washington, DC: Government Printing Office, 1885), 952; Hereinafter Cited *ORA*.

⁵⁸ C. G. Kennedy, *Preliminary Report of The Eighth Census, 1860* (Washington: Government Printing Office, 1862), 131.

production. To stop agricultural production meant financial ruin. Financial ruin meant no importation or production of war materials.

The smaller population base contributed to the Confederacy having fewer cities than the North. With fewer large southern cities, less industrial and manufacturing development took place. Of the ten largest cities in the United States, the Confederacy contained only New Orleans, with a population of 168,675. The next two largest cities in the Confederacy were Charleston, South Carolina, and Richmond, Virginia, with populations near 40,000.⁵⁹ Production and manufacture of goods in the South paled in comparison to the Union. The Confederacy produced some 10 percent of the total manufactured products within the United States.⁶⁰ Fewer urban centers meant a smaller industrial base to mobilize for naval ship construction.

Iron production in the Confederacy was limited and closely associated with the smaller industrial and manufacturing base. The South contained some small rolling and foundry mills that produced bar, sheet, and rail iron. Only eleven such facilities were of any consequence: five in Virginia, three in South Carolina, one in Georgia, and two in Tennessee.⁶¹ Virginia was the most important of these iron producing Confederate states. In comparison to Pennsylvania, the nation's leading producer of iron products at \$15,000,000, Virginia's \$1,500,000 output is quite small.⁶² Despite its paltry production compared to its northern neighbors, Virginia's inclusion in the Confederacy substantially increased Confederate industrial and manufacturing capabilities.

⁵⁹ Kennedy, *Eighth Census*, 242-244.

⁶⁰ David G. Surdam, *Northern Naval Superiority and the Economics of the American Civil War* (Columbia: University of South Carolina Press, 2001), 32-33

⁶¹ Still, *Shipbuilding*, 25.

⁶² William N. Still "The Facilities for the Construction of War Vessels in the Confederacy" *The Journal of Southern History*, Vol. XXXI, No. 3 (Aug. 1965), 286-287.

Less urbanization, industrial, and manufacturing capabilities contributed to a less concentrated citizenry. An agriculturally dominated society led to a smaller population; however, Secretary Mallory faced another problem. The War Department continuously shortchanged the Navy Department's search for skilled labor to assist needed warship construction. Either through conscription or civilian service to the army, Mallory encountered labor shortages at manufacturing and ship construction facilities. Correspondence between the war and naval departments suggested that everything was being done to address the labor situation, but Mallory consistently complained of top field commanders dragging their feet in providing men for navy service.⁶³ His complaints grew louder as the war progressed and conscription laws passed by the Confederate Congress conflicted with earlier statutes passed to help solve the Navy's labor shortages.⁶⁴

In addition to Mallory's problems securing and maintaining skilled labor, workers he did find often went unpaid. Many workers encountered long stretches when pay was delayed. In some cases, installation commanders like William F. Lynch shifted funds intended for supply and machinery to pay disgruntled workers.⁶⁵ Midshipman Richard Bacot complained of delays receiving pay while stationed in eastern North Carolina.⁶⁶ The Confederate government's inability to pay its workers and military personnel affected both battlefield morale and industrial efficiency. The latter point was constantly made by Mallory to Confederate Treasury officials.⁶⁷

Each specific aspect of the Confederate States Navy's shipbuilding complex faced operating an aggressive building program in an economically unsuitable and less-developed

⁶³ Mallory to Benjamin, January 10, 1862, *ORN* ser. 2 vol. 2, 127.

⁶⁴ Stephen Mallory to Sydney Smith Lee, October 31, 1864, *ORN* ser 2. vol. 2, 753-755.

⁶⁵ Stephen Mallory to C. G. Memminger, June 8, 1863, Letters Received by Confederate Treasury Secretary, National Archives and Records Administration, Record Group 365, Roll 35, 402.

⁶⁶ Richard H. Bacot to sister, March 19, 1864, Richard Bacot Papers, North Carolina State Archives, Raleigh, NC.

⁶⁷ Stephen Mallory to C. G. Memminger, April 13, 1864, Letters Received Confederate Treasury Secretary, RG 365, Roll 35, 549, 565; Stephen Mallory to George Trenholm, Aug. 2, 1864, Letters Received Confederate Treasury, RG 365, Roll 35, 600; Mallory to Trenholm, Sept. 10, 1864, 617.

industrial environment. Shipyards, marine machinery manufacturing facilities, ordnance foundries, and powder works were scattered throughout the Confederacy. While these facilities were initially situated in a few major ports and cities, many stations were relocated after the spring of 1862. Union amphibious assaults on either side of the Confederacy, coupled with a strengthening Union blockade and the Union's increased presence on major Confederate rivers, curtailed initial construction efforts. Those same Union incursions not only forced a contraction and relocation of many Confederate naval manufacturing locations, but also disrupted the internal flow of supplies, raw materials, and other resources. Railroads, reinforced by water-based transportation, could marginally handle internal distribution before 1862. After reorganization of facilities during spring and summer 1862, transporting valuable war materials became more difficult and ship construction efforts suffered.

Shipbuilding Facilities

New Orleans, Charleston, and Richmond became areas of Confederate naval construction. Joining them were Mobile, Savannah, Memphis, and Wilmington, which boosted naval ship construction for Mallory's department. In total, thirty-six private yards existed in Confederate states.⁶⁸ To some historians, this number is inaccurate and a bit low.⁶⁹ They point to facilities located deep in the interior on rivers not being accurately counted in census numbers. Contributing to these discrepancies were the quick construction, and then destruction, of smaller yards. Between 1850 and 1860, there were 145 shipbuilding facilities in the southern United States, including Maryland, Kentucky, and in the counties that became West Virginia. Historian William Still found that the true number, probably never to be accurately represented, seemed to

⁶⁸ United States Census Office, Eighth Census, 1860, *Manufactures of the United States in 1860* (Washington, 1865), 716; Still "The Facilities for the Construction of War Vessels", 286. Areas along the Ohio River, including Wheeling, Virginia and parts of Kentucky, never contributed to Confederate Navy building.

⁶⁹ Still, "Construction of War Vessels", 285-286; Victor S. Clark, *History of Manufacturers in the United States* (3 vols. New York, 1929), I, 470.

be somewhere between 145 and 36.⁷⁰ With border slave states staying in the Union, some shipbuilding and manufacturing facilities were unavailable to the Confederacy.

Accompanying the Southern ports were two government operated ship building facilities. Pensacola was the first yard to be included, followed by the Gosport Navy Yard near Norfolk. The Pensacola Yard, despite being government owned, was older and outdated. Its main activities emphasized light repair and refueling operations. Conversely, the Gosport Yard was the largest and most modern shipbuilding facility in the South.⁷¹

By late summer and fall 1861, Confederate naval construction was well under way. Activities accelerated steadily at ports and shipbuilding centers. Construction of wooden gunboats began alongside a few ironclad vessels. Activities in larger ports like New Orleans and Norfolk were the focus of Confederate construction; however, smaller establishments on coastal and inland waters of eastern North Carolina, and at Columbus, Georgia and Jacksonville, Florida also worked feverishly to produce vessels capable of facing the Union blockade. In total, twenty-six vessels were built or planned during the Confederacy's first months, with only five ironclads among them. Secretary Mallory's report includes reference to preparations underway for building Maury's fleet of one hundred small, wooden gunboats.⁷²

The loss of New Orleans, Norfolk, and Memphis in early 1862 to Union occupation signaled a transition as ship construction moved to the interior. Ship construction in Virginia shifted to Richmond. Once there, shipbuilding increased as established facilities (Tredegar Iron Works, the "Rocketts Yard," and another shipyard across the James River) already existed.⁷³ Shipyards also operated on the Chattahoochee River in and south of Columbus, Georgia.

⁷⁰ Still, *Shipbuilding*, 24-25.

⁷¹ *Ibid.*, 23.

⁷² Malloy to Davis, February 27, 1862, *ORN* ser. 2 vol. 2, 149-159.

⁷³ John M. Coski, *Capital Navy* (New York: Savas Beatie LLC, 1996), 64-65.

Smaller yards sprang up on the Yazoo River in Mississippi, the Great Pee Dee River in South Carolina, the Tombeegee River in Alabama, and inland rivers beyond the Union army's control in eastern North Carolina near Kinston, Tarboro, and Halifax. Construction continued in the port cities of Mobile, Charleston, Savannah, and Wilmington as Union operations had not reached them. To streamline shipbuilding efforts, Mallory appointed John L. Porter as Chief Naval Constructor.⁷⁴

Ship Machinery

Along with limited iron production, there were few ship machinery and steam engine production facilities. A total of 115 facilities able to produce steam engines existed in the South. Many of these facilities were small and isolated and census records fail to elaborate on specific engines produced. The smaller facilities often consisted of small, private shops in little coastal and river towns where shipping was a major component of the local economy. The largest facility in the South was the Tredegar Iron Works in Richmond. Along with Tredegar, large foundries were located in Rome (Georgia), New Orleans, Mobile, and another smaller company in Richmond.⁷⁵ It did not matter if hulls could be produced if a ship lacked suitable engines for propulsion. An entirely sail driven fleet would have been a poor investment of money and resources.

Mallory's new navy encountered "numerous obstacles" as the Confederacy had insufficient means to build enough suitable steam engines. "No marine engines, such as are required for the ordinary class of sloops of war, or frigates, have ever been made in the Confederate States, nor have workshops capable of producing them existed in either of them."⁷⁶

⁷⁴ Porter to Mallory, Sept. 20, 1862, *ORN* ser. 2 vol. 2, 272; In this letter Porter requests that he be named Chief Naval Constructor as he was not promoted until Jan. 1864; *Register of Officers*, 155.

⁷⁵ Still, *Shipbuilding*, 25; Surdam, *Economic Superiority*, 36-37.

⁷⁶ Malloy to Davis, February 27, 1862, *ORN* ser. 2 vol. 2, 149-159.

Transferring steam engines from confiscated and purchased ships solved the problem of propulsion for some ships. Unfortunately, Confederate authorities needed as many ships as possible to combat superior Union naval numbers. Vessels that might be used after alterations and refitting were rendered useless without engines. In New Orleans in March 1862, for example, Lt. Isaac Brown reported four vessels under construction “with engines and boilers secured for two of them.”⁷⁷

Marine machinery manufacture was the responsibility of Engineer in Chief William P. Williamson. He reported directly to Mallory; but worked closely with the Office of Orders and Detail to secure, build, and transport engine parts for fitting out Confederate vessels. During the first phase of Confederate shipbuilding, confiscation and importing were Williamson’s best source for marine engines and machinery. After reorganization, the Chief Engineer was able to see some Confederate marine machinery establishments become operational in addition to a few locations where prewar manufacturing remained.

Facilities responsible for producing marine engines and other machinery vital to gunboat propulsion encountered varying degrees of success. New Orleans initially figured into the Confederacy’s plans with many small foundries like Leeds, Clark, Bennett & Lurgis, and Gretna, to name a few.⁷⁸ Its potential was not realized because, in April 1862, Captain David G. Farragut’s Union squadron steamed up the Mississippi River and punched through the fledgling Confederate fleet, taking possession of the city.⁷⁹ Following reorganization, the Charlotte (North Carolina) Navy Yard was expected to produce most marine machinery needed.⁸⁰ Instead,

⁷⁷ Isaac. N. Brown to Stephen Mallory, April 10, 1862, Letters Received by the Confederate Treasury Secretary, RG 365, Roll 39, 207.

⁷⁸ P. Kean, *Report of Evidence Taken Before a Joint Special Committee of Both Houses of the Confederate Congress to Investigate the Affairs of the Navy Department* (Richmond, Virginia: G.P. Evans & Co., 1863), 75-82.

⁷⁹ Tucker, *Blue and Gray Navies*, 190-214. These pages give a detailed account of the battle of New Orleans in April 1862.

⁸⁰ Still, *The Confederate Navy*, 80.

facilities located in Columbus, Georgia and in Richmond, Virginia provided the bulk of domestically produced heavy machinery used in Confederate warships. The Shockoe Foundry in Richmond and the Columbus Iron Works also provided machinery for the Confederate States Navy.⁸¹

Richmond's industrial complex provided a suitable environment for marine engine production. The Shockoe Foundry was originally run by the Talbott brothers. They specialized in producing industrial machinery for agricultural and general manufacturing. In March 1862, Mallory leased the establishment and immediately put the facility to work producing gunboat engines. Many engines were required for Commander Maury's one-hundred gunboat fleet. After the Battle of Hampton Roads and the change in Confederate building policy, engines produced by Shockoe were meant for ironclads.⁸²

The Columbus Ironworks in Georgia also provided machinery. Columbus was one of the most industrialized centers within the South. Located on the Chattahoochee River, Columbus's booming industry came about through agricultural trade and the importance of river steamboats. Many shops and sawmills operated to help repair and maintain the river boats so important to the region's commerce.⁸³ The industrial capabilities attracted Confederate war planners. Eventually, the potential for boiler manufacture at the Columbus Iron Works resulted in a Confederate States Navy lease of the facilities.⁸⁴

The Confederate Naval Ironworks in Columbus helped build machinery and parts for ships all over the Confederacy. The Muscogee Railroad was located nearby, extending across

⁸¹ Still, *The Confederate Navy*, 80.

⁸² Lease between Confederate Navy and James Talbott, March 1, 1862. Talbott & Brother Paper Collection, Virginia Historical Society, Manuscript Collections, Richmond, Virginia; William F. Martin Papers, Southern Historical Collection, University of North Carolina, Chapel Hill; Coski, *Capital Navy*, 72. Communications between Naval Agent Gilbert Elliott and William Williamson reveal contracts for engines for wooden gunboats, Nov. 9, 1861.

⁸³ Maxine Turner, *Navy Gray: The Story of the Confederate Navy on the Chattahoochee and Apalachicola Rivers* (Tuscaloosa, Alabama: The University of Alabama Press, 1988), 9.

⁸⁴ Still, *The Confederate Navy*, 80.

Georgia; it provided a connection to Macon. Furnaces, rolling mills, and blast machinery made the complex an important component where some new engines were built as well as repairing and rebuilding salvaged riverboat steam engines. This facility helped the dire situation facing the Confederacy following Norfolk's surrender. It provided a much needed boost to the industrial manufacturing capability of Confederate shipbuilding and would "power a large percentage of the Confederate Navy."⁸⁵

The Charlotte Navy Yard was an interesting establishment. Its main function was to have been marine machine manufacture.⁸⁶ In actuality, it served two functions, producing both marine machinery parts and articles associated with ordnance. The facility maintained a number of workshops, machinery, and tools; many of these had been transferred from Norfolk. After a large steam hammer, evacuated from Pensacola made its way to Charlotte, heavy forging operations commenced.⁸⁷ The North Carolina Central Railroad and the South Carolina Railroad made this facility extremely important logistically.⁸⁸ Once fully operational, the yard produced gun carriages and projectiles as well as propeller shafts for Confederate ships.⁸⁹ Along with these facilities, many marine engines and parts continued to be smuggled in from Europe until the war's end.

Despite the ongoing operation and establishment of facilities in Richmond, Columbus, and Charlotte, domestic engine production in the Confederacy remained difficult. Confederate evacuation of New Orleans curtailed the full Confederate potential for marine machinery production. Additionally, the Chief Engineer complained that facilities best suited for engine

⁸⁵ Still, *The Confederate Navy*, 81; Turner, *Navy Gray*, 54.

⁸⁶ *The Confederate Navy*, 80.

⁸⁷ Ralph W. Donnelly, "The Charlotte, North Carolina, Navy Yard, CSN" *Civil War History* Vol. 5 No. 1 (Illinois State Historical Library, 1959), 74.

⁸⁸ *Ibid.*, 75.

⁸⁹ Still, *The Confederate Navy*, 77.

manufacture were “now engaged exclusively on ordnance work.”⁹⁰ Hampering Williamson’s operations were insufficient skilled labor, marginal tools, and an inconsistent supply of raw materials.

In Charlotte, Engineer Ashton Ramsey pushed operations night and day. Despite his efforts to maintain enough workmen to run the facility, Ramsey reported little activity at his station. He stated a need for seven machinists, eight blacksmiths, eight gun-carriage makers, two blockmakers, one pattern maker, one coppersmith, and two molders before a minimum output could be achieved.⁹¹ To correct the situation, Mallory attempted to recruit capable workers in Europe. As many as twenty skilled workers were assigned to Charlotte, but only three actually reported.⁹² The aggravations experienced by Ramsey did not surprise Williamson. He had claimed labor shortages would limit effective machinery manufacture many months earlier during reorganization.⁹³ The Chief Engineer saw many men lost to the army through volunteered service or conscription. Others, not native to the Confederacy, migrated overseas or to the northern states.⁹⁴

Most problematic to Williamson’s efforts was the lack of suitable tools and machinery, as well as the manufactured and raw materials needed for machine assembly. The supply of iron, steel, tin, and rubber hampered production. Once scarce materials were located, the tools and machinery used for manufacturing useful parts was often inadequate or not in working order. With skilled workmen, Chief Engineer Williamson found “exorbitant wages” for workers that

⁹⁰ Charles B. Dew, *Ironmaker to the Confederacy* (New Haven: Yale University Press, 1966), 177.

⁹¹ Ramsey to Brooke, enclosed in a letter from Mallory to Davis, July 1, 1864, *ORA* ser. 4 vol. 3, 521-522.

⁹² Mallory to Bulloch, December 17, 1864, *ORN* ser. 2 vol. 2, 782.

⁹³ Williamson to Mallory, August 15, 1862, *ORN* ser. 2 vol. 2, 240-241.

⁹⁴ *Ibid.*

did not necessarily work each day because the inconsistent shipment of materials and tools limited what workers could accomplish.⁹⁵

Ordnance Production

By early 1864, at the office of Ordnance and Hydrography, Commanders George Minor and John M. Brooke oversaw the most successful bureau within the Confederate States Navy. New ordnance facilities operated in Charlotte, Atlanta, and Selma, accompanied by the established facilities in Richmond. These facilities could supply "...all the heavy ordnance required to arm the ironclads and other vessels completed and building; and to furnish guns for the defense of our ports..." Commander Brooke boasted.⁹⁶ Maintaining that high level of production became more difficult during 1864 and 1865.

Only two Southern facilities produced cannon at the outbreak of war, Tredegar Works in Richmond, and Bellona Foundry in Chesterfield, Virginia. Tredegar, owned by Joseph R. Anderson, produced a total of 881 cannon between 1844 and 1860.⁹⁷ Bellona Foundry, the smaller of the two, also made cannon for the United States government during prewar years. It was owned by Dr. Junius L. Archer.⁹⁸

In addition to the Charlotte Navy Yard and the Atlanta Ordnance Works, the Confederacy opened another interior ordnance production site. This facility, the Selma Gun Foundry and Naval Ordnance Works, became an important ordnance manufacturing facility. Impressive, and arguably the most important Confederate naval station, Selma was located deep in the Alabama interior. This facility was placed under the Confederate States Navy in June 1863 as

⁹⁵ Williamson to Mallory, August 15, 1862, *ORN* ser. 2 vol. 2, 241.

⁹⁶ Brooke to Mallory, April 30, 1864, *ORN* ser. 2 vol. 2, 642.

⁹⁷ Dew, *Ironmaker*, 12; Still, *Shipbuilding*, 25-26.

⁹⁸ William H. Grimes, Jr. "Guns, Silkworms, and Pigs: Bellona Arsenal and Bellona Foundry Saw Service Under Two Flags," *Virginia Cavalcade* Vol. 3 (Summer, 1953-Spring, 1954), 37.

