

Timothy P. Marshall. THE MOST IMPUDENT PROCEDURE IN THE HISTORY OF BLOCKADE RUNNING: AN HISTORICAL AND ARCHAEOLOGICAL EXAMINATION OF THE CANADIAN STEAMSHIP *ARABIAN*. (Under the direction of Dr. Gordon P. Watts) Department of History, May 1999.

The purpose of this thesis is to provide a comprehensive examination of the artifactual remains located within site 0007NEI located off the coast of the United States near Fort Fisher, in Wilmington, North Carolina and to provide a hypothesis as to the identity of the vessel in question. This thesis provides historical and documentary evidence integrated with archaeological research to provide an assessment and evaluation of the wreck in question. For the purpose of this thesis, the wreck is hypothesized to be that of the *Arabian*, a Canadian-built steamship that ran the blockade three times during the American Civil War. Based on this premise, research into the type and construction of the vessel coupled with information recovered from the seafloor is presented to prove the case for the vessel being the *Arabian*.

This thesis, in its attempt to prove the underlying hypothesis, contains a variety of information pertinent to the identification of the wreck. Since the hypothesis rests on the identification of the Civil War blockade runner, a chapter is devoted to the effects and enforcement of the Union naval blockade in general and specifically around the Cape Fear River during the war. Another chapter chronicles the checkered history of the *Arabian* and her role both before and during the war. Other chapters detail the ship's Great Lakes history as well as construction and information about the ship's steam engine and propulsion system. A chapter is devoted to the archaeological investigation and interpretation of the wreck site. Conclusions and recommendations about the vessel and the site are presented in the final two chapters.

"THE MOST IMPUDENT PROCEEDURE IN THE HISTORY OF BLOCKADE
RUNNING": AN HISTORICAL AND ARCHAEOLOGICAL INVESTIGATION OF
THE CANADIAN STEAMSHIP *ARABIAN*.

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Introduction

“The most impudent procedure in the history of blockade running.” General William Whitting used these words to inform the Confederate officials of the blockade runner *Arabian*’s arrival in Wilmington, North Carolina in the summer of 1863. Information from Confederate sympathizers implied that the vessel might have been loaded with Union spies attempting to gain information on the vital Southern port. The suspicious general quickly impounded the vessel, which, after a lengthy investigation, he was later forced to release. The *Arabian* went on to have a reasonably profitable career bringing supplies to the embattled port before being run aground by the Union blockading vessels and dashed to pieces by a ferocious storm.

The fascinating history of the *Arabian* began well before the ship’s involvement in the American Civil War. Built by one of the early Canadian steamship entrepreneurs, the vessel plied many routes on Lake Ontario. While the *Arabian* received glowing praise in the local newspapers for her power, speed, and beauty, she was never able to secure a fixed and lucrative route in the highly competitive Great Lakes steamship market. For seven years the *Arabian* operated in a transport capacity along the Canadian side of the Great Lakes, sinking twice during that span. The owner then decided the *Arabian* was no longer profitable in her previous role and removed her once-elegant upper works so she could serve as a tow boat. The *Arabian* seemed doomed to spend the rest of her career as a simple tow boat—moving vessels and barges on the St. Lawrence River.

Momentous events in America saved the *Arabian* from her ignoble assignment. One week after Confederate forces fired on Fort Sumter, President Abraham Lincoln retaliated with stern measures. He announced the establishment of a blockade of the Confederate coast—an action he hoped would convince the rebellious states to rejoin the Union. Traditionally, the South was industrially weak and heavily dependent on goods imported from the North and Europe. The outbreak of the war forced the Confederates to turn almost exclusively to foreign sources for manufactured goods.

The inception of the blockade gave birth to a new and highly profitable enterprise. Confederate dependence on incoming supplies, coupled with the uncertainty of transporting goods through the blockade, caused prices for everyday items to soar. Anyone willing to risk the loss of a cargo, a ship, or both could realize fantastic profits if the vessel successfully navigated the blockade. This new enterprise became known popularly as “blockade running.” Interests in both the North and South, along with foreign entrepreneurs, were involved in running the blockade.

Blockade running brought a new career to the *Arabian*. A pair of British merchants bought the ship and launched her new career. The ship made a series of successful runs between Nassau and Wilmington, bringing in a variety of profitable goods. On her third trip out of Wilmington, Union blockading vessels intercepted the *Arabian* at night; she ran aground in her attempt to escape. The next day, the blockaders fired upon the stranded steamer, and forced her crew to abandon ship. The following day, a violent storm developed and the steamer was pounded to pieces. This third sinking of the vessel was her last; the checkered career of the *Arabian* had ended.

The means and opportunity to complete this thesis came about as part of a grant awarded to Professor Gordon Watts of East Carolina University by the National Parks Service. Funded under the service's Battlefield Protection Plan, the aim of project was to document the wrecks off Fort Fisher, to help record our cultural heritage. North Carolina State underwater archaeologists have suspected that one of the wreck sites contained the remains of *Arabian*, but conclusive evidence had not yet been gathered. The immediate goal of this thesis was to document the vessel both historically and archaeologically in order to prove whether one of the sites contains the *Arabian*. The ultimate goal of the thesis was to detail the inter-relationship between the *Arabian* and the often chaotic and complex world around her.

The first chapter examines the development of the Union blockade, and the tactics used to evade it. Chapter II provides a brief history of the development of the steam engine used by the *Arabian* and concludes with the construction of the *Arabian*. Chapter III details the vessel's career from the Great Lakes to her eventual loss off the coast of North Carolina. Chapter IV gives an overview of the region where the vessel went down, and a history of the wreck site. Chapter V outlines the research and archaeological methodology used in the investigation of the vessel and the wreck site. Chapter VI details the findings of the archaeological investigation and includes an interpretation of the findings. Chapter VII presents conclusions based on the historical and archaeological research and interpretation. The final chapter presents recommendations for the future use and preservation of the site.

Chapter I

The Union Blockade

Early in 1860 the United States approached a crossroads. Due to long-standing and irreconcilable political differences, South Carolina, in December 1860, became the first of eleven states to secede from the United States of America. Mississippi, Florida, Alabama, Georgia, Louisiana, and Texas soon followed. State representatives met in February 1861 to draft a Confederate Constitution, which provided the foundation for the Confederate States of America. In April, Confederate forces forced the surrender of the United States garrison at Fort Sumter in Charleston Harbor, South Carolina. The fall of Sumter prompted Virginia, Arkansas, Tennessee, and North Carolina to join the Confederacy.¹

The American Civil War had begun. The following years altered the Union forever and their impact is felt even today. Maritime activities played a key role in the Civil War, and the unique nature of those maritime activities provided the Canadian towboat *Arabian*, unsuccessful as a Great Lakes transport craft, a part in that military event.

On 17 April 1861, Confederate President Jefferson Davis initiated maritime actions by issuing letters of marque.² This allowed the Confederacy, which had no real

¹ Listed dates are from the U.S. Library of Congress, "A Timeline, The Civil War, 1861-1865", found on the World Wide Web access site: <http://rs6.loc.gov/ammem/tl1861>.

² James Russell Soley, *The Blockade and the Cruisers*, New York: Scribner and Sons, reprint 1992, 168.

navy at the start of the war, to license privateers to prey upon Northern shipping. Davis' Union counterpart, President Abraham Lincoln, responded on 19 April by declaring a naval blockade along the coasts of Georgia, South Carolina, Alabama, Florida, Mississippi, Texas, and Louisiana. On the 27th of that same month, Lincoln extended the blockade to include the coasts of Virginia and North Carolina.³

At the start of the war, the South found itself particularly vulnerable to the effects of a blockade. While rich in raw materials, the South possessed few factories to process those materials; before secession the South did not produce most of its necessary manufactured goods. Instead, goods either arrived from the North by internal trade routes, via rail and river, or external routes, like coastal and European trade. Maintaining an influx of supplies was vital for the Southern war effort.

In spite of the obvious Southern deficiency, the blockade was an unprecedented action for the federal government to take along its own coast: a blockade is an act of war usually implemented against a belligerent foreign power.⁴ In a rebellion—the Civil War was obviously an internal conflict—the government normally would close the rebellious ports. At that time, however, there were some problems associated with port closures, chief among them was a lack of recognition under international law coupled with the inability to pursue offenders outside territorial waters. Interestingly enough, President Lincoln did not officially close any American ports until nearly the end of conflict on 11 April 1865.⁵

³ Ibid., 7.

⁴ Soley, *Blockade*, 27.

Unlike port closure, blockading was internationally recognized, its specifics had been decided upon by the nations of Europe during the final negotiations in the Declaration of Paris in 1856, under the Law of Nations.⁶ Another advantage was that the Union had the right to search all ships entering the blockade, and possessed the legal ability to pursue Confederate ships outside territorial waters. Union warships could seize any ship found under the flag of the enemy, imprison the crew, and impound the cargo. Union vessels could not seize foreign-registered vessels, but could conduct searches, confiscate contraband, and send the ship on its way.⁷

In some respects Lincoln's proclamation gave the Confederacy what it desperately wanted—the appearance of recognition as a power separate from the United States. The Confederates desperately needed European intervention, and intervention was much more likely if European nations recognized the Confederacy as an independent power. In an attempt to coerce European intervention, the Confederacy began a self-imposed ban on the export of cotton. After all, England had imported 78% of the South's cotton crop the year before the war, allowing the English textile industry to produce a profit of fifty-nine million pounds in 1860.⁸ Southern leadership believed the “King Cotton” doctrine would ensure British intervention in the war. Britain dealt the Confederacy a blow when it declared its neutrality on 13 May 1861, an action quickly

⁵ Robert M. Browning, *From Cape Fear to Cape Charles: The North Atlantic Blockading Squadron During the Civil War*, Tuscaloosa: University of Alabama Press, 1993, 7.

⁶ Frank J. Merli, *Great Britain and the Confederate Navy, 1861-1865*, Bloomington: Indiana University, 1970, 45.

⁷ Soley, *Blockade*, 30.

⁸ Wise, *Lifeline*, 11.

duplicated by France.⁹ “King Cotton” did not force France or Britain into the conflict, instead, it initially denied the South the use of its most profitable export and placed the South at even a greater disadvantage in the war.

There were major problems with President Lincoln’s dramatic blockade proclamation, the primary one being the United States Navy’s inability to comply effectively with the strategy. The United States Naval Registry for 1861 contains the names of ninety ships. Of those, over half were outdated types, such as sailing ships of the line, frigates, sloops, and brigs.¹⁰ One of the reasons for the state of the American Navy was that the war began during a time of dramatic maritime technological transition. After hundreds of years the dominance of sailing vessels was giving way to a new technology—steam powered vessels. The one vital advantage the steamer had over the sailing vessel was independence from the wind for motive power. In addition, shipwrights began using new materials for ship hulls: iron and steel plating. In England, where suitable naval timber had become scarce, iron-hulled vessels were being built as early as 1821.¹¹ Iron and steel hulls had the advantage of greater strength, and were better able to support the heavy weight of the newly incorporated steam engine, boilers, coal bunkers, and weapons. The thick metal plating also made good armor. At the start of the war only thirty-five of the ninety vessels owned by the United States Navy were

⁹ Peter J. Parish, *The American Civil War*, New York: Holmes and Meier Publishers, Inc., 1975, 407.

¹⁰ Soley, *Blockade*, 7.

¹¹ National Register of Historic Places Inventory, Cape Fear Shipwreck District, Division of History and Archives, Underwater Archaeology Unit, Kure Beach, North Carolina, 2. Noted as “National Register” in further footnotes. The Underwater Archaeology Unit will be noted as UAU for the remainder of the thesis.

steam powered.¹² At the time of the president's proclamation only three of the thirty-five were in a position to begin the blockade.¹³ Those three vessels had the impossible task of blockading a southern coastline that measured more than 3,500 miles, and included 189 harbors, inlets, and rivers.¹⁴

Considering the situation, it is completely understandable that it took six weeks from the declaration to approach any semblance of a real blockade, and then only at the principal ports.¹⁵ On 30 April, Norfolk became the first port to experience the blockade.¹⁶ Flag Officer Silas Stringham was placed in command of the newly created Coast Blockading Squadron, renamed the Atlantic Blockading Squadron on 1 May.¹⁷ Stringham's orders from President Lincoln were to "establish and enforce a blockade at each and all of the ports in the States enumerated east of Key West."¹⁸ One of Stringham's first actions was to carry out an organized blockade of the ports of Charleston, Mobile, and Savannah on 28 May 1861. New Orleans joined the blockaded list three days later.¹⁹

President Lincoln formed a Blockade Strategy Board in June 1861 to study and

¹² Soley, *Blockade*, Appendix A, 243.

¹³ Soley, *Blockade*, 26.

¹⁴ Frank L. Owlsey, *King Cotton: Foreign Relations of the Confederate States of America*. H.C. Owlsey ed. 2ed., Chicago: University of Chicago Press, 1959, 178.

¹⁵ Soley, *Blockade*, 35.

¹⁶ Wise, *Lifeline*, 25.

¹⁷ Browning, *Cape Fear*, 6.

¹⁸ Soley, *Blockade*, 83.

¹⁹ *Ibid.*, 83.

assist with the implementation of an effective blockade. The Board included the head of the Coast Survey, Professor Alexander D. Bache, Major John G. Bernard of the Corps of Engineers along with two commanders, Charles Henry Davis, and the Chairman, Captain Samuel Francis Du Pont.²⁰ The board, counting on Southern dependency on materials from Europe, concluded the blockade should be concentrated against the Confederates' main ports.²¹ The South possessed only a few ports with strong commercial establishments and good internal transportation.

The South's best ports combining these factors were New Orleans, Mobile, Savannah, and Charleston. From these four cities, trade with Europe could begin almost immediately. The ports of Wilmington and Beaufort in North Carolina, Brunswick in Georgia, and Fernandina in Florida possessed deep water facilities, but lacked large scale commercial establishments.²² On 2 July, the blockade was extended to Galveston, and on 21 July to Wilmington. The initial Wilmington blockade consisted of one ship, a converted merchantman, the U.S.S. *Daylight*.²³

By July 1861, Commander Stringham had managed to increase his fleet to twenty-two vessels, and 3,300 men.²⁴ Although an improvement, the increase still proved inadequate for the task. Commander Stringham often complained to Secretary of the Navy Gideon Welles that he simply did not have the tools at his disposal to comply

²⁰ Browning, *Cape Fear*, 8.

²¹ Wise, *Lifeline*, 13.

²² Ibid., 24.

²³ Soley, *Blockade*, 91.

²⁴ Ibid., 85.

with the president's proclamation. In June, July, and August 1861 alone, forty-two blockade-runners cleared Wilmington.²⁵

The task finally defeated Stringham, and, on 16 September 1861, he resigned under pressure.²⁶ By this time, the Blockade Board had reached the conclusion that there was simply too much responsibility for one commander to handle efficiently. The board divided the Atlantic Blockading Squadron into the North and South Atlantic Blockading Squadrons. The division between the squadrons was the border between North and South Carolina.²⁷ Flag Officer Louis M. Goldsborough was placed in command of the North Atlantic Squadron. The South Atlantic Squadron was placed under the command of Flag Officer Samuel F. DuPont. The division remained in place for the balance of the war.

The principal source for goods coming into Southern ports was England.²⁸ However, the distances and risks involved forced most blockade runners to shun the route directly to and from England, and instead stop at neutral ports for supplies. The five principal neutral ports used by blockade runners were Nassau, Bermuda, Havana, Halifax, and Matamoras.²⁹

Nassau was the most prominent of the four ports. Situated on the Island of New

²⁵ Ibid., 89.

²⁶ Browning, *Cape Fear*, 15.

²⁷ Soley, *Blockade*, 90.

²⁸ Ibid., 36.

²⁹ Ibid., 6.



Figure 1. Map illustrating selected ports.

Providence in the Bahamas, Nassau was only five hundred miles from the three major Southern ports of Wilmington, Charleston, and Savannah. This was a journey a blockade runner could make comfortably in a few days (see Figure 2). Another advantage was that such a voyage required little coal; this left the runners plenty of room for cargo. Additionally, because of the shallow water at Nassau, Union blockaders stationed there were forced to anchor around Anbaco Light—fifty miles away.³⁰ Since many small islands surrounded New Providence, it was relatively easy for blockade runners to avoid the blockade cruisers.

³⁰ Ibid., 36.

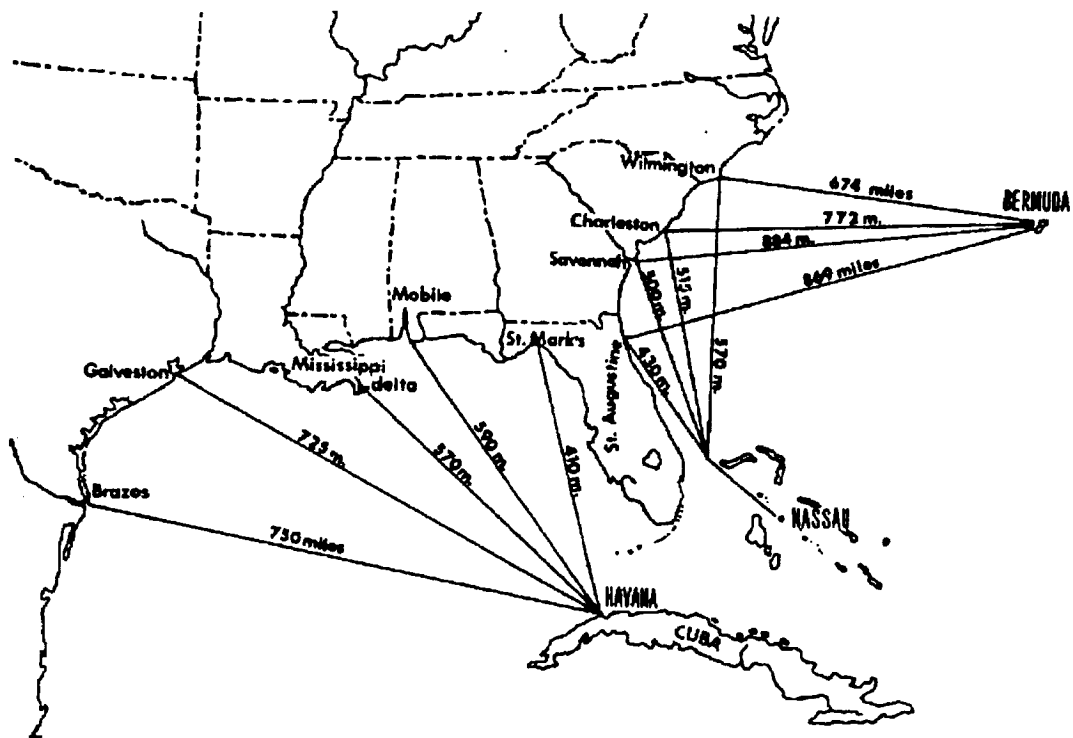


Figure 2. Neutral ports and distances to Confederate ports. As published in J.R. Soley's *The Blockade and the Cruisers*.

Initially, blockade runners would steam from Europe (and from Union ports like New York) and stop at neutral ports before completing their journey to a Southern port. These ships, however, were not considered neutral, and courts in the United States could legally impound them. As the war continued, cargoes were first sent to the neutral ports, and then transferred to other ships, which steamed to Confederate ports. Thus, heavy freighters could haul large amounts of cargo to a neutral port and transfer cargo to smaller, more elusive ships for transport across the blockade. This strategy significantly increased the odds of the goods arriving in the Confederate ports.

Like earlier methods, this system was also subject to action by the United States' legal system. To counteract this, shrewd businessmen introduced a final way to confuse

the issue of a shipper's neutrality. Merchants shipped goods from Europe to New York via legal shipping lines, the goods were then taken to a neutral port, and finally, blockade runners ferried the cargoes to Confederate ports.³¹

Early in the conflict blockade runners enjoyed a measure of success due to the lack of suitable Union naval vessels available to enforce the blockade. To procure a sufficient number of ships to carry out the blockade effectively, Union commanders first recalled most of the naval vessels stationed in foreign waters, and then initiated a vigorous construction program for the fleet. It took time for Northern shipyards to build new vessels, and the federal government was compelled to buy and modify commercial vessels for blockading duty. By December 1861, the Union had leased or purchased outright more than 264 ships, and had them armed for blockade duty.³²

The haste with which this plan was executed led to a great deal of abuse and fraud. Often the government paid highly inflated prices for the use of a ship, or paid a purchase price many times more than a vessel's actual worth.³³ Many of the ships proved to be unsuitable for blockade duty.³⁴ Often, the vessels were old and lightly built, with the steam machinery exposed to the elements and potential gunfire.³⁵ Even when

³¹ Ibid., 38-41.

³² James Spurnt, *Chronicles of the Cape Fear River, 1660-1916*, Raleigh: Edwards and Broughton, 1916, 390.

³³ Browning, *Cape Fear*, 144.

³⁴ Ibid., 146.

³⁵ Ibid., 152.

internally reinforced, some of the newly-acquired blockaders were physically unable to withstand the firing of their ordnance.

Early in the war, the Navy discovered that only steam powered vessels could effectively maintain the blockade. Sailing vessels were often relegated to carrying coal and supplies for the squadron.³⁶ U.S. Secretary of the Navy Gideon Welles stated: "Steam has become such an indispensable element in naval warfare, that vessels propelled by sails only are considered useless."³⁷ By December 1861, the United States War Department had purchased 79 steamers compared to only 58 sailing ships, thereby demonstrating a clear preference for steam vessels even in the early stages of the war.³⁸

Some of the most effective blockading vessels were former blockade runners, which possessed the speed necessary to capture the elusive blockade runners. Slowly, and by a variety of methods, the United States Navy increased its fleet, and was able to maintain a formidable presence along the Confederate coast. By the war's end, the Navy had purchased more than 414 vessels, 313 of which were steam powered.

As the efficiency of the blockade improved, blockade runners were forced to adapt. Sailing vessels were the most numerous violators of the blockade in the early stages of the war. In 1861, more than 250 sailing ships successfully navigated the

³⁶ Ibid., 146.

³⁷ Richard S. West, Jr. *Gideon Welles: Lincoln's War Department*, New York: The Bobs-Merrill Company, 1943, 185.

³⁸ Browning, *Cape Fear*, 146.

blockade of the North and South Carolinas' ports.³⁹ As the blockaders became more efficient, and more abundant, a sailing ship's chances of navigating the blockade significantly diminished. One hundred and forty-five sailing vessels successfully navigated the blockade in 1862; in 1863, that number fell to 53, and, by the end of 1864, only 14 sailing vessels ran the blockade.⁴⁰

The blockade runners came to an obvious conclusion: steam vessels stood the best chance of negotiating the blockade. Initially, any steam vessel had a good chance of eluding federal ships. Some entrepreneurs purchased older commercial steamers, like the *Arabian*, and used them in blockade running. Often merchants in the business of running the blockade preferred vessels that could be purchased cheaply and easily modified into a serviceable blockade runner. The modified vessels had most of their upper structure removed, not only to reduce weight, but also to produce a smaller silhouette, one more difficult to detect. Owners painted the ships in colors such as light gray, to help them blend in better during the favorite conditions for blockade running: fog and poor weather.⁴¹

After being outfitted for the venture in the summer of 1861, the *Bermuda*, built in the 1850's, became the first steamship to run the blockade.⁴² Quickly, however, vessels like the *Bermuda* became easy prey for the increasing numbers of blockading ships.

³⁹ Marcus Price, "Ships that Tested the Blockade of the Carolina Ports, 1861-1865," in *American Neptune*, VII, 1948, 104.

⁴⁰ Price, "Ships that Tested...", 99.

⁴¹ Gordon Watts, Jr. "Runners of the Union Blockade" in *Archaeology*, Vol. 42, No. 5, 1989, 36. See also Browning, *Cape Fear*, 250.

⁴² Wise, *Lifeline*, 50.

Would-be backers for blockade runners needed a vessel that combined the qualities of speed, low freeboard, and shallow draft to elude blockaders, while retaining a relatively large cargo capacity to maximize profits. The vessel type that most adequately met the requirements was the "Clyde steamer." Clyde steamers were packet boats built in the 1840's for use on the Clyde River in Scotland. These vessels combined long slender iron hulls, shallow draft, and powerful engines to achieve very fast speeds.⁴³ The Clyde steamers had enough freeboard to remain stable at sea and had the low profile necessary for a would-be blockade runner to avoid detection. Most importantly, the vessel maintained a serviceable cargo capacity. The *Antonia*, formerly the *Herold*, was the first of the Clyde steamers to be employed in this manner, and made the first of her twenty-four successful runs in March 1862.⁴⁴

Blockade running again advanced with the completion of the *Banshee* in January 1863. This was the first vessel built expressly for the purpose of crossing the Union blockade.⁴⁵ She measured 214 feet in length, 20 feet in beam, and had a metal hull of 1/3-inch steel plating. Despite her size, she drew only eight feet of water.⁴⁶ In spite of myriad problems, first among them being structural weakness, the *Banshee* served as a basic model for many of the purpose-built blockade runners to follow.⁴⁷ Soon, yards

⁴³ Ibid., 108.

⁴⁴ Ibid., 108. See also National Register, 3.

⁴⁵ Wise, *Lifeline*, 108.

⁴⁶ Ibid., 289.

⁴⁷ Ibid., 145.

along the Clyde and Mersey rivers began producing new and innovative vessels to run the Union blockade.

Some of the innovations used in blockade running included improvements like the adoption of the "turtle-back," a covering over the bow that allows a vessel to break through heavy seas. Blockade runners carried as few masts and spars as possible. To reduce the steamer's silhouette further, those masts could be mounted on hinges and lowered to the deck.⁴⁸ Some ships employed telescoping funnels, again to lower the ship's profile.⁴⁹ Screw propulsion was also popular with some blockade runners. Screw-driven vessels had the advantage of being more maneuverable, quieter, and somewhat less vulnerable to gunfire. Paddle-propelled vessels, however, remained popular because of shallow draft requirements, faster acceleration, and the ease with which grounded steamers could be extracted from sand bars.⁵⁰

In spite of all the innovations employed by the blockade runners, the endeavor remained fraught with the perils posed by the blockaders and often adverse weather conditions. The dangers were more than offset by the amazing profit owners and investors could realize by a successful voyage. Before the war, the wages of a steamship captain averaged \$150 per month. In 1863, the captain of a blockade runner could clear as much as \$5,000 per month.⁵¹ Profits for ship owners were much higher. A completed

⁴⁸ Browning, *Cape Fear*, 250.

⁴⁹ Watts, "Runners of the Union Blockade," 36.

⁵⁰ Browning, *Cape Fear*, 250.

⁵¹ J. Thomas Scharf, *History of the Confederate States Navy*, New York: The Fairfax Press, 1977, 481.

round trip, bringing supplies to the Confederacy and smuggling cotton out, could turn a profit of \$100,000.⁵² It was no wonder that, if pursued and near Confederate territory, many captains would run their ships aground in an attempt to retain the cargo. The cargo was often more valuable than the ship.

Throughout the war, the lure of fantastic profits attracted commercial and private interests in the Union, the Confederacy, and abroad. Firms in Britain and the United States had the advantage of access to a large commercial market, coupled with modern shipping and shipbuilding facilities. Southern firms enjoyed the advantage of a previously-established commercial network and local contracts.

A problem quickly developed because of the inflated profits. Commercial firms, being profit-oriented, tended to ship goods that ensured the highest return. Unfortunately, the most vital supplies—food and clothing—did not generate as much profit as specialty items like liquor. As a result, blockade runners carried these vital items in lesser quantities than the Confederate government required. This inadequacy was partially offset by vessels owned by state and governmental organizations, which helped ensure that proper supplies successfully penetrated the blockade. North Carolina Governor Zebulon B. Vance reported that state-sponsored blockade runners had brought in a tremendous volume of supplies, including 250,000 pairs of shoes, 50,000 blankets, 2,000 Enfield rifles, and other vital commodities during the war, generating a profit of 2.5

⁵² Wise, *Lifeline*, 115. As the war progressed, the South was forced to abandon its cotton policy, and large amounts of cotton were shipped from Southern ports.

million dollars.⁵³ In spite of the efforts of noncommercial blockade runners, supply problems continued. These difficulties forced the Confederate Government to enact legislation that reserved up to one half of a runner's cargo space for government use.⁵⁴

The men who signed on to command and crew the blockade runners came from many nations. Due to their knowledge of the coast, Southern steamboat captains were the most sought-after commanders of the runners. Furloughed British naval captains and British civilians were also recruited to command blockade runners. The crew of the average runner was generally English or Irish, because so many Southerners had joined the army.⁵⁵ The pilots necessary to guide these vessels through the dangerous southern approaches tended to be men who had served in that capacity before the war began.⁵⁶ Their experience and guidance could ensure the success of a run or doom it to failure. The crew of the *Arabian* would later discover the importance of a sure and veteran pilot.

In the early stages of the war, the Union blockading tactics actually made the task of the blockade runners somewhat easier. At night, when conditions were optimum for blockade running, Union vessels would often ride at anchor and carry lights at their mastheads, further marking their position for the runners.⁵⁷ Tactical improvements occurred in the fall of 1862, when the North Atlantic Blockade Squadron received a new

⁵³ Spurnt, *Chronicles*, 157-158. See also Wise, *Lifeline*, 224. Other state officials put the figure at half that amount.

⁵⁴ Wise, *Lifeline*, 146.

⁵⁵ Ibid., 108-109.

⁵⁶ National Register, 45.

⁵⁷ Soley, *Blockaders*, 93-94.

commander, Samuel P. Lee.⁵⁸ Lee ordered his vessels to change stations frequently, and, under the cover of night, steam closer to the inlets for better surveillance.⁵⁹ Lee tirelessly worked to make his force both larger and more effective, and eventually his cruisers were able to form three lines of blockaders to stop the runners at one of the key Confederate ports—Wilmington, North Carolina.⁶⁰

Wilmington was the principal port in North Carolina. While the city did not have prominent commercial and banking establishments, it did have three rail lines, along with a relatively deep harbor.⁶¹ The geography of the region around Wilmington had a great influence on the port's success as a destination for blockade runners (see Figure 3).

Wilmington lies about twenty miles from the mouth of the Cape Fear River. Smiths Island, a small island in the entrance of the Cape Fear, divides the entrance of the river into two channels. The eastern entrance, called New Inlet, was created by a fierce storm in 1761, but channel depth allowed passage of shallow draft vessels only.⁶² The deeper western entrance, called Old Inlet, or Western Bar Inlet, allowed access by deeper draft vessels. Extending beyond Smiths Island are the dangerous Frying Pan Shoals.⁶³

To the west of Smiths Island, Fort Caswell, which protected the approach to Old

⁵⁸ Soley, *Blockaders*, 229.

⁵⁹ *Ibid.*, 230.

⁶⁰ *Ibid.*, 237.

⁶¹ Wise, *Lifeline*, 7.

⁶² *Ibid.*, 16.

⁶³ Soley, *Blockaders*, 91.



Figure 3. Approaches to Wilmington. Courtesy of the North Carolina Underwater Archaeology Unit at Kure Beach.

Inlet, was captured by the Confederates on 10 April 1861.⁶⁴ At the start of the war, New Inlet lacked protection by any Confederate forts. To remedy this situation, the Confederates began construction of a fort on Federal Point (renamed Confederate Point) in the spring of 1861. In the summer of 1862, Colonel William Lamb was assigned to the project, and soon the new fort, known as Fort Fisher, became a formidable strong point protecting New Inlet.⁶⁵

Confederate occupation of Forts Fisher and Caswell became essential for blockade runners to reach Wilmington. As other ports were closed, Wilmington became

⁶⁴ National Register, 37.

⁶⁵ Ibid., 38.

the key Confederate port from 1863 to 1864.⁶⁶ The Union stationed more and more blockaders outside the two Cape Fear entrances in an effort to stop the increasing number of runners. The guns of the two forts forced the blockaders to remain at a respectable distance, thereby giving runners a better chance of successfully entering and exiting the port. To aid the runners, the forts used a system of flares, flags, and cannon fire to alert them as to the best time to elude the Union's ships.⁶⁷

Blockade runners brought more dangers to Wilmington than the threat of the Union Navy. Blockade runner crews, who, unlike Confederate soldiers, were not compelled to adhere to any military code of behavior, soon inundated the city. The companies that employed the crews set up infamous boarding houses where the men might find all types of pleasure at all hours. This lawless, frontier-like existence was hard to stomach for a town that had prided itself in bringing culture to an otherwise undistinguished seaport. One visitor called Wilmington the "meanest" place in the Confederacy.⁶⁸

In spite of all the supplies entering Wilmington, the city endured drastic shortages. Most of the incoming goods were quickly routed toward the front lines where the need for supplies was greatest.⁶⁹ Some of the people in Wilmington could barely

⁶⁶ Soley, *Blockaders*, 94.

⁶⁷ Browning, *Cape Fear*, 253.

⁶⁸ Wise, *Lifeline*, 129.

⁶⁹ *Ibid.*, 128.

afford the necessities of life, while others accumulated great private wealth and lived in luxury.⁷⁰ At one point, a ham cost \$50, a pair of boots \$500, and an overcoat \$1,500.⁷¹

The blockade runners brought other perils to Wilmington. The blockade runner *Kate* arrived in the late summer of 1862, bringing badly needed cargo along with something else. The crew of the *Kate* introduced a deadly yellow fever epidemic into the region. Mosquitoes bit the infected crew members, and then transferred the disease to the people of Wilmington. On 9 September, the man who sold coal to the *Kate*'s crew was the first to die, and before the epidemic had run its course, more than 1,500 cases of yellow fever were reported in Wilmington and the surrounding countryside. Eight hundred died as a result before winter finally brought an end to the plague.⁷² The fear of another epidemic arriving on board a foreign vessel later played a pivotal role in the *Arabian*'s career as a blockade runner.

Union commanders realized that capturing Wilmington was one of the keys to defeating the Confederacy. The port began receiving a great deal of the Union Navy's attention, and by the fall of 1864, fifty steamers were on station to enforce the Wilmington blockade.⁷³ Due to a lack of naval strength, there was little the Confederates could do to counter the Union strategy. The only serious attempt to break the Union blockade came in May 1864, when the Confederate ironclad *Raleigh* tried to drive the

⁷⁰ National Register, 47.

⁷¹ Spurnt, *Chronicles*, 88.

⁷² Wise, *Lifeline*, 127.

⁷³ Soley, *Blockaders*, 93-94.

blockaders away from New Inlet. The attempt failed, and in returning, the *Raleigh* ran aground in the inlet⁷⁴.

In the fall of 1864, Union military leaders began plans to permanently wrest Wilmington from the Confederates. A flotilla of ships arrived off the Cape Fear River on 19 December.⁷⁵ Five days later, with the detonation of the powder ship *Louisiana*, a heavy bombardment of Fort Fisher began.⁷⁶ On 15 January 1865, a massive land assault finally took Fort Fisher from the Confederates; a setback from which the South never recovered.⁷⁷

Blockade running proved to be an important element to both sides during the war. By closing major Southern ports, the United States was able to further weaken the industrially underdeveloped Confederacy. This greatly contributed to the Confederacy's defeat. The port of Wilmington, North Carolina proved important for both the Union and the Confederacy, and was significant in the history of the *Arabian*. The next chapter details the documented history of the vessel, and how she ended up on the seabed off Fort Fisher.

⁷⁴ National Register 66.

⁷⁵ Wise, *Lifeline*, 209.

⁷⁶ Browning, *Cape Fear*, 289.

⁷⁷ Soley, *Blockaders*, 233.

Chapter II

The Evolution of the Walking Beam Engine and the Construction of the *Arabian*.

The unique style of steam engine used by the *Arabian* was the product of hundreds of years of evolution in steam technology. The very idea of harnessing the power of steam to assist humankind is an old one. In 150 B.C., the scholar Hero recorded a description of a circular device which rotated rapidly as steam escaped from it—the first steam engine. Hero later invented a steam-driven device that opened and closed a pair of heavy stone temple doors.⁷⁸ Much later, in the twelfth century, inventors harnessed the power of steam to operate the bellows of a church organ.⁷⁹

More than seven hundred years ago, Roger Bacon predicted the future of steam power when he wrote: "Instruments may be made by which the largest ships, with only one man guiding them, will be carried with greater velocity than if they were filled with sailors."⁸⁰ Bacon's vision was a bold one, and it was necessary to produce a practical steam engine first before attempting application to vessel propulsion. It was many years and many failures before inventors successfully applied a steam engine to ship propulsion.

⁷⁸ Carl D. Lane, *American Paddle Steamers*, New York: McCann Inc., 1943, 3.

⁷⁹ Ralph N. Hill, *Side Wheeler Saga: A Chronicle of Steamboating*, New York: Reinhart and Co., 1953, 3.

⁸⁰ Hill, *Side Wheeler*, 10.

An Englishman named Thomas Savery invented the first truly practical machine to take advantage of steam power in 1702. The device drew water from flooded mines. Savery's machine introduced steam into a chamber that was quickly cooled by water forced into that chamber. The steam was thus condensed and the resulting vacuum applied to draw the water from the mine.⁸¹

The Savery machine later gave way to a more improved steam engine developed by another Englishman: Thomas Newcomen. In 1812, Newcomen took Savery's idea one step further when he produced a steam engine that powered a pump for water removal. The Newcomen engine consisted of a cylinder containing a piston, which was, in turn, attached to a fulcrum; the fulcrum motivated a water pump (Figure 4). Steam was introduced into the engine's cylinder, and then quickly cooled by a jet of cold water, drawing the piston and powering the pump.⁸²

James Rumsey was one of the first inventors to successfully apply steam technology to ship propulsion. In the latter part of the eighteenth century, Rumsey produced a vessel that used a steam engine to pump water in at the vessel's bow and expel it at the stern. This system propelled the ship at two to three miles per hour.⁸³ Unfortunately, Rumsey could never interest enough investors to fund further tests.

At nearly the same time Rumsey was conducting his experiments, John Fitch, also an Englishman, was developing his own ideas for a steam-powered vessel. Fitch

⁸¹ Whittier, *Paddle Wheel Steamers and their Giant Engines.*, Duxbury: Seamasters, Inc., 1987, 5.

⁸² Ibid., 5.

⁸³ Guthrie, *A History of Marine Engineering*, London: Hutchinson Education LTD., 1971, 34.

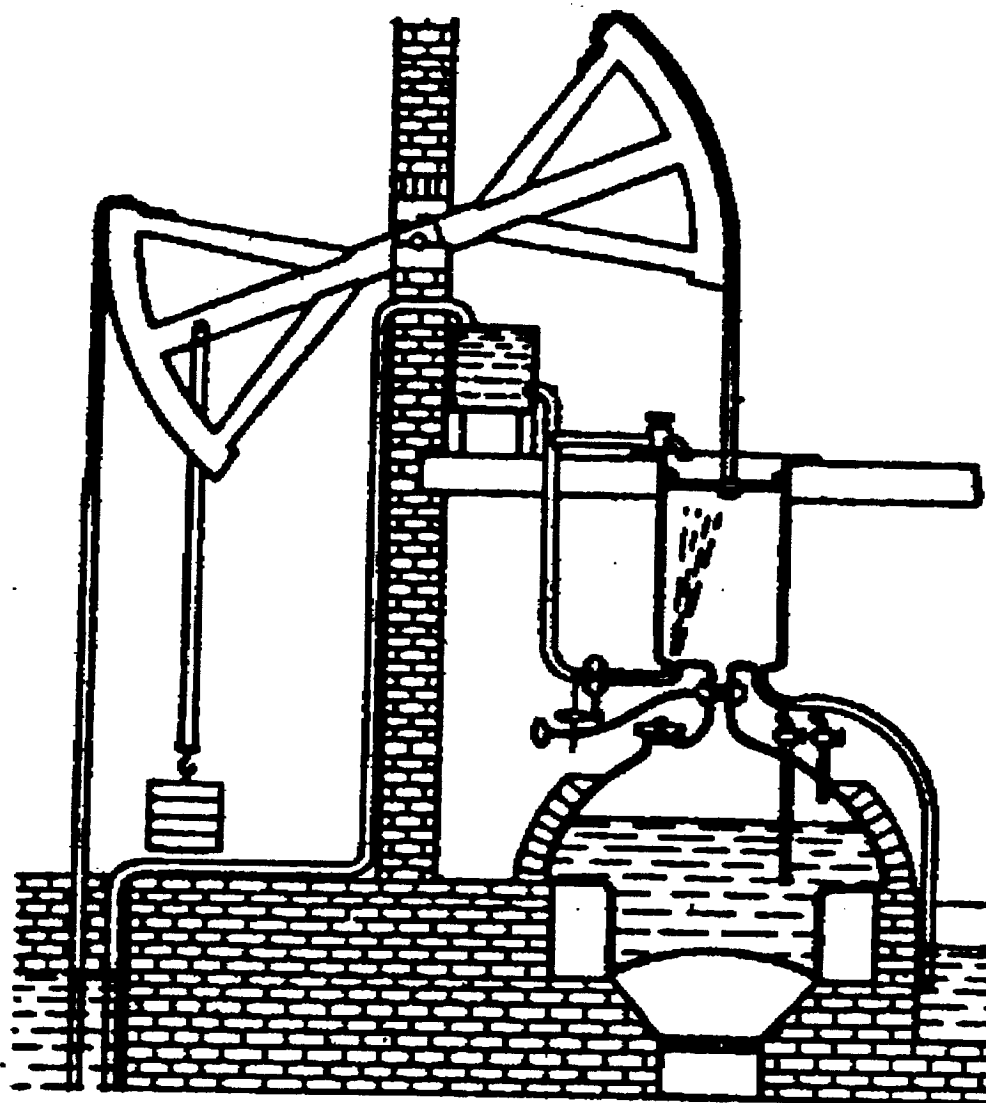


Figure 4. Newcomen steam engine. Published in Bob Whittier's *Paddle Wheel Steamers and their Giant Engines*.

successfully produced a ship in 1786 that used a steam engine to propel a series of paddles, much like those of a canoe, which moved his vessel along at a speed of three

miles per hour.⁸⁴ The engine Fitch used had a twelve-inch cylinder with a three-foot stroke.⁸⁵

In 1787, using an improved vessel with the same engine, Fitch was able to convey a crew and thirty passengers on a twenty-mile trip from Burlington to Philadelphia at an average speed of five knots. In 1790 Fitch put a stern wheeler into passenger and freight service on the Delaware River, thus introducing the first commercial steamship.⁸⁶ Fitch also managed to get a law passed in New Jersey that gave him the right to produce all boats run by fire and steam in that state for a specific period of time.⁸⁷

In 1803 two of the most influential men in steam technology, Robert Fulton and Robert Livingston, developed a successful paddle-propelled steam vessel powered by an eight-horsepower steam engine. The engine employed a complicated arrangement to transfer power from the single vertical cylinder to the paddle wheels.⁸⁸ In 1806 Fulton built another vessel with a similar power transfer system, but this vessel had a twenty-horsepower engine and was 113 feet long. The steamer made regular trips from New York City to Albany in the summer of that year and sparked a wave of interest in steam navigation.⁸⁹ This famous Fulton craft later came to be known as the *Clermont*.