Commander Jones became commandant.⁹⁹ Jones had extensive service and experience in ship construction and ordnance production. He served on the CSS *Virginia*, commanded the CSS *Chattahoochee* during its final preparations for service, and also briefly commanded the Charlotte Navy Yard.¹⁰⁰ A total of 73 Brooke guns were manufactured and shipped to various points within the Confederacy under Jones's watch. Of that total, 53 rifled and smoothbore guns were shipped directly to Mobile, bolstering Confederate defenses in that port city.¹⁰¹

In Richmond, the Tredegar Iron Works, accompanied by the Richmond Ordnance Works and the Bellona Foundry, continued to produce heavy guns and projectiles for the Confederate States Navy. The larger facility, Tredegar, manufactured the heavy artillery while the Richmond Ordnance Works helped rifle and band many guns produced by Tredegar. In addition, large numbers of projectiles and other ordnance stores were manufactured.¹⁰² Along with the Selma Naval Gun Foundry and Ordnance Works, Tredegar Iron Works, accompanied by the Richmond Ordnance Works and Bellona Foundry, manufactured many effective artillery pieces for the Confederate States Navy after reorganization of shipbuilding and manufacturing establishments. A total of 265 siege and seacoast artillery pieces were produced at Tredegar, many of them ended up on Confederate vessels and at other naval stations along the coast.¹⁰³ Bellona did not reach that output, producing 120 smaller pieces, mostly howitzers and three-inch rifles.¹⁰⁴

By mid-war, Commander Brooke and his facility commanders had difficulties obtaining suitable raw materials for marine engine manufacture. Either through depletion, the Union

⁹⁹ John M. Brooke to Catesby Jones, June 8, 1863, Confederate Navy File, National Archives and Records Administration, Record Group 45, M-1091, Roll 37, 0.

¹⁰⁰ *Register of Officers*, 103.

¹⁰¹ Walter W. Stephen, "The Brooke Guns From Selma" *The Alabama Historical Quarterly*, Vol. 20 No. 3, (Fall, 1958), 465.

¹⁰² John M. Brooke to Stephen Mallory, November 25, 1863, *ORN* ser. 2 vol. 2, 547-548.

¹⁰³ Charles B. Dew, *Ironmaker*, 111.

¹⁰⁴ Larry J. Daniel and Riley W. Gunter, *Confederate Cannon Foundries* (Union City, TN: Pioneer Press, 1977), 22; Dew, *Ironmaker*, 111.

blockade, or Union Army advances, ordnance production facilities faced the shortages head on. As the Selma Gun Foundry and Naval Ordnance Works became operational, Commander Jones experienced periods when no iron could be obtained for gun manufacture. Additionally, little copper, tin, or zinc could be obtained, limiting fuse production.¹⁰⁵ Raw material shortages were commonplace at all Confederate ordnance production locations. As Commander Jones complained of iron shortages at his facility, Tredegar also felt the pinch as only six artillery pieces were manufactured during March 1864.¹⁰⁶

Ordnance foundries and their auxiliary facilities felt the sting of labor shortages. Lieutenant McCorkle, stationed at the Naval Ordnance Works in Atlanta, reported few mechanics employed at his facility.¹⁰⁷ In Richmond, Commander Brooke called for an immediate reorganization and recall of skilled laborers to be employed by the Confederate States Navy:

There are in the Southern States more than a sufficient number of mechanics to work these establishments...But these men have been swept into the Army en masse and their services can only be obtained by special and individual detail...In addition to the difficulty in procuring details, great inconvenience results from the existing system by which mechanics detailed from the Army for Navy work instead of being transferred and placed under the control of the Navy Department.¹⁰⁸

Advocating reorganization of the way the War and Navy Departments assigned skilled labor to war production went unheard. By this point in the war, Mallory had little pull regarding personnel reorganization and allocation. President Davis still held the Confederate Army and War Department operations close to his vest, influencing events on land, while virtually ignoring Mallory's department.

¹⁰⁵ Jones to Brooke, Communications from March 2 through the 15, 1864, Confederate Navy Area File, RG 45, M-1091, Roll 37, 068, 069, 078, 079, 080, 082, 083.

¹⁰⁶ Dew, *Ironmaker*, 111.

¹⁰⁷ McCorkle to Jones, February 27, 1864, Confederate Area Navy File, RG 45, M-1091, Roll 37, 064.

¹⁰⁸ Brooke to Mallory, April 30, 1864, *ORN* ser. 2 vol. 2, 642.

Powder Works

Confederate States Navy powder works were initially situated in Petersburg, Virginia. This location, so close to Richmond's industrial complex and the shipbuilding center at Norfolk, was ideal. After the Confederacy retreated from Norfolk during spring 1862, the powder works were threatened by Union movements toward Richmond. Confederate leadership felt it would be prudent to relocate the station away from the main battle front in Virginia. Along with relocating shipbuilding operations to Richmond and ship machinery production to Charlotte, the powder works moved to South Carolina.

Columbia, nestled in the center of the state, afforded a new location and better protection. Confederate Navy Engineer T. A. Jackson oversaw the relocation of the powder works and helped organize suitable facilities.¹⁰⁹ This station operated until the capture of Columbia in February 1865. Before its capitulation, as many as 50 men worked at the establishment, procuring "20,000 pounds per month" despite its impending surrender.¹¹⁰

Railroads and Rivers

Even with all the manufacturing limitations, the biggest liability Mallory and his department needed to overcome was the inadequate Confederate transportation network. By 1861, the railroad had asserted its importance across the United States. Within the Confederacy, railroad mileage lagged well behind the north. The Confederacy possessed only 9,940 miles of track while the Union possessed 21,571 miles.¹¹¹ Less railroad mileage made it more difficult to quickly connect the interdependent public and private yards dotting the southern coastline with

¹⁰⁹ Minor to Mallory, August 15, 1862, *ORN* ser. 2 vol. 2, 250.

¹¹⁰ Report of Commander John M. Brooke, January 2, 1865, The War Department's Navy Records Collection, Record Group 109, Special Manuscript Collections, John M. Brooke Correspondences.

¹¹¹ Kennedy, *Eighth Census*, 234-235.

industrial and manufacturing facilities located at interior towns and cities. Transportation difficulties, rail and water based, impacted the raw materials and supplies needed to run the many shipyards and manufacturing facilities producing ships, ordnance, engines, and machinery parts. Compounding limited track mileage linking ports and cities was the way railroad construction began in many Southern regions. In the decades preceding hostilities, political and military leaders were not instituting railroad construction. Merchants and business leaders began the process of laying rail to further individual interests. Local ports and coastal cities had railroads built, extending into the interior towards large waterways and river systems. These railroads increased the volume of products and commodities shipped from local ports.

The Confederacy's rivers were the real money makers for its economy. Water based transportation of goods, even up to the Civil War, proved more profitable for businessmen, merchants, and farmers. This was especially true along the Mississippi River. Connecting with the Ohio River to the northeast and the Red and Missouri Rivers to the northwest, interregional trade between southern, border, and northern states made the Midwestern river valleys the mid-nineteenth century interstate system. Huge cargoes of bulk goods funneled down river. One historian, Archer Jones, pointed to the large shipping discrepancy between riverboats and trains. The riverboats could carry loads of 500 tons or more while a locomotive could only pull some 15 tons.¹¹² New Orleans was the largest city and most important port in the southern United States for a reason, its trade and transportation based on the Mississippi River. Prior to 1861, New Orleans exported more than all other major Southern ports combined by more than \$15,000,000.¹¹³ Similarly, other ports such as Mobile, Savannah, and Richmond, all located on

¹¹² Archer Jones, *Civil War Command and Strategy* (New York: Macmillan, 1992), 129.

¹¹³ Surdam, *Economic Superiority*, 12.

or near important waterways, were critical to exporting Southern goods. Southern railroads, some in close proximity to these port cities, enhanced water based trade.¹¹⁴

The railroads helped save one important Southern port. In the early 1830's, Savannah, Georgia, was increasing its share of shipping and trade. Charleston, South Carolina, one-hundred miles to the north, lagged in commercial importance. Materials and products produced in interior South Carolina and Georgia found it cheaper to move products down the Savannah River, bypassing Charleston by going through Savannah. South Carolina merchants and business leaders needed to reclaim some regional commerce or risk financial ruin.¹¹⁵

A railroad, the Charleston and Hamburg, was built to cut into Savannah's share of trade. This railway extended deep into interior South Carolina close to the Savannah River. The line started at Hamburg, on the north side of the Savannah River, and stretched 136 miles across South Carolina to Charleston. This rail line opened the door for cotton and other goods to flow into Charleston, pumping renewed vigor into the port. Interestingly, this southern railroad was the longest track in the world in 1833.¹¹⁶

Economically, the railroad helped Charleston immensely during subsequent decades. Other ports, large and small, followed Charleston's lead. In the South, lines were financed locally and built for economic expediency. In most cases, these spurs extending into the interior seldom linked together. Lines extended to rivers and canals to help expedite commerce. Rival ports and cities preferred to stay isolated and protect local economic interests. Ports throughout Virginia, the Carolinas, and Georgia continued to build these independent lines until the

¹¹⁴ Henry M. Flint, *The Railroads of the United States* (Philadelphia: J. E. Potter, 1868), 342.

¹¹⁵ George Edgar Turner, *Victory Rode The Rails: The Strategic Place of the Railroads in the Civil War* (Lincoln, NE: University of Nebraska Press, 1992), 29.

¹¹⁶ Flint, *Railroads*, 342-344; Turner, *Victory*, 29.

beginning of the Civil War. With cotton continuing to be a sought after crop, port cities wanted to safeguard their share of the financial pie.¹¹⁷

The development of railroads continued in the states that eventually comprised the Confederacy. Railroads extended into the interior from New Orleans and Mobile on the Gulf of Mexico. In Florida, there were smaller rail lines in the western panhandle connecting to Montgomery, Alabama. On the eastern side of Florida, there were no prewar connections with lines in Georgia. Tennessee lines joined at Chattanooga, helping to bridge eastern and western sections of the South. Railroads in Arkansas and Texas were internal and did not run into other states. Most lines in Texas were situated close to Houston, near the Gulf coast.¹¹⁸

With small railroad lines extending into the interior from many port cities and towns, a larger network of tracks slowly took shape. Lines gradually came together to form railroads connecting states and regions. Along the Chattahoochee River, rail lines were built to connect communities within the Georgia and Alabama interior. These smaller, shorter lines helped commerce grow along the Chattahoochee, Flint, and Apalachicola Rivers flowing into the Gulf of Mexico.¹¹⁹ Still, there was only one important east-west connection functioning in the Confederate States. It stretched from Richmond, weaving its way through Tennessee and eventually ending at the Mississippi River. One other important east-west line was being built from Georgia to the southwest, in the direction of Vicksburg, Mississippi. This second line was incomplete, with many gaps and natural obstacles holding up its completion.¹²⁰

The Confederacy also contained an important north-south route. This route was the Wilmington and Weldon Railroad in North Carolina. Running north, this line traveled through

¹¹⁷ Turner, *Victory*, 29-30.

¹¹⁸ Surdam, *Economic Superiority*, 37-39.

¹¹⁹ Turner, *Navy Gray*, 19-20.

¹²⁰ Surdam, *Economic Superiority*, 37.

Petersburg to Richmond. Moving south, this line extended into South Carolina from Wilmington, eventually connecting with Columbia as the Wilmington and Manchester railroad. From Columbia, rail connections stretched into Georgia.

Another problem with the Confederate rail network rested with its initial construction. The railroads were built to move agricultural products. Prior to the war, 75 percent of Southern rail freight, on certain railroads, consisted of cotton.¹²¹ Transporting large amounts of military materials and resources, including soldiers, artillery, and heavy machinery, was questionable. Different rail gauges impeded swift transportation along most railroads by shifting materials every time the line met another line.¹²² Additionally, regardless of gauge, in some Southern cities, different railroads seldom connected. George Edgar Turner explained:

Richmond was the terminus of five railroads. These facilities made it easy to move passengers and freight to but not through the city. Richmond suffered the severe handicap common to most Southern cities, large and small. Municipalities had invested heavily in early railroad building. A city which had invested in a railroad's securities expected the road to serve its interests. Since it received no profit or other benefit from passengers and freight merely passing through, it was strongly opposed to direct track connections between lines meeting within it.¹²³

Stopping, unloading, and reloading supplies onto other trains from rival lines wasted much time and energy. Complicating mass movement further was a lack of double tracking. Most Southern rails extending inland from ports and away from cities were single track lines. Unable to ship materials both ways to vital areas of combat and military manufacture at the same time hampered supply, transportation, and construction.¹²⁴

¹²¹ Surdam, *Economic Superiority*, 39.

¹²² *Ibid*, 37.

¹²³ Turner, *Victory*, 37-38; Charles W. Ramsdell, "The Confederate Government and the Railroads," *The American Historical Review*. Vol. 22, No. 4 (Jul., 1917), 797; *Savannah Republican*, Nov. 11, 1861. This specific newspaper described Augusta, Georgia in the fall of 1861. The situation mirrored Turner's depiction of Richmond.

¹²⁴ P. V. Daniels to George W. Randolph, April 26, 1862, *ORA* ser. 4 vol. 1, 1094; Surdam, *Economic Superiority*, 39.

Maintenance of the Confederate railroad tracks was problematic. Only three Confederate mills produced railroad tracks: Tredegar, Atlanta Rolling Mill, and Etowah Iron Works. These facilities had access to raw materials for iron manufacture but only enough to operate at a fraction of full capability. Tredegar, the largest facility, was unable to help as a result of the government's demands for iron plating, machinery, and heavy ordnance. If all existing facilities had been able to operate fully, "their output would have been less than 20,000 tons, an amount far short of the 50,000 tons per year needed to maintain existing tracks."¹²⁵ Immediate production of necessary war machinery and instruments trumped preservation of existing railroads. Manufacturing new rail lines were not a realistic option once the problem of disrupted internal distribution was recognized. The Union blockade eliminated any chance new railroad supplies would be imported, the South's main source of antebellum track mileage.

With reorganized Confederate shipbuilding relocated in the interior after mid-1862, problems remained for Secretary Mallory and his department. The patchwork interior facilities exacerbated the ongoing logistical struggle. Producing marine engines in one location, propellers at another, and heavy artillery somewhere else, proved difficult to orchestrate. Shipping machinery and artillery to different shipyards relied upon an increasingly suspect transportation network.

The Confederate transportation network was in a constant state of upheaval following reorganization of shipbuilding activities. Increased Union activity on land and at sea adversely affected movement of Confederate military supplies and materials. With the Union operating unchecked on the Mississippi River, the Confederacy was effectively cut into two separate regions by July 1863. Union blockading operations and raids disrupted trade and the movement of military materials on other important rivers as well.

¹²⁵ Surdam, *Economic Superiority*, 77-78.

Without moving supplies on rivers, an increased strain upon Confederate railways occurred. As the Union Navy advanced up the Mississippi River and became a more effective blockading force, transportation of supplies and materials became increasingly dependent upon clogged railroads. Confederate Secretary of War James Seddon reported the deplorable condition of southern railroads to President Davis:

With the coasting trade cut off and the command by the enemy, through their naval superiority, of all our great rivers, reliance for internal trade and communication has been necessarily on the railroads. These were never designed nor provided with means for the task now incumbent upon them. They have, besides, suffered much from the inability to command the supplies of iron, implements, and machinery they habitually imported...Some of the shorter and least important roads must be sacrificed and the iron and machinery taken for the maintenance of the leading lines and for the construction of some essential and less exposed interior links of connection.¹²⁶

In addition to Union blockading activities, Union army movements deeper into Confederate territory cut off some key rail junctions. As cities came under Union occupation, more and more railroads became useless to Confederate military planners. After the Union captured Chattanooga, Tennessee, in September 1863, an important east-west route was cut, isolating parts of the Confederacy from Lynchburg and Richmond, Virginia.

With Chattanooga's occupation, access to important mining operations and coal deposits was blocked. Securing raw materials from North Carolina and Virginia might possibly make up for lost access to western Tennessee. The biggest problem in securing other resources, Capt. Mitchell, commander of the Office of Orders and Detail, explained, was the problem supplying so many stations. He cited transportation conditions between places like Columbus and Selma, as well as Wilmington with Charleston and Charlotte as "uncertain and deficient."¹²⁷ As these areas would benefit from reallocating raw materials from other areas, getting needed supplies to

¹²⁶ James Seddon to Jefferson Davis, April 28, 1864, *ORA* ser. 4 vol. 3, 339.

¹²⁷ Captain John K. Mitchell to Stephen Mallory, November 16, 1863, *ORN* ser. 2 vol. 2, 543-544.

maintain production remained a challenge. In the absence of sufficient coal reserves, commanders in Savannah and Charleston resorted to burning wood.¹²⁸

Hampering Mallory's construction efforts was the Confederate War Department. When it came to moving supplies, materials for the Confederate Army were usually given priority. George Minor reported that railways clogged with supplies for the army hindered operations at the Charlotte Navy Yard in 1862.¹²⁹ Later in the conflict, as things looked more desperate for the Confederacy, army officers and War Department officials expressed the attitude that their department be shown preference for railroad transport. Major S. B French suggested "that every other branch of the public defense should be subservient to that which we can alone rely."¹³⁰ Major French may have had a point, but to Mallory railroads carried needed ordnance, parts, and machinery into shipyards and other naval facilities.

Complicating the Confederate States Navy's use of Southern railways was Mallory's pursuit of an ironclad fleet. Supplying different foundries, mills, and shipyards with needed iron plating and machinery became increasingly difficult heading into the war's second year. With a tightening Union blockade, importing needed iron and machinery became limited. Mallory's emphasis on ironclad construction helped deplete the Confederacy's railroad network:

I think it is impossible to obtain any iron unless it is seized. The Petersburg Railroad agent says that he must have the old iron on the Petersburg road to replace the worn out rails on the road. The Kinston and Raleigh road requires the iron taken below Kinston to replace the iron on the Charlotte and [North Carolina] road, and these roads are considered a military necessity...The whole subject of [railroad] iron was laid before the North Carolina legislature and I am unable to obtain any iron.¹³¹

¹²⁸ Captain John K. Mitchell to Stephen Mallory, November 16, 1863, ORN ser. 2 vol. 2, 543-544; Capt. Duncan Ingraham to General John C. Pemberton, April 8, 1862, Museum of the Confederacy Manuscript Collections, Duncan N. Ingraham Papers. This communication discussed the availability of coal resources traveling from Chattanooga to Atlanta destined for the Charleston Naval Station.

¹²⁹ Minor to Mallory, August 15, 1862, ORN ser. 2 vol. 2, 250.

¹³⁰ Major S. B. French to Colonel L. B. Northrop, February 8, 1864, ORA ser. 4 vol. 3, 90.

¹³¹ Tucker, *Blue and Gray Navies*, 46.

Needing iron for internal transportation, while simultaneously building ironclad vessels complicated logistical issues for all Confederate gunboat construction efforts. Depletion of railroads by cannibalization or overuse based upon battlefield conditions and necessity did not help keep the interdependent network of shipyards and manufacturing facilities tied together.

Using isolated and less strategic tracks for ironclad construction and maintenance of more important lines was one problem. Another deficiency of the Confederate rail system was limited rolling stock and even fewer locomotives. With industry engaged in producing ordnance, iron plating, and marine machinery, maintenance and upkeep of existing rail cars became harder. Before the war, Tredegar had been the South's principle producer of locomotives, but had not produced any since 1860.¹³² During the antebellum period, the South only produced 19 of 470 locomotive engines collectively.¹³³ As a result, available cars deteriorated by as much as 25 percent, as reported by Confederate Assistant Adjutant-General William M. Wadley in April 1863. Wadley expressed the need for the Confederacy to obtain 31 engines and 930 cars to sustain military transportation needs.¹³⁴

The Confederate States Navy was dependent upon a very limited transportation network to move important materials for shipbuilding efforts. With the Union blockade tightening its grip upon the Confederate coastline, closing major Southern ports and the Mississippi River, transporting materials fell onto the tracks of an inadequate railroad network. The rail system suffered from poor management and maintenance, adversely affecting internal supply of stations and manufacturing facilities. Heavy industry was busy forging ordnance, marine machinery, and iron plating for many vessels. Military leaders overlooked the importance of keeping

¹³² Surdam, *Economic Superiority*, 76; Dew, *Ironmaker*, 35. David Surdam states that Tredager produced its last locomotive in 1858 while Charles Dew asserts a final locomotive produced in 1860.

¹³³ Surdam, *Economic Superiority*, 33-34.

¹³⁴ Assistant Adjutant-General William M. Wadley to James A. Seddon, April 14, 1863, *ORA* ser. 4 vol. 2, 483-485.

adequate working track lines for heavy transportation. Rolling stock and engines suffered without proper upkeep. Union army and naval units interrupted replacement parts available to fix these important conduits. Military necessity disrupted sound organization and the implementation of policies that could have preserved Confederate railroads.