⁸⁴ Hill, 17.

⁸⁵ Guthrie, *Marine Engineering*, 33.

⁸⁶ *Ibid.*, 34.

⁸⁷ Hill, 12.

⁸⁸ Mills, *Steam Engine*, 257.

⁸⁹ Whittier, 6.

Later steamship developers simplified Fulton's complicated power transfer system and produced a new type of engine known as the crosshead engine. The crosshead engine relied on a member that moved up and down between two tracks and transferred the engine's power to the paddle wheels. The tracks were subject to a great deal of stress and were reinforced by a heavy "A-Frame" of stout wood (Figure 5).

For a time, the crosshead engine proved adequate, but, as ships grew larger and more capable of handling larger cargoes and more passengers, a serious flaw began to appear. The increasingly larger engines used progressively longer strokes to achieve more power—the stroke eventually reaching twelve feet.⁹⁰ The top-heavy nature of the crosshead engine's A-Frame eventually compromised the stability of the entire ship.

The solution to the problem was the development of the walking beam engine. The first walking beam engine was developed around 1822.⁹¹ The walking beam engine proved to be such a sound concept that it remained in use for more than 100 years, until the 1920's.⁹²

This style proved especially popular on American eastern steamers and Canadian Great Lakes Steamers. Walking beam engines get their name from the diamond-shaped arrangement of skeletal members made of either wood and iron or iron which pivoted on a trunion mounted on an A-frame of iron and wood (Figure 8). The walking beam

⁹⁰ Ibid., 9.

⁹¹ Ibid., 13. Whittier notes that old drawings suggest the idea was known as early as 1810, and Robert Stevenson was the first to actually produce a walking beam engine.

⁹² Kevin Foster, "Marine Steam Engines, 1807-1875: A Typology," from a paper presented at the 17th Annual Conference on Underwater Archaeology, Sacramento, California, 2.

transferred of the piston through the pivoting beam to a crank attached to the paddle wheels.

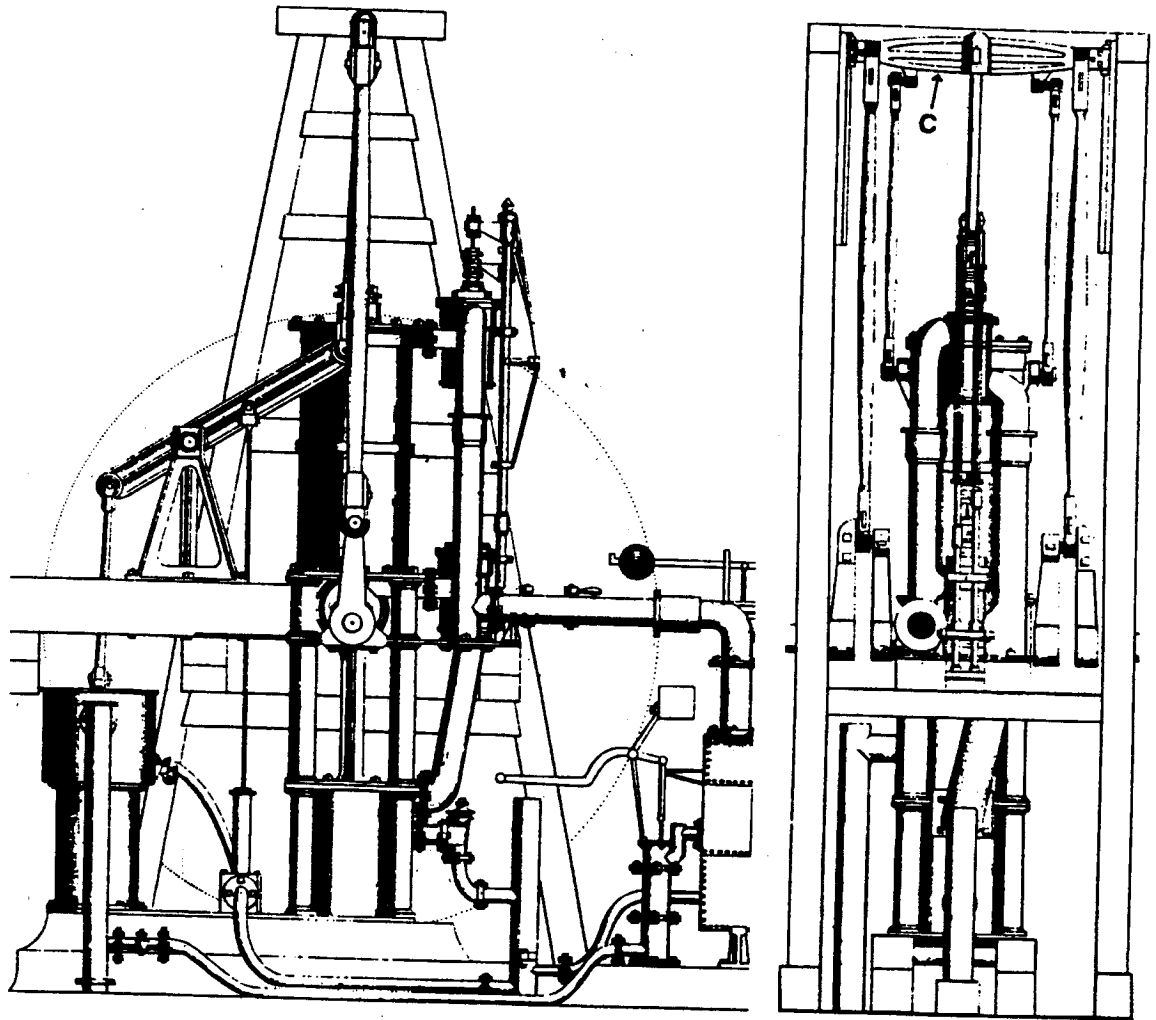


Figure 5. Crosshead engine. Published in Whittier's *Paddle Wheel Steamers and their Giant Engines*.

The operation of a walking beam engine is complex and a basic understanding of the engine is necessary to present archaeological interpretations in chapter 6. The walking beam engine was powered by steam produced by boilers. In the simplest definition boilers used heat generated from a fire fueled by either wood or coal to produce steam which was then vented to the engine. Early boilers were not much more complex than that simple description, composed of a water-filled chamber surrounded by, or on top of a firebox. A tall smokestack was required by the firebox which functioned as a chimney to ensure that a strong draft drew air in and expelled smoke out. The high stack also served to direct the smoke and sparks emitted from the engine away from the vessel and passengers. Early boilers, consisting often of wrought iron plates made by primitive manufacturing techniques, varied greatly in thickness, lacked strength, and produced only low steam pressure. They were known as "low pressure" boilers. Boiler explosions were not uncommon with the early boilers and for a short period some steamboats towed a "safety barge" for apprehensive passengers.⁹³

In the ordinary low pressure boiler (Figure 6) fuel was burned in the furnaces (C) and the gases were vented through the flues (D) and back through the return flues (E) and up the smoke pipe or smoke stack (F). Water (H indicates water level) is converted to steam by contact with metal heated by the fire and expands into the steam room (G) and on into the steam drum, also called the steam chimney (L). From the steam drum the steam is routed through a pipe (not pictured) to the engine. The spent fuel

⁹³ Whittier, 19. Prior to 1852 anyone could operate a steam engine without a license or training.

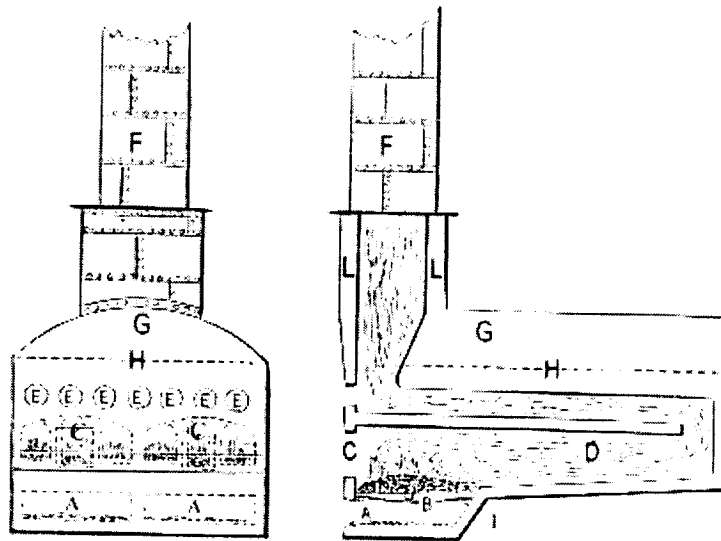


Figure 6. Ordinary low pressure steam boiler. Published in Bob Whittier's *Paddle Wheel Steamers and their Giant Engines*.

dropped through a grate (B) into the ash pit (A). Note the water in the bottom of the boiler (I) to protect it from burning.

The restricting factor for this simple boiler was the limited amount of surface area to produce the steam. To increase surface area, two boiler designs emerged, each using a system of tubes to increase the surface area. The first type was known as a fire tube boiler (Figure 7). The fire (F) heated the water (W), which was contained in tubes (T) and produced steam (S). The steam went into the steam drum (D) and then was routed to the engine (E). The damper in the stack helped regulate the fire. In the second boiler type, the reverse occurs: hot gasses from the firebox heat tubes filled with water, which results in steam, thus a "water tube boiler." The *Arabian* likely had a fire-tube boiler.⁹⁴

After the steam was generated by the boiler it routed from the steam drum (Figure 8-a) to the steam pipe (b) and then to the engine's valve chest (c). The valve chest was

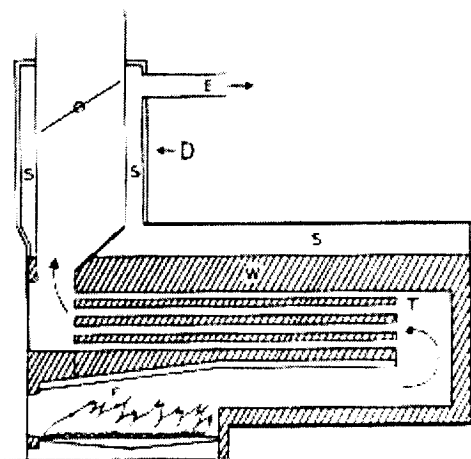


Figure 7. Fire tube boiler. Published in Bob Whittier's *Paddle Wheel Steamers and their Giant Engines*.

responsible for regulating the steam to the engine's cylinder (d). The valve chest had one steam intake and one steam exhaust valve, each attached to lift rods. An eccentric cam (e) on the paddle shaft operated an eccentric arm (f) that was attached to the valve chest by a horizontal rocker shaft (g). As the paddle shaft turned, the eccentric cam rotated, causing the eccentric arm to make the rocker shaft rock. Wipers attached to the shaft pivoted, striking lifting toes on the lift rods and opening and closing valves as necessary.

The steam introduced into the cylinder forced the engine's piston to move, and the piston shaft (h) drove a crosshead (i) mounted in guides (j) on the cylinder. The guides kept the piston's rod vertical. The crosshead was attached to connecting rods (k) that joined to the walking beam. The other end of the walking beam had a connecting rod (l) which was

⁹⁴ Whittier, 18.

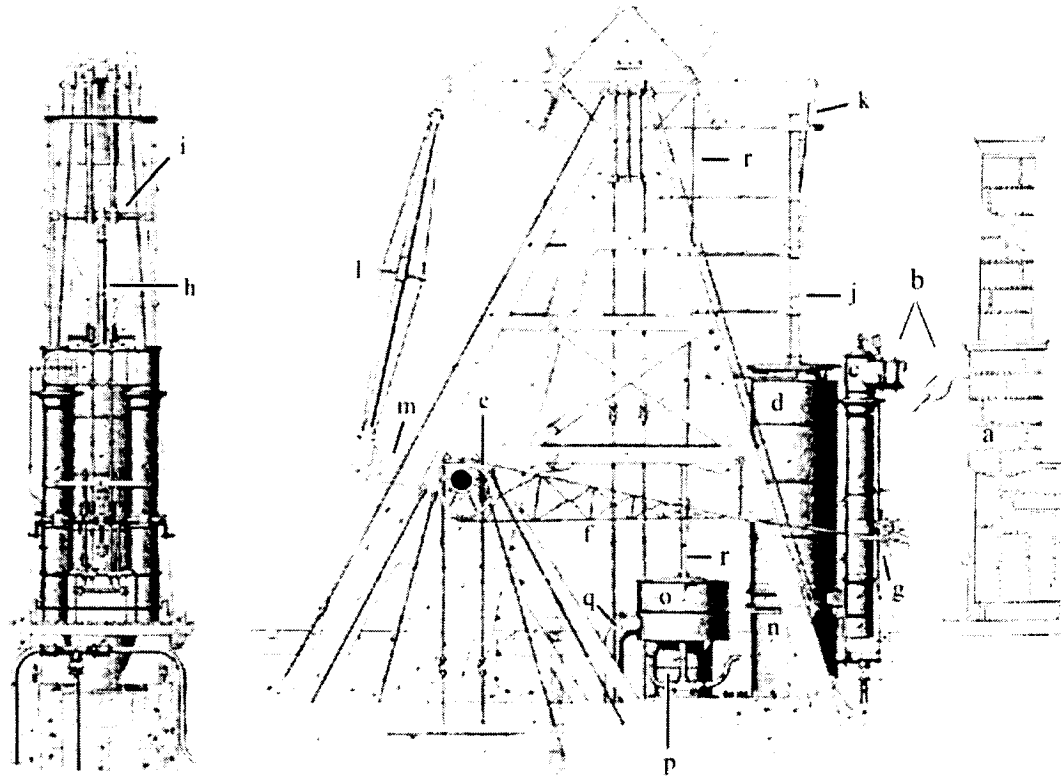


Figure 8. Walking beam engine with boiler. The boiler is out of proportion to the engine in order to fit it in the illustration. The engine is similar to what the *Arabian* would have had. Original illustrations courtesy of the Mariners Museum.

attached to a crank (m) on the paddle wheel shaft. The up and down motion of the walking beam was thus applied to the rotation of the paddle shafts.

After the steam propelled the piston, it was then exhausted into the condenser (n) where it was cooled, the resulting vacuum helped draw the engine's piston back. The water was then drawn out through the foot valve by the air pump (o) and deposited through the air pump to the hot well (p). The water is taken from the hot well by a feed pipe (q) back to the

boiler or deposited outside the vessel. The air pump was powered by connecting rods (r) attached to the walking beam.

Like the evolution of the steam engine worldwide, the development of the steamship in Canada is complex. As early as the 1600's, European nations sent settlers and explorers to Canada in order to take advantage of the region's abundant resources and excellent opportunities for prosperity. One of the most important regions in Canada is the Great Lakes, which provide a transport medium for moving abundant raw materials. The five Great Lakes form a huge freshwater system covering an area of nearly 100,000 square miles.⁹⁵ In addition to the lakes proper, there are many rivers, navigable tributaries and streams forming a system that reaches deep into upper North America.

The French were among the earliest explorers in the region; the French explorer La Salle launched *Griffin* on Lake Erie in 1679.⁹⁶ In time numerous settlers from France and England moved into the region, and towns sprang up on the shores of the Great Lakes. Entrepreneurs built a myriad of sailing vessels to move people and supplies locally, and to foreign ports.

Robert Fulton was the first to demonstrate the possibilities of commercial steamboats with the *North River Steamboat of Clermont* in 1807. The very next year a

⁹⁵ James Croil, *Steam Navigation and its Relation to the Commerce of Canada and the United States*, Toronto: William Briggs, 1898, 245.

⁹⁶ Mark L. Thompson, *Steamboats and Sailors of the Great Lakes*, Detroit: Wayne State University, 1991.13.

group of American investors launched the *Vermont* on Lake Champlain.⁹⁷ Purely Canadian endeavors in marine engineering officially began in 1809, when Montreal brewery merchant John Molson, along with other investors, launched the *Accommodation*. The *Accommodations* engine, and boilers, were manufactured in Montreal. Seventy-two feet long and powered by a six-horsepower engine, the *Accommodation* was greatly under-powered, and plied the route between Quebec and Montreal with much difficulty. While the *Accommodation* proved a failure, Molson went on to found a very successful steamship line using other, more efficient steam vessels.⁹⁸

In 1817 Canadians and Americans were caught up in a race to build and launch the first steamship on Lake Ontario.⁹⁹ It began when a prominent Kingston, Ontario citizen and merchant proposed to build a steamship for the lake in the summer of 1815, but his idea was met with suspicion. However, when investors on the American side of the Great Lakes began negotiations with the steam pioneers Fulton and Livingston to build a steamer for the Great Lakes, the situation rapidly changed. An intense ship building rivalry emerged between the British-supported Canadians and the nearby Americans—particularly among the shipbuilders at Sackett's Harbor.¹⁰⁰

The British, still a power in Canada, wanted to ensure possession of a Great Lakes naval force equivalent to America's naval strength in the region. Upon hearing of the

⁹⁷ Whittier, *Paddle Wheel Steamers*, 7. See also David McGee, "History of Canadian Maritime Engineering, 1700-1980," discontinued website, [Http://www.epas.utoronto.ca8080/~dmcgee](http://www.epas.utoronto.ca8080/~dmcgee) section 2.4, 1.

⁹⁸ McGee, "History of Canadian Maritime Engineering," section 2.4, 2.

⁹⁹ Croil, *Steam Navigation*, 247.

¹⁰⁰ Walter Lewis, "The *Frontenac*—a Reappraisal," in *Fresh Water*, vol. 2, No. 1, 1987, 1-2.

American steamship plans, the senior British naval officer, Commodore Sir Edward George, began a study on the importance of steam navigation on the Great Lakes. He concluded that transportation of supplies along the length of Lake Ontario and from Prescott to Kingston was vital to British interests. George thought the advantage of a steamship—a vessel that did not rely on wind or currents—provided the best mode of transportation. After Commodore George publicly supported the construction of a steamship, merchants in Kingston warmed to the idea.¹⁰¹

In October 1815, Canadian steamship advocates held a meeting to organize a group of investors interested in beginning steamship trade on the Great Lakes. They formed a joint stock partnership that had as its initial task the ordering of an engine from an English steam engine company. Due to a shortage of available Canadian shipbuilders skilled in steamship construction, investors were forced to contract two Americans to build the actual vessel.¹⁰² Total investments in the vessel were thought to be as high as £20,000.¹⁰³ The completed vessel, 170 feet in length with a 30-foot beam, was christened the *Frontenac*. The investors launched the ship in 1816, before an American vessel could be completed.

The Americans at Sackett's Harbor finally completed their vessel, called the *Ontario*, in 1817. Constructed under license from Robert Fulton, the *Ontario*, measuring

¹⁰¹ Lewis, "Frontenac," 2.

¹⁰² Ibid., 4. Interestingly, the firm that built the ship, Teabout and Chapman, was based in the town that was home to Canada's competition in the race, Sackett's Harbor. See Croil, *Steam Navigation*, 247.

¹⁰³ Croil, *Steam Navigation*, 248.

120 feet in length, was smaller than the *Frontenac*.¹⁰⁴ While the Canadians managed to launch *Frontenac* first in 1816, the *Ontario* claimed the title of the first fully operational steamship on the Lakes; although neither vessel enjoyed a great deal of commercial success. The *Frontenac* was under-powered, her forty horsepower engine could barely propel her 700-ton bulk, especially against any real current.¹⁰⁵ The *Ontario* was a little more successful, but was plagued with engine problems throughout her career.¹⁰⁶ While on the Lakes, the two were never in actual direct competition with one another.

In 1818, American investors built a second steamship, the *Sophia*, of 70 tons, which ran a packet between Sackett's Harbor and Kingston.¹⁰⁷ The Canadians quickly followed with their second vessel, the *Queen Charlotte*. The *Queen Charlotte* is also worthy of note for being the first Great Lakes vessel with engines built in Montreal.¹⁰⁸ During the same year, Americans launched the first steamer on Lake Erie, *Walk on the Water*.¹⁰⁹ The vessel, purely an American venture, was built in the United States.

A major development occurred in 1823 with the construction of the steamship *Hercules*. The Eagle Foundry of Montreal, founded by American John D. Wood, built the engines for the vessel. Between 1820 and 1829 the foundry supplied Upper and

¹⁰⁴ Arthur Pound, *Lake Ontario*, New York: Bobbs-Merrill Co., 1945, 318.

¹⁰⁵ Lewis, "Frontenac," 4. See also Pound, *Lake Ontario*, 318. In addition the vessel was unable to make progress against a strong head wind.

¹⁰⁶ Lewis, "Frontenac," 5.

¹⁰⁷ Croil, *Steam Navigation*, 249.

¹⁰⁸ Ibid., 250.

¹⁰⁹ Carl D. Lane, *American Paddle Steamers*, New York: Coward-McCann Inc., 1943, 16.

Lower Canada with nearly all of its low pressure engines. The primary advantage of the Eagle engine was its price, approximately half that of comparable British engines.¹¹⁰

Overall, American vessels operating on the Lakes were built in American yards, and their engines came from American foundries. Canadian vessels were usually constructed in Canada, but initially their engines had to be built and transported from England at great expense.¹¹¹ Eventually, Canadian engineers copied British and American designs, and traveled to British and American foundries to learn how to produce steam engines. Engineers from America, like John Ward, and from Britain, like John Bennett, began the rudiments of Canadian steam engine industry with their talents and were invaluable to the fledgling industry.¹¹² Slowly but surely, investors built more and more steamships and began to operate them on nearly all parts of the Lakes and their tributaries. By 1836 there were forty-five paddlewheel steamers operating on the Great Lakes.¹¹³ By 1862 that number had increased to 320.¹¹⁴

The risks for British, Canadian and American steamship owners did not end with the completion of the vessel's construction. Steamships were built for the "high-end" or high profit trade, for passengers, perishables and mail contracts. Because of the lucrative nature of the "high-end" trade new vessels and owners often faced fierce competition both from other steamships and sailing vessels. Almost all of the early steamship

¹¹⁰ McGee, 2.4, 3.

¹¹¹ Lewis, "Frontenac," 4. See also McGee, 2.5, 1.

¹¹² McGee, 2.8, 1.

¹¹³ Alida Malkus, *Blue Water Bounty*, New York: Hastings House Publishing, 1960, 177.

¹¹⁴ Croil, *Steam Navigation*, 247.

operators on the Great Lakes suffered bankruptcy at one time or another.¹¹⁵ Compared to a similar-sized sailing vessel, a steamship was much more expensive to build and maintain.¹¹⁶ One of the most famous Canadian steam entrepreneurs, Donald Bethune, went bankrupt three times between 1846 and 1851.¹¹⁷ The unstable nature of Canadian steamship lines also greatly hampered the development of Canadian marine engine manufacturers.

So difficult were the obstacles to steam traffic that it was not until 1875 that steamships became the majority of transports working on the Great Lakes.¹¹⁸ In fact, until the beginning of the American Civil War, fewer than 7% of all the vessels operating on the Great Lakes were steamships.¹¹⁹ Into that fiercely competitive and erratic market Andrew Heron placed his newly-constructed steamship, the *Arabian*.

Andrew Heron was the son of a prominent Niagara, Ontario family, and was already an experienced steamship owner when he decided to build the *Arabian*. Heron had entered the steamship business around 1848 when he became partial owner of the *City of Toronto*. When he was contemplating construction of the *Arabian*, Heron was the

¹¹⁵ McGee, 2.5, 3.

¹¹⁶ Ibid., 2.2, 4.

¹¹⁷ Ibid., 2.5, 3.

¹¹⁸ Mark L. Thompson, *Steamboats and Sailors of the Great Lakes*, Detroit: Wayne State University Press, 1991, 31.

¹¹⁹ Alida Malkus, *Blue Water Bounty*, 159.

full owner of the steamship *Chief Justice Robinson*, and partial owner of the steamship *Peerless*.¹²⁰

In the 1840s and 1850s the Lake Ontario shore side towns of Toronto, Rochester, Hamilton, and Oswego grew rapidly. The first established steamship route on Lake Ontario began in 1834, when the steamship *Champion* began running the 60-mile route between the towns of Toronto and Rochester.¹²¹ Heron decided to build a vessel to tap into the newly expanding market. Seemingly ignored by Heron was the increase in firms operating in the Lake Ontario transport market.

To build the *Arabian*, Heron contracted one of the largest steamboat building companies in upper Canada: the Niagara Harbor and Dock Company, which employed 140 men at that time to work on steam vessels.¹²² What emerged was a fairly typical Great Lakes 1850's steamship, long and narrow, wooden hulled, with overhanging guards that ran the length of the vessel. Unfortunately neither engine or hull plans for the vessel have been found, but many details of the vessel survive and others can be speculated upon. There is some disagreement among various sources as to the *Arabians* overall size and engine power. Contemporary research on the Niagara Harbor and Dock Company by Canadian historian Bruce Parker puts the *Arabians* overall length at 182 feet, the beam at 26.6 feet, draft at 11 feet and tonnage at 350.¹²³ Another source, John M. Mill's

¹²⁰ The *Chief Justice Robinson* is noteworthy as the first steamship on the Great Lakes built with a ram to deal with moderate amounts of ice. See Pound, *Lake Ontario*, 281. For Heron's interests in the *Peerless*, see Walter Lewis, unpublished manuscript.

¹²¹ Keith Holland et al., *An Extraordinary American Shipwreck, The Maple Leaf*, Jacksonville: St. Johns Archaeological Expeditions, Inc., 1993, 67.

¹²² Bruce Parker, "The Niagara Harbor and Dock Company," *Ontario History*, LXXII, 1980, 114.

Canadian Coastal and Inland Steam Vessels, lists the *Arabian* as 174 feet long and a 24-foot beam.¹²⁴ Erik Heyl, in his volume *Early American Steamers*, lists the *Arabian* as 173 feet. To further cloud the issue, an account in the *Montreal Advertiser* claimed the ship was 184 feet long, had a beam of 44 feet.¹²⁵

The *Arabian* was propelled by a walking beam engine with a cylinder four feet in diameter with an 11 foot stroke. The engine was either 100 horsepower or 300 horsepower, depending on the source.¹²⁶ The vessel was fitted with two low-pressure boilers, 23 feet in length by 9 feet 9 inches across the face. The boilers appear to be forward of the engine in all available illustrations. Early Great Lakes steamers mounted the boilers on overhanging guards, which helped directed scalding water from explosions outwards.¹²⁷ In Heyl's illustration the *Arabian's* boilers appear to be in the hold, a position common in 1850's Great Lakes Steamers.¹²⁸ The *Arabian's* paddle shafts were 13 inches in diameter, and, along with the vessel's walking beam, were of imported malleable iron.¹²⁹ The main deck held freight space and two levels of passenger cabins

¹²³ Ibid., 118.

¹²⁴ John M. Mills, *Canadian Coastal and Inland Steam Vessels*, Providence: The Steamship Historical Society of America, Inc., 1979, various.

¹²⁵ Article printed in *Daily News*, Kingston, 29 May 1857. The vessel speed was recorded as being 15 knots.

¹²⁶ Parker's research puts the engine at 300 horsepower, the article in the *Advance* at 100.

¹²⁷ Whittier, 18.

¹²⁸ From correspondence with Archaeologist Frank Cantelas.

¹²⁹ *Whig Standard* (Kingston), 7 May 1852.

(Figure 9). An article published shortly after the launching of the vessel predicted she would be the fastest steamer on Lake Ontario.¹³⁰

The *Arabian* was a very elaborately outfitted vessel, as evidenced by two newspaper articles, both printed on 6 May 1852. The *Whig Standard* published the more detailed account of the two, giving a colorful and enlightening description of the vessel:

As neither labor nor money has been spared in order that her hull, engine and machinery might be as strong and perfect as skill and material could make them, so every needful cost has been incurred in order that the furniture and fittings may be combined to render the *Arabian* in every way worthy the patronage of the traveling community.¹³¹

The writer reported that the *Arabian* sat as steady as a rock on the water, and was of magnificent proportions. The article noted the engine was manufactured by the able engineer, Mr. Risley, and "expended the resources of scientific skill, and a more perfect mechanism could hardly be imagined."¹³² Concerning the vessel's accommodations, the article pointed out the *Arabians* full-length upper cabins with staterooms on both sides, and dining salons in the center. The ship had beautifully accoutered and furnished ladies' cabins as well as upper cabins—both of which displayed artfully placed stained glass windows. The vessel boasted 110 berths, some of which were double-posted. The writer concluded by stating that the vessel was a splendid addition to the line and her owner will, no doubt, "receive such a return for their spirit and enterprise as the qualities merit."¹³³

¹³⁰ *Niagara Chronicle*, 30 October 1851.

¹³¹ *Whig Standard* (Kingston), 7 May 1852.

¹³² *Ibid.*

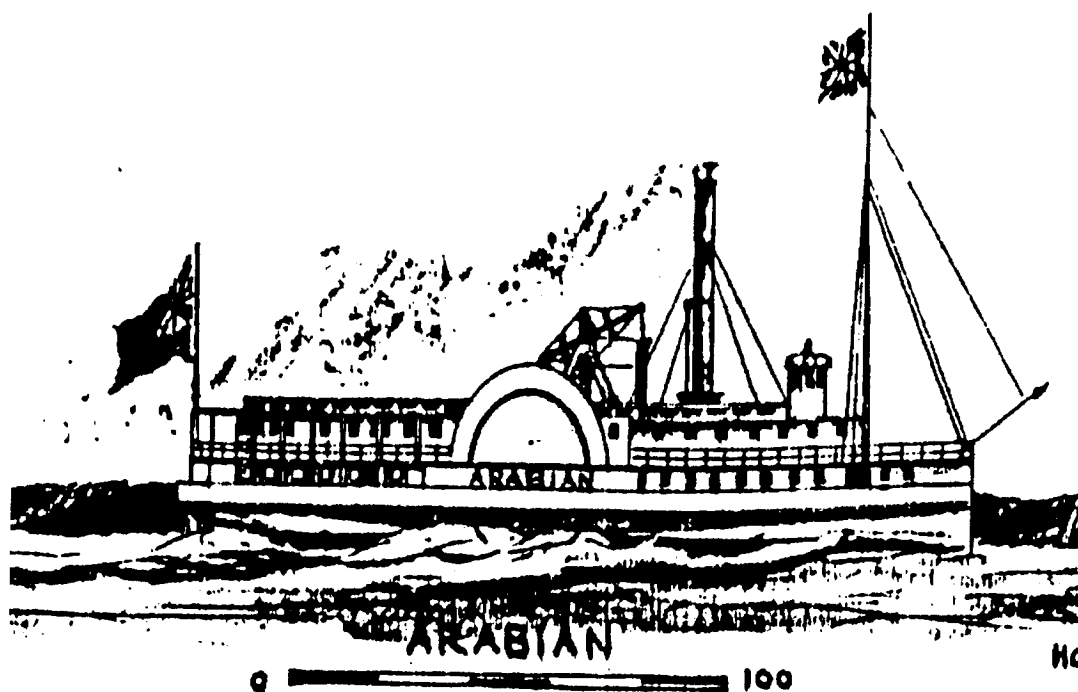


Figure 9. Drawing of the *Arabian* from Erik Heyl's *Early American Steamers*.

The second article, which appeared in the *St. Catherines Journal*, is more colorful than the first, but conveys less pertinent vessel information. It stated that the *Arabian* “is as pretty a model of a boat as anyone with a seaman’s eye could desire to look at, she is a perfect model.”¹³⁴ The article noted that the vessel’s upper works combined both elegance and usefulness—to the great credit of the taste of the builder. The writer noted the vessel had a 300-horsepower engine, and felt if the vessel did not go fast, then no faith could be placed in steam.

¹³³ Ibid.

¹³⁴ *St. Catherines Journal*, 7 May 1852, excerpted from the *Hamilton Journal*.

The *Arabian* was launched on 7 July 1851, and successfully completed her first trial run from the shipyard to Port Dalouise and back, on the afternoon of 30 October.¹³⁵ Certain influences can be seen in the construction of the *Arabian*—specifically influences from Britain and the United States. The American influence is apparent through the employment of a walking beam engine, more popular for American steamboats at the time. British steam engine builders tended to build side lever engines during that period.¹³⁶ The British influence is apparent in where the engines were built. The Niagara Harbor and Dock Company built the engine and boilers; Toronto native John Lowe supervised the construction of the company's foundries. Lowe had learned the steam engine trade working for a British firm located on the Clyde, which was the boat-building center for the Britain Isles in those days.¹³⁷

The *Arabian* was well suited to the transport trade, combining a good cargo capacity with numerous well-appointed passenger cabins. Paddle wheel steamers were generally more maneuverable and smoother riding than the screw propelled steamers that were introduced on the Great Lakes in the 1840's.¹³⁸ The large, heavy, side-mounted paddles also gave stability to the high profile, shallow draft ship. Paddle wheel propulsion systems remained popular for inland steamships for many years but eventually

¹³⁵ Ibid., 114.

¹³⁶ McGee, 2.2, 2.

¹³⁷ Parker, "The Niagara Harbor and Dock Company," 103.

¹³⁸ Keith Holland, *The Maple Leaf*, 30.

were eclipsed by screw propulsion. Propellers were less delicate than paddle wheels and paddle wheel boxes, took less vessel space and overall were more efficient.

Even today there is some slight confusion about the origins of the *Arabian*, which can be traced to a single contemporary article on the vessel in the *Hamilton Spectator*. The newspaper contended that the vessel was from Hamilton, because she was outfitted there, and her crew was recruited from there as well.¹³⁹ On the other hand, all official records agree that the origin of the vessel was Niagara. After the summer of 1851 Niagara's newest ship, and her owner, were ready to begin operations on the fiercely competitive Lake Ontario.

¹³⁹ *Hamilton Spectator*, as quoted in the *Daily News*, Kingston, 8 March 1853.

Chapter III

The *Arabian*'s Career

In January, 1852, Andrew Heron entered a cartel that established transport routes designed to reduce competition on Lake Ontario and the St. Lawrence above Montreal.¹⁴⁰ Heron placed the newly built *Arabian* on the Through Line, a route between Hamilton and Montreal. This was the second time steamship owners had attempted to organize that particular route; the first had failed due to competition between owners. The owners hoped that the new cartel would reduce that competition.

The *Arabian* was one of six ships on the Through Line, which made stops at Niagara, Queenston, Lewiston, Cape Vincent, Brockville, Prescott, Ogdenburgh, and other ports on the St. Lawrence (Figures 10 and 11). The vessels returned by reversing the route, and each leg of the journey took approximately thirty-three hours to run. Other ships running this line were the *Champion*, *Mayflower*, *Maple Leaf*, *New Era*, and *Highlander*.¹⁴¹

Heron hired Captain William Colcleugh to command the *Arabian*. Colcleugh had previously earned Heron's trust when he commanded Heron's second ship, the *Chief Justice Robinson*.¹⁴² Colcleugh was known for skills as a steamboat captain, even earning

¹⁴⁰ Walter Lewis, "Until Further Notice: The Royal Mail Line and the Passenger Steamboat Trade on Lake Ontario and the Upper St. Lawrence River, 1838-1878," Unpublished M.A. Thesis, Queens University, 1983.

¹⁴¹ Keith Holland, *The Maple Leaf*, 74.

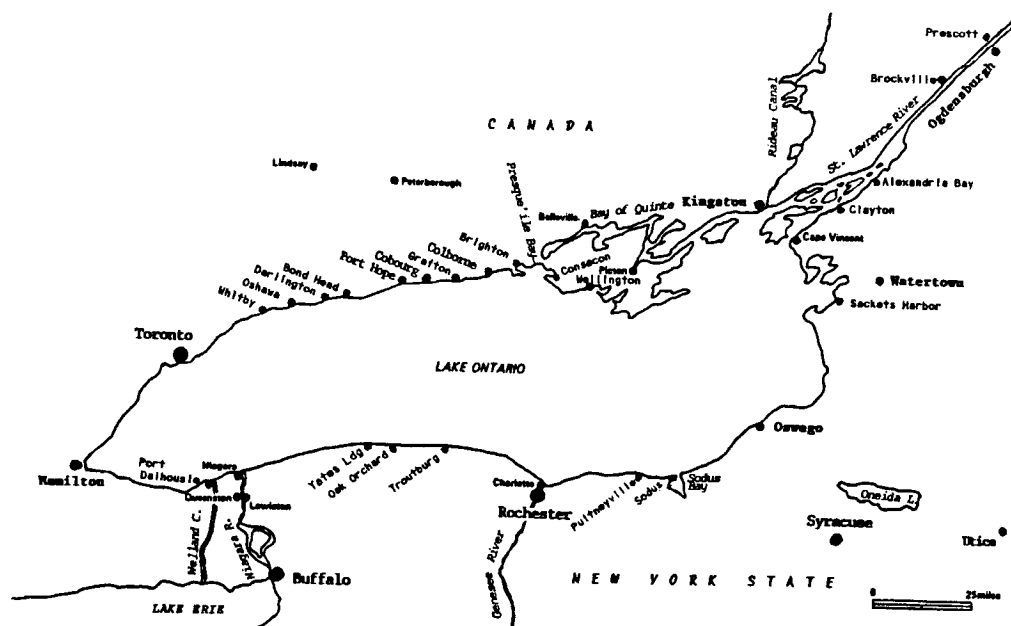


Figure 10. Lake Ontario. Courtesy of historian Walter Lewis.

praise in a local newspaper article.¹⁴³ Colcleugh soon began testing his vessel by racing her against other steamships operating on the water. This was a normal practice for the time, and helped generate local interest. While operating on the Through Line, the *Arabian* lost a series of races, including a very heated one to the *Jenny Lind* in July 1852.¹⁴⁴

The *Arabian* did not stay on the Through Line long. Despite the involvement of the cartel, the second Through Line also failed. The Through Line remained in operation until the end of 1852, but was discontinued due to mounting financial losses.

¹⁴² *Daily News*, 8 October 1852.

¹⁴³ *St. Catherines Journal*, 7 May 1852, excerpted from the *Hamilton Journal*.

¹⁴⁴ *Daily News*, 20 July 1852, quoting the *Ogdensburg Daily News*.

Southbound service on the line was in direct competition with American steamers. Return service competed not only with the same American ships, but also against numerous Canadian vessels.

In early 1853 Heron entered another route alliance and had her placed on the River St. Lawrence and Lake Ontario Royal Mail Line. The line served the numerous ports between Toronto and Prescott. The *Arabian* spent a year working the route until it was altered in 1854 to run between Hamilton and Kingston. The *Passport* and the *Magnet* joined the *Arabian* on the new route. In May 1854 misfortune struck the *Arabian* when she collided with the barque *Industry* in Toronto. Fortunately, there was little apparent damage and no injuries resulted from the accident.¹⁴⁵

After workers repaired the damaged *Arabian*, Heron again switched her route to one providing service between Hamilton and Kingston. On 17 October 1855, a passenger named Isabella Lucy Bird booked passage on the *Arabian*. Bird dutifully recorded her observations and experiences in a diary that she later published as a small travelogue entitled *The English Woman in America*.

In her book, Bird complained that the *Arabian*, besides being overly crowded, was inferior to any American steamer on board which she had traveled. She found in "very bustling and dirty, and the carpet was plentifully sprinkled with tobacco juice."¹⁴⁶ Bird described the stewards as dirty and the stewardesses as being too smart to attend to the comfort of the passengers.

¹⁴⁵ *British Whig*, 18 May 1854.

¹⁴⁶ *Ibid.*, 239.

T H R O U G H L I N E

FROM HAMILTON TO MONTREAL IN 33 HOURS.

—

Calling at Niagara, Queenston, Lewiston, Cape Vincent, Brockville, Prescott, Ogdensburgh and other Ports on the St. Lawrence.

—

THIS MAGNIFICENT LINE, composed of New, Powerful and Fast Steamers, fitted up in the most modern and elegant style, with Upper and Lower Saloons, State Rooms, etc.

WILL LEAVE HAMILTON

EVERY MORNING, (Sundays excepted,) at seven o'clock, as follows, commencing Monday next, 14th instant :—

MAPLE LEAF,	Capt. Wilkinson,	every	Monday
ARABIAN,	" Colclough,	"	Tuesday
NEW ERA,	" Maxwell,	"	Wed'sday
CHAMPION	" Marshall,	"	Thursday
HIGHLANDER	" Stearns,	"	Friday
MAYFLOWER,	" Patterson,	"	Saturday

They will leave Lewiston and Queenston about half past Two P. M., and arrive at Montreal about Four P. M., making the passage from the Niagara River to Montreal in about twenty-five hours.

UPWARDS: WILL LEAVE MONTREAL

EVERY AFTERNOON (Sundays excepted) at Four o'clock.

For Toronto and Hamilton direct, calling at Ogdensburgh, Prescott, Brockville, Kingston, Cobourg, Port Hope, Darlington, etc.

Toronto, June 10, 1852

Figure 11. Flyer for the Through Line. Published in Keith Holland's *An Extraordinary Vessel, The Maple Leaf*.

A dismayed Bird witnessed a chaotic loading of passengers, crates, and boxes through both the fore and after sections of the ship. She noted with great disdain that most passengers arrived less than five minutes before the vessel's time of departure. The simultaneous loading of passengers and cargo made the vessel a frantic place, although the lack of significant accidents impressed her.