Conclusion

At the beginning of hostilities, the Confederate economy and industrial infrastructure lagged behind its northern neighbors. During the decades leading to the Civil War, emphasis on an agriculturally based economy hurt diversification of the Southern economy. Heavy industry and manufacturing capabilities existed in some limited areas, but not on a widespread scale. Fewer commercial and industrial centers supported a smaller population base than the Union. Fewer skilled workers were available to run the few shops that could forge ordnance and heavy machinery. Industrial and manufacturing limitations created a smaller railroad network, complemented by river and canal based trade and transportation.

These economic and industrial inadequacies adversely affected development of the Confederate States Navy. Each ship built, ironclad or wooden, depended upon the same economic framework regardless of the materials used. Transportation deficiencies, exacerbated by Union troop and naval movements that cut off important material sources and supplies, were only one problem. Cannibalization of the Confederate railroad network by poor management and Mallory's directive to construct ironclads at the expense of wooden vessels crippled the internal flow of goods and materials for shipbuilding at all stations. Making Mallory's efforts even more frustrating was the Navy Department's subservient position within the Davis administration. The lower position was enhanced by a determined enemy that necessitated quick

response to Confederate Army needs. Important shipbuilding centers located along the Southern coastline were lost before full scale navy shipbuilding efforts could be finalized.

This chapter focused broadly on Confederate limitations in producing naval vessels. No one area of ship manufacture was meticulously examined. Instead, an holistic picture has been given demonstrating the industrial and manufacturing limitations Confederate naval planners faced as they built a navy. Ship construction, marine machinery manufacture, and ordnance forging were the three areas Confederate naval leaders had to keep functioning to produce vessels. The Confederate economy was marginally equipped to build a navy in the face of wartime obstructions.

Taking all these aspects of Confederate shipbuilding capabilities into consideration enabled a closer examination of shipbuilding at the regional and local level. Confederate wooden gunboat construction had two phases. The first phase was more aggressive, consisting of a building program aimed at three different ship types: Porter gunboats, Maury gunboats, and altered confiscated vessels. This changed after the Battle of Hampton Roads in 1862. Along with Confederate reorganization, Mallory focused his department's attention on building ironclads, as wooden gunboat construction became a secondary effort. The next two chapters will focus on two separate phases of wooden gunboat construction.

A regional look at northeastern North Carolina will examine the more aggressive first phase of wooden gunboat construction at multiple yards. Another, more detailed, look at local wooden gunboats will cover construction of the CSS *Peedee* at Mars Bluff on the Great Pee Dee River in South Carolina. The construction of a gunboat at Mars Bluff occurred after Confederate reorganization of facilities and changed direction of Confederate construction policy that advocated ironclads over wooden vessels. Having a clearer picture of national level economic,

industrial, and manufacturing inadequacies will bring these limitations into focus at the regional and local levels.

Chapter 4: First Phase in Eastern North Carolina

North Carolina's geographic position within the United States put it in a precarious position during the secession crisis of late 1860 and early 1861. The actions of South Carolina and Virginia were critical to North Carolina's involvement in the Civil War. South Carolina began the secession crisis in December 1860, and then confirmed the newly formed Provisional Confederate government's resolve in the bombardment of Fort Sumter in Charleston Harbor, April 1861. Actions taken in South Carolina brought the reality of armed conflict to North Carolina's doorstep. Placing North Carolina in an even tougher position was the secession of Virginia on April 17. North Carolina was then surrounded by two states in open conflict with the United States government.

Newly elected President Lincoln acted quickly and ordered a 75,000 man army raised to contain the rebellious activities occurring in Charleston. Lincoln's call on North Carolina for troops to quell the rebellion was too much. North Carolina Governor John W. Ellis replied to Lincoln's proclamation:

Your dispatch is [received] and if genuine which its extraordinary character leads me to doubt I have to say in reply that I regard the levy of troops made by the administration for the purpose of subjugating the states of the South is in violation of the constitution and a gross usurpation of power. I can be no party to this wicked violation of the laws of the country, and to this war upon the liberties of a free people. You can get no troops from North Carolina. I will reply more in detail when your call is received by mail.¹³⁵

Governor Ellis's terse reply mirrored the sentiments of many southerners despite strong Unionist feelings in his state. North Carolinians prepared to wage war against a country they helped create. On May 20, 1861, North Carolina became the last state to secede from the Union.

¹³⁵ Ed. Noble J. Tolbert, Governor John W. Ellis to United States Secretary of War Simon Cameron, April 15, 1861. *The Papers of John Willis Ellis* vol. 2 1860-1861 (Raleigh: State Department of Archives and History, 1964), 612.

After leaving the United States and joining the Confederacy, North Carolina played a pivotal role in Confederate military planning. North Carolina was in a geographically important position possessing a sizable coastline along the Atlantic Ocean with a large network of barrier islands shielding sounds and navigable rivers. North Carolina's coast made it an inviting staging area for Confederate commerce raiding. The Wilmington and Weldon Railroad ran a few miles west of the eastern coastal plain and directly linked Wilmington with Petersburg, Virginia. The rail line's carrying important military supplies was important to the Confederacy's chances of victory. Finally, North Carolina's inland waterways connected its northern sounds with Norfolk via the Dismal Swamp and Albemarle and Chesapeake Canals. Control of North Carolina's coast and inland waterways was tactically and strategically important to both the Union and Confederacy.¹³⁶

Commerce raiding, blockade running, and maintaining control of the Wilmington and Weldon Railroad were important activities considered by Confederate military planners. Confederate Navy Secretary Stephen Mallory also saw North Carolina's addition to the Confederacy as an opportunity to expand Confederate States Navy shipbuilding efforts. With a large coastline accompanied by many navigable rivers, components of shipbuilding capabilities were present in many North Carolina coastal towns and ports. That same geography, though making North Carolina strategically important, curtailed large scale manufacturing and industrial development along its coast.

¹³⁶ J. Thomas Scharf, *History of The Confederate States Navy: From Its Organization To The Surrender Of Its Last Vessel. Its Stupendous Struggle With The Great Navy Of The United States; The Engagements Fought In The Rivers And Harbors Of The South, And Upon The High Seas; Blockade- Running, First Use Of Iron-Clads and Torpedoes, And Privateer History* (New York: Fairfax Press, 1877), 368-369.



Figure 4-1. Map of eastern North Carolina (Source: “*Harpers Weekly*” December 1863).

Barrier islands lined North Carolina’s coast protecting several large sounds. The two largest sounds, Pamlico and Albemarle, were separated by Roanoke Island. This left narrow Croatan Sound for ships to travel. Behind the barrier islands and shallow sounds were numerous rivers, many of which were navigable deep into North Carolina’s interior. The Pasquotank, Roanoke, Tar-Pamlico, Neuse, and Cape Fear Rivers were a few of the main waterways in

eastern North Carolina. Wilmington, New Bern, Washington, and Elizabeth City were important ports established along these rivers.¹³⁷ These ports connected smaller establishments situated on the interior rivers with other markets for exporting and trading of goods.

North Carolina's Antebellum Economy

From colonial times until 1860, commerce in North Carolina was dependent upon producing naval stores. During the antebellum period, North Carolina dominated American naval store production, producing close to 96 percent by 1840.¹³⁸ In the twenty years before the Civil War, that number changed little as North Carolinians continued to depend upon lush pine forests extending deep into the countryside for economic prosperity. The tar and pitch obtained from burning pine was instrumental in construction of wooden sailing vessels and barges. Inland towns, like Greenville on the Tar River and Fayetteville on the Cape Fear River, sent North Carolina's most lucrative cash crop downriver to the ports of Washington and Wilmington ready for construction or exportation. North Carolina had an entrenched maritime tradition, an economic and geographic relationship with the sea.

Even though a special relationship existed, the unique geography of its coastline hampered development of ports along the coast. During the antebellum period, only Ocracoke Inlet provided ports along the Neuse, Tar-Pamlico, Roanoke, and Pasquotank River's access to the Atlantic Ocean. In 1846, Hatteras and Oregon Inlet were opened during a large storm and its associated wave action.¹³⁹ Of these two new inlets, Hatteras was the new entry point larger vessels could safely use when entering North Carolina's northern sounds.¹⁴⁰ Of all North

¹³⁷ Scharf, *History of the Confederate Navy*, 368-369.

¹³⁸ Percival Perry, "The Naval Stores Industry in the Old South: 1790-1860," *The Journal of Southern History* Vol. 34, No. 4 (Nov. 1968), 515.

¹³⁹ T. C. Elliott, "Oregon Inlet, Roanoke Island," *Oregon Historical Quarterly* vol. 32, no. 3, (Sep. 1931), 282.

¹⁴⁰ Scharf, *History of the Confederate States Navy*, 368-369; William K. Boyd, *History of North Carolina Vol. 2, The Federal Period: 1783-1860* (Spartanburg, South Carolina: The Reprint Company, 1973), 85.

Carolina's rivers, only the Cape Fear flowed directly into the Atlantic Ocean, strengthening the port of Wilmington, while the other rivers flowed into the sounds.

The completion of the Wilmington and Weldon Railroad in 1840 benefited Wilmington further. This railway eventually connected Wilmington directly with Petersburg and Richmond, Virginia. The location of the railroad west of the fall line isolated the inland ports further. Merchants had access to the state's lone ocean reaching river and an important rail line connecting smaller towns in North Carolina's interior to the Atlantic. Wilmington's position on the Cape Fear River and that river's direct access to the ocean, coupled with new railroads, entrenched its position as the largest city and port in North Carolina.¹⁴¹

In addition to Wilmington, Norfolk also benefited from North Carolina's geographic situation in the northeastern coastal region. During the 1830's, residents of the Albemarle region noticed economic opportunity bypassing them at neighboring ports to the north and south. Restricted access to the inland ports of northeastern North Carolina caused many merchants to ship cargoes and goods from Wilmington and Norfolk for 25 percent less than shipping items through ports on Albemarle or Pamlico Sound. Shallower, more hazardous waters and increased shipping times proved costly for some merchants and shipping companies.¹⁴² As a result, Wilmington, and especially Norfolk, developed faster and became larger commercial centers than ports located between them.

Throughout the antebellum period, local newspapers in the Albemarle region printed scathing editorials detailing the economic hardships created by neighboring ports funneling goods past smaller towns. In 1830, the editor of the *Edenton Gazette* characterized the state of

¹⁴¹ Boyd, *History of North Carolina*, 331.

¹⁴² *Ibid.*, 85. Material within this citation was taken from the Board of Internal Improvements Report originally published in 1833 as cited from the author.

Virginia as “a bloodsucker” sapping the life from smaller North Carolina ports.¹⁴³ Animosity of northeastern North Carolina residents did not subside. In 1849, the *Plymouth Weekly*’s editor stated, “a great quantity of produce, lumber, and naval stores coming down the Roanoke passing right by Plymouth, and making Norfolk the depot...Why is it, that North Carolinians had rather enrich and build up other cities in other states, than have respectable towns within their own borders.”¹⁴⁴

Inland ports and towns along North Carolina’s sounds and rivers carved niches, despite larger neighboring ports and geographic limitations. Port towns, like New Bern, Beaufort, Washington, and Elizabeth City, grew slowly. Agricultural products and naval stores continued to be traded, sold, and exported. Smaller ships and schooners were built, as well as a few steam powered vessels. After opening the Dismal Swamp and Chesapeake and Albemarle Canals, relationships between smaller ports of northeastern North Carolina and Norfolk were reinforced. Acting as the interstate highways of the period, goods and products were sent downriver to the smaller ports of Washington, New Bern, and Elizabeth City from interior towns, then went to Norfolk via the canals. The inland ports acted as collecting points for the inland waters of North Carolina, yet bulk cargoes continued, and preferred to flow through Wilmington and Norfolk.

No matter the size or location of a port, a maritime culture permeated North Carolina’s coastal region. That culture factored into Stephen Mallory’s ship construction operations. During each phase of Confederate shipbuilding, North Carolina contributed resources, manpower, and shipyards to the Confederate naval efforts. Both ironclads and wooden gunboats were built in North Carolina; however, the emphasis during the first phase of construction from 1861 through early 1862 focused on wooden gunboats.

¹⁴³ *Edenton Gazette*, February 13, 1830.

¹⁴⁴ *Plymouth Weekly*, October 21, 1849.

Wilmington, North Carolina

At the Civil War's beginning, Wilmington seemed to be a good place to begin warship construction. The state's largest port was home to numerous shipbuilders, with nineteen listed in the 1860 census. More than twenty-seven ships, including seven steamers, were built between 1815 and 1860. In addition to the many shipbuilders, Wilmington possessed the Hart and Bailey Ironworks and the Thomas E. Roberts Foundry. Propeller shafts and marine machinery could be produced locally.¹⁴⁵

Instead, Confederate States Navy construction concentrated in North Carolina's northern sounds. Wilmington was initially overlooked by naval planners as a separate shipbuilding and navy station location. Governor Ellis believed that Forts Caswell and Johnston were strong enough to repel any attack attempted by Union naval units.¹⁴⁶ Supporting the forts guarding the Cape Fear River's entrance were two converted vessels, *Uncle Ben* and *Arctic*.

Uncle Ben, a tug, was converted shortly after North Carolina's secession. The vessel was operated by the North Carolina Quartermaster's Department until all ships were turned over to Confederate control.¹⁴⁷ *Arctic*, another converted vessel, was built in 1855 in Philadelphia. Used as a lightship, it ended up in Wilmington. As the clouds of war began to roll towards North Carolina, local shipbuilder James Cassidy refitted the vessel to patrol the Cape Fear and help repel a potential attack.¹⁴⁸ These two vessels represented Confederate naval power on the Cape Fear River for the war's first year.

¹⁴⁵ R. Thomas Campbell, *Storm Over Carolina: The Confederate Navy's Struggle For Eastern North Carolina* (Nashville: Cumberland House Publishing, 2005), 184-187; *New Hanover County 1860 Federal Census*.

¹⁴⁶ *Wilmington Daily Journal*, June 13, 1861.

¹⁴⁷ *ORN* ser. 2 vol. 1, 270; Campbell, *Storm Over Carolina*, 183; Edwin L. Combs III, "On Duty At Wilmington: The Confederate Navy On The Cape Fear River" MA Thesis, East Carolina University, 1996, 11.

¹⁴⁸ Money, ed. *Dictionary of American Naval Fighting Ships*, Vol. 1 353; *New Hanover County, North Carolina, 1860 Federal Census*, 132; Combs, "On Duty At Wilmington," 11-12.

North Carolina's Northern Sounds: Strategic Construction

Wilmington certainly possessed the shipbuilding capability Mallory needed, yet was neglected for strategic purposes. Norfolk's position in southeastern Virginia made strengthening North Carolina's northeastern coast more important than Wilmington. The northern sounds and canals connected those vulnerable inlets with Norfolk, one of the two most important Confederate shipbuilding centers. There were no large forts on the barrier islands guarding the inlets at Hatteras, Ocracoke, and Oregon. In addition to having few land based fortifications, state and Confederate leaders viewed purchasing and converting gunboats for Pamlico and Albemarle Sound as more important than the Cape Fear River.

Even with protecting Norfolk in mind, Mallory and Confederate States Navy authorities were still slow in asserting control over North Carolina waters. Transferring the Confederate capital from Montgomery to Richmond contributed to the slow exchange of institutional control. The assimilation of Virginia and North Carolina into the Confederate national structure occurred while the Confederate government moved delaying communications and causing uncertainty among political and military leaders. Arranging the state navies was a frustrating process. Mallory's dream of an ironclad vessel capable of breaking through a forming Union Navy blockade kept him focused on activities occurring in Richmond and Norfolk. Once his department was running and the Norfolk Navy Yard operating, Mallory could look to other commands and states.

The command of North Carolina waters, called the naval defenses of Virginia and North Carolina, was created in late July 1861. Confederate officials relieved state authorities who had been operating North Carolina's naval forces since session months before. The command stretched from the waters south of Norfolk to Wilmington and was first held by Captain Samuel

Barron.¹⁴⁹ Barron took command as Confederate commerce raiders *Gordon, Mariner, Raleigh, Teaser, Winslow, and York* created havoc among Union shipping traveling past the Outer Banks. In addition to the raiders, Forts Hatteras and Clark moved towards completion. Positioned at Hatteras Inlet, these two forts hoped to keep enemy vessels out of the northern sounds.¹⁵⁰ Union military planners acted quickly and organized an expedition to neutralize the Confederate raiders. Major General Benjamin Butler and Commodore Silas H. Stringham led an assault against Hatteras Inlet and forced their way into Pamlico Sound on August 29, 1861.¹⁵¹

Despite the attack by Butler and Stringham, ship construction operations commenced. Mallory continued efforts begun by North Carolina state authorities as more ships were purchased and converted into coastal and harbor defense vessels. Meanwhile, in Richmond, Mallory began planning ships focused upon shallow water and harbor defense. The inadequate defense of Hatteras Inlet forced Mallory to embrace a wider wooden shipbuilding program despite his preference for fewer, technologically superior ironclad vessels. Albemarle and Pamlico Sounds needed gunboats to help protect North Carolina's coast and Virginia's southern flank.¹⁵²

The Confederate States Navy commenced North Carolina's wooden gunboat construction in late 1861. Two inland ports, Washington and Elizabeth City, were the first locations where Confederate shipbuilding took place. Smaller ships capable of patrolling the inland sounds and rivers could be built at these locations. Moreover, as long as the inland sounds and Roanoke Island remained under Confederate control, both locations could benefit, if needed, from

¹⁴⁹ *Register of Officers*, 10; Mallory to S. Barron, July 20, 1861, *ORN* ser. 2 vol. 2, 710.

¹⁵⁰ Campbell, *Storm Over Carolina*, 32-34.

¹⁵¹ C. C. Churchill presenting the orders of Major General Wool, August 25, 1861, *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies* ser. 1 vol. 4 (Washington: Government Printing Office, 1882), 580.

¹⁵² William F. Lynch to Benjamin Huger, Sept. 17, 1861, *ORN* ser. 1 vol. 6, 729-730.

unobstructed communication and supplies from Norfolk through the inland canals. Norfolk's shipbuilding capabilities north of the sounds could not overcome logistical limitations that Confederate naval authorities faced in North Carolina during the first phase of wooden gunboat construction. Ultimately, construction efforts failed because of limited ordnance available, shortages of suitable engines, few supplies, a lack of large scale industry, and Union advances into North Carolina.

Washington, North Carolina

Washington was positioned on the Pamlico River southeast of Greenville. This inland port developed into an important shipbuilding and commercial town. Washington Township was established in the 1770's by James Bonner; however, the first official reference to the town occurred five years later in the journal of the Council of Safety in Halifax. After the end of the Revolutionary War and Constitutional Convention, a local shipbuilding industry emerged in the small harbor.¹⁵³

At the end of the eighteenth century, Washington officially became a port. In 1790, the federal government established a customs office. During the initial stages of Washington's development, the Blount brothers, John Gray, Thomas, and William, grew their successful mercantile firm and extended into shipbuilding. Brigs and sloops were contracted and built as Washington's influence as a shipping center within the Tar-Pamlico River basin grew. Naval stores, including turpentine and lumber, as well as agricultural products like corn and tobacco, moved down the Tar River from Tarboro and Greenville, passing through Washington on their

¹⁵³ William N. Still, *Of Tar Heel Towns, Shipbuilders, Reconstructionists, and Alliancemen: Papers in North Carolina History*, vol. 5, "The Shipbuilding Industry in Washington, North Carolina" (Greenville, North Carolina: East Carolina University Publications, 1981), 27; Herbert Paschal, "In the Beginning" in *Washington and the Pamlico*, ed. Ursula F. Loy and Pauline M. Worthy (Washington, NC: Washington-Beaufort Bicentennial Commission, 1976), 3-5.

way to other markets and ports. “River based trade and shipbuilding dominated the local economy of Washington for the next six decades” until the Civil War.¹⁵⁴

As the Blount family continued successful operations, other merchants and businessmen invested in Washington’s potential. The Fowle family moved to Washington from New England in 1812. Josiah and Luke were the first brothers to relocate, later joined by youngest brother Sam.¹⁵⁵ As the Fowle family settled and began business, war loomed. In June 1812, the United States went to war with Great Britain. The British preferred to focus on established commercial centers, so North Carolina’s coast was left largely unmolested.¹⁵⁶ Protection by the Outer Banks allowed American privateers and coastal traders to operate almost unchecked from North Carolina’s sounds while other ports struggled. Shipping tonnages in Washington increased from 3,700 tons to almost 5,000 from 1814 through 1820.¹⁵⁷ Beaufort County’s population also rose during the second decade of the nineteenth century from 7,203 to 9,850.¹⁵⁸

As wartime shifted back to peace, regular commercial and trade activities persisted. Exporting naval stores and agricultural products continued as flat bottomed barges carried goods down the Tar River to Washington. The Fowle mercantile firm grew and incorporated many vessels, purchasing five schooners, four brigs, and one sloop between 1815 and 1819. Accompanying those ten vessels was a gradual accumulation of valuable real estate near the

¹⁵⁴ Paschal, *Washington*, 4-5.

¹⁵⁵ Pauline Worthy, “The Town Develops” in *Washington and the Pamlico* (Washington, NC: Washington-Beaufort Bicentennial Commission, 1976), 10-11.

¹⁵⁶ Christopher P. McCabe, “The Development and Decline of Tar-Pamlico River Maritime Commerce and Its Impact Upon Regional Settlement Patterns.” Master’s Thesis, East Carolina University, 2007. For a detailed analysis of the British blockade during the War of 1812 see Wade Dudley, *Splintering the Wooden Wall: The Blockade of the United States, 1812-1815* (Annapolis, MD: Naval Institute Press, 2003).

¹⁵⁷ McCabe, “The Development and Decline of Tar-Pamlico River Maritime Commerce,” 96.

¹⁵⁸ The University of Virginia Library, Geospatial and Statistical Data Center, “Historical Census Browser,” <http://fisher.lib.virginia.edu/collections/stats/histcensus/>; McCabe, 96.

waterfront.¹⁵⁹ Despite continued commercial growth following the war with Great Britain, ship construction fell noticeably during the next two decades. William N. Still found “only two or three vessels, usually schooners, were built per year.”¹⁶⁰

Following the stagnation of the 1820’s, Washington experienced a considerable increase in shipbuilding. By 1830, Beaufort County had almost 11,000 residents.¹⁶¹ Hezekiah Farrow built the first marine railway in Washington. This equipment increased activities for Farrow’s company, where he focused on repairing vessels. Farrow’s son, Joseph, built a ship in 1847 called the *Benjamin F. Hanks*.¹⁶² In addition to the Farrow’s and the Fowle mercantile firm, other shipbuilders in Washington included Burton Shipp, William Tannahill, and, briefly, Hull Anderson.¹⁶³

In 1845, the *Tarboro Press* wrote of the shipbuilding and commercial community developing. “Washington is a delightful place...wharves and shipping gives it the appearance of a commercial city. About midway of the [river] is an island (called the Castle) owned by Abner Neale covered with workshops...for shipbuilding...” the paper boasted.¹⁶⁴ Although published a few years before the peak of shipbuilding, that newspaper foreshadowed Washington’s importance as a shipbuilding center. By the beginning of the 1850’s, ownership of the few shipping and shipbuilding companies changed hands as new companies formed. Washington was home to the successful Myers & Company and the firm of I.W. & U.H. Ritch, which bought out Burton Shipp’s shipbuilding firm.¹⁶⁵ During the fifties, Washington became the most

¹⁵⁹ Ann Merriman, “North Carolina Schooners, 1815-1901, and the S. R. Fowle and Son Company of Washington, North Carolina.” Master’s Thesis, East Carolina University, 1996, 69, 87-92.

¹⁶⁰ Still, *Of Tar Heel Towns*, 33.

¹⁶¹ UVA, “Historical Census Browser.”

¹⁶² *Washington Whig*, June 23, 1847; William N. Still and Richard Stephenson, “North Carolina Vessel Papers” (Manuscript, Private Collection of William N. Still, 2006).

¹⁶³ Still, *Of Tar Heel Towns*, 33.

¹⁶⁴ *Tarboro Press*, March 1, 1845.

¹⁶⁵ Loy, *Washington and the Pamlico*, 581.

important shipbuilding town in North Carolina. Twenty-three ship carpenters lived in Beaufort County and three marine railways operated.¹⁶⁶ During a two and a half year stretch, from 1855-1857, twelve vessels were built, but a sharp decline followed. The Panic of 1857 resulted in economic turmoil and only one vessel was built before the Civil War.¹⁶⁷

Elizabeth City, North Carolina

Elizabeth City was the other sound-side North Carolina port that participated in Confederate wooden gunboat construction. Located in Pasquotank County, the city was initially chartered in 1793; however, the area had been settled more than a century earlier. When the Dismal Swamp Canal connected the inland waters of Virginia and North Carolina, the town was incorporated. As the canal's southern entrance point, Elizabeth City became an important distribution point in North Carolina's inland waters.¹⁶⁸

The Dismal Swamp Canal became a reality after Virginia legislators passed a bill for digging the canal in 1787, followed by North Carolina legislators in 1790.¹⁶⁹ Elizabeth City became the southern terminus of the canal. After almost two decades of construction, the first "flats" moved through the canal in 1807.¹⁷⁰ Shingle flats were the only vessels to use the canal until 1814, when a twenty ton deck boat transited the canal with a cargo of bacon and barley. The voyage started on the Roanoke River near Scotland Neck and ended in Norfolk, representing the unification of Albemarle Sound and Chesapeake Bay.¹⁷¹

¹⁶⁶ Still and Stephenson, "Vessel Papers"; *Beaufort County, North Carolina 1850 Census* (Washington: Beaufort County Genealogical Society, 2000).

¹⁶⁷ Still and Stephenson, "Vessel Papers"; Greg R. Taylor, *The Transportation Revolution* (New York: Holt, Reinhart & Winston, 1951), 350.

¹⁶⁸ William A. Griffen, "Ante-bellum Elizabeth City: The History of a Canal Town" (Master's Thesis, East Carolina University, 1970), 1.

¹⁶⁹ Alexander Crosby Brown, *The Dismal Swamp Canal* (Norfolk, Norfolk County Historical Society, 1970), 34-35.

¹⁷⁰ Brown, *The Dismal Swamp Canal*, 46.

¹⁷¹ *Norfolk Gazette and Public Ledger*, June 11, 1814; Brown, *Dismal Swamp*, 49.

As the Dismal Swamp Canal moved towards completion, Elizabeth City established local government. The town became the seat of local government in Pasquotank County on June 3, 1800. Its population was small but continued to grow during the first twenty years of the nineteenth century as it rose from 677 inhabitants in 1820 to almost 1,000 in 1830¹⁷²

Elizabeth City also demonstrated a steady increase in economic activity. By the mid-1820's, Elizabeth City trailed only Wilmington in the number of North Carolina vessel enrollments.¹⁷³ Nineteen general merchandising stores ran advertisements in local newspapers, hoping to capitalize on the town's growth and the canal's importance.¹⁷⁴ In addition to increased local purchasing and commercial shipping activity, transportation companies began operations connecting the inland sound ports with Virginia. The Virginia and North Carolina Transportation Company formed and invested in the *Petersburg*, a steamboat that operated out of Elizabeth City. As trade increased with Norfolk, Elizabeth City continued to ship cargoes through Ocracoke Inlet. During the period of economic vitalization associated with the canal, three-fourths of trade from North Carolina still traveled through Ocracoke Inlet.¹⁷⁵ The town's position as the first large port in Albemarle Sound made its location ideal for growth.

Economic expansion and distribution of goods in the vicinity of Elizabeth City waterways created the need for a bigger shipbuilding and repair industry in the town. Anthony Butler and Charles Grice were two of the first shipbuilders, establishing shipbuilding companies during the nineteenth century's first two decades. Later, William F. Martin, a lawyer, operated a shipyard along with shipbuilding firms owned by Richard Overman, Timothy Hunter, C. M.

¹⁷² Wayne H. Payne, "The Commercial Development of Ante-bellum Elizabeth City", 24, 50; Still, "Vessel Papers."

¹⁷³ Still and Stephenson, "Vessel Papers."

¹⁷⁴ Griffen, "Ante-bellum Elizabeth City," 73.

¹⁷⁵ *Ibid.*, 73-74.

Laverty, and Burgess and Lamb.¹⁷⁶ The latter three built three vessels in the fall of 1849. These three ships were impressive vessels “with two intended for West Indian trade and the other for the canal.”¹⁷⁷

A report published in 1856 stated that as many as 119 vessels participated in commerce from Elizabeth City shipyards. The vessels included “one brig, ninety-three schooners, five sloops, four sloop boats, and sixteen barges with a weight of 5,863.”¹⁷⁸ Specific information about whether these 119 vessels were built from the keel up or simply repaired is not clear. The 1860 Pasquotank County Census showed nine ship carpenters living in or near Elizabeth City, alongside many mariners, vessel captains, and around 30 merchants.¹⁷⁹

Wooden Gunboat Construction Begins

Confederate construction efforts at Washington and Elizabeth City did not occur immediately or simultaneously. The only evidence indicating their beginnings and progress survive through correspondence between Confederate commanders and shipbuilders charged with their completion. Some contracts for the ships built in Elizabeth City and a few payment vouchers for vessels to be built in Washington survive.¹⁸⁰ The naval officials, officers, and shipbuilders include Stephen Mallory, William Williamson, John L. Porter, Arthur Sinclair, and Gilbert Elliott.

Secretary Mallory, Chief Naval Constructor Porter, and Engineer in Chief Williamson were ultimately responsible for the North Carolina vessels as they directed operations from

¹⁷⁶ Elliott, *Ironclad on the Roanoke*, 17; Griffen, “Ante-bellum Elizabeth City,” 78-79; C. Alexander Turner, “An Historical and Archeological Investigation of the *Scuppernon*: A Mid-Nineteenth Century North Carolina Built Centerboard Schooner” (Masters Thesis, East Carolina University, Greenville, NC, 1999), 34.

¹⁷⁷ *The Old North State*, November 3, 1849.

¹⁷⁸ Griffen, “Ante-bellum,” 79.

¹⁷⁹ *Pasquotank County, North Carolina Census, 1860*. (Elizabeth City: Albemarle Genealogical Society, 1999).

¹⁸⁰ William F. Martin Papers, Southern Historical Collection, University of North Carolina, Chapel Hill, North Carolina; Confederate Navy File, National Archives and Records Administration, Record Group 45, Microfilm Collection 1091.

Richmond and Norfolk. Arthur Sinclair was a veteran naval officer, serving many years in the United States Navy before obtaining a Confederate commission. Sinclair served in North Carolina waters and at the Gosport Navy Yard in 1861 and early 1862 before being transferred to New Orleans. Before going to New Orleans, Sinclair oversaw construction of three wooden gunboats in Washington.¹⁸¹

Gilbert Elliott was an Elizabeth City native. Trained in law, he was employed by William F. Martin, a local Elizabeth City lawyer, in his legal practice and also managed his shipyard. As the Civil War became a reality, Elliott became the recognized agent for Adjutant General James G. Martin. In this capacity, Elliott assumed responsibility for William F. Martin's shipyard. William was James's younger brother. Elliott eventually claimed fame as a contractor of the ironclad CSS *Albemarle*, completed in 1864. During the Confederate States Navy's first phase, Elliott learned the shipbuilding business working on wooden gunboats for Martin's firm.¹⁸² Contracts for four wooden gunboats were drawn up to be built, with Elliott's help, in Elizabeth City.¹⁸³

Captain William F. Lynch commanded naval forces operating in North Carolina waters as construction on these seven gunboat began. Lynch took command following the loss of Hatteras Inlet. In addition to losing the inlet, Samuel Barron, first commander of North Carolina waters, was captured by Union forces. Lynch took control and quickly realized the vulnerability of North Carolina's coast.¹⁸⁴ Lynch, along with North Carolina Governor Henry T. Clark,

¹⁸¹ *Register of Officers*, 180; William Williamson to Gilbert Elliott, Nov. 9, 1861, William F. Martin Papers.

¹⁸² Elliott, *Ironclad on the Roanoke*, 17.

¹⁸³ Stephen Mallory to Gilbert Elliott, Jan. 6, 1862, William F. Martin Papers; Report of Stephen Mallory, Feb. 27, 1862, *ORN* ser. 2 vol. 2, 150. This report indicates seven steam gunboats under construction in North Carolina waters: three in Washington, four in Elizabeth City.

¹⁸⁴ William F. Lynch to Stephen Mallory, Sept. 12, 1861, *ORN* ser. 1 vol. 6, 726-727.

complained of insufficient troop numbers, limited artillery, and non-existent naval forces available to properly defend the coast.¹⁸⁵

As Governor Clark and military leaders pushed for more resources in North Carolina, shipbuilders in Washington and Elizabeth City began exploring the possibility of Confederate vessel construction. Gilbert Elliott, local shipbuilding agent in Elizabeth City, was already quietly communicating with General Martin concerning his shipyard's potential activities. Martin wanted to know if his young associate had the capacity to build ships on schedule for the Confederacy. Martin was in contact with Com. Sinclair in Norfolk, expressing Elizabeth City's ability to build gunboats.¹⁸⁶ Though advocating the potential for shipbuilding at his yard under Elliott's direction, Martin was leery of taking on such a project. Martin, along with Elliott, was aware of the difficulties in obtaining marine engines and did not want to get locked into a project destined to remain incomplete. Instead, he moved slowly, wanting to obtain a contract for "hull only" construction while the government was responsible for the engines.¹⁸⁷

As Elliott and Martin shopped their shipyard and Elizabeth City's potential, Commander Sinclair finalized contracts for gunboats in Washington. The wooden gunboats built in Washington were built by the Ritch and Farrow firm and Myers & Company.¹⁸⁸ Myers & Co. contracted to build two wooden gunboats on October 5, 1861, for \$16,000 a piece. A week later, Ritch and Farrow signed a contract for one \$13,200 gunboat. The three gunboats were scheduled for completion by March and May 1862.¹⁸⁹ These contracts included no specifications about the

¹⁸⁵ William R. Trotter, *Ironclads and Columbiads: The Civil War in North Carolina* (Winston-Salem, NC: John F. Blair, Publisher, 1989), 57-58.

¹⁸⁶ Martin to Elliott, Sept. 14, 1861, Martin Papers.

¹⁸⁷ Elliott, *Ironclad on the Roanoke*, 21.

¹⁸⁸ Still, "Shipbuilding Industry." 37.

¹⁸⁹ P. Kean, *Report of Evidence Taken Before a Joint Special Committee of Both Houses of the Confederate Congress to Investigate the Affairs of the Navy Department* (Richmond, Virginia: G.P. Evans & Co., 1863), 439-440.

gunboats. Partial payments indicated machinery was to be furnished by the government and that capture or disruption by the enemy would not negatively affect the contract.

As the Washington contracts were signed, Elliott continued communicating with Sinclair and Martin about construction in Elizabeth City. During mid October, Confederate building policy changed. Sinclair wrote Elliott, stating that Confederate naval authorities would only accept fully completed vessels ready for service. He reported:

I have just received yours of the 13th inst. The Secretary of the Navy has instructed me to make no more contracts for gunboats without machinery. They must be complete, so your offer must be for all. My plan of boat was furnished by Mr. Porter [and] doubtless the same will be given you by him. Please let me hear from you as early as practicable.¹⁹⁰

With three gunboats already under contract, accompanied by construction in other Confederate ports, numerous completed hulls with no machinery would put the Confederate States Navy in a difficult position. Any marine machinery was in short supply, and stripping converted vessels of engines for newly constructed ones limited the number of ships able to defend North Carolina's sounds. Engineless ships would then be relegated to floating batteries.

Martin and Elliott's cautious approach paid off by the end of October 1861. Capt. Lynch and his small "fleet" encountered some success in North Carolina waters by capturing the steamer *Fanny*, loaded with important supplies and armaments.¹⁹¹ After that success, Elliott was summoned to the CSS *Sea Bird*, Capt. Lynch's flagship. At the meeting, Elliott and Martin were able to secure a contract for a Confederate gunboat. The specifications called for a 130 ft. long vessel with a 25 ft. beam and a 7 ft. depth of hold. Similar to contracts drawn up for the Washington vessels, Elliott would be protected from enemy interruption and not be required to return additional funds. Based upon specifications, the gunboat fit within the *Chattahoochee*

¹⁹⁰ Sinclair to Elliott, Oct. 15, 1861, Martin Papers.

¹⁹¹ Taylor to Lynch, Oct. 8, 1861, *ORN* ser. 1 vol. 8, 737-378.

class of Porter gunboats.¹⁹² The steamer *Empire*'s engines would be bought, removed, and used aboard the yet to be constructed gunboat.¹⁹³

As the fall pushed towards winter, prospects for more gunboat construction in Elizabeth City increased. In November 1861, Williamson, Elliott, and Porter were in constant communication about building and fitting out more wooden gunboats in North Carolina waters. Williamson informed Elliott of the potential of increased shipbuilding activity. Specifications called for vessels of 100 to 120 ft. in length with a beam of around 26 ft. which would mount two guns. The "large" number of boats Williamson referenced was Maury's wooden gunboat fleet.¹⁹⁴ As 1861 turned to 1862, Elliott found himself on the cusp of contracting to build more warships. By January 6, 1862, Elliott agreed to build three more gunboats for the Confederate States Navy within four months. At the time, he was building Capt. Lynch's *Chattahoochee* class vessel and another unclaimed hull sat on the stocks.¹⁹⁵

Deciphering precise specifications for the Washington gunboats by the Myers and Ritch and Farrow firms is difficult. No plans, detailed specifications, or drawings concerning the vessels survive. Cross referencing communications between Elliott, Williamson, Porter, and Mallory, coupled with analysis of other ships built under similar circumstances, offer clues. After receiving the contract for his first Elizabeth City vessel (at 130 ft. in length), Elliott was sent specifications for the Washington gunboats by Constructor Porter. Porter indicated that Elliott would need to take out a 20 foot section to fit his specifications to reach 130 feet for his

¹⁹² Still, *Confederate Navy*, 45; Mallory to A. McLaughlin, Oct. 3, 1861, Confederate Navy File, ZB File, Manuscript Collection, United States Navy Historical Center, Washington Navy Yard, Washington DC. This communication indicates that the specifications of Elliott's gunboat in Elizabeth City would match the plans for one to be built by Lt. McLaughlin in Columbus, Georgia where CSS *Chattahoochee* was built.

¹⁹³ Contract between Gilbert Elliott/William F. Martin and William F. Lynch, Oct. 22, 1861, Martin Papers; Kean, *Report of Evidence*, 441-442; Porter to Mallory, Oct. 11, 1861, Martin Papers.

¹⁹⁴ Williamson to Elliot, Nov. 26, 1861, Martin Papers; Com. Maury to Governor Letcher, Aug, 11, 1861, Matthew F. Maury Family Manuscript Collection, Washington DC, Library of Congress.

¹⁹⁵ Elliott, *Ironclad on the Roanoke*, 48; Mallory to Elliott, Jan. 6, 1862, Martin Papers.

Elizabeth City gunboat. A twenty foot decrease indicates a 150 ft. gunboat, of the *Macon*-class, the largest class of the John L. Porter wooden gunboats.¹⁹⁶ The boat built by Farrow's firm cost \$2,800 less than the Myers built gunboats. Later in the war, United States Navy Commander Stephen Rowan reported that the Farrow hull was smaller than the Myers hulls.¹⁹⁷

Problems for Gunboat Construction

The problem Stephen Mallory faced in establishing Confederate shipbuilding in North Carolina was primarily caused by strategic concerns beyond his control. While possessing shipyards, some needed infrastructure, and a few skilled workers, North Carolina's northern sounds were not as developed as Wilmington or Norfolk. Despite the long tradition of naval stores production and maritime trade, Elizabeth City and Washington were more isolated than other shipbuilding centers. The Dismal Swamp and the Chesapeake and Albemarle Canals were the only direct, reliable distribution avenues for marine machinery, ordnance, and military supplies.

There were no direct rail connections with Washington and Elizabeth City. The only railway extending to the North Carolina coast besides the Wilmington and Weldon was the Atlantic and North Carolina Railroad. This railway went between Beaufort and New Bern and then towards Kinston.¹⁹⁸ The South's shipbuilding establishment was still scattered, with needed auxiliary industries located in different regions. Building ships in Washington and Elizabeth City required support from industries located in other Confederate states.