The loading boards soon came down, and, with a ringing of bells and the slow churning of the ship's paddle wheels, the *Arabian* made her way along the calm waters of

Lake Ontario. Many people lost their luggage; some went from cabin to cabin

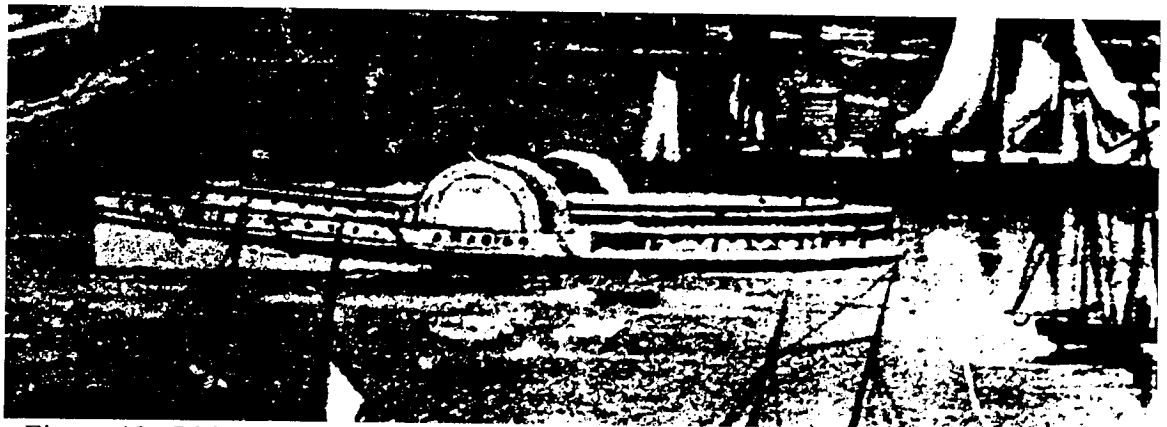


Figure 12. Lithograph "Toronto C.W. taken from Top of Jail 1854. Courtesy of Instate for Great Lakes Research.

ransacking the rooms looking for lost articles. Passengers quickly filled the salons, most lying on sofas, with the men reading the morning papers and the women reading novels. Many men were unable to check and see if their wives were safely settled in on board because cabin segregation was strongly enforced by stern stewardesses.

Soon after her arrival, Bird found that she was unable to get a private cabin or sleeping quarters. She finally gained private accommodations when a gracious stewardess donated hers. Later, the three hundred passengers ate dinner in the vessel's dining room, providing, Bird noted, three hundred reasons against eating anything. The food was greasy, and, while some of it was served raw, some dishes were terribly overdone.

After dinner, a severe case of ague plagued Bird and she retired to her cabin at nine o'clock that evening. The next morning after the ship had reached its destination, Bird left her watch and several valuable locket under a pillow in the cabin for the

stewardess to show her appreciation. Bird made her way through a driving snow to continue her journey on a handsome new steamer, the *New Era*.¹⁴⁷

In October 1855, shortly after Bird had taken leave of the vessel, *Arabian* struck a pier in Darlington harbor and sank in nine feet of water. Heron had the ship raised several days later and the Marine Railway in Kingston made the repairs.¹⁴⁸ Also in 1855, the *Arabian* lost her trusted master when Captain Colcleugh retired and turned his attention to the management of a forwarding and commission business in Kingston.¹⁴⁹

After Captain Colcleugh's retirement, a captain named Sclater took control of the vessel. The *Arabian* spent an uneventful year under the captain, whom Heron replaced in the summer of 1856 with Thomas Maxwell, a former Royal Mail Line captain. Shortly after being placed under Maxwell's command, Heron took the *Arabian* off the Royal Mail Line and employed the vessel as a special excursion boat. The ship transported passengers to and from the numerous resorts below Quebec.¹⁵⁰ Captain Maxwell was later severely criticized in a local newspaper on at least two occasions for endangering the ship's passengers by racing the *Arabian* against the ship *Champion*. During one race he cut across the *Champion*'s bow and nearly rammed her.¹⁵¹

In July 1857, an advertisement in the *Montreal Daily Transcript* ran as follows:

Trip to Quebec, River Quelle, Murray Bay, River du Loup and Rimouski. —

¹⁴⁷ Ibid., various references.

¹⁴⁸ *Daily News* (Kingston), 19-23 October 1855.

¹⁴⁹ *Daily News*, 7 April 1857. Colcleugh later died in Niagara while outfitting a vessel, under what the paper felt was mysterious circumstances.

¹⁵⁰ *Leader* (Toronto), 2 June 1856.

¹⁵¹ Heyl, *Early Steamers*, 9.

We are happy to inform those in search of pleasure or health, that the splendid steamer *Arabian* [sic], belonging to the River St. Lawrence and Lake Ontario Royal Mail Line will visit the above Canadian watering places.¹⁵²

On 21 July 1857 the *Arabian* was involved in a third accident. While she was traveling from Murray Bay to Quebec, an approaching storm forced the ship to anchor in a small stream near the west end of Isle Madame, about twenty-four miles below Quebec. The storm proved quite fierce, and, shortly after 2:00 am, the ship began dragging her anchors, and then drove stem-first onto the island's rocky shore. The keel and the engine guides were carried away on impact. Fortunately, the rocky bottom was shallow, and the ship did not take on enough water to cause severe damage. The passengers managed to evacuate safely to the island and spent the remainder of the night under canvas before being taken to their destination.¹⁵³

Three days later, the agent for the *Arabian*, Mr. Steveson, chartered the screw steamship *Lady Head* in order to reach the stranded vessel and render assistance.¹⁵⁴ Unfortunately, it took until 6 August to dispatch a crew of carpenters.¹⁵⁵ The company dispatched a second crew five days later to speed up repairs.¹⁵⁶ Finally, on 25 August, more than a month after the ship first settled onto the rocky river bottom of Isle Madame, a small steam tug towed the *Arabian* into the port of Montreal.¹⁵⁷

¹⁵² *Montreal Daily Transcript*, 3 July 1857.

¹⁵³ Heyl, *Steamers*, 10.

¹⁵⁴ *Mercury* (Quebec), 25 July 1857.

¹⁵⁵ *Le Journal de Quebec*, 6 August 1857.

¹⁵⁶ *Le Journal de Quebec*, 15 August 1857.

¹⁵⁷ *The Pilot* (Montreal), 26 August 1857.

It took several more months to repair the vessel, and Heron was forced to hire a new Captain, settling on an experienced captain named Wilson. Heron placed the vessel on a newly created route between Toronto and Oswego.¹⁵⁸ The *Arabian* did not remain long on the route, and, in October 1858, Heron placed the vessel in service between Rochester and Cobourg. The *Arabian* replaced the *Maple Leaf* on that route, the owners of the *Maple Leaf* were forced to withdraw her due to unpaid debts.¹⁵⁹

The *Arabian* worked the *Maple Leaf*'s route for only a few short months. Beginning in March 1859, the vessel, along with Heron's other ship, the *Peerless*, was left without a regular service to run.¹⁶⁰ Rumors quickly surfaced that the *Arabian* had been chartered to run the lucrative and much-coveted route between Gaspé and Shédiac on the lower St. Lawrence River.¹⁶¹ These rumors were true and the provincial government gave Heron a subsidy of £2,500 for service on the Quebec to Shédiac trade route.¹⁶²

The Gaspé and Shédiac route was the last freight and passenger route to which Heron assigned the vessel. The *Arabian* served only two months when Heron apparently concluded the vessel could not make a profit as a passenger and cargo ship. In the winter of 1859, Heron had the vessel's upper works removed and the *Arabian* began service as a

¹⁵⁸ *Daily News*, 5 April 1858.

¹⁵⁹ Heyl, *Steamers*, 10.

¹⁶⁰ *Daily News*, 24 March 1859.

¹⁶¹ *British Whig*, 24 April 1858, quoting the *Globe*.

¹⁶² *British Whig*, 25 April 1858.

tow boat on the St. Lawrence (Figure 13).¹⁶³ The *Arabian* worked as a tow boat for approximately three years, until October 1862 when she suffered a boiler explosion that seriously injured a fireman¹⁶⁴ This accident ended the transient existence of the *Arabian* on the Great Lakes.

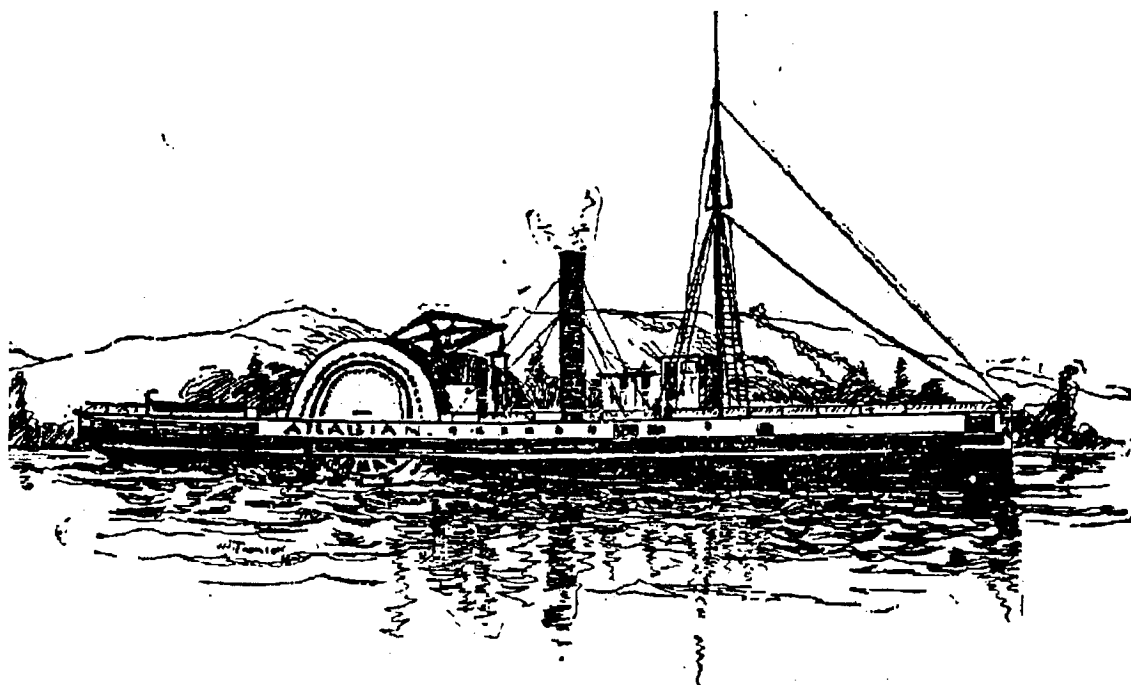


Figure 13. *Arabian* as a towboat. From J. Ross Robertson *Landmarks of Toronto*.

Research by Walter Lewis, a historian specializing in Canadian steamship history, has shown that many Great Lakes steamers finished out their careers in the same manner when they were no longer competitive on the transport market. One of the many difficulties against profitable steam transportation on Lake Ontario was that competition

¹⁶³ Heyl, *Steamers*, 10.

¹⁶⁴ Lucy I. Bird, *The English Woman in America*, 239.

was too great. As early as 1842, too many steamships were operating on the lakes for any one to make a profit.¹⁶⁵ In 1856, shortly after the *Arabian*'s construction, other entrepreneurs established several railroad lines that served to increase the competition for cargo transportation in that region.¹⁶⁶ Many steamship owners lost a significant amount of their passengers and freight to rail lines like the Grand Trunk Line and the Great Western Railway.¹⁶⁷ Steam vessels were often forced to criss-cross Lake Ontario to find cargoes, and rate cutting became a common practice.¹⁶⁸ In addition in the middle 1850's the region suffered a severe economic depression.¹⁶⁹ The *Arabian* could not succeed as a commercial transport, but was well suited to her tow boat role.

At some point, soon after the boiler explosion, Andrew Heron managed to sell the *Arabian*.¹⁷⁰ The vessel's new owners had the ship repaired and steamed her to New Brunswick; there she was registered to a man named "Leach." In March 1863, the *Arabian*'s new owner(s?) took the ship to the United States via the St. Lawrence River. The vessel made one brief stop in New York and then steamed on to Boston.¹⁷¹ While in Boston, the ship's boilers were cleaned, and her master secured \$41,000—possibly for

¹⁶⁵ Parker, "The Niagara Harbor and Dock Company," 118.

¹⁶⁶ Even the railroads were having difficulty making a profit in the transport business. The Great Western Railway operating in the region lost \$380,669 in 1854 alone. Ashdown, D., *Railway Steamships of Ontario*, Boston: The Boston Mills Press, 1979, 37.

¹⁶⁷ Ibid. 37

¹⁶⁸ Anna G. Young, *Great Lakes Saga*, Montreal: Richard, Bond, and Wright, 1963, 45.

¹⁶⁹ Ashdown, D., *Railway Steamships of Ontario*, Boston: The Boston Mills Press, 37.

¹⁷⁰ The first evidence of a sale comes from various newspaper shipping lists.

¹⁷¹ *New York Herald*, 1 April 1863.

purchasing a cargo.¹⁷² The *Arabian* then steamed back to New York, arriving on 2 April, still under registry to Leach and to the New York firm of Brett and Sons.¹⁷³ The vessel remained in New York until 14 May when she cleared New York harbor in ballast, ostensibly sailing for Havana. The vessel flew an American flag when she departed, still registered to Leach and to Brett and Son.¹⁷⁴

The ship never touched at Havana, but arrived, instead, in Nassau in early June. According to records from the Ministry of Transportation and Civil Aviation in Cardiff, the *Arabian* was then registered to new owners. A synopsis of their records states:

Arabian-1863

Registered Tonnage: 262 92/100 tons.

Built at Niagara in 1852.

Previous registry not stated.

Dimensions 174ft x 24ft x 18 4/10 ft.

Sloop rigged, round stern, caravel built, no gallery, no head, framework wood.

Steamer, paddle propelled.

Engine room 61 ft. in length, one engine, 235 70/100 tons, 220 h.p.

Owners: Robert Henry Sawyer and Ramon Antonio Menendez of Nassau, merchants.¹⁷⁵

An excerpt from a 7 June 1863 letter from S.C. Hawley, U.S. Consul at Nassau to Secretary of State William Henry Seward illuminates what occurred while the *Arabian* was in New York and after her arrival in Nassau:

A steamer has arrived here from New York, called the 'Arabian' [sic] in

¹⁷² Letter from General William Whitting to Secretary of War James Seddon, 29 June 1863. Naval Records Group 109, Confederate War Department Letters, WP 398, National Archives, Washington, D.C. Hereafter, War Department will be referred to as "WD," Naval Records Group by "NRG," and National Archives by "NA."

¹⁷³ Shipping News, *New York Herald*, 2 April 1863.

¹⁷⁴ *New York Times* and *New York Herald*, 14 May 1863.

¹⁷⁵ Record courtesy of the Institute for Great Lakes Research, Perrysburg, Ohio. Hereafter referenced as IGLR.

ballast. She has taken a British crew and is being painted up fog colour for a blockade runner. She was a Lake Ontario steamer, taken down the St. Lawrence to New York where she was Americanized and made into an ocean steamer. Why she should have been allowed to leave New York for Nassau or Havana in ballast is difficult to imagine. The dullest intellect should have understood her business. She is very fast and will carry a thousand bales of cotton and will be of essential aid to the rebellion.¹⁷⁶

The Consul identified the mate of the *Arabian* as "Mr. Lock," a notorious man who had been the captain of the blockade runner *Retribution*. A British mail steamer transported the members of the vessel's original American crew who did not wish to travel further with the *Arabian* back to New York. The owners subsequently recruited new crew members—mostly British.¹⁷⁷

The *Arabian* cleared Nassau on 12 June 1863—this time registered to a person listed only as "Morse." She arrived in Wilmington, North Carolina on or about 17 June, and received a very unfriendly reception. Unbeknownst to the ship's owners, the *Arabian* had been under surveillance since her arrival in Nassau. A Southern patriot named John Murtland of Charleston, South Carolina, had kept a close eye on what he regarded as a suspicious vessel. On 12 June 1863, he wrote to Mr. Lawrence Adams, a co-worker, reporting that the *Arabian* would be clearing Nassau and be heading for either Charleston or Wilmington. A greatly alarmed Murtland warned Adams that "...the crew must be *closely watched* [sic], they are pretty near all Yankees and will no doubt endeavor to learn something they shouldn't know when they get to Dixie."¹⁷⁸

¹⁷⁶ Ibid.

¹⁷⁷ Letter from S.C. Hawley to Seward, 27 June 1863, IGLR.

¹⁷⁸ Letter from John Murtland to L.A. Adams, 12 June 1863, NRG 109, Vessel Papers A63, no. 6., NA. Vessel Papers will be hereafter referenced as "VP."

Contrary to the earlier report of the consul, Murtland maintained that the *Arabian* had kept the American crew she had picked up in New York. This would help explain the hostile reception she received upon reaching the Confederate port of Wilmington, North Carolina. Mr. Murtland insisted the vessel be denied entry to Southern ports for she “certainly carries spies and is owned out of the Confederacy.” He continued his protest by stating his belief that the owners were unwilling to carry anything for the Confederate government.¹⁷⁹ Perhaps more significantly, Murtland was staying at the offices of the vessel’s owners, Menendez and Sawyer. This alone added an air of validity to his statements.

Mr. Adams promptly forwarded Murtland’s letter to Brigadier General Charles Jordan, Confederate Chief of Staff at Charleston. Jordan in turn wrote to Major-General William H. Whitting in Wilmington and requested that the General keep an eye out for the vessel “as her crew was nearly all Yankee.”¹⁸⁰ Additionally, an investigation by Jordan revealed that the vessel had other investors besides the two named British merchants, and one Edward Kidder, who resided in the South. However, Jordan thought it highly suspicious that Mr. Kidder had a brother-in-law in New York and that Kidder’s eldest son had left the South at the beginning of the war.

General Whitting’s suspicions deepened when he received information suggesting that a former Southerner named Robinson had allegedly purchased the vessel. Robinson, most recently spotted in New York City, had resided in the South before the war. He had

¹⁷⁹ Letter from John Murtland to Adams, NRG 109, VP A6 no. 6, NA.

¹⁸⁰ Letter from Chief of Staff Jordan to General Whitting, 18 June 1863, NRG 109, WD 2/48/193, NA.

accompanied the vessel on her trip from New York to Nassau.¹⁸¹ Robinson's apparently inexplicable presence in New York City ensured intense scrutiny by various officials from the Confederacy.

In a letter dated 18 June 1863, Whitting wrote to Confederate Secretary of War, James A. Seddon, that he was "embarrassed by the arrival of the *Arabian*." General Whitting informed Seddon that the ship's arrival was "the most impudent procedure in the history of blockade running."¹⁸² Whitting promptly seized the vessel and had her crew imprisoned. He then confided to Secretary Seddon that she was obviously "Yankee-built," and intercepted letters confirmed the ship had been purchased in New York and consigned to Mr. Kidder and Mr. Martin. Mr. Martin, he wrote, was in Nassau where, with the aid of a Northern man, he had started a business branch.¹⁸³

Whitting also called the secretary's attention to the danger of foreign vessels introducing disease into Wilmington in spite of rigid quarantine procedures already in place. Nassau had already reported outbreaks of yellow fever, and Whitting did not want a repeat of the yellow fever epidemic that had struck the area during the past summer. He disclosed that he expected just such an outbreak with the arrival of each ship.¹⁸⁴

Additionally, the general was afraid that the people of Bermuda, weary of the threat of disease, would stop all Southern vessels that had cleared infected ports from

¹⁸¹ Letter from Whitting to Seddon, 18 June 1863, NRG 109, WD W 373, NA.

¹⁸² Letter Whitting to Seddon, 18 June 1863, NRG 109, WD 386, NA.

¹⁸³ Ibid.,

¹⁸⁴ Ibid., Whitting's view is a legacy from the visit of the *Kate* one year earlier that resulted in 800 Yellow Fever deaths.

entering Bermuda. This would cut off a vital source of supplies. Such was the state of Whitting's fears that he requested his letter be forwarded to the President. Seddon granted his request. Whitting deferred to Seddon and awaited further instructions.¹⁸⁵

While awaiting further action, Confederate authorities moved the *Arabian*'s crew to Richmond and on 18 June, Secretary Seddon received a letter from the *Arabian*'s purser, Mr. Charles Soeb. Soeb informed Seddon that Joseph W. Morse had commissioned the vessel, and she had departed Nassau on 13 June bound for Wilmington. She carried an assorted cargo, mostly what Soeb called the "necessities of life," and some freight for the government. He confirmed the vessel's ownership by Nassau merchants and British subjects Sawyer and Menendez. Soeb stated that Sawyer and Menendez were the principal owners of the ship and had invested \$64,000 in her. Soeb also knew of two partial owners—Mr. Kidder and Mr. Martin of Wilmington—who had invested \$20,000.¹⁸⁶

When the *Arabian* arrived in Wilmington, Soeb stated, the vessel received permission from the Collector of the Port to land the cargo. The collector also gave them a permit that required General Whitting's signature. The general refused to sign, stating he first needed to correspond with the War Department. Soeb stated that he could not understand why the authorities were treating the *Arabian* differently than every other incoming vessel, and he requested that the ship and her cargo be released.¹⁸⁷

¹⁸⁵ Letter Whitting to Seddon, 18 June 1863, NRG 109, WD W 386, NA.

¹⁸⁶ Letter from Charles Soeb to Seddon, 18 June 1863, NRG 109, WD 270-2, NA.

¹⁸⁷ Ibid.

A week later, on 27 June, Secretary Seward received a letter from Consul Hawley, who had recently arrived in Washington, D.C. Hawley informed the Secretary that the *Arabian* had cleared the New York Custom House during the latter days of May without freight or passengers, and the New York City firm of Brett and Sons had facilitated her clearance.¹⁸⁸

On the following day, 28 June, Seddon received another letter concerning the *Arabian*, this one from a prominent Southern businessman, James M. Vance. Vance requested that the general interview one of the vessel's owners, Mr. Edward Kidder. Vance considered Kidder a loyal and honorable gentleman of business. Vance argued that the ship's seizure was an injustice to Mr. Kidder and the incident deserved a speedy investigation.¹⁸⁹

In a 29 June letter, Whitting informed Seddon of the results of his investigation. Whitting found that there was "unusual certainty of alien interest" in the vessel, but there were difficulties in getting sufficient proof of such interest.¹⁹⁰ The Southern owners of the vessel had already been in contact with the British owners Sawyer and Menendez in Nassau, and the general thought they would make it difficult for any detective sent there to gain further information.