Securing suitable engines for the Washington and Elizabeth City gunboats proved difficult. Contracts for the Washington wooden gunboats were made first, nearly two weeks

¹⁹⁶ Porter to Williamson, Nov. 26, 1861; Martin Papers; Glenn Forest, "Is the Chicod Creek Vessel a *Macon* Class Porter Gunboat?" *Underwater Archeology* 1997, 150-151.

¹⁹⁷ Report of Com. Stephen Rowan, March 27, 1862, *ORN* ser. 1 vol. 7, 150-151.

¹⁹⁸ Charles L. Price, "North Carolina Railroads During the Civil War" *Civil War History* Vol. 7, (1961), 301.

before the meeting between Captain Lynch and Elliott on board the CSS *Sea Bird*. These gunboats were given precedent over the Elizabeth City vessel based on references to some contracts. The Talbott Brothers, owners of the Shockoe Foundry in Richmond, agreed to build six marine engines for the three Washington gunboats, although no specific contract has been located.¹⁹⁹

Elliott had been promised the *Empire's* engines by Capt. Lynch, but Porter indicated the vessel's engines could not be used after an investigation by Williamson. Troubled by this development, Elliott appealed to Norfolk and Richmond, hoping to find some good news. The Talbott Brothers had no engines on hand. The only machinery able to power a vessel with a six or seven foot propeller shaft was in New Orleans.²⁰⁰ To complete Lynch's vessel, Elliott was dependent upon the Confederate transportation system. Numerous stops would be made if shipped by rail. Complete transportation by water was not an option because of Union naval forces. There was no certainty that the engines could be secured and, with a \$6,000 price tag, Elliott had little money to spend. Hope for those engines making it all the way to Elizabeth City was questionable.

Securing steam engines was just one of many problems Elliott encountered. The young contractor knew of the deficient manufacturing capabilities, but also contended with timber and other material shortages. Between October and December, letters indicated Elliott's problems. Limited iron resources and disappearing shipments of timber were just some of the headaches

¹⁹⁹ M. Smith to Gilbert Elliott, Nov. 4, 1861, Martin Papers.

²⁰⁰ *Ibid.*

Elliott experienced.²⁰¹ Iron Foundries, like George Reid and Phillips & Co. of Norfolk and Tredegar, constantly reported scarce supplies and low production.²⁰²

The scarcity of iron was accompanied by frustration attempting to secure quality timber, both oak and yellow pine. In Columbia, North Carolina, James N. Perry was a local lumberman with an established relationship with Martin and Elliott.²⁰³ As early as September 1861, Perry was cutting timber, hoping to sell it in Norfolk.²⁰⁴ Others, including L. Hinds of Camden County, William R. Abbott of South Mills, J.J. Jordan of Winton, and E. L. Dozier of Camden, also had existing relationships supplying Martin's shipyard. The most useful of these sawmill owners and woodsmen to Elliott were Jordan and Hinds.²⁰⁵ Hinds wrote Elliott, explaining the progress of his timber cutting and digging operations. The timber Elliott needed was soon to be in route. The supplies were welcome, but a promised partial \$5,000 payment for Lynch's vessel was the best part.²⁰⁶ Shortly after, Mallory and Elliott agreed to build three more Confederate gunboats.

As activities progressed in Elizabeth City, the gunboats in Washington also moved forward. Along with hull construction, arrangements were made to supply engines and boilers for three Porter gunboats.²⁰⁷ Aside from references by Williamson and officials associated with Shockoe Foundry in Richmond, specific details for these three vessels are scarce. The only other clues are partial payments received by the companies and their contracts. As the original Myers'

²⁰¹ Turner, "Investigation of the *Scuppernon*," 41; Receipts for iron purchases, April 7, 1851 and March 28, 1861, Timothy Hunter Papers, East Carolina University Manuscripts. Timothy Hunter, a local shipbuilder in Elizabeth City consistently obtained iron from outside locations like New York, Norfolk and as far as England and Sweden.

²⁰² Elliott, *Ironclad on the Roanoke*, 34-42.

²⁰³ Receipt for planked timber, Feb. 1861 and Lumber, Dec. 20, 1861, James N. Perry to Timothy Hunter, Timothy Hunter Papers.

²⁰⁴ Elliott, *Ironclad*, 23.

²⁰⁵ *Ibid.*, 22-44.

²⁰⁶ *Ibid.*, 45; Stephen Mallory to George Ritchie, March 6, 1862, Copy of Payment Made for \$5,000. Confederate Navy File, RG 45, M-1091, Roll 5, 277.

²⁰⁷ Smith to Elliott, Nov. 4, 1861, Martin Papers.

contract stated, incremental payments would be made based upon continued progress. The contract stated that a keel must be finished, the hull framed, and then planked.²⁰⁸ Three total payments were made by March 1862. The Ritch and Farrow gunboat appeared to have not gotten much farther.²⁰⁹

Obtaining proper ordnance and projectiles was another problem for shipbuilders in Washington and Elizabeth City. Although 1,100 pieces of heavy artillery had been captured when the Union evacuated Norfolk, only 80 found their way to North Carolina, and went to shore batteries and other forts.²¹⁰ Even with the Norfolk guns, General D. H. Hill's October 1861 assessment described a porous coastal defensive network. He pointed to limited ammunition available for guns protecting New Bern, too few guns at Fort Macon, inferior guns guarding Washington, and the want of proper armament in Hyde County. Those problems notwithstanding, Hill appealed to Secretary Mallory about his most pressing concern. He reported:

Roanoke Island is the key to one-third of North Carolina, and its possession by the enemy would enable him to seize the great railway connection between north and south of the Confederacy. This all important island is in want of men and guns. It should have six more rifled cannon.²¹¹

Mallory could do nothing but appeal to the Secretary of War for guns and ammunition because he possessed none.²¹² Tredegar, one of two Confederate facilities that could produce heavy cannon, only produced 45 artillery pieces by October 1, 1861.²¹³ By early winter 1862, the artillery situation remained problematic at best. Josiah Gorgas explained, "The winter of

²⁰⁸ Kean, *Report of Evidence*, 439-440.

²⁰⁹ Forest, "Chicod Creek Vessel," 150-151; Still, "Washington Shipbuilding Industry," 37-38.

²¹⁰ Report of General R. E. Lee to Governor John Letcher, June 10, 1861, *ORN* ser. 1 vol. 5, 805-806. A later report of the Confederate Navy Department, dated July 18, 1861, indicated a total of 203 guns sent to North Carolina (*ORN* ser. 2 vol. 2, 77).

²¹¹ Hill to Mallory, October 18, 1861, *ORN* ser. 1 vol. 6, 739.

²¹² Mallory to Judah P. Benjamin, Oct. 23, 1861, *ORN* ser. 1 vol. 6, 739-740.

²¹³ Dew, *Ironmaker to the Confederacy*, 111.

1861 and 1862 was the darkest period of my department...Heavy guns...were called in all directions-the largest guns for the smallest places.”²¹⁴ The manufacturing capabilities and artillery secured at Norfolk could not keep up with demand. If shore based installations received insufficient artillery and ammunition, the navy had worse prospects.

The Burnside Expedition

The seven gunboats under contract in North Carolina during early 1862 had a limited life expectancy. During previous weeks and months, an amphibious expedition was organized under the dual command of Union General Ambrose Burnside and Admiral Louis Goldsborough. Their aim was complete control over North Carolina’s sounds and, by extension, the railroads on North Carolina’s coastal plain. Calls were made as early as September 1861 for a follow up assault to bolster the newly acquired Union position on Hatteras Island.²¹⁵

These calls were answered by Burnside’s expedition. This amphibious assault began during the early morning of February 7, 1862. To reach their strategic goals, eastern North Carolina’s capitulation and control of its railways, Burnside and Goldsborough’s combined force needed to accomplish two objectives. First, they must neutralize the Confederate land based fortifications covering Roanoke Island and adjacent Croatan Sound. Goldsborough’s fleet was then to destroy Capt. Lynch’s “Mosquito Fleet” protecting Pamlico and Albemarle Sounds.

These objectives were achieved over a three day period. The combined army and navy units landed smoothly and quickly neutralized Confederate defenders on Roanoke Island.²¹⁶ Roanoke Island surrendered to Union forces the evening of February 8. Goldsborough regrouped, and, under command of Commander Stephen Rowan, part of the Union fleet steamed north toward Capt. Lynch’s Confederate naval flotilla. On February 10, 1862, Rowan cornered

²¹⁴ Dew, *Ironmaker to the Confederacy*, 113.

²¹⁵ Rowan to Stringham, September 5, 1861, *ORN* ser. 1 vol. 6, 172-173.

²¹⁶ Goldsborough to Welles, Feb. 18, 1862, *ORN* ser. 1 vol. 6, 554.

the Confederates at Elizabeth City and destroyed them. Both Albemarle and Pamlico Sounds had been captured within a three day period. The seven Confederate gunboats would not be finished.

After the rout at Elizabeth City, Gilbert Elliott's shipbuilding activities in his hometown were over. A *Chattahoochee* class vessel under construction was never completed.²¹⁷ The Burnside Expedition did not stop there. A little over a month passed before Fort Macon, New Bern, and Morehead City came under Union control.²¹⁸ Union naval forces then steamed up Pamlico River and captured Washington, North Carolina., ending construction of the three Porter gunboats. The Farrow vessel was burned on the stocks while the Myers boat was towed upstream before being scuttled by the Confederate defenders to prevent capture. Sufficient progress was never made on the contract for the second Myers gunboat.²¹⁹

Conclusion

The Burnside Expedition brought an abrupt end to wooden gunboat construction in northeastern North Carolina. The gunboats in Washington and Elizabeth City, despite the best efforts of ship carpenters and Confederate officials, were never finished. Shipbuilding was held back by geographic limitations posed by rivers and sounds that limited the local manufacturing, transportation, and communication.

Marine machinery production was only possible in the few more urbanized areas like Norfolk, Richmond, New Orleans, and Columbus. Confederate ordnance production early in the conflict could not keep up with the combined needs of the Confederate army and navy. Ironclad warships, the most important cities and ports, and under equipped army units would receive most

²¹⁷ Elliott, *Ironclad on the Roanoke*, 53.

²¹⁸ Burnside to Stanton, April 10, 1862, *ORA* ser. 1 vol. 9, 206.

²¹⁹ Com. Rowan to Flag-Officer L. Goldsborough, March 27, 1862, *ORN* ser. 1 vol. 7, 150-151; Still, *Of Tar Heel Towns*, 37-38.

manufactures and artillery. Wooden gunboats, especially those waiting for machinery and engines, had to wait as wartime stimuli necessitated allocation of precious resources to the most urgent areas.

Union occupation of the northeastern sounds did not signify the end of construction in North Carolina. Shipbuilding operations shifted south to North Carolina's largest city and port, Wilmington, and inland, along three other rivers. Both ironclad and wooden gunboats would be built there until early 1865. Confederate vessel construction continued in northeastern North Carolina as well. Two ironclads were successfully completed, the CSS *Albemarle* near Halifax, and the CSS *Neuse* near Kinston. These locations were located up river from Washington and Elizabeth City. Similar to North Carolina, South Carolina also saw increased shipbuilding after Confederate reorganization in mid 1862. The Confederate States Navy continued wooden gunboat construction at an interior facility near Florence until 1865.

Chapter 5: Second Phase, CSS *Peedee* and Mars Bluff

South Carolina was an important part of Confederate States Navy shipbuilding. In actuality, the Confederate States Navy owes its beginnings to the first state to secede from the Union. Upon secession, South Carolina organized a state navy for defensive purposes against the United States. It contributed shipyards and considerable resources during each phase of Confederate shipbuilding. Both ironclad and wooden vessels were constructed in the Palmetto State. Charleston was an obvious construction location as one of the oldest and most important Confederate ports. It built and refitted Confederate vessels almost throughout the war. In addition to shipbuilding activities, blockade runners regularly used Charleston to smuggle needed supplies into the Confederacy, especially during the Civil War's first two years.

Charleston's importance notwithstanding, another location was the site of a Confederate States Navy Yard in South Carolina. Mars Bluff, situated close to Florence on the Great Pee Dee River, was the other Confederate shipbuilding site in South Carolina. The Mars Bluff Navy Yard was established as a part of Stephen Mallory's reorganization of Confederate shipbuilding and manufacturing facilities during mid-1862. At this site, what is believed to be a *Macon*-Class wooden gunboat, CSS *Peedee*, was completed during the Civil War's second half.

Initiated in early 1863, the CSS *Peedee* was not completed, commissioned, and put into active service for nearly two years. Confederate inadequacies in mass transportation, manufacturing capability, and maintaining enough supplies created a strained logistical framework that station commanders Lt. Van R. Morgan and, later, Lt. Edward J. Means, along with Naval Constructor E. C. Murray and other personnel dealt with on a daily basis.²²⁰ That the

²²⁰ S. S. Lee to Edward J. Means, July 18, 1864 and French Forrest to Van R. Morgan, March 9, 1863, Confederate Navy File, ZB File, Manuscript Collection, United States Navy Historical Center, Washington Navy Yard, Washington DC. Each communication indicates changing the command at Mars Bluff to the recipient.

CSS *Peedee* was ever completed despite the limitations and Secretary Mallory's preference for ironclad construction after 1862 is remarkable.

Charleston, South Carolina

The history and economy of South Carolina was closely associated with agriculture and maritime commerce. From its early history as a British colony until the Civil War, cultivation of rice, cotton, and the production of naval stores and lumber were important components of South Carolina's economy. Charleston was the industrial and manufacturing center for this largely agrarian state. It evolved into a diversified urban center supporting a variety of industries and economic interests including iron foundries, sawmills, and railcar production capabilities. Although the scale of this diversification was small in comparison to the more urban north, Charleston ranked third in southern manufactures behind Richmond and New Orleans. A yearly total of \$2,750,000 worth of manufactures was produced in Charleston by 1850. That number increased to its peak of \$3,000,000 in 1856.²²¹

Within Charleston's diversified economy, elements of heavy industry were present. With an industrial and manufacturing presence, a vibrant shipbuilding sector existed. As many as five shipyards with around 160 white and black mechanics operated during the 1840's.²²² Numerous sailing, steam, and smaller boats were constructed along with three dry docks. On the eve of the Civil War, economic conditions and several fires during preceding years suppressed economic growth as a whole in Charleston, including shipbuilding. An 1860 local survey indicated four firms engaged in ship construction and repair work.²²³

²²¹ Ernest M. Lander, Jr., "Charleston: Manufacturing Center of the Old South," *The Journal of Southern History* vol. 26, No. 3 (Southern Historical Association, Aug. 1960) 330-331.

²²² Charleston, South Carolina City Council. *Census For The City of Charleston, South Carolina For The Year 1848* (Charleston, SC: J.B. Nixon, 1849), 31-35.

²²³ *Courier*, March 24, 1860; Lander, "Charleston: Manufacturing Center," 341.

Secretary Mallory wished to use the manufacturing and industrial capabilities in Charleston for the Confederate States Navy. Captain Duncan Ingraham took command of navy construction in Charleston in November 1861. Early in 1862, Ingraham expanded construction operations. Charleston residents had legitimate concerns about a possible amphibious landing by the Union. Just before Ingraham took command of rebel naval forces in South Carolina, an expedition led by Admiral Samuel F. DuPont, captured Port Royal, just south of Charleston.²²⁴ Consequently, and despite Mallory's reservations concerning dwindling resources, Ingraham secured permission to build the CSS *Chicora*, as well as the CSS *Palmetto State*.²²⁵ These two ironclad vessels became the Confederate States Navy's backbone in Charleston Harbor.

Establishment of the Mars Bluff Navy Yard

During the spring and summer of 1862, construction in Charleston continued as the Confederates bolstered defenses in several important Confederate ports and cities. Union thrusts into Confederate territory on each side of the Confederacy and a strengthening blockade necessitated these changes. As important points along the coast were reinforced, Mallory moved manufacturing and shipbuilding locations into the interior to protect them from coastal raids. The Confederate States Navy Yard at Mars Bluff was one of these inland locations. It was deep enough in South Carolina's interior to shield it from possible Union raiding parties.²²⁶

The beginning of the Mars Bluff Navy Yard was documented in letters exchanged between Lt. Alfonse Barbot and Capt. Ingraham in November 1862. Barbot was ordered to Chesterfield County, near Cheraw, South Carolina, to scout the area for a suitable shipyard location on the Pee Dee River.²²⁷ Barbot may have found the site and made the

²²⁴ Report of Flag-Officer S. F. Du Pont, Nov. 11, 1861, *ORN* ser. 1 vol. 12, 261-266.

²²⁵ Still, *Iron Afloat*, 81; *Register of Officers*, 97.

²²⁶ Scharf, *History of the Confederate States Navy*, 669.

²²⁷ *Ibid.*

recommendation, but he did not establish the yard. In December 1862, Mallory ordered Lt. William Dozier to Mars Bluff to begin organizing shipbuilding. Reaching Mars Bluff, Dozier made contact with William W. Harllee who helped gather materials.²²⁸ In addition to the Lieutenant, a paymaster was sent with \$10,000 to begin gunboat construction.²²⁹

The Navy Yard's site was located on private property leased by the Confederate government. That property had been owned by two brothers, Nathan and Knight Gibson, who inherited the land from their father James Gibson. When James died in 1854, and before dividing the land between his two sons, he was one of the wealthier planters in the area. His holdings included slaves valued at \$119,032, and 10,000 acres of farmland. In addition to plantation land adjacent to the river, James Gibson owned a home in Darlington with seven additional slaves.²³⁰

The Gibson family continued farming their land until the beginning of the Civil War. During this time, the land was slowly partitioned between other individuals. "Bird's Landing," owned by Joseph Bird, was the site of the Confederate States Navy's official lease; however, the lease is unclear. The lease states that the land to be used is the "turn of the River to Bird's Landing." The specific location, north or south of Bird's Landing, is not specifically stated. A total of ten acres was leased to the Confederacy for one year for \$200. On March 16, 1863, the agreement was signed between Lt. Dozier, Capt. S. Thomson, and Joseph Bird. The lease was retroactively dated to January 1863. The lease stipulated that structures and gunboats were to be

²²⁸ Stephen Mallory to William Dozier, Dec. 16, 1862, *ORN* ser. 1 vol. 13, 817-818.

²²⁹ Stephen Mallory to L.M. Thomson, Dec. 18, 1862, Confederate Navy Area File, National Archives and Records Administration, Record Group 45, M-1091, Roll 5, 306; *Register of Officers*, 194.

²³⁰ Lawrence Babits, Lynn Harris, Nolen Caudell and Adam Edmonds, *Prehistoric Pottery, Munitions and Caulking Tools: Archeological and Historical Investigations at Mars Bluff Confederate Shipyard (38 MA22/91) on the Great Pee Dee River* (Greenville, NC: Program in Maritime Studies, History Department, East Carolina University; Maritime Research Division, South Carolina Institute of Archeology and Anthropology, University of South Carolina, Bruce and Lee Foundation, 2009), 11-13; Michael Trinkley and Debi Hacker, *Indians, Slaves and Freedmen in the Pee Dee Region of South Carolina* (Columbia: Chicora Foundation, 1993), 23-25.

built at the location for the Confederate government's use.²³¹ Although the lease only made arrangements for one year, Confederate authorities operated the shipyard until its destruction in March 1865.²³² The lease could have very easily been extended to support continuing gunboat construction, yet those specific documents and communications have not been located.

Regional Infrastructure and Commerce

The position of the Mars Bluff Navy Yard did not occur by accident. Strategically and logistically, this was an important location. The navigable portion on the Pee Dee River beyond potential Union amphibious incursions was only part of the equation. Equally important as navigable waters and inland protection was the railroad running through Marion County, near the Mars Bluff site. This was the Wilmington and Manchester line which connected Wilmington, North Carolina, with Columbia, South Carolina. Located about halfway between the two cities was Florence, southwest of Mars Bluff.

Florence was important because the Wilmington and Manchester railroad connected with the Northwestern Railroad, which extended to Charleston. The two railroads connected Mars Bluff with the Charleston and Wilmington Naval Stations and, by extension via the Wilmington and Weldon Railroad, with Petersburg and Richmond. The Confederate Powder Works, located in Columbia, also connected directly with Mars Bluff.²³³ Columbia and Charlotte were connected, offering Mars Bluff a tie to the Charlotte Navy Yard.

The rail connections with interior and coastal navy stations were important for a number of reasons. First, Mars Bluff accessed lumber and raw timber needed in other areas. Second,

²³¹ *Marion County Deed Book "Z"*, 1863, 417-418; Babits, *Historical Investigations at Mars Bluff Confederate Shipyard*, 16.

²³² W. M. Hunter to S. S. Lee, March 25, 1865, *ORN* ser. 1 vol. 16, 511. This report details the destruction of the CSS *Peedee*. Shortly before its destruction, Lt. Means had the navy yard evacuated and important materials either taken or destroyed.

²³³ Larry E. Nelson, "Sherman at Cheraw," *The South Carolina Historical Magazine* vol. 100 no. 4 (Oct. 1999), 331.

meetings and rail travel by Confederate construction officers and station commanders was essential for vessels to be completed. Thirdly, shipments of artillery and ordnance supplies, together with machinery and general supplies, moved more swiftly along rail lines than by wagon, horseback, or by foot. While transportation of materials was preferred on railroads, shipments occurred by any means necessary.

The area surrounding Mars Bluff Navy Yard was a producer of agricultural products. Rice was the major crop, chiefly cultivated on smaller farms. Closer to the coast, on the Georgetown side of the Pee Dee River, larger plantations produced bulk crops. The Pee Dee River carried a large portion of the crop yields to and from local markets. Aiding the river's commercial appeal were a series of public work projects during the 1820's. From 1823 through 1825, \$21,000 was spent on improving the Pee Dee's navigation.²³⁴ Rafts, pole boats, and a few steamboats ferried products up and down the river. Local newspapers kept citizens updated concerning boats, cargoes, and owners transporting goods on the Pee Dee. One company, the Merchants and Planters Steamboat Company of Cheraw, operated a number of pole boats and the steamer *Osceola*.²³⁵

Augmenting the agricultural economy in northeastern South Carolina was the naval stores and lumber industry. The naval stores industry followed construction of railways into northeastern South Carolina during the 1840's and 1850's. The railroads extended the reach of naval stores production farther from the riverbanks. Quick transportation of naval stores and the abundant lumber close to rivers helped the industry grow. While North Carolina was the leader of naval stores production during the antebellum period, by 1860, South Carolina produced the

²³⁴ *Charleston City Gazette*, Jan. 9, 1827; Babits, *Historical Investigations at Mars Bluff Confederate Shipyard*, 33.

²³⁵ *Winyah Observer*, Nov. 16, 26, Dec. 10, 1842 and, December 2, 16, 1846; Merchants and Planter Steamboat Company, Account Book 1838-1840, Miscellaneous Manuscript Collection, Darlington County Historical Commission; Babits, *Historical Investigations at Mars Bluff Confederate Shipyard*, 32-33.

second most turpentine, an important naval store, worth \$1,096,974.²³⁶ The forests also yielded fresh timber for export. In 1847, three sawmills operated in Georgetown. After timber was gathered farther up river, it was loaded on flatboats and shipped downriver to Georgetown for shipment to other markets. The increasing naval stores and lumber production helped swell river based traffic and commerce.²³⁷

The commercial importance of the Pee Dee River in decades preceding the Civil War was impacted by the introduction of lumbering and naval stores production coupled with the improvements made to the Pee Dee River's navigation during the 1820's.²³⁸ The railroad represented Marion County's and, by extension, Mars Bluff's connection with other ports and commercial centers in the Confederacy. The direct connection with other cities by railroads was of great importance to Confederate commanders choosing inland locations. Not only could wooden gunboat construction at Mars Bluff benefit from ties to manufacturing centers and Confederate naval establishments, but it could help construction efforts in other locations.

The timber resources and lumbering industry in Marion County helped other stations construct vessels. Confederate vessel construction in Wilmington was tied to operations at Mars Bluff. There were numerous lumber shipments to Wilmington from Marion County. Mallory stated, "This station has been of much use lately in filling requisitions for timber for the new steamer at Wilmington."²³⁹ Shipments of lumber to Wilmington continued until January 1865, just before the port's capitulation. Hindering these shipments were insufficient numbers of rail cars available to transport the materials.²⁴⁰

²³⁶ Perry, "The Naval-Stores Industry," 524.

²³⁷ Babits, *Historical Investigations at Mars Bluff Confederate Shipyard*, 33; Perry, "The Naval-Stores Industry," 523-524.

²³⁸ *Charleston City Gazette*, Jan. 9, 1827; Babits, *Historical Investigations at Mars Bluff Confederate Shipyard*, 33.

²³⁹ Report of Stephen Mallory, April 30, 1864, *ORN* ser. 1 vol. 15, 732-733.

²⁴⁰ Edward J. Means to R. F. Pinkney, Nov. 29, 1864; Edward J. Means to John L. Porter, Dec. 24, 1864, Edward J. Means Papers, Miscellaneous Correspondence 1864-1865, Louisiana State University Manuscript Collections.

In addition to connecting yards, railroads allowed central oversight of vessel construction. Both Chief Naval Constructor Porter and Chief Engineer Williamson traveled extensively. During the course of the war, each man visited navy yards throughout the Confederacy, amending designs or correcting flaws while advocating timely construction. Porter regularly traveled back and forth between naval stations and Richmond, usually by rail.²⁴¹ Williamson also traveled extensively throughout the Confederacy, visiting Georgia, South Carolina, North Carolina, and Virginia, inspecting machinery planned for Confederate vessels.²⁴²

Porter and Williamson were not the only ones to travel extensively by rail. Mars Bluff Navy Yard personnel also traveled regularly, meeting with officers and constructors at other stations. Station commanders Morgan and Means often traveled, lobbying for supplies or to secure skilled workers for Mars Bluff.²⁴³ Swift communication and coordination of construction was critically important to Mallory's department. Any alteration in ship design based upon local geographic conditions, or material and supply shortages, needed to be quickly approved by Confederate naval constructors and engineers. Southern railways represented an important conduit in keeping construction of navy vessels going.

Shipments of artillery, machinery, and general supplies traveled on rails into Mars Bluff. Freight from Charleston, Effingham, and Florence, including sawmills, grist mills, and stoves moved on the Wilmington and Manchester Railroad.²⁴⁴ Two flat boats were purchased to increase the flow.²⁴⁵ The transportation improvements undertaken in the decades before the Civil War contributed to these successful movements.

²⁴¹ John L. Porter, Travel Voucher, May 24, 1864, Confederate Navy File, ZB File, United States Navy Historical Center; Other travel vouchers for railroad travel were dated June 13, 1864, Month of July 1864, and Sept. 30, 1864.

²⁴² William P. Williamson, Travel Vouchers, October 1861 through April 1862, Confederate Navy File, ZB File, United States Navy Historical Center.

²⁴³ Van R. Morgan Travel Voucher, Apr. 30, 1864, Confederate Navy File, ZB File, United States Historical Center.

²⁴⁴ Wilmington and Manchester Railroad Payment Vouchers, RG 45, M-1091, Roll 3, 308, 310.

²⁴⁵ R. F. W. Alston Pay Voucher, RG 45, M-1091, Roll 3, 54.

Problems Maintaining Appropriations and Supplies

Despite the strategic and logistical placement of Mars Bluff, a one year project turned into a two year attempt to overcome shortages and delays. Railroads and improved river transportation could not solve all the logistical problems. Limited ordnance stores, ship machinery, general provisions, and securing skilled labor regularly disrupted construction schedules. Contributing to those problems were Union army movements that disrupted supply lines, displaced other interior facilities, and threatened Mars Bluff Navy Yard itself.

Upon Lt. Dozier's arrival in Marion County, efforts were made to procure materials. As suggested by Mallory's orders in December, W. W. Harllee was contacted and helped secure needed materials. Robert Harllee also furnished victuals, tools, and some building materials.²⁴⁶ Robert F. W. Allston, former Governor of South Carolina, furnished two flat boats. A wealthy planter in nearby Georgetown County, Allston contributed substantial capital to the Mars bluff yard throughout the CSS *Peedee's* construction.²⁴⁷ At one time, Lt. Dozier bought \$392 worth of food for the yard from another local source.²⁴⁸ Bricks and other building materials and tools were also purchased during the first weeks to construct structures at the shipyard.²⁴⁹

After operations commenced, Lt. Dozier was recalled to Charleston and Lt. Van R. Morgan took over the yard.²⁵⁰ Morgan continued construction of the CSS *Peedee*. Soon after Morgan assumed duty, Naval Constructor E. C. Murray returned from Mobile, Alabama, with

²⁴⁶ Robert Harllee Pay Voucher, Feb. 13, 1863, RG 45, M-1091, Roll 3, 60; *Marion County, South Carolina Census, 1860* (Hemingway, SC: Three Rivers Historical Society, 1987), 45. Robert Harllee was listed as an M. D. but also owned many acres of land.

²⁴⁷ R.F. W. Allston Pay Voucher, Jan. 30, 1863, RG-45, Roll 3, 54; *Georgetown County, South Carolina Census, 1860* (Hemingway, SC: Three Rivers Historical Society, 1995), 73; Allston Family Papers, Manuscript Collection, South Caroliniana Historical Society, Charleston, South Carolina. Robert F. Allston was a wealthy planter worth over \$450,000. One pay voucher indicated supply of 1000 feet of rough edge lumber to the yard on March 10, 1864.

²⁴⁸ W. F. Jackson Pay Voucher, Jan. 18, 1863, RG-45, M-1091, Roll 3, 46.

²⁴⁹ Pay Voucher indicating 3500 bricks purchased, Feb. 23, 1863, RG-45, M-1091, Roll 3, 64. Voucher indicating \$408.37 of tools and supplies bought from D. Minsisheimer, a local merchant.

²⁵⁰ French Forrest to Van R. Morgan, March 9, 1863, Confederate Navy File, ZB File, United States Navy Historical Center.

building supplies including saw blades and iron.²⁵¹ Accompanying Murray's purchases was more than 32,000 feet of pitched timber.²⁵²

As supplies were secured and building materials brought in, Confederate authorities hired laborers and carpenters. Both free and slave labor was used during the yard's operation. Within Marion County, there were 32 carpenters, 15 coopers, 11, blacksmiths, 3 engineers, 5 turpentine tapers, 2 turpentine distillers, and 5 painters listed as construction and naval stores related professionals. Some 29 merchants lived and worked in Marion County.²⁵³ Many local citizens, not already enlisted or conscripted into the army, volunteered to work at the yard. J. F. Finger and William Evans, both carpenters, worked at Mars Bluff as late as October 1864.²⁵⁴

Contributing to the operation were numerous slaves. As many as eleven different plantation owners contributed skilled and unskilled workers. Many carpenters working at the Navy Yard were black, both free and slave.²⁵⁵ Free and slave labor contributed considerable time and energy to the yard and the CSS *Peedee*.

With activities at the yard underway, the first problems were encountered by Confederate authorities. Correspondence between Secretary Mallory and station officers indicates appropriations to the yard appeared to have run out by late April 1863.²⁵⁶ This same letter shows little was accomplished because the same request for \$10,000 was again made in June

²⁵¹ E. C. Murray Pay Voucher, Mar. 21, 1863, RG 45, M-1091, Roll 3, 82.

²⁵² Keith and Morris Pay Voucher, Mars Bluff Shipyard Collections.

²⁵³ *Marion County, South Carolina Census, 1860*. The number of individuals participating in each trade was found within this source.

²⁵⁴ William Evans Pay Voucher, Feb. 9, 1864, RG 45, M-1091, Roll 3, 58; Edward J. Means, Oct. 22, 1864, Means Papers. *Mr. Finger may have been both a carpenter and engineer in Marion County. Correspondences of Paymaster Thomson (June 24, 1864) stated his occupation as such (RG 45, Roll 3, 116-118).

²⁵⁵ Miscellaneous Pay Vouchers, RG 45, M-1091, Roll 3, 5; Mars Bluff Shipyard Papers, Miscellaneous Collection (Darlington, SC: Darlington Historical Society Manuscript Collections); Babits, *Historical Investigations at Mars Bluff*, 21.

²⁵⁶ L. M. Thomson to Stephen Mallory, April 9, 1863, RG 45, M-1091, Roll 3, 101.

1863. Requests for funds went up to \$20,000 the following month.²⁵⁷ Trouble obtaining regular appropriations did not stop construction activities, but certainly complicated them. Securing funds was a problem the Mars Bluff Yard and its leadership dealt with throughout its operation.

The Confederate Treasury Department had problems obtaining money needed to fund both the War and Navy Departments. Marion County citizens and businesses did more than simply supply needed labor and materials, but they also needed funds. Ladies donated their jewelry to help the fund shipyard. Historian Leah Townsend recalled statements of James Rogers in a local Florence newspaper:

Mr. James Rogers wrote...that the construction of the gunboat "Peedee" was a community project, largely financed by contributions from [businessmen], slave labor from plantation owners, and collections of jewelry and silver plate by the ladies...He mentions two aunts of J. M. Napier, of Darlington, from whom this tradition probably came. It is borne out of an undated letter, written probably in 1925, by Louise Harllee Pearce to her great-granddaughter Louise Wallace (Salligen), stating that the money for the boat came partly from the sale of their jewelry by the ladies of the region, and that they called it "our" boat.²⁵⁸

As the local community rallied around the vessel's construction, the station became a symbol of pride for residents. Picnics and dances were said to have taken place on board the vessel and in the navy yard. The community effort represented a multi-regional movement as other Confederate towns raised money, for both wooden and ironclad gunboats.²⁵⁹

When Secretary Mallory gave his second annual report he indicated that "one seagoing steam gunboat of 5 guns advancing towards completion, machinery ready." This was the gunboat under construction at Mars Bluff during 1863. Mallory indicated insufficient skilled labor and

²⁵⁷ Thomson to Confederate Navy Department, June 6, 1863; Thomson to Mallory, July 21, 1863, RG 45, M-1091, Roll 3, 123, 125.

²⁵⁸ Leah Townsend, "The Confederate Gunboat Pedee," *The South Carolina Historical Magazine* Vol. 60, No. 2 (Apr. 1959), 67; *Florence Morning News*, Dec. 30, 1959.

²⁵⁹ Matthew F. Maury to Ladies Defense Association, Apr. 4, 1862, Maury Family Papers; Babits, *Historical Investigations at Mars Bluff Confederate Shipyard*, 32; Mary Massey and Jean Berlin, *Women in the Civil War* (Lincoln: University of Nebraska Press, 1994), 37.

mechanics at all Confederate yards.²⁶⁰ Those stated limitations did not prevent the Confederates from expanding operations at Mars Bluff. By the next report in April 1864, the CSS *Peedee* had its propellers and engines installed awaiting its full armament. Alongside the gunboat was a partially built tender and torpedo boat, just underway.²⁶¹

Construction at the yard appears to demonstrate smooth operations. In actuality, the report given by Secretary Mallory is misleading, stating that the ship already mounted a battery of five guns. The CSS *Peedee* eventually mounted three heavy guns; but the rifled artillery destined for the gunboat had yet to arrive.²⁶² The engines provided for the gunboat did not perform at their highest level because they were designed for a smaller vessel, perhaps originally meant for a Maury gunboat. As 1864 turned to fall, the command at Mars Bluff changed. Lt. Morgan was reassigned and Lt. Edward J. Means took over. Means' correspondence provides a detailed look at the difficulties he and, Lt. Morgan faced.

CSS *Peedee* Moves Towards Completion

After relinquishing command in July, Morgan set the final stages of CSS *Peedee's* construction in motion. Reports of late 1863 and early 1864 were accurate when depicting the ship's exterior construction. The problems Means experienced getting a completed gunboat combat ready originated in Selma, Alabama. The Selma Gun foundry and Naval Ordnance Works was well into its second year. Two rifled Brooke guns would be mounted on the CSS *Peedee*; their journey from central Alabama to northeastern South Carolina became more than a two month odyssey.

²⁶⁰ Report of Stephen Mallory to President Jefferson Davis, Nov. 30, 1863, *ORN* ser. 2 vol. 2, 532, 535.

²⁶¹ Report of Stephen Mallory to President Davis, April 30, 1864, *ORN* ser. 1 vol. 15, 732-733.

²⁶² Jones to McLaughlin, July 12, 1864, RG 45, M-1091, Roll 37, 167; Brooke to Jones, Oct. 11, 1864, RG 45, M-1091, Roll 37, 360.

The journey of the Brooke guns began in July 1864. Com. Jones, commandant of Selma Gun Foundry and Ordnance Works, wrote Lt. McLaughlin of the impending transfer of guns by way of Montgomery and Columbus, Georgia.²⁶³ Com. Jones also sent word to Lt. Morgan that the 6.4 inch and 7 inch rifled guns were on the way and indicated the personnel responsible for ensuring delivery. The guns had not left Montgomery on July 26.²⁶⁴ Weeks later, the guns were still in Montgomery as the railroad to Columbus was not in service. Transportation would not occur without direct orders from Richmond.²⁶⁵ Union army movements were becoming increasingly disruptive to transportation efforts.²⁶⁶ The other large ordnance piece, the nine-inch Dahlgren, was originally produced at the Fort Pitt Foundry in mid-1862. Determining its specific path to Mars Bluff remains a mystery.²⁶⁷

Meanwhile, in Mars Bluff, Lt. Means assumed command. The CSS *Peedee* inched towards completion as the masts and rigging were erected and put in working order. Lt. Means received word that the cannon had been shipped from Augusta on September 8.²⁶⁸ In the same letter, Means stated the problems that the CSS *Peedee* faced. Despite positive word of the guns' arrival, they had not actually shown up. Ordnance stores were believed to be in Kingsville, South Carolina and the gun carriages were not in Mars Bluff. Even though the wooden gunboat was still waiting for its armament, Means indicated that the vessel was ready for a crew.²⁶⁹

Waiting for ordnance stores and rifled guns to show up was but one difficulty Lt. Means faced in his first weeks. Problems arose with the galley and some machinery on board. Means

²⁶³ Jones to McLaughlin, July 12, 1864, RG 45, M-1091, Roll 37, 167.

²⁶⁴ Jones to Morgan, July 13, 1864, RG 45, M-1091, Roll 37, 168, 185.

²⁶⁵ Jones to Brooke, Aug. 15, 1864, RG 45, M-1091, Roll 37, 230.

²⁶⁶ *Ibid.*

²⁶⁷ Babits, *Investigations at Mars Bluff*, 78. Initially thought to have come from the left over supply at Gosport in 1861, archeological evidence indicates the Dahlgren had "FP No 573" on the breach, indicating mid-war production by the Union.

²⁶⁸ Means to S. S. Lee, Sept. 17, 1864, Means Papers.

²⁶⁹ *Ibid.*

stated that some needed supplies were in Charlotte.²⁷⁰ Complicating galley repairs was an October directive from Secretary Mallory and Constructor Porter concerning wooden water tanks. Lt. Means reported that Constructor Porter was needed at the yard to oversee the alterations.²⁷¹ Other changes were needed to the one-inch “pivots” on the IX-inch carriage for the Dahlgren gun. Alterations to the positioning of the guns and repairs to the galley were only a symptom. Changes made to the gun chassis resulted in moving hatches, for moving the one-inch pivot for the howitzers. Porter inspected the vessel personally and made the recommendation.²⁷² Alterations and changes to the CSS *Peedee* was one problem Means faced.

Lt. Means indicated an influx of 80 men arrived from Charleston on Sept. 26.²⁷³ The men who worked the yard and the sailors training to operate the steamer had to be fed and clothed. Maintaining a steady supply of food remained a priority. Continued purchases from local sources continued until the end of the year. Before Means’ arrival, Lt. Morgan successfully procured food, including 200 pounds of bacon, 75 bushels of corn, and 50 bushels of beans between April and July 1864.²⁷⁴ One of Morgan’s purchasing agents, Charles Haseldon, helped secure many supplies. When Means took over, he wanted to maintain Haseldon’s services, but the agent had been conscripted into the Confederate army. Means advocated Haseldon’s release from army duty to continue securing food and supplies by explaining the purchasing agent’s family connections. Attempting to offset Mr. Haseldon’s reassignment, Means tried obtaining food through the local commissary department with no luck. That department struggled to feed

²⁷⁰ Means to Ramsey, Sept. 26, 1864, Means Papers.