Whitting learned that former Wilmington resident Charles Robinson, who had left North Carolina after the outbreak of the war, had brought the ship to New York via the

¹⁸⁸ From a correspondence with historian Erik Heyl concerning the blockade running activities of the *Arabian* to fellow historian Marcus Price. Courtesy of the Institute for Great Lakes Research.

¹⁸⁹ Letter from J.M. Vance to Seddon, 28 June 1863, NRG 109, VP 373, NA.

¹⁹⁰ Letter Whitting to Seddon, 29 June 1863, NRG 109, WD WD395, NA.

St. Lawrence River. Robinson had then taken the *Arabian* to Boston where he secured \$41,000, but the general did not know either the source or the purpose of the money. In addition, Robinson had had the ship's boilers cleaned while in Boston.

The great difficulty, wrote General Whitting, would be in proving whether Robinson, or any other enemies of the Confederacy, still had an interest in the vessel when it arrived in Wilmington. In conclusion, the general thought that the permanent seizure of the vessel would only cause many innocent parties to suffer.¹⁹¹ Whitting proposed that the consignors of the *Arabian* submit to a cash bond, which they would forfeit if there arose any evidence of enemy involvement in the ship. Whitting would agree to release the vessel if the consignors agreed. In fact, the general had already explained his idea of the consignors, and they had quickly concurred with the plan. On 7 July, Whitting received approval from Secretary Seddon for the bond. Nevertheless, the Secretary wanted it stressed that the owners and crew of the vessel were to strictly observe the law and uphold the peace.¹⁹²

Even with the issuance of the bond, the investigation into the *Arabian's* ownership continued. On 10 July, Assistant Secretary of War James A. Campbell contacted the military commander of Richmond, John H. Winder, and repeated that the "government does not desire to detain the crew of the *Arabian* with any view of inflicting punishment."¹⁹³ Campbell told Winder the crew was very important in libeling the vessel, and Winder was not to let them go until the court proceedings in North Carolina

¹⁹¹ Letter, Whitting to Seddon, 29 June 1863, NRG 109, WD WD395, NA.

¹⁹² Letter, Seddon to Whitting, 7 July 1863, NRG 109, WD 9-13-235, NA.

could be initiated and the crew formally interviewed. The general received final orders that the War Department “desires that they [the crew] be afforded all conveniences and privileges consistent with their safe keeping.”¹⁹⁴

On 11 July 1863, Assistant Secretary Campbell ordered George V. Strong, a district attorney at Goldsboro, North Carolina, to file libel in the case, and to begin interrogations of *Arabian*'s officers and crew. Campbell told Strong that if it proved convenient, the Commander of the Confederate Council could make the examinations. Campbell then sent a letter to General Whitting instructing the general to give all related information to Mr. Strong. Campbell would also transfer the crew back to Wilmington, if necessary, for Strong's convenience.¹⁹⁵

A man named S.S. Baxter took the actual depositions. This was done under Strong's orders, or by Confederate Council's instructions. Unfortunately, only eight interviews survive, all from the ship's crew, and none from the officers. Six of the eight crew members were born in Ireland. They were: Michael Carberry, James Irvine, Christopher Ennos, E. McGregor, William McGabe, and John McCaffrey. Carberry stated that he had signed on in New York to go to Havana, but the vessel instead traveled to Nassau and picked up Mr. Robinson. In addition, the ship took on a cargo of iron bars, copperas soda, boots, and shoes before heading to Wilmington.

¹⁹³ Letter, J.A. Campbell to General John H. Winder, 10 July 1863, NRG 109, WD 256, NA.

¹⁹⁴ Ibid.,

¹⁹⁵ Letter, Assistant Secretary Campbell to General Whitting, July 1863, NRG 109, WD W260, NA.

The other two crew members whose testimonies survive hailed from St. Johns, Newfoundland. One of the men, Thomas Fleherty, had signed on to be the ship's engineer. He stated that the ship was definitely English owned and traveled under English papers. Furthermore, Fleherty revealed that the ship steamed to Wilmington carrying government stores.

In his report on the crew, Baxter wrote that they were all British subjects, but he had some doubt as to whether the vessel was of British or American registry. He also noted that Fleherty was probably mistaken that the vessel was carrying government stores (in spite of the fact that this supported purser Soeb's earlier insistence). Baxter reported that none of the rest of the crew said the cargo was for the government. In addition, Baxter could find no record of an *Arabian* contract in the governmental records of the Confederate War Department.

Baxter's investigation was able to confirm that a long-time resident of Wilmington, Mr. Robinson, had brought the ship to the United States. Like the others, Baxter found it suspicious that Robinson had relocated to Nassau after the war began. Based on his examination, Baxter hypothesized that the vessel carried goods to the Confederacy, possibly in concert with citizens of the United States.

Baxter's recommendations were as follows: the witnesses should all be sent to the Attorney of the Confederate States for further questioning; the witnesses should remain in Raleigh; if the Attorney's questioning revealed enemy involvement, General Whitting

should then take proper action against the vessel, its owners, and any others involved in the matter.¹⁹⁶

On 17 July, General Whitting received a final letter from Seddon concerning the *Arabian*. Seddon gave the general final discretion in the matter, and, unless the district attorney advised otherwise, Secretary Seddon was of the inclination to allow the vessel to continue. While no official record of action exists, the district attorney must have cleared the vessel of foreign involvement and approved its release. The next time the *Arabian* appears in the war records is on 17 July, when she cleared Wilmington, bound for Nassau.

Ample documentation exists detailing the *Arabian*'s first cargo brought into Wilmington, and it provides an interesting look at what the vessel's purser called the "necessities of life." The *Daily Journal*, a Wilmington newspaper, reported the list of the sale of the cargo from the *Arabian*:

Auction Sale

By Wilkes Morris, Auctioneers

Cargo Sale – Direct Importation

On Wednesday, July 15, 1863, commencing at 10 o'clock, A.M., I will sell at my Sales Rooms, No. 2 Granite Row, the entire cargo of

Br. – Steamship "ARABIAN"

Purchased expressly for this market, and comprising
Articles of necessity, and which are now very
Scarce, and in demand, viz:

149 corooms Muscovado Sugar

18 barrels Crushed Sugar

15 tierces Molasses

100 boxes Star Candles

25 kits Mackerel

25 kits Salmon

¹⁹⁶ Letter, S.S. Baxter Report, 10 July 1863, NRG 109, WD W510, NA.

20 boxes Hull and Sons Brown Soap
 20 boxes Extract Logwood
 45 barrels Copperas
 10 kegs Bi.Carb.Soda [sic]
 20 barrels B.Carb.Soda [sic]
 5 bales Hoops
 18 barrels Epsom Salts
 12 cases Seidlitz Powders
 1 case Antimony
 1 flask Quicksilver
 1 case Phosphate
 4 cases Spt.Ether Sulph.Root [sic]
 Gross Ess. Peppermint, Gross Ess. Lemon [sic]
 10 bales Dundas Bagging
 2 cases Childrens [sic] Fancy Hose
 3 cases Gaiters
 4 cases Note, Letter, and Cap paper
 1 case Envelopes
 20 cases English matches
 30 pairs super English Hames
 3000 lbs. English Sole Leather
 1 case Brier Root Pipes
 10 casks Ale, pints
 10 casks Ale, quarts
 20 casks E.L. Pale do
 300 cases French Ale, quarts
 105 cases Geneva Gin, quarts
 10 $\frac{3}{4}$ pipes Holland Gin
 10 $\frac{1}{4}$ casks Cognac Brandy
 6 $\frac{1}{4}$ casks Cognac Brandy, *3d proof*
 35 $\frac{1}{4}$ casks St. Croix and Jam. Rum
 10 pipes St. Croix and Jam. Rum
 80 cases St. Jullien Claret
 50 cases Cognac Brandy
 10 casks Alcohol
 40 boxes English cheese
 30 kegs Nails
 300 sacks Turks Island Salt

July 7, 1863

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¹⁹⁷ *The Daily Journal*, 7 July 1863.

Wilkes Morris, auctioneer of the cargo, made a huge profit during the war by selling the cargoes of numerous blockade runners similar to the *Arabian*. Zebulon Vance, Governor of North Carolina, appointed Morris to be the state purchasing agent at Nassau, and at Nova Scotia.¹⁹⁸ Some have suggested that Morris may have contracted the *Arabian* to carry government stores, which would support the two crewmen's statements. There is no evidence to support this, and the cargo definitely does not have the appearance of a governmental cargo.

After this trip, documentation concerning the *Arabian* becomes increasingly vague, but the vessel maintained a hectic schedule for the next month. The ship continued to run the blockade, clearing Wilmington on 17 July 1863 and arriving in Nassau on 22 July.¹⁹⁹ The *Arabian* then returned to Wilmington, arriving in late July, and steamed back to Nassau, arriving on 4 August, most likely in ballast.²⁰⁰ The vessel left on 7 August, and arrived in Wilmington five days later.²⁰¹ Strangely enough, upon the vessel's August arrival, Whitting informed the War Department that the *Arabian* had once again appeared under what he described as being a "mysterious circumstance."²⁰² Unlike the vessel's initial arrival, there appears to have been no action taken against the ship or her owners.

¹⁹⁸ Wilkes Morris's Obituary, *Wilmington Star*, 12 February 1901.

¹⁹⁹ Shipping News Section in the *New York Herald*, 1 August 1863, and Wise, *Lifeline of the Confederacy*, 243.

²⁰⁰ Shipping News Section in the *New York Herald*, 29 August 1863.

²⁰¹ From the correspondence between Heyl and Price, courtesy of the IGLR.

²⁰² Letter, Whitting to Seddon, 12 August 1863, MRG 109. Catalog of War Department telegrams, NA.

On 9 September, Wilkes Morse sold a second *Arabian* cargo, which he combined with the cargoes of the blockade runners *General Beauregard*, *Flora*, and various items from the *Mary Ann* and *Margaret*. Wilkes touted the auction as being “the most important sales event ever held in the Confederacy.”²⁰³ This would be the last cargo the *Arabian* would bring in from Nassau.

During early September 1863, plans were being prepared for what would be the *Arabian*’s final attempt to run the Union blockade. Confederate War Department records show that on 7 September 1863, the *Arabian* received 15 tons of cotton, approximately 65 bales, for shipment to Nassau.²⁰⁴ Additional records show the *Arabian* cleared the port of Wilmington on 8 September.²⁰⁵ The steamer then dropped down the Cape Fear River to observe the blockading fleet and select the most opportune time to escape. The vessel was forced to lie at anchor off Smithville until 15 September when the captain decided conditions were favorable for running the blockade.

On that same day, the screw tug USS *Howquah*, under the command of Acting Master William G. Wright, waited just outside New Inlet off Fort Fisher. The vessel had arrived on station as part of the Union naval blockading force a mere two days earlier. At 4:15 P.M., the *Howquah* spotted an unidentified

²⁰³ *Wilmington Morning Star*, 27 August 1863.

²⁰⁴ War Department Receipts and Shipments of Cotton, NRG 109, VP B-28, NA. This is a relatively small amount of cargo for the vessel to carry. Research has not revealed why it was so small.

²⁰⁵ Vessel Abstracts for the Port of Wilmington July to September 1863, NRG 109, VP 9-37-153, NA

steamer to the south of her position. General quarters sounded at 5:20 P.M., and, at 5:55 P.M., Wright ordered the vessel's battery run out and the crew to ready the gunboat for pursuit. At 7:00 P.M. the unidentified steamer began crossing over the bar at the inlet. At 7:50 P.M., adhering to standard procedures, the captain of the *Howquah* had a blue light lit, launched a rocket, and fired a port side cannon to alert other Union ships in the area. After alerting neighboring vessels, the *Howquah* set off in pursuit of the steamer. By 8:00 P.M., the blockaders had lost sight of the vessel.²⁰⁶

A second blockader, the USS *Iron Age*, with Lieutenant Edward Stone in command, was on blockading station near the *Howquah* and had been alerted to the escaping steamer by the *Howquah*'s signals. Lieutenant Stone quickly moved his vessel in to investigate, and soon spotted the blockade runner. The gunboat fired three shots from the spar deck battery, causing the steamer to reverse course and run for the protection of Fort Fisher. The lookouts on the *Iron Age* then lost sight of the vessel quickly and Stone ordered his ship back to her night station.²⁰⁷

Passing *Howquah* on the way to her station, the officers of the *Iron Age* learned that the *Howquah* had raised the alarm, and lit up the night sky. Stone and Wright discussed the encounter and Stone informed Wright that the vessel was forced back by gunfire.²⁰⁸ The squadron's senior officer prevented a third vessel, the USS *Nippon*, from joining the pursuit after spotting the signals.

²⁰⁶ Deck Log USS *Howquah*, 15 September 1863, NRG 109, NA.

²⁰⁷ Stone identified the *Howquah*'s light as white, while the *Howquah*'s log states the light was blue—an easy mistake to make at night and from a distance at sea.

²⁰⁸ Deck Log USS *Iron Age*, 15 September 1863, NRG 109, NA.

With the coming of dawn, all three vessels spotted an unidentified steamer aground just off Fort Fisher. The *Nippon* steamed toward the vessel at 5:00 A.M. and fired a single ranging round at her. At 11:00 A.M., in better position, the *Nippon* renewed firing. The *Nippon* fired sixteen rounds from a 20-pounder pivot cannon at the grounded vessel, with two rounds hitting the steamer. The gunfire forced the crew of the stricken steamer to abandon ship, and they boarded the ship's boats and rowed ashore.²⁰⁹

For thirty minutes the guns at Fort Fisher attempted to drive away the *Nippon*, but she stayed just out of range. At 7:00 P.M., Niles Larsen of the *Nippon* was dispatched in a cutter with an armed crew to destroy the vessel by setting her afire. A second boat from the *Iron Age* was also dispatched to aid Larsen's efforts. However, building seas forced both boats to return to the safety of the larger vessels before anything could be accomplished. By 10:00 P.M., Larsen and both crews had returned to their respective vessels.²¹⁰

The next day, 17 September, all three ships reported squally, rainy weather that dramatically escalated throughout the day. The *Iron Age* had her windlass broken by the heavy seas, and reported using two anchors to maintain station.²¹¹ Early on the morning of 18 September, the weather cleared, and both the *Howquah* and the *Nippon* saw pieces of a steamer and bales of cotton floating in the water—debris they thought was from the

²⁰⁹ Deck Log, USS *Nippon*, 16 September 1863, NRG 109, NA.

²¹⁰ Ibid.

²¹¹ Deck Log, USS *Nippon*, 17 September 1863, NRG 109, NA.

grounded vessel. John B. Breck reported the stranded vessel as being a total wreck.²¹² Larsen was again dispatched in a ship's boat from the *Nippon* and recovered nine bales of cotton fifteen miles east of Fort Fisher.²¹³

Initially, the identity of the wrecked vessel was unknown to the commanders of the blockade, this changed within days of the loss. On 22 September the USS *Connecticut*, under the command of John J. Almy, captured the 246-ton English blockade runner *Juno*. After a two-hour chase, the Union vessel overtook the runner and stopped her crew from destroying most of the cargo and the ship's papers. The steamer, carrying 250 bales of cotton and tobacco products, had cleared Wilmington on the night of 21 September.²¹⁴

Most importantly the vessel carried a letter from the ship's purser to a friend that was supposed to be mailed upon the ship's arrival in Bermuda. The letter reported that the *Juno* had cleared Bermuda on Friday, 11 September, and had arrived at Wilmington on the 15th of that month at about midnight. While heading toward Wilmington, the blockade runner passed a grounded vessel, which was just off Fort Fisher. They were able to confirm the steamer's identity as the *Arabian*. The purser was informed that the vessel had attempted to run out on the 15th of September, but was driven back by fire

²¹² Samuel P. Lee Papers, Library of Congress, Washington, D.C.

²¹³ Richard Rush, ed., *Official Records of the Union and Confederate Navies in the War of the Rebellion*, Series 1, Vol. IX, (Washington, 1895), 211. This will be referred to hereafter as ORN.

²¹⁴ ORN, Series 1, Vol. IX, 212.

from Union blockaders. The ship's pilot had misjudged the bar, and the *Arabian* ran aground at about 8:00 P.M.²¹⁵

Further proof of the vessel's identity came through the Southern press. Acting Rear Admiral Samuel P. Lee forwarded a copy of the *Richmond Whig* of 29 September to Secretary of the Navy Gideon Wells. In it, an article read:

The Steamer *Arabian*, on going out at New Inlet Bar on night last week, was forced back by the blockaders, got aground, and has gone to pieces near Fort Fisher. She was loaded principally with cotton. Vessel and cargo a total loss, all of which falls on private parties.²¹⁶

The erratic career of the Canadian steamer *Arabian* finally ended. The unsuccessful vessel was never able to maintain a permanent route while on Lake Ontario, and sank twice while in Canadian waters. Bought by British merchants to act as a blockade runner in the American Civil War, the *Arabian*'s new career was almost over before it began. The complex actions needed to bring the vessel from Canada to Wilmington under the watchful eyes of wary United States governmental officials also prompted the suspicions of Confederate officials. The vessel was impounded and almost missed the chance to make any profit for her owners. After a short career as a blockade runner, the vessel sank a third and final time. Soon after the war, the fate of the *Arabian* and the location of her wreck became shrouded in mystery and her location was left to historians and archaeologists to determine more than 130 years later.

²¹⁵ Ibid.,

²¹⁶ Report of Samuel P. Lee to Secretary of Navy Gideon Wells, ORN, Series 1, Vol. IX, 221.

Chapter IV

History of Site NEI 0007 and Surrounding Region.

After running aground and going to pieces, the *Arabian* appeared infrequently in the historical record. During the war the wreck served as a navigational aid for the blockaders, enabling them to avoid the dangerous bar and maintain station (See Figure 14). The wreck site gained brief notoriety on 27 December 1873. A schooner called the *Mary Wheeler*, out of Beaufort, North Carolina, tried to pass over the bar at the New Inlet and struck something solid in three fathoms of water. The *Wilmington Star* confirmed that the object struck was the wreck of the blockade runner *Arabian*.²¹⁷ Upon hitting the wreck, the *Mary Wheeler's* captain immediately lowered the sails, and threw out the vessel's two anchors to keep the vessel from drifting. The crew managed to escape using the ship's boats. The *Mary Wheeler* was later discovered beached between Bogue and New River Inlets.

The location of the *Arabian* has appeared on several maps. Two official maps, completed soon after the war, note the location of the several wrecks offshore of Fort Fisher, but do not identify the *Arabian* by name. The first map was completed in 1865 and the second over a decade later in 1876 (Figure 15). While neither shows the *Arabian's* location, they did help later archaeologists locate the numerous wrecks off Fort Fisher.

Two more modern maps of the wrecks in the region were prepared well after the Civil War and neither shows the correct wreck location. The first completed in 1925 by

²¹⁷ *Wilmington Star*, 6 December 1873 and 6 January 1874.

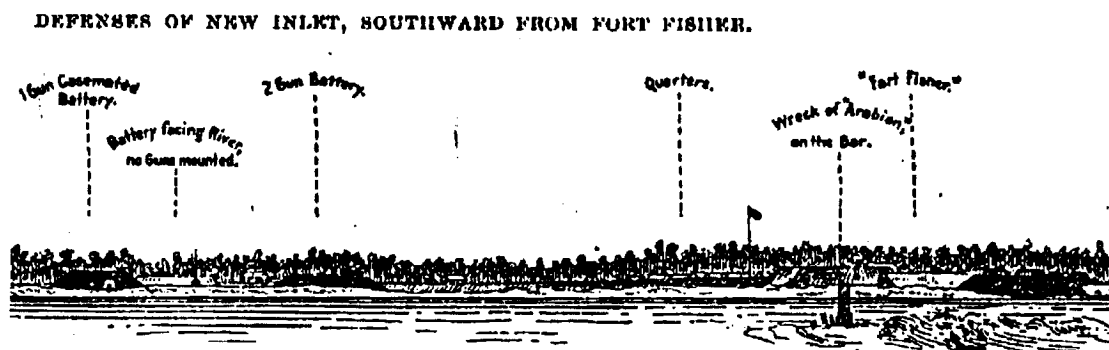


Figure 14. Defenses of New Inlet, showing the wreck of the Arabian. Published in *The Official Records of the Union and Confederate Navies in the War of the Rebellion*, Series 1, vol. 9.