²⁷¹ Means to Porter, Oct. 25, 1864, Means Papers.

²⁷² Means to Mallory, Nov. 11, 1864, Means Papers; John L. Porter travel voucher for Nov. 1864, ZB File, United States Navy Historical Center.

²⁷³ Means to Ramsey, Sept. 26, 1864, Means Papers; Capt. J. R. Tucker’s Circular Orders to the Charleston Squadron, Sept. 19, 1864, James Rochelle Papers, Manuscript Collection, Duke University Archives.

²⁷⁴ Pay Vouchers, April 27, 28 and July 1, Mars Bluff Shipyard Collection, Darlington Historical Society.

its own personnel as well.²⁷⁵ Even though Means was successful in regaining Mr. Haselden's services, it did not work out in the end because he deserted in January 1865.²⁷⁶

Keeping the station fed was just one supply problem encountered; another revolved around obtaining shoes for the workers. This task was especially desperate for the slaves. Lt. Means wrote to a Mr. Sparkman on November 4, 1864 expressing his concerns:

There are hired to the Navy Yard several negroes belonging to Col. B. Allston...many of which are in want of shoes and some in want of clothing. I do not know where to apply or from whom to procure the needed articles and as all these necessities are so very high I do not feel warranted in going it blind...If they do not get something soon they will suffer. Some of those in want of shoes are getting timber in the swamp and it is necessary they should have shoes.²⁷⁷

Word of the shortcomings made its way to Colonel Benjamin Allston's residency, hence Means appealed to Mrs. Allston, Col. Allston's mother, in Georgetown directly.²⁷⁸ She had written the Lieutenant concerning shoes a few weeks before, simply stating that her son "would wish them provided."²⁷⁹

The shoe shortage explained Means's interest in retaining the services of B. W. Jernigan. Jernigan was the only shoemaker within ten miles, but he had been conscripted to join the army. Means felt that his presence was a necessity for continued operations. Means cited the unavailability of any other shoemakers, the man's older age, and his willingness to work for minuscule wages.²⁸⁰ It is unclear if Lt. Means secured Jernigan's services. The Lieutenant wrote the Allston residence a few weeks later, asserting the need for more shoes, and suggesting such requests went unfulfilled.

²⁷⁵ Means to Mallory, Nov. 8, 1864, Means Papers.

²⁷⁶ Means to Maj. C. D. Melton, Jan. 14, 1865, Means Papers.

²⁷⁷ Means to Mr. Sparkman, Nov. 4, 1864, Means Papers.

²⁷⁸ Edward J. Means to Mrs. R. F. W. Allston, Nov. 15, 1864, Allston Family Papers, Manuscript Collections, South Caroliniana Historical Society, Charleston, South Carolina.

²⁷⁹ Adele Allston to Edward J. Means, Sept. 2, 1864, Allston Family Papers.

²⁸⁰ Means to Melton, Oct. 27, 1864, Means Papers.

While finishing the CSS *Peedee*, Means still had two other vessels under construction. A steam tender and torpedo boat sat unfinished. Securing engines and boilers was a challenge. The Union army's "March to the Sea" through Georgia disrupted movement of machinery. In December, engines intended for the tender sat in Columbus.²⁸¹ The torpedo boat had no engines assigned. Means wrote Mallory that some engines were in Georgetown on board the blockade runner *Steamer Carolina*. He suggested transporting the engines to Mars bluff using the railroad.²⁸² Lt. Means sent Assistant Paymaster William Deacon to Georgetown to bring engines back to Mars Bluff. In addition to the engines, stoves also were to be impressed for use at Mars Bluff.²⁸³

The Florence Stockade

A few miles southwest of Mars Bluff a large prison facility operated near Florence. A report written on October 12, 1864 indicated 12,362 prisoners were housed just miles from Mars Bluff.²⁸⁴ Some prisoners escaped while others were given paroles. Correspondence between Means, Mallory, and Capt. S. S. Lee demonstrated the concern officers at Mars Bluff had with the proximity of the stockade. Means reported limited manpower available to deal with escaped Union prisoners. There were only five companies of soldiers defending the area stretching east to the coast and north to the North Carolina state line. To better secure his position, Means drilled his workers despite illness ravaging their ranks.²⁸⁵ Means also ordered Naval Constructor Murray to post nightly watches at the yard and railroad bridge.²⁸⁶ Tired, sick, and underfed men continued efforts despite increased demands posed by the Florence Stockade.

²⁸¹ Means to Mallory, Dec. 21, 1864, Means Papers.

²⁸² Means to Mallory, Dec. 6, 1864, Means Papers.

²⁸³ Means to Deacon, Dec. 6, 1864, RG 45, M-1091, Roll 5, 324; Means to Mallory, Dec. 20, 1864, Means Papers.

²⁸⁴ W. D. Pickett to Lt. Gen. Hardee, Oct. 12, 1864, *ORA* ser. 2 vol. 7, 972-974.

²⁸⁵ Means to Mallory, Sept. 17, 1864, Means Papers; Correspondence was also sent to Gen. J. W. Trapier reporting the above stated conditions of security against potential escapees (Sept. 17, 1864, Means Papers).

²⁸⁶ Means to Murray, Sept. 17, 1864, Means Papers.

Final Weeks at the Mars Bluff Ship Yard

As the calendar turned from 1864 to 1865, the Confederacy was in bad shape. Union army movements through Georgia into South Carolina and North Carolina curtailed operations at most coastal and inland Confederate States Navy stations. Despite realities, Secretary Mallory painted a more positive picture concerning his department in early January 1865. He indicated the capacity for continued operations at interior manufacturing facilities with some supplies and provisions, but admitted deficiencies in securing skilled and unskilled labor to operate at full capacity.²⁸⁷

At Mars Bluff, Lt. Means continued to push construction forward. The steam tender and torpedo boat still sat on the stocks waiting for engines. Means reported to Mallory that the engines intended for the tender had been captured at Columbus, Georgia. Those engines were still undergoing repairs and, from the deplorable conditions of the railways, transporting them would have been virtually impossible.²⁸⁸ The torpedo boat, however, received its engines, which arrived January 12. The CSS *Peedee* was put into official commission under the command of Lt. Oscar F. Johnston.²⁸⁹ The good news concerning acquisition of the torpedo boat's engines and the commissioning of the CSS *Peedee* was short lived.

²⁸⁷ Mallory to Davis, Jan. 5, 1865. Jefferson Davis Papers, Manuscript Collection, Special Collections Duke University Archives.

²⁸⁸ Means to Mallory, Jan. 4, 1865, Means Papers.

²⁸⁹ Means to Mallory, Jan. 12, 1865, Means Papers.

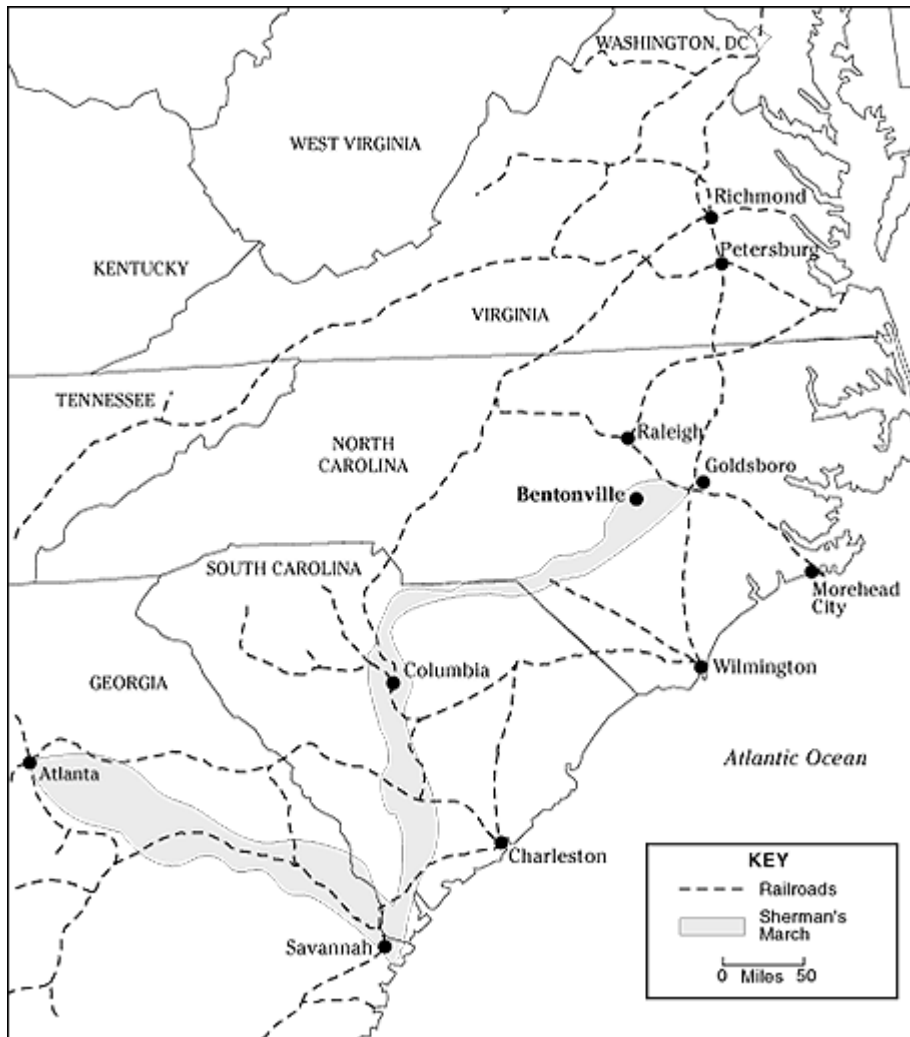


Figure 5-1. Map of Georgia, South Carolina, and North Carolina Railroads during General Sherman's "March to the Sea" (Source: U.S. National Parks Service).

Lt. Means continued operations in the face of the mounting crisis. By February 1865, Gen. Sherman had captured Columbia. Means continued gathering supplies and funds for the yard's operations, but circumstances beyond his control foiled his efforts.²⁹⁰ In late February, Means reported to Mallory that he was evacuating valuable supplies and machinery north to

²⁹⁰ Means to S. S. Lee, Feb. 10, 1865; Deacon to Mallory, Feb. 22, 1865, Means Papers. Lt. Means requested \$100,000 in appropriations for continued operations.

Cheraw.²⁹¹ During the evacuation, CSS *Peedee* completed its one military mission as it covered the Confederate retreat across the Pee Dee River at Cheraw.²⁹²

Conclusion

The men serving at the Mars Bluff Navy Yard did their jobs until the very end. Despite overwhelming logistical limitations in transporting ordnance, machinery, and building materials, coupled with labor shortages and limited provisions, the Confederate States Navy completed the wooden steamer, CSS *Peedee*. It took almost two full years to accomplish. This was completed while sidestepping numerous logistical shortcomings at the local, regional, and national levels. With military movements in different regions of the Confederacy coinciding with construction operations at Mars Bluff, shipyard officers and personnel only had so much control over keeping an efficient building schedule up to speed. An inadequate, interdependent network of manufacturing facilities caused great delays in CSS *Peedee*'s construction.

²⁹¹ Means to Mallory, Feb. 22, 1865, Means Papers.

²⁹² Report of Flag Officer Hunter, Mar. 25, 1865, *ORN* ser. 1 vol. 16, 511-512.

Chapter 6: Logistics of CSS *Peedee*'s Heavy Cannon

Obtaining needed armaments for Confederate vessels was an important aspect of a ship's fitting out. Without proper ordnance and ammunition, a naval vessel lacks the very instruments it needs to wage war against an enemy. In the Confederacy, securing needed weaponry for warships was difficult. For the wooden gunboats under construction in northeastern North Carolina, obtaining armament was problematic because of limited supply and insufficient industrial capacity during the war's first year. Shore installations and the Confederate army took precedence over unfinished wooden gunboats. Finding ordnance proved a non-issue for naval authorities in Washington and Elizabeth City. Burnside's Expedition ended wooden gunboat construction before specific requests for weaponry were made.

A different story unfolded at the Mars Bluff Navy Yard where the CSS *Peedee* was built. Commanders and constructors were able to build, despite numerous obstacles, what is believed to be a Macon class wooden gunboat. Problems securing adequate appropriations from the Confederate Treasury were commonplace. Parts and machinery for systems critical to the CSS *Peedee*'s construction were difficult to find and install as the Civil War's final year unfolded. The above examples are demonstrative of the logistical problems station commanders Lt. Van R. Morgan and Lt. E. J. Means experienced.

Shipping CSS *Peedee*'s heavy guns to Mars Bluff is the clearest and most specific example of the logistical nightmare the officers endured. Two Brooke rifled cannon, one 6.4 inch and one 7 inch, coupled with one IX inch Dahlgren served as CSS *Peedee*'s heavy armaments. The story of their shipment and arrival at Mars Bluff clearly demonstrates Confederate logistical shortcomings during the Civil War's later stages.

Brooke Rifled Cannon

The two Brooke rifled cannon that were mounted on the CSS *Peedee* had their origins in Selma, Alabama.²⁹³ At the Selma Naval Gun Foundry and Ordnance Works, the Confederate States Navy produced heavy cannon for military use. Both the army and navy received heavy guns from this establishment, commanded by Commandant Catesby ap. R. Jones.²⁹⁴ Between July 1863 and December 1864, 75 heavy cannon were sent to the army and navy.²⁹⁵ Shipping the two rifled guns to Mars Bluff from Selma was difficult to orchestrate considering the precarious transportation situation and Union military advances made into many Southern states.

There was no direct rail connection between the stations. Two railroad options existed for shipping ordnance from Selma to more eastern Confederate stations. There was one direct railroad in Selma, the Alabama & Tennessee Rivers Railroad, traveling northeast until its terminus at Blue Mountain, Alabama. From there, armaments would travel east towards Atlanta over as many as 55 miles of southeastern terrain before another working railroad could be reached at Rome, Georgia, northwest of Atlanta.²⁹⁶ It did not connect directly with Atlanta. It was not used much to transport ordnance and was in bad shape by mid-1864.

The second option meant sending cannon east by way of the Alabama River to the Montgomery & West Point Railroad in Montgomery. The Montgomery and West Point traveled northeast, to West Point, Georgia. Here the Montgomery and West Point became the Atlanta & West Point Railroad going to Atlanta.²⁹⁷ From Atlanta, the Georgia Railroad traveled 140 miles

²⁹³ Catesby Jones to Lt. A. McLaughlin, July 12, 1864. Confederate Navy File, RG 45, M-1091, Roll 37, 167.

²⁹⁴ John M. Brooke to Catesby R. Jones, June 8, 1863. RG 45, M-1091, Roll 37, 0.

²⁹⁵ Larry J. Daniel and Riley W. Gunter, *Confederate Cannon Foundries* (Union City, TN: Pioneer Press, 1977), 75.

²⁹⁶ Jeffrey N. Nash, *Destroyer of the Iron Horse: General Joseph E. Johnston and Confederate Rail Transport, 1861-1865* (Kent, OH: Kent State University Press, 1991), 105; David G. Surdam, *Northern Naval Superiority and the Economics of the American Civil War* (Columbia, SC: University of South Carolina Press, 2001), xvi-xxi.

²⁹⁷ Nash, *Destroyer of the Iron Horse*, 107; Turner, *Navy Gray*, 19-20.

east to Augusta, Georgia.²⁹⁸ This direct connection between Atlanta and Augusta was the most convenient route for ordnance from Selma, Alabama, to travel east.

A longer, secondary route stretched across southern and central Georgia. The Central of Georgia connected Savannah with Macon.²⁹⁹ This route connected Columbus with interior Georgia via the Southwestern Railroad.³⁰⁰ A spur line, in Millen, Georgia, connected this central Georgia railroad to Augusta.³⁰¹

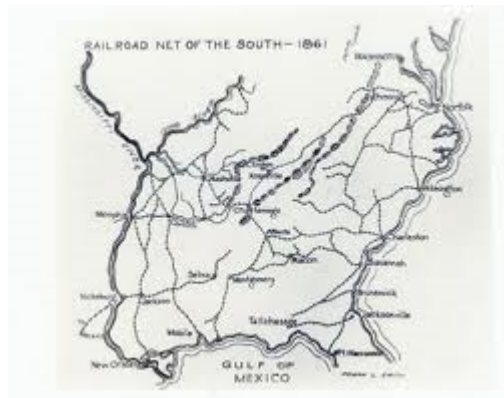


Figure 6-1. Railroad network of the Confederate States, 1861. (Source: University of North Carolina Library).

At Augusta, railroads entered South Carolina. The South Carolina Railroad extended to Branchville, south of Columbia. Another line extended to Kingville, just southeast of Columbia. Kingville was the southwest terminal of the Wilmington and Manchester Railroad, which ran through Florence and Mars Bluff.³⁰² Rifled guns could be delivered if shipped using one of these paths.

Complicating shipment using these railroads were Union army advances and assaults of General Sherman to the north in Tennessee. By mid-1864, Union military movement had

²⁹⁸ Nash, *Destroyer of the Iron Horse*, 106.

²⁹⁹ H. David Stone, Jr., *Vital Rails: The Charleston & Savannah Railroad and the Civil War in Coastal South Carolina* (Columbia, SC: The University of South Carolina Press, 2008), 3.

³⁰⁰ T. Conn Bryan, *Confederate Georgia* (Athens, GA: The University of Georgia Press, 1953), 110; Still, *Confederate Navy*, 81.

³⁰¹ Surdam, *Northern Naval Superiority*, xvi-xxi.

³⁰² *Ibid.*

impacted transportation on the Confederate rail system.³⁰³ Atlanta was the major railroad hub south of Chattanooga. It funneled materials in all directions as far as Charleston and Savannah to the east and Meridian, Mississippi, to the west. Grant ordered his chief subordinate, Gen. Sherman, to seize Atlanta. Once Atlanta was taken, shipment of Confederate military resources would be further constricted.

The shipment of the CSS *Peedee's* Brooke guns began in July 1864.³⁰⁴ Com. Jones sent word to Lt. Augustus McLaughlin, at Columbus, of the impending transfer of guns by way of Montgomery. Jones believed the guns would be sent through Columbus from Montgomery by naval agent J. W. Parks.³⁰⁵ Additional communication was sent to Lt. Van R. Morgan, the Mars Bluff station commander, of the gun shipment.³⁰⁶ In the same communication to Morgan, Jones indicated that nobody would be sent with them and individuals commanding different stations responsible for shipment should be contacted if late arrival occurred.³⁰⁷

The two guns did not get far before they ran into problems. Two weeks had passed when Com. Jones learned the guns were in Montgomery awaiting transportation.³⁰⁸ Weeks later, Jones received word from Lt. McLaughlin that the guns had not yet reached Columbus by August 19, 1864.³⁰⁹ Jones appealed directly to Com. Brooke, commander of the Office of Ordnance and Hydrography, insisting that gun shipments would not occur “without stringent orders from Richmond.”³¹⁰ While he waited for a directive from Richmond, Jones contacted special agent E. H. Jackson, responsible for gun shipments to Charleston, South Carolina. In addition to

³⁰³ J. B. Jones, *A Rebel War Clerk's Diary Vol. II* (New York: Old Hickory Bookshop, 1935), 105-106; McPherson, *Battle Cry*, 680-681.

³⁰⁴ Jones to McLaughlin, July 12, 1864, RG 45, M-1091, Roll 37, 167.

³⁰⁵ *Ibid.*

³⁰⁶ Jones to Morgan, July 13, 1864, RG 45, M-1091, Roll 37, 168.

³⁰⁷ *Ibid.*

³⁰⁸ Jones to Manly, July 26, 1864, RG 45, M-1091, Roll 37, 185.

³⁰⁹ McLaughlin to Jones, Aug. 19, 1864, RG 45, M-1091, Roll 37, 243.

³¹⁰ Jones to Brooke, Aug. 15, 1864, RG 45, M-1091, Roll 37, 238.

reporting the guns still in Montgomery on August 22, Jones advised Jackson to contact a Mr. Howell at Augusta to determine a suitable path once the guns made it to South Carolina.³¹¹ A few days passed until arrangements were finalized on August 29 to transport the two Brookes to Mars Bluff.³¹² Forty-eight days passed after the original shipment of the two Brooke rifles destined for the CSS *Peedee*, but the two weapons still sat in Montgomery.