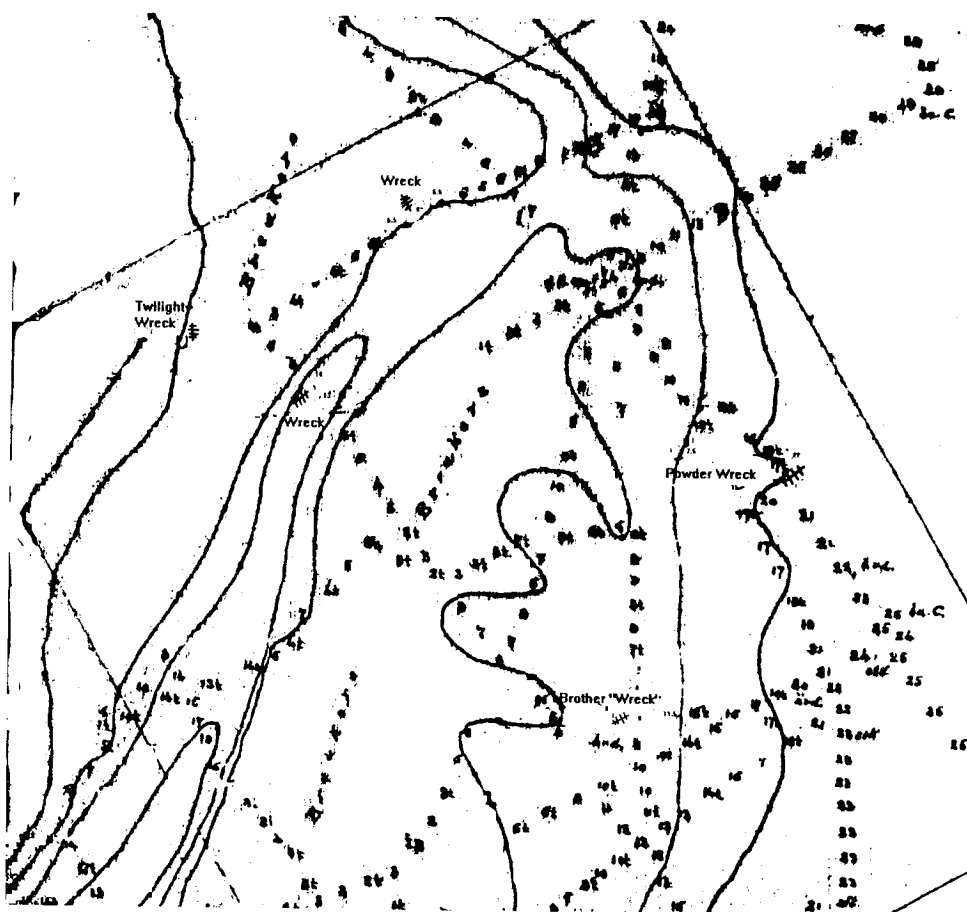


Figure 15. 1876 United States Coast Survey, courtesy North Carolina Underwater Archaeology Unit, Kure Beach, North Carolina. Some text "cleaned" to make more legible.

R. N. Sweet places the *Arabian's* remains well below Fort Fisher (Figure 16). The second map, in completed in 1958 by C.H. Foard, perpetuates the same error.

In spite of the number and variety of Civil War wrecks in the Cape Fear region post war salvage crews virtually ignored the area. The raising of a portion of the blockade runner *Venus'* hull was one of the few recorded salvage ventures.²¹⁸ The wrecks soon became artificial reefs, attracting marine life and becoming productive fishing spots. The sites became popular with swimmers and skin divers, and often yielded well-preserved artifacts. Local oral traditions helped preserve the names and locations of some wrecks. More often locals remembered the location of a wreck because of its recreational value, but its identity was usually unknown.

With the development and popularity of the Self-Contained Underwater Breathing Apparatus (SCUBA), the public rediscovered the Cape Fear wreck sites in the 1950's. In the late 1950's and early 1960's divers explored and collected artifacts from at least ten of the region's wrecks sites. Some divers even set up primitive backyard conservation facilities to clean and preserve the recovered artifacts.²¹⁹ Many of these artifacts found their way into the Blockade Runner Museum in Wilmington.²²⁰

The first large scale artifact salvage in the region occurred in the summer of 1962 when U.S. Navy divers began to recover artifacts from the blockade runner *Modern Greece*. The Navy, in conjunction with the North Carolina Division of Archives and History, systematically recovered more than 10,000 artifacts over two summers

²¹⁸ National Register, 6.

²¹⁹ National Register, 9.

²²⁰ The Museum is now closed and its collection is housed by the New Hanover County Museum, Wilmington, North Carolina.

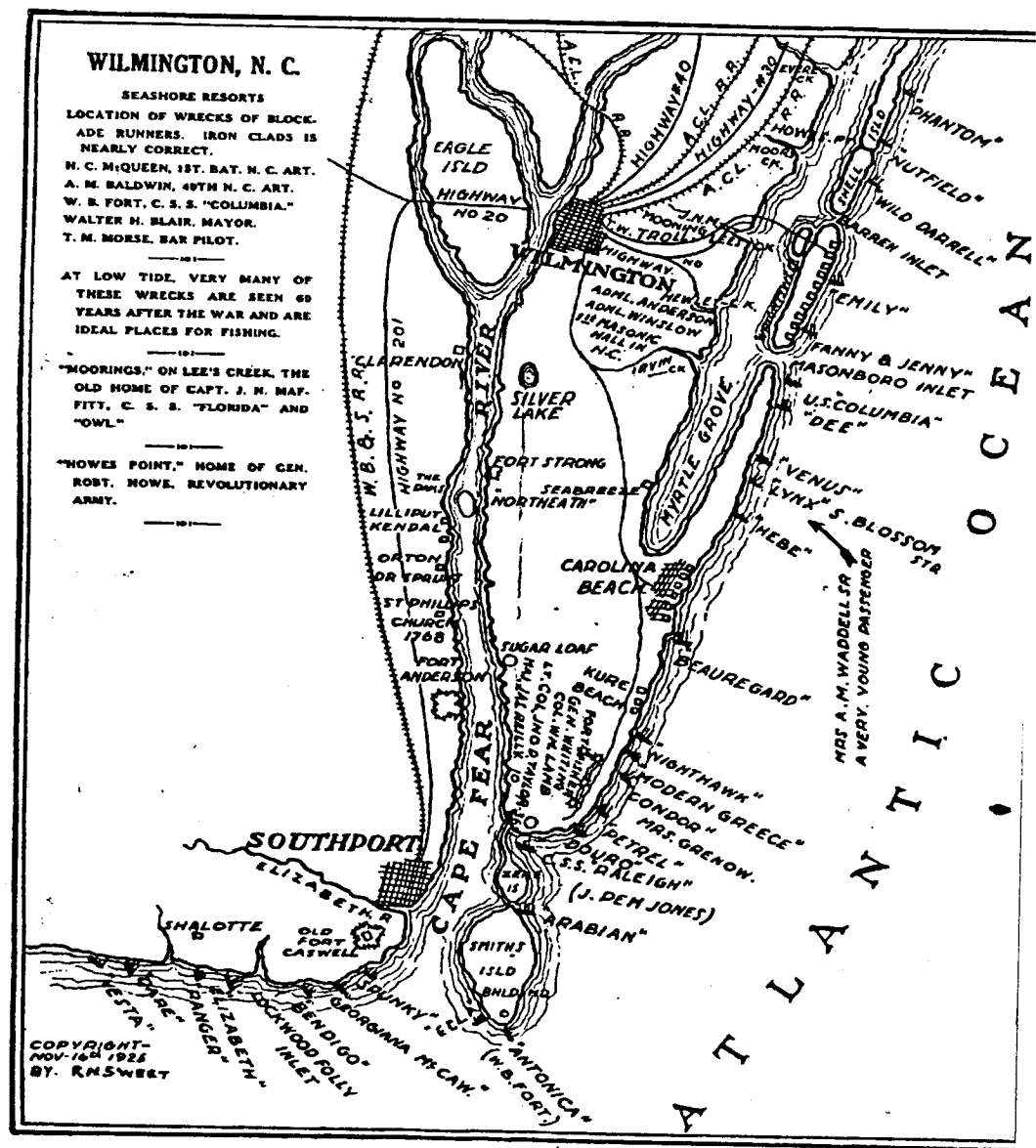


Figure 16. Map completed by R.N. Sweet, 1925. Courtesy of the Map Division, University of North Carolina, Chapel Hill.

summers.²²¹ Because of the unstable nature of many artifacts recovered, the North Carolina Division of Archives and History established the first laboratory dedicated to preservation in the country.²²² Many of the stabilized and preserved artifacts were placed in museums around the country.

²²¹ Gordon P. Watts, and Bright, Leslie, "Progress in Underwater Archaeology in North Carolina 1962-72, *The International Journal of Nautical Archaeology and Underwater Exploration* (1973) 2.1:132.

The work conducted on the *Modern Greece* heightened interest around the country in maritime history and artifact collection. In 1967, the North Carolina General Assembly passed the Underwater Archaeology Law, which established state ownership of all historical and archaeological materials submerged in state waters for ten years or longer.²²³ The state developed a permit system to allow the divers to collect artifacts from wreck sites, which state officials then documented and returned to collectors. In the 1960's and early 1970's the state issued more than 500 permits to divers.²²⁴ The permitted divers discovered no new sites, but they generated much new information about previously known sites.

In 1965, the state was forced to take commercial salvors to court to end the unauthorized collection of artifacts. Alarmed by the possible looting of sites by salvors, some of whom were reported to be using explosives, the North Carolina State Legislature enacted a new article. G.S. 121 Article 3, entitled "Salvage of Abandoned Shipwreck and other Archaeological Sites," allowed the North Carolina Division of Archives and History to assemble a professional staff and develop rules and regulations to manage historic sites.²²⁵ The North Carolina General Assembly appropriated funds in 1971 for the establishment of a professional staff in 1972, to handle the state's underwater archaeology program.²²⁶

In the mid-1980s a dispute between the State of North Carolina and the Army Corps of Engineers over the wreck of the *Bendigo* resulted in a revision of the program. The dispute, which was over how close dredging operations came to the wreck, brought to light how poorly documented the Civil War wreck sites were. State archaeologists

²²² National Register, 8.

²²³ Watts, Progress in Underwater Archaeology in NC, *IJNA*, 133.

²²⁴ National Register, 9.

²²⁵ Ibid., 9.

²²⁶ Watts, Progress, *IJNA*, 135.

consolidated the information for each site from all previous investigations, along with other related documentation, and insight gained by interviews of local divers, salvors, and pertinent state personnel. Any gaps in the information was quickly corrected by site investigation and related research.²²⁷

In 1985, sites in the region were nominated to, and accepted for inclusion in the National Register of Historic Places. The area was designated as the "Cape Fear Civil War Shipwreck District." The district boundaries extended from the Little River at the North Carolina/South Carolina border northward to New Topsail Inlet, North Carolina.²²⁸

The shipwreck district is divided into three units. The first unit is the known as the New Inlet unit, and includes the wrecks off Fort Fisher. The second unit, called the Carolina Beach Unit, includes the wrecks along the beach halfway between New Inlet and Masonboro Inlet. The third unit is the Lockwood's Folly unit, which includes wrecks in the Lockwood's Folly inlet.²²⁹ The *Arabian* site falls within the New Inlet Unit, and has the state designation 0007 NEI by the UAU.

In 1994, ECU Professor Gordon P. Watts, Jr. received a grant from the National Park Service (NPS), under the Battlefield Protection Plan, to study the numerous wreck sites offshore of Fort Fisher in the New Inlet Unit. Researchers and archaeologists believed that there were at least seven wreck sites immediately off Fort Fisher. Wrecks of the following ships were thought to be in the New Inlet Unit; four steam-propelled blockade runners, the *Arabian*, *Stormy Petrel*, *Modern Greece* and the *Condor*; and three Union steamships; the USS *Aster*, the USS *Flambeau*, and the USS *Louisiana*.²³⁰

²²⁷ National Register, 11.

²²⁸ Ibid., 12.

²²⁹ National Register, 18-22.

²³⁰ The *Condor* was the vessel that was transporting famed spy Rose Greenhowe, who drowned trying to escape the sinking vessel. The *Aster* was an Armed steam tug. The *Flambeau* was intentionally run aground shortly after the war. The *Louisiana* was loaded with gunpowder and detonated during the war in attempt to damage Fort Fisher.

The first time UAU personnel dove on site 0007NEI was on April 8 August 1976, in conjunction with a study done by an ECU graduate student Thomas P. Moorefield.²³¹ Moorefield was conducting thesis research on the geology of the Fort Fisher region. Divers failed to learn much about the site because of limited underwater visibility. In December 1980, UAU attempted another investigation, but had to abort because the buoy marking the site drifted off. A third trip in September 1984 again found the visibility too limited for anything significant to be accomplished. Finally on 12 April 1985, UAU members Richard Lawrence and Mark Wilde-Ramsing were able to take advantage of unusually clear diving conditions, and investigated several sites off Fort Fisher, including site 0007NEI. Divers found the wreck badly broken up, and the site covered by a widely scattered debris field. The archaeologists removed a copper pipe, brass bell, stoneware jug and brass spigot for analysis and preservation (see Figures 16-19). The pipe and spigot both appear to be from either the vessel's engine or boiler. The stoneware jug was commonly used during the period to hold liquids, probably for human consumption. The bell, Lawrence has speculated, might have come from the *Arabian's* engine room.

The divers were able to make several observations about the type of ship the wreck might have been. The remains of a walking beam and paddle wheel assembly indicated that the vessel was a side-wheel paddle steamship. A mass of metal plates contained within the site suggested that vessel could have been metal-hulled. The disorganized nature of the wreck did not allow investigators to discover the wreck's orientation to the beach.

The observations of Lawrence and Wilde-Ramsing were confirmed in June 1989, by Professor Watts, who found two paddle wheels and a large single cylinder engine. Professor Watts indicated that he thought the vessel might have had been wooden-hulled. Later documentary research determined the site most likely held the remains of the blockade runner *Arabian*, one of several side wheel steamships lost in the region.

²³¹ All information from the site comes from the UAU site files, NEI 0007 *Arabian*.

These preliminary investigations formed the basis for work conducted by the 1994 National Parks Service survey. For the first time a large number of archaeologists would have the equipment and the time to conduct a detailed examination of the site. The next chapter will detail the methodology used in the examination and the rationale behind its development.



Figure 17. Copper pipe.

Figure 18. Common stoneware jug .

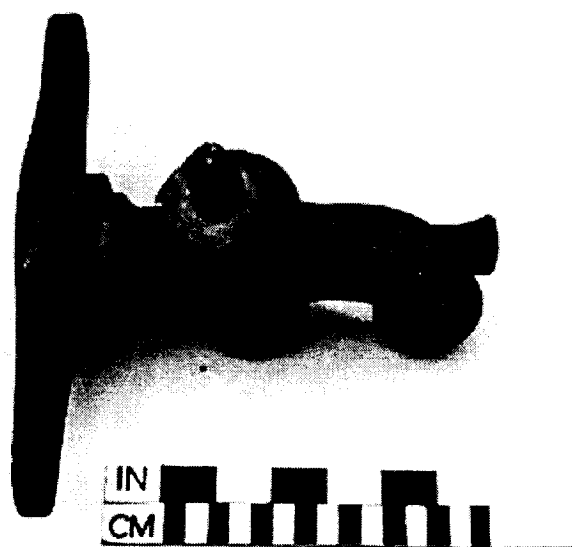


Figure 19. Spigot.

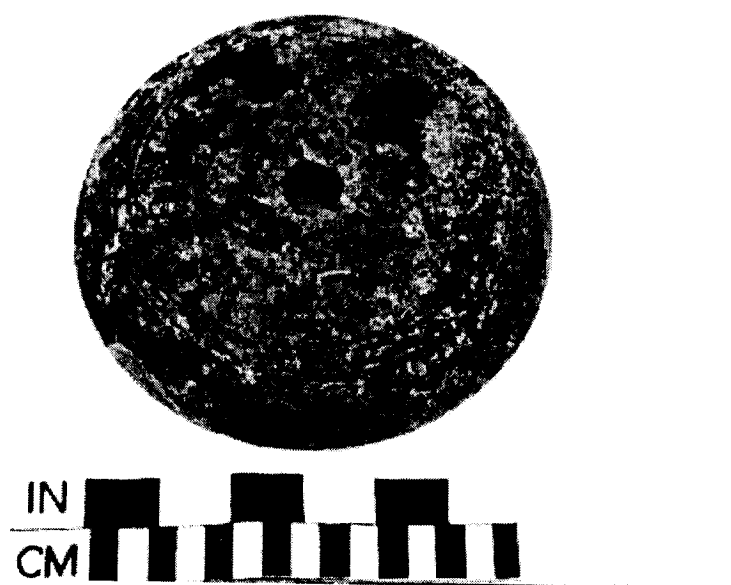


Figure 20. Bell.

Chapter V

Thesis Historical and Archaeological Methodology.

Historical research on the *Arabian* began in the fall of 1994 using a variety of primary and secondary sources. Sources utilized include extensive Union and Confederate documents, a variety of period newspapers, and a large volume of other material relevant to the investigation. The archives at Duke University, the Mariners' Museum, the Institute for Great Lakes Research, and the University of North Carolina at Chapel Hill are examples of repositories where research was conducted for this thesis. Several American and Canadian steamship historians were also consulted to obtain further in depth information about the vessel and its historical relevance.

The National Park Service Fort Fisher Project took place during the summers of 1994 and 1995. Both field seasons started in early July, with the 1994 season lasting one month and the 1995 season lasting nearly a month and a half. The project's goal was to accurately identify the wrecks offshore of Fort Fisher in the New Inlet Unit and document each as thoroughly as the limited time would allow. Project director Professor Watts was assisted by four UAU staff archaeologists, seven East Carolina Graduate students, and two consulting underwater archaeologists.

The initial task of the project was to establish the exact locations of the wreck sites and complete a site map of the region. UAU files gave an approximate location for each wreck, and project personnel used a transit station positioned on the beach adjacent to the wreck sites to guide a boat equipped with a magnetometer to each location. A few

passes with the magnetometer determined where the main body of the wreck lay. A buoy was dropped over the site and later tied to it by divers. The global positioning system was used to obtain an accurate position for the site.

Next a boat equipped with side-scan sonar surveyed the entire region, running a series of lanes at 100' intervals. A Motorola Falcon IV positioning system allowed the vessel to maintain accurate lane intervals. The survey area covered 9,000 yards by 4,200 yards, or nearly 400,000 square yards in total area. After determining a wreck's location a much tighter survey was made using both side scan sonar and magnetometer.

Eventually thirty-four separate targets were detected and investigated in the region. Project divers then determined each target to be either a wreck site and its components, or something not relevant to the project. For example, one target turned out to be a mass of pre-Civil War railroad iron. The wreck sites were then plotted on a map of the region (Figure 21). The figure has two boxes outlined within it. The larger box is the location of the initial survey, and the smaller box indicates where the survey was extended. The extension was added to ensure the thoroughness of the survey.

The remote sensing conducted on the *Arabian* site confirmed earlier observations by UAU archaeologists. The site contains a few large components and a scatter of smaller artifacts over a relatively large area. Major components such as the engine and paddle wheels are visible on segments of the sonar record (Figure 22).

On 16 July 1994 the project entered the next phase, the physical documentation of each wreck site. The *Arabian* site falls approximately halfway between the wreck closest

to the shore and the one furthest away, about 2000 feet from the shore. Water depth over the site is approximately 25 feet and water visibility was among the best of the wreck

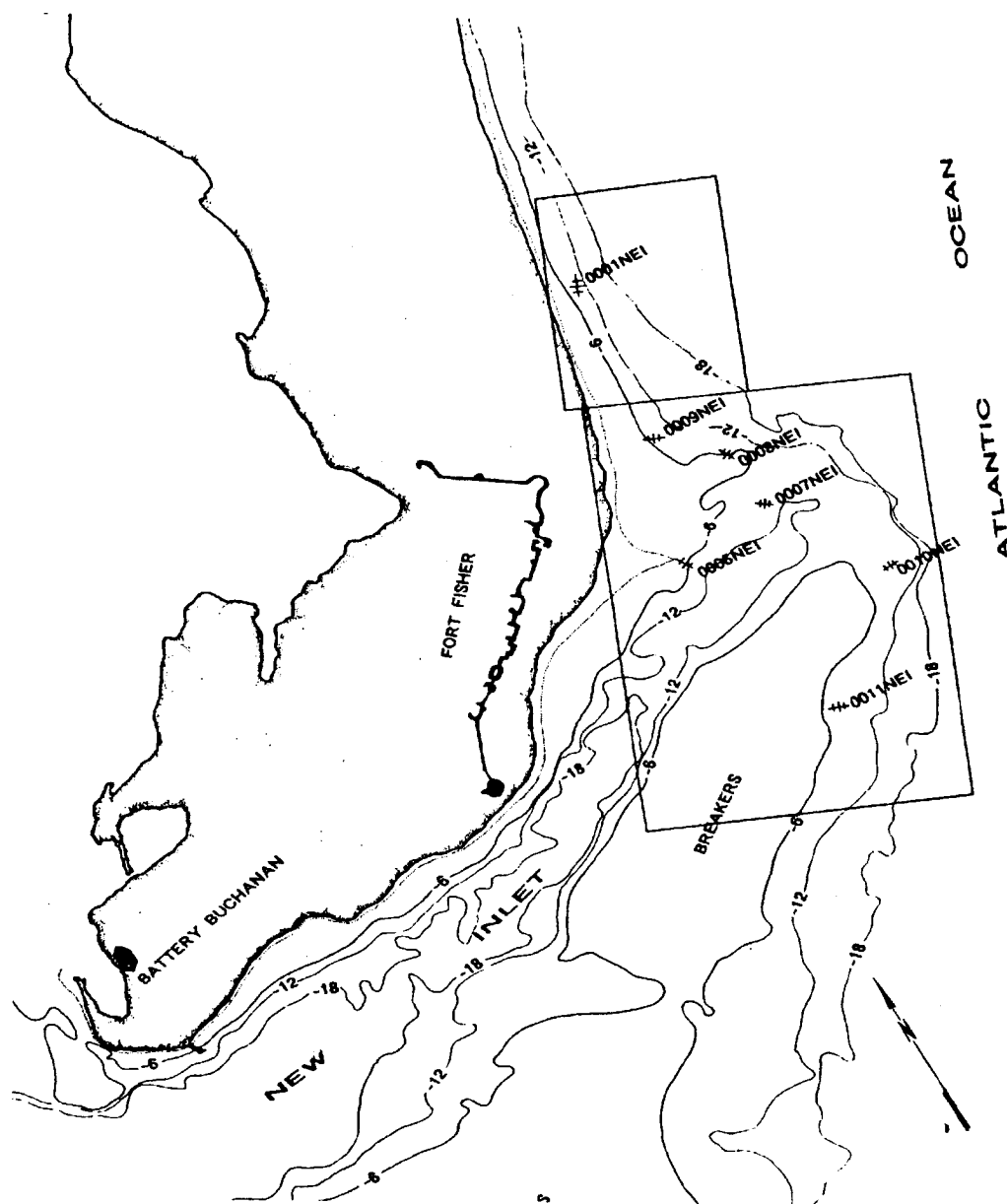


Figure 21. Project area, showing wrecks in relation to Civil War-era Fort Fisher.