It might have been easier to ship the guns along the more northern route through Atlanta, but that would have risked their capture. Gen. Sherman's Atlanta Campaign gained momentum as the CSS *Peedee*'s rifled ordnance began its path across central Alabama toward Georgia. The Battle for Atlanta began in July 1864.³¹³ By late August 1864, Atlanta was close to capitulation as Confederate officials prepared to destroy resources that could not be relocated before retreat.³¹⁴ The more southern route across interior Georgia, with more stops on the way to Augusta, was the only valid option for the guns destined for Mars Bluff.³¹⁵ As a result of Gen. Sherman, the two Brooke rifled cannon's shipment path from Montgomery was sealed.

An earlier communication between Com. Jones and Lt. McLaughlin sheds light on the holdup of the gun shipment from Montgomery to points east. In his August 19 letter to Jones, McLaughlin, still stationed in Columbus, stated that some supplies would be "forwarded to you as soon as the roads are again in working order."³¹⁶ Once the guns were shipped down the Alabama River to Montgomery, they had one option by mid-to late August, the southerly route toward Columbus. Jones admitted on August 15 that shipment of guns would be curtailed due to

³¹¹ Jones to Jackson, Aug. 22, 1864, RG 45, M-1091, Roll 37, 255.

³¹² Com. Catesby Jones to General Sam Jones, Aug. 29, 1864, Letters Sent by the Selma Naval Gun Foundry and Ordnance Works, National Archives and Records Administration, Record Group 109, Volume 3, 872.

³¹³ United States Army, Military Division of the Mississippi, *General and Field Orders: Campaign of the Tennessee, Ohio and Cumberland*, Maj. General William T. Sherman Commanding, 1864-1865 (St Louis, MO: R. P. Studley and Co., Printers, 1865), 64.

³¹⁴ McPherson, *Battle Cry of Freedom*, 774.

³¹⁵ Robert C. Black, "The Railroads of Georgia in the Confederate War Effort," *The Journal of Southern History* Vol. 13, No. 4 (Nov., 1947), 529.

³¹⁶ McLaughlin to Jones, August 19, 1864, RG 45, M-1091, Roll 37, 244.

railroad repairs; however, his specific reference to the location of those railroad repairs has not been ascertained.³¹⁷ When compared to McLaughlin's August 19 communication about shipping materials to Selma from Columbus, the most immediate railroad problems appear to lie between Montgomery and Columbus.

Problems with railroad conditions were not confined to tracks between Montgomery and Columbus. Railroads in central Georgia faced many obstacles maintaining reliable service. The most immediate problem was Union army movements. Union cavalry units ravaged in front of Sherman's main forces near Atlanta. Generals George Stoneman and Edward M. McCook caused serious problems for the Central Georgia Railroad. The bridge over the Oconee River was badly damaged and no cars came into Macon from the east for nearly a month.³¹⁸ The cavalry raids during late July help explain why the two Brooke rifles remained in Montgomery until August 31, when they were finally sent east.³¹⁹

While the guns were detained in Montgomery, Lt. Means took command at Mars Bluff. Means indicated that the guns passed through Augusta on September 8.³²⁰ Means confirmed their arrival in a September 27 letter sent to Jones.³²¹ He mentioned that the guns had only been at Mars Bluff a few days. Frustratingly, Means indicated that the only ammunition on hand was for the IX inch Dahlgren and that he still needed rifled ammunition.³²² At least a month passed and communications continued regarding supplies for the rifled guns. Important boxes with the

³¹⁷ Jones to Brooke, Aug. 15, 1864, RG 45, M-1091, Roll 37, 238.

³¹⁸ Black, "The Railroads of Georgia in the Confederate War Effort," 529.

³¹⁹ *Ibid*; Jones to Mars Bluff Navy Yard, September 20, 1864, RG 45, M-1091, Roll 37, 329; Military Division of the Mississippi, *General and Field Orders*, 67.

³²⁰ Means to S. S. Lee, Sept. 17, 1864, Means Papers.

³²¹ Means to Jones, Sept. 27, 1864, Means Papers.

³²² No date, Means Papers. Based upon other communications, the date of this letter falls between Sept. 17 and Sept. 27.

percussion locks and sights for the guns were lost somewhere on the road between Macon and Columbus.³²³

The CSS *Peedee*'s two rifled guns took weeks traveling before installation on the steamer. The guns left Selma from the Naval Gun Foundry and Ordnance Works and arrived at Mars Bluff. Even after their arrival, Means found himself tracking down auxiliary supplies through October and November.³²⁴

Union army movements in Georgia disrupted shipments of ordnance from central Alabama to points east. The most convenient route meant shipping cannon by the Alabama River to Montgomery. From Montgomery there was direct connection with Atlanta which extended direct lines to Augusta into South Carolina. This route was cut before shipment occurred in late July and August.

The only route available was the Southwestern Railroad through Columbus to Macon where it connected with the Central of Georgia. This was the route the guns took, but Union cavalry raids interrupted transportation. Repairs to the track and Oconee River Bridge kept the guns in Montgomery for many weeks before safe passage could be secured.

IX-Dahlgren

The third heavy gun mounted on the CSS *Peedee* was a IX inch Dahlgren. Initially, this gun was believed to have originated in Norfolk, Virginia, at the Gosport Navy Yard, captured after the Union evacuation in April 1861. The Union evacuation after Virginia's secession abandoned many artillery pieces, including 52 IX inch Dahlgren cannon.³²⁵ Recent archeological investigations indicate CSS *Peedee*'s Dahlgren cannon were not manufactured

³²³ Means to Jones, Oct. 31, 1864, RG 45, M-1091, Roll 37, 372; Jones to A. J. Stewart, Nov. 11, 1864, RG 45, M-1091, Roll 37, 385.

³²⁴ *Ibid.*

³²⁵ Jack Bell, *Civil War Heavy Explosive Ordnance* (Denton, TX: University of North Texas Press, 2002), 3.

until mid-1862. Markings on the tube read “JMB” on the left trunnion and “FP No. 573” on the breech.³²⁶ These markings indicate a mid-1862 production at Fort Pitt Foundry near Pittsburg, Pennsylvania.³²⁷ Considering this new archeological evidence, how did this Dahlgren get to Mars Bluff?

The most plausible source of this heavy smoothbore was by the Confederates capturing it. The date of manufacture suggests its mounting on a Union gunboat sometime during mid-to late 1862. Knowing the date of manufacture and that the gun had to have been obtained from a captured, abandoned, and or sunk Union vessel, only three options exist for the Confederates to obtain the weapon. Three U.S. Navy gunboats meet the requirements: USS *Eastport*, USS *Indianola*, and USS *Southfield*.³²⁸

USS *Eastport* and USS *Indianola*: A Trans-Mississippi Source

The USS *Eastport* was built in 1862 as an ironclad steam gunboat. It was armed with eight guns, including four IX inch Dahlgren guns, two rifled 60 pounder Dahlgren cannon, and two 100 pound Parrotts.³²⁹ The vessel first served in Tennessee as an army gunboat before serving in the Red River expedition in 1864. Crew members of the CSS *Missouri* torpedoed the *Eastport* on April 1, 1864. The ship was raised and towed downstream nearly 60 miles, but sunk again. Many of the *Eastport*'s weaponry were eventually removed before it was destroyed on April 26, 1864. The guns were recovered by Confederate forces the following day.³³⁰ Soon thereafter, two IX inch Dahlgren cannon were issued to the CSS *Missouri*, including one marked

³²⁶ L. E. Babits, “Confederate Artillery Material from the Peedee River, South Carolina” *Military Collector and Historian* Vol. 62, No. 4 (Winter 2010), 14; Babits, *Investigations at Mars Bluff*, 78.

³²⁷ Babits, “Confederate Artillery Material,” 14.

³²⁸ *Ibid.*, 24.

³²⁹ *Ibid.*

³³⁰ United States Navy, *Civil War Naval Chronology 1861-1865* (Washington DC: Naval History Division, 1971), Vol. 4, 43-44.

FP No. 572.³³¹ There is no mention of CSS *Missouri*'s weaponry being removed or replaced during the Civil War's last year. At the war's end, Union officers took possession of the *Missouri* and recorded the weaponry on board.³³²

The USS *Indianola* was another Union Army vessel built in 1862 before transfer to the U.S. Navy in January 1863. This vessel's time on the Mississippi River as a Union ship was short lived, as it surrendered to the Confederates in early February 1863.³³³ The Confederates destroyed it a few days later to avoid recapture. Its armament consisted of four guns, including two IX inch Dahlgren cannon.³³⁴ Few specifics survive concerning the *Indianola*'s ordnance after its destruction. There are references to the two XI inch smoothbores being disabled, but no documentation survives about the two IX inch Dahlgrens. There is an outside shot that one of these Dahlgren's could have made it to Mars Bluff when considering the date of the vessels' sinking and the fact that this vessel is one of the three captured by Confederate forces.³³⁵

The problem with the *Eastport* and *Indianola* as a source for the CSS *Peedee* Dahlgren is their location in the Trans-Mississippi West. Shipping large cannon across the Mississippi River to Mars Bluff would have been difficult under the best of circumstances. By the time either of these vessels' armament could have been sent east, February 1863 and mid 1864, Confederate forces did not have adequate control over the railways and waterways connecting the Mississippi River with eastern parts of the Confederacy. Vicksburg, terminus of the Meridian Railroad in Mississippi, was under siege by Union forces during 1863. Even if Vicksburg had been accessible, and a direct connection across Mississippi to Meridian was available, Selma,

³³¹ J. Pearce, P. Frazer, T. Dunlop, "List of all navy stores found aboard CSS *Missouri*," *ORN Ser. 1 Vol. 27*, 241-242.

³³² J. Pearce *ORN Ser. 1 Vol. 27*, 241-242.

³³³ Paul H. Silverstone, *Warships of the Civil War Navies* (Annapolis: Naval Institute Press, 1989), 155.

³³⁴ Silverstone, *Warships*, 155.

³³⁵ Babits, "Confederate Artillery Material," 25-26.

Alabama, was not connected by rail. The Tombigbee River had no railroad. If taking a similar path as the Brookes from Selma, which is possible, the Dahlgren cannon faced numerous stops along many river and rail connections across Georgia and South Carolina before reaching Mars Bluff.

USS *Southfield*: An Eastern Source

A third vessel is the most plausible source of the CSS *Peedee*'s IX inch Dahlgren. The USS *Southfield* was originally a New York City ferryboat before the U.S. Navy purchased it in December 1861.³³⁶ This vessel saw extensive action on eastern waters in Virginia and North Carolina. Its last armament was added in September 1862 and included four IX inch Dahlgrens.³³⁷ The *Southfield* served until April 1864, when it was sunk by the CSS *Albemarle*.³³⁸

After the *Southfield* sank, Confederate officials made an attempt to raise it. The attempt failed, but some guns were salvaged in May 1864. After Commander J. W. Cooke raised two IX-inch Dahlgren cannon, he complained of having "no projectiles for them."³³⁹ Federal spies substantiated Cooke's claims and indicated one gun still on the docks while the other had been moved to another location. The gun was most likely hauled upstream to another location. Fort Branch was nearby, but documents and archeological investigations revealed no IX inch Dahlgren at the fort.³⁴⁰

³³⁶ United States Navy Department, "Statistical Data of US Ships," *ORN* ser. 2 vol. 1, 212; Silverstone, *Warships*, 102.

³³⁷ S. P. Lee to H. K. Davenport, Oct. 24, 1862, *ORN* ser. 1 vol. 8, 146-147.

³³⁸ Barrett, *Civil War in North Carolina*, 217-218.

³³⁹ Ed. John M. Brooke, Jr. *Ironclads and Big Guns of the Confederacy: The Journal and Letters of John M. Brooke* (Columbia, SC: University of South Carolina, 2002), 184; Cooke to Brooke, May 16, 1864, *ORN* ser. 1 vol. 10, 640-641.

³⁴⁰ Phillip Shiman, *Fort Branch and the Defense of the Roanoke Valley 1862-1865* (Hamilton, NC, Fort Branch Battlefield Commission, 1990), 51; Babits, "Confederate Artillery Material," 25-26.

With Fort Branch eliminated, the Wilmington & Weldon Railroad loomed as the other possible destination. Traveling by ship upriver to Weldon, North Carolina, the gun could have been loaded onto the railroad and taken south to Wilmington. In Wilmington, the cannon could have been transferred to the Wilmington & Manchester Railroad that traveled to Mars Bluff. Recovering the cannon from the *Southfield* in May 1864 gives Confederate authorities plenty of time, if traveling by rail, to get this particular Dahlgren to Mars Bluff by September 1864.³⁴¹ The only problem with this particular Dahlgren source is when the *Southfield* was armed in the fall 1862. FP 573 was a mid-summer manufacture and it is possible that the gun went elsewhere. No primary source, log book, or communication has been located verifying the cannon serial number on the USS *Southfield*.

Conclusion

Obtaining ordnance for Confederate gunboats was arguably the most important and difficult job of naval constructors and officers after construction. For the CSS *Peedee*, these difficulties were clear.

Two Brooke rifles were manufactured at the Naval Gun Foundry and Ordnance Works in Selma, Alabama. After production, the two rifles made their difficult journey across Alabama, Georgia, and South Carolina. Union military movements, especially those associated with Sherman's Atlanta Campaign, caused delay and uncertainty. Union movements not only cut major railroads in Atlanta but also caused destruction along routes east of Macon. These railways were the most direct routes to Mars Bluff. By mid-1864, other railways used along the journey were in poor shape, even those in close proximity to Selma and Columbus.

³⁴¹ Means Papers, Sept. 27, 1864 and another Sept. letter with no date. The other September communication indicates 9 inch ammunition on board with no additional rifled ammunition. When compared with other communications concerning the arrival of other armaments, a September date can be given.

The IX inch Dahlgren cannon destined for CSS *Peedee* possibly had a more direct route to Mars Bluff. Archeological investigations in 2009 shed light on the original source of the Dahlgren. Instead of coming from the stockpile abandoned by retreating Union forces at Norfolk, foundry markings “FP 573” on the cannon’s side clearly indicate a mid 1862 northern manufacture at Fort Pitt Foundry.

Three Union vessels are possible sources for the IX-inch Dahlgren, USS *Eastport*, USS *Indianola*, and USS *Southfield*. These are the only vessels from which Confederate States Navy forces recovered cannon post July 1, 1862. The first two vessels served in the Trans-Mississippi west and faced a near impossible journey through Union controlled terrain. The third vessel, the *Southfield*, is the most likely source of the Dahlgren having served in waters along the Virginia and North Carolina coast that had access to working railroad communities reaching Mars Bluff.

Chapter 7: Conclusion

The Confederate States Navy faced difficult challenges building warships. Despite the difficulties, Stephen Mallory charted an ambitious course upon his appointment as Confederate Navy Secretary. One top priority was ironclads. Mallory preferred to use technological innovation to combat superior United States Navy numbers. Despite a preference for ironclads, wooden gunboats were built throughout the war; however, after the Battle of Hampton Roads, wooden gunboat construction was placed in a secondary position.

Mallory's dreams of an ironclad fleet were placed upon the back of an agriculturally based economy with limited industrial and manufacturing resources. Wartime conditions choked a fragile logistical framework. That logistical infrastructure was dependent upon limited track mileage, unsecured rivers, and an over-reliance upon bulk imports. Once the Union blockade became effective, constriction of an underdeveloped wartime economy occurred. Wooden gunboat construction experienced many of the same difficulties ironclads faced, due to a shared reliance upon the limited infrastructure.

During both phases of Confederate States Navy construction, wooden gunboats were contracted for and built. During the Civil War's first year, the uncertainty of a foreign or domestically manufactured Confederate ironclad, created a greater need for wooden gunboats. With armor technology still in its infancy, some Confederates, formerly leaders in the United States Navy, advocated wooden gunboat construction as a cheaper, more reliable way of constructing a navy. Proponents, including Commander Matthew Fontaine Maury, viewed ironclad technology as a waste of resources and money. When considering overall Confederate potential to manufacture and repair ironclads, Maury viewed the newer weapons with caution.

Despite Mallory's enthusiasm for ironclads, wooden gunboats were a major part of Confederate shipbuilding strategy early in the war.

The Battle of Hampton Roads helped signal the end of the first phase of Confederate shipbuilding activities. The duel of the CSS *Virginia* and the USS *Monitor* meant elimination of widespread wooden gunboat construction. The technological innovation displayed in combat with the loss of Memphis, New Orleans, and Norfolk meant a reorganized and refocused Confederate shipbuilding program. Mallory embraced the newer technology and the fact that only a limited number of ships could be built. The few ships he sought would not be just warships, but technologically superior, incorporating iron plates and the newest artillery. That newer focus still had to contend with limited infrastructure and manufacturing ability, questionable transportation, and a lack of suitable labor to keep operating at peak capacity.

The Confederate strategy for shipbuilding, advocated by Confederate Navy Secretary Stephen Mallory, focused upon ironclad construction. Despite the hopes, and then the demonstrated effectiveness of the ironclad, Mallory's department still built wooden gunboats during each phase of Confederate shipbuilding operations. Northeastern North Carolina, during the war's first year, and the Mars Bluff Navy Yard after Confederate reorganization, both became areas for Confederate wooden gunboat construction.

In northeastern North Carolina, the inland ports of Washington and Elizabeth City were selected as shipbuilding sites in the fall of 1861. Seven wooden gunboats were contracted between private companies and the Confederate government. The naval constructors, carpenters, and local businesses did not have enough time to finish the gunboats. Problems securing enough building materials doomed Gilbert Elliott's construction efforts. Finding suitable marine engines proved difficult for the young naval agent. Myers & Company and Ritch and Farrow entered

similar contracts to build wooden gunboats. Although it appears considerable progress was made, problems securing engines and ordnance prevented completion. Despite securing agreements with the Shockoe Foundry in Richmond, limited materials and the Burnside Expedition prevented the wooden steamers being finished. The seven vessels may have been completed given enough time; however, an ever changing frontier caused by Union military movements consistently upset shipbuilding operations and ended many during the spring of 1862.

Construction of the wooden gunboat CSS *Peedee* at Mars Bluff represented the reorganized Navy Department's effort to build gunboats in the interior. Although the Confederate States Navy focused on ironclads after 1862, the Mars Bluff Navy Yard built a wooden gunboat. Similar to problems experienced in northeastern North Carolina, Confederate officers and laborers were still reliant upon other areas of the Confederacy for key materials. Successful completion of the CSS *Peedee* can be attributed to access Mars Bluff had with other cities via direct rail connections provided by the Wilmington and Manchester Railroad. Cannon, machinery, gun carriages, and building materials were shipped by rail.

Mars Bluff's position on the Wilmington and Manchester Railroad did afford some opportunities not experienced by builders in northeastern North Carolina. Despite its placement near a railroad, circumstances in other parts of the Confederacy curtailed construction efforts locally. Finding suitable steam machinery and other parts was difficult, especially when alterations had to be made. Ordnance production was limited to Richmond and Selma during CSS *Peedee*'s construction. The rifled ordnance destined for Mars Bluff was produced in Alabama. Material shortages, securing skilled labor, and problems maintaining safe and efficient shipment of the Brooke rifles held back delivery. Considering the difficult military situation

facing the Confederacy during the war's final year, obtaining supplies needed to run Mars Bluff became more difficult. The logistical limitations coupled with Mallory's preference for ironclad vessels increased the time needed to complete *CSS Peedee*.

Wooden gunboat construction occurred during both phases of Confederate shipbuilding operations. The wooden gunboat program, occurring alongside the more important ironclad program, experienced many of the same logistical shortcomings despite design and material differences. Confederate deficiencies in domestic ordnance and ship machinery manufacture, coupled with an inadequate railroad and transportation network caused problems with wooden gunboat construction. Commander Sinclair, with the help of Myers & Company and Ritch and Farrow in Washington, and Gilbert Elliott's efforts in Elizabeth City represented the difficulties wooden gunboat construction experienced during the war's first year. After Confederate reorganization, *CSS Peedee* was successfully completed, yet experienced many problems during its building, taking nearly two years to become operable.

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