Sites, from 5-15 feet.²³² The sea bottom in the site area included a crushed shell and silt mixture and included several large rock outcroppings.

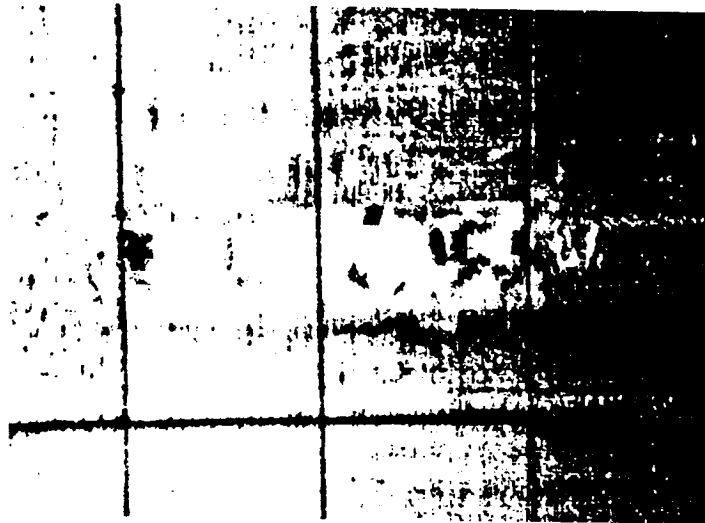


Figure 22. Sonar image from pass over site near the steam cylinder .

Two dive seasons were spent on the wreck site, and 14 divers helped document the site. In July 1994 twenty-one dives were completed on the site, totaling over eighteen hours underwater. The second dive season, beginning in June 1995, documentation efforts were intensified with forty-two dives completed, totaling over twenty-four hours underwater.

Divers began the documentation phase by running a guide rope that intersected each of the site's major components. The rope began at the two folding stock anchors located by the earlier UAU investigation, and ended at the most shoreward component, a

²³²The wreck is no longer visible during low tide. The entire region is subject to severe erosion

paddle wheel assembly. Next, divers descended in pairs to record the site using Plexiglas slates with a piece of mylar and a reel-type tape measure in English/standard units. Since the vessel was constructed using English measurements it follows that the wreck should be recorded them in the same manner. The *Arabian* site was dense enough to dictate documenting each diagnostic feature and some of the intervening components to give a sense of site complexity. The divers carefully measured and sketched the wreck components on mylar, later transferring it to a large site map. In addition to the drawings made by the archaeologists the site was both video and photographically recorded.

One aid to interpretation of the site was an examination of other wreck sites containing the remains of similar vessels. One of the more pertinent sites examined was that of the Canadian-built *Maple Leaf*. The *Maple Leaf* was built before the *Arabian* and constructed using similar techniques and materials. Both vessels served on Lake Ontario and the *Arabian* actually took over for the *Maple Leaf* on a route after debts forced the withdrawal of the ship. Unlike the *Arabian*, the *Maple Leaf* was lost in the service of the Union, sunk by a mine in the St. John's River, near Jacksonville, Florida. The wreck soon became covered by the river's sediment, resulting in the preservation of her hull and cargo. The *Maple Leaf* wreck site has been the subject of intense investigations; a good portion of the cargo has been recovered, and the site has been the subject of several ECU field schools. The detailed nature of the *Maple Leaf* examination proved an aid in the interpretation of the *Arabian*. The next chapter will disclose the results of the wreck site documentation and an initial interpretation of the data generated.

and the wreck site is now much deeper. The erosion is also threatening Fort Fisher.

Chapter VI

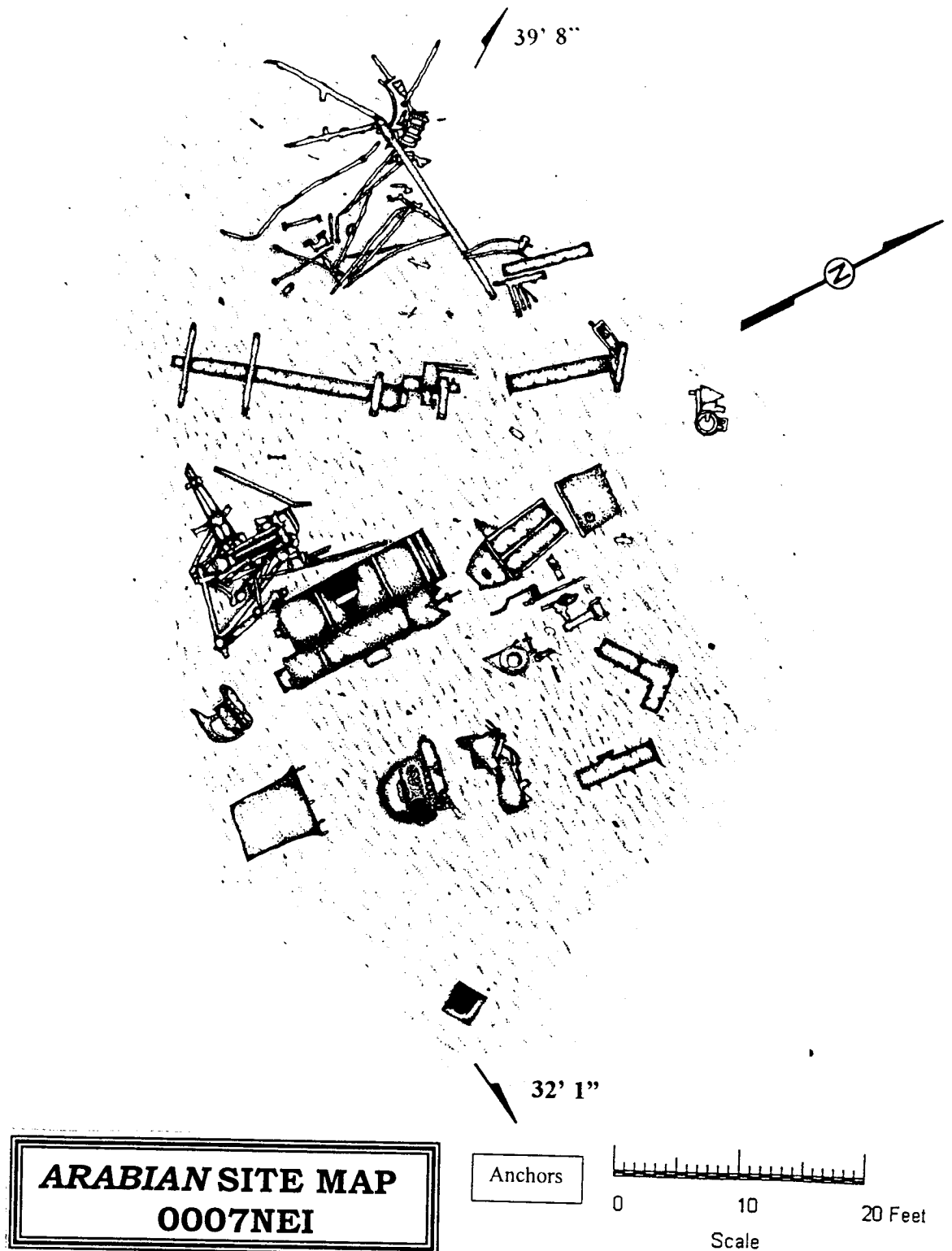
Archaeological Investigation Results.

The *Arabian* archaeological site covers an area roughly 182 feet long by 42 feet wide, and lies roughly perpendicular to the present shoreline (see map insert). To aid the presentation of the site it will be divided into fourteen features. In each of the features all diagnostic components will be identified and described. The first feature detailed is the one closest to shore, with each succeeding feature located further and further seaward. Figure 24 has key components labeled to help illustrate various features found within the site.

Feature 1

Feature 1 consists entirely of one of the ship's paddle wheels, with a small section of shaft still attached (Figures 25 and 26). Based on the overall orientation of the major wreck components, it appears that the paddle is from the port side. The component has become partially covered in silt, almost to the halfway point on one of the paddle flanges. Each flange is seven feet four inches across, and seven inches in width. The shaft is eight feet two inches in length, with the broken end partially buried in the sand and ragged to the touch. The other end is relatively smooth and appears to be the outer end of the shaft. Each flange appears solid, with a series of twelve spokes or ribs, two inches in thickness, radiating from the central spindle. The distance between the flanges is four feet eleven inches.

Port Paddle Wheel Assembly



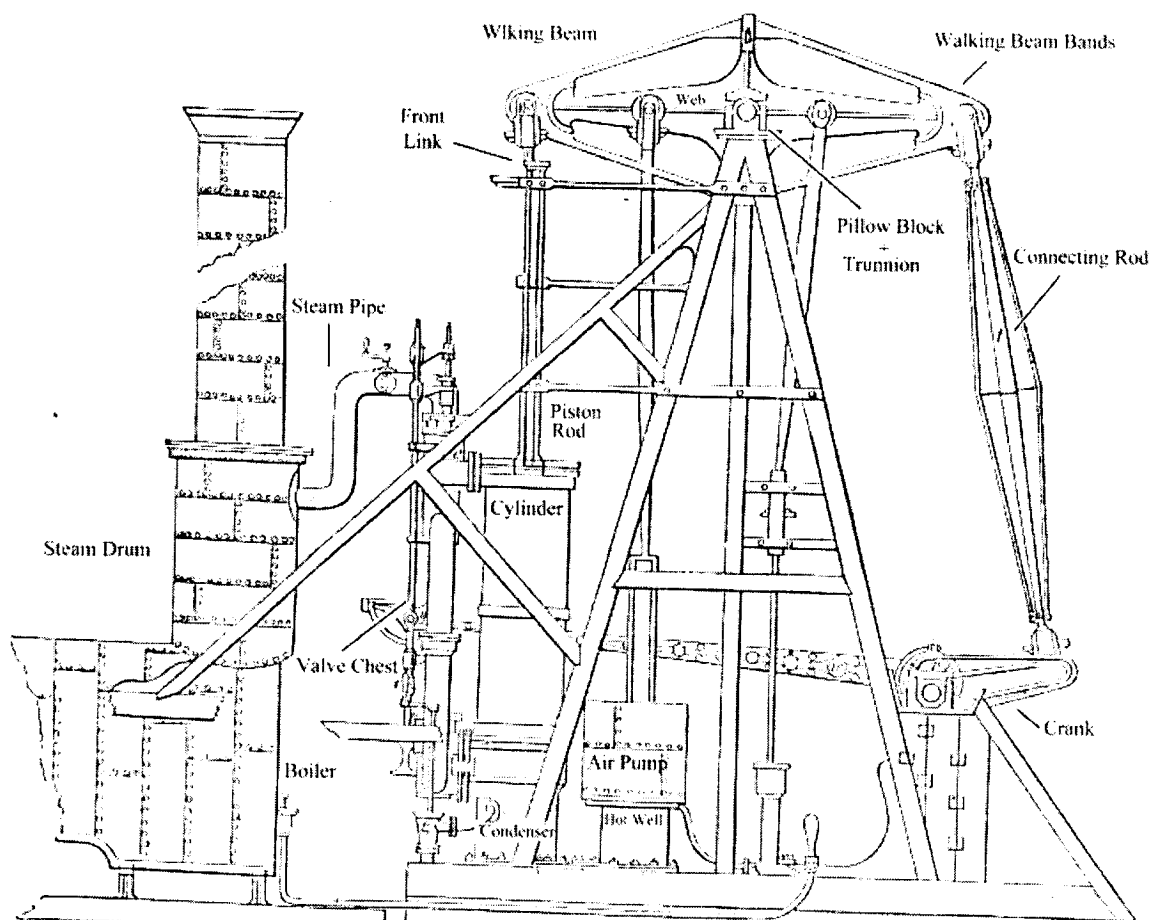


Figure 24. Walking beam engine with key components labeled.

Feature 2:

Feature 2 contains a variety of components, but the most recognizable pieces make up one half of the vessel's walking beam (Figure 27). Point "A" is the walking beams connecting rod, which measures eighteen feet long and is nine inches in diameter. Point "B", the lower band of the walking beam, is seven feet eight inches in length and six inches in width. The upper band, labeled "C", is eleven feet long and 6 inches in

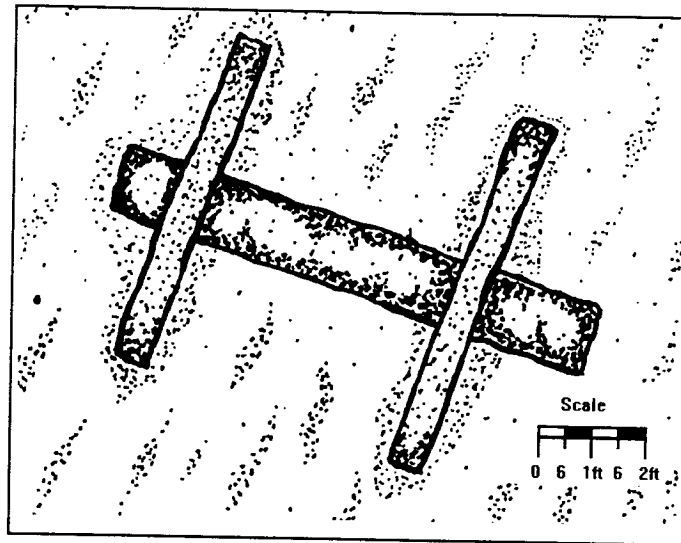


Figure 25. Feature 1, Port paddle wheel assembly.

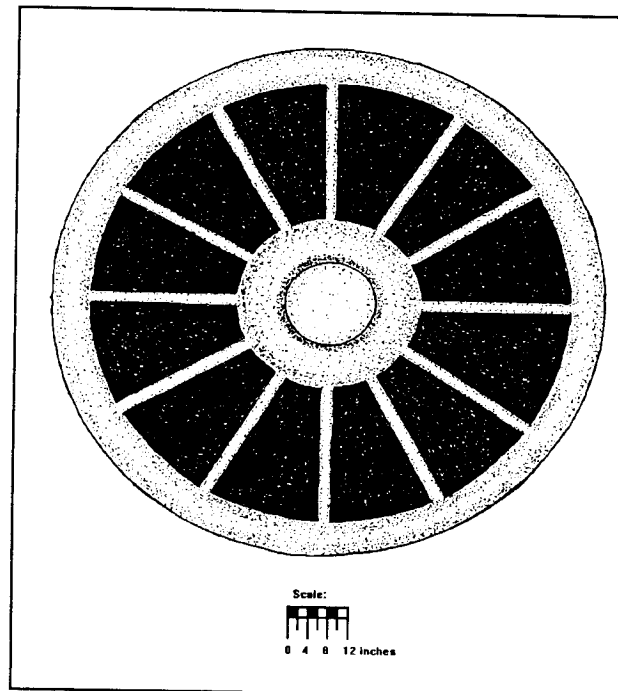


Figure 26. End view, port paddle wheel.

width.

A small projection on upper walking beam, 72 inches from the walking beam articulation point, marked "D" on the Figure, was a clamp that that fastened the bands

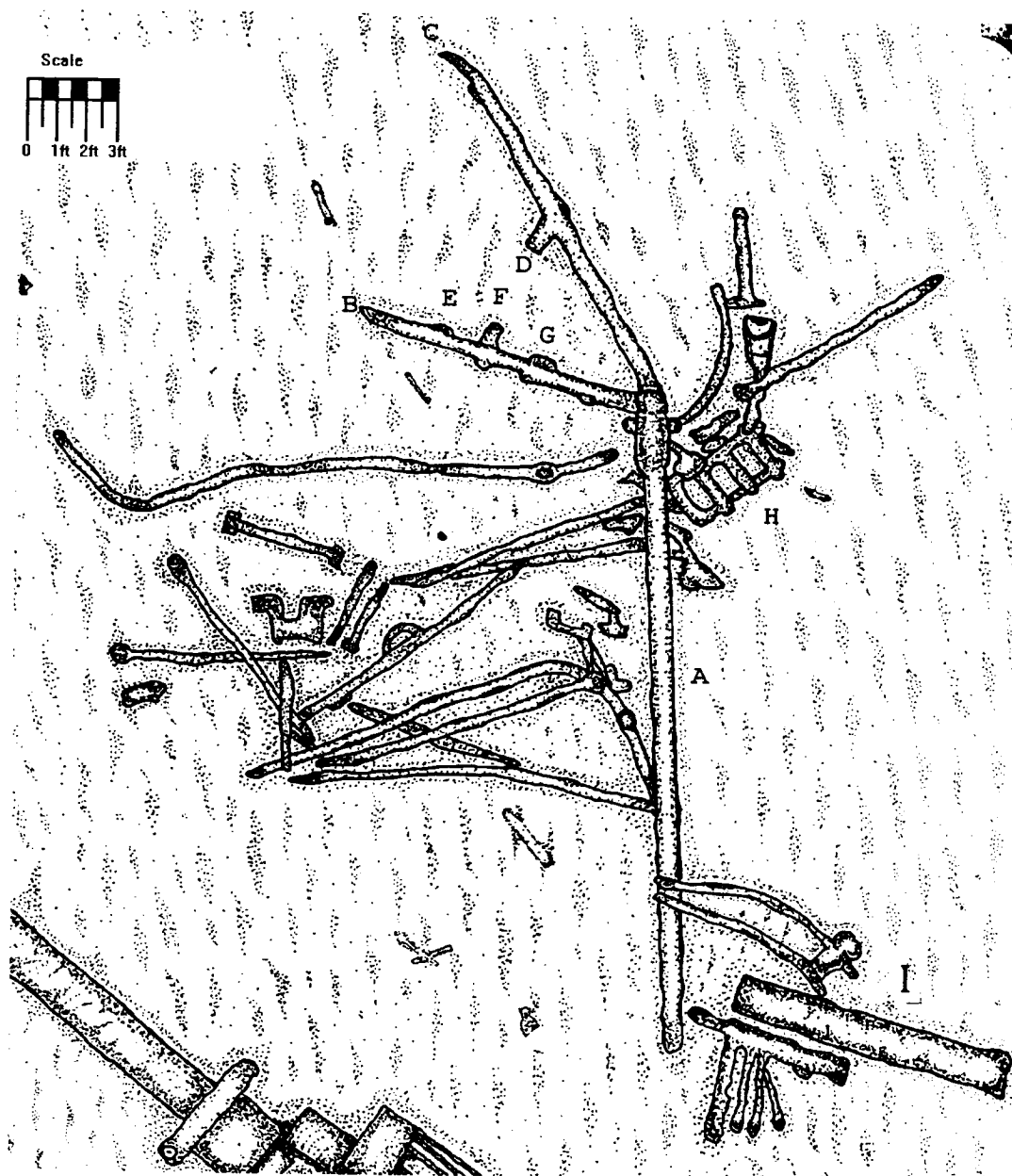


Figure 27. Feature 2, Walking beam portion, and miscellaneous artifacts.

and web together. The lower arm has three clamp points, one at 36 inches "G", one at 48 inches "F", and one at 54 inches "E".

There are several ideas as to the function of the components around the walking beam. The survey by Professor Watts in 1989 identified a number of the pieces as rods

and boiler tubes. Some of the rods appear to be tie rods used in the A-frame that supported the walking beam. George King, steam engineer for the Mystic Seaport Museum, has brought up an alternative explanation for some of the pieces around the walking beam. On the basis of their shape he suggested some of the pieces might have been associated with the paddle wheel articulation mechanism used in feathering paddle wheels. Feathering paddle wheels have a mechanism that pivots the paddles to enter the water at an oblique angle and then repositions them to propel the vessel. While possible, this is unlikely because feathering paddle wheels were not in common use in Canadian steamers at the time. The overall design of the *Arabian* appears to be a conservative one, and unlikely to include a feathering mechanism. Near the end of the connecting rod is a section of paddle wheel shaft, labeled "I" in the figure. It appears to be broken from the assembly found in Feature 1. It is more than twelve inches in diameter and eight feet two inches in length. Artifact "H" could be several things, but its shape suggests a ladder.

Feature 3

Feature 3 is the vessel's starboard paddle wheel assembly (Figure 28). The entire assembly measures twenty-one feet long and the shaft itself, point "B" on the figure is approximately one foot three inches in width, except for the end, which is one foot in diameter. Points "C" and "D" are flanges. Point "C" is thirteen feet from the proximal end of the shaft and point "D" is five feet two inches beyond point "C". The two wheels are seven feet six inches in diameter and six inches in thickness. This tapered end fit in a pillow block that supported the outer end of the shaft. Point "A" on figure is the ship's bell crank which attached to the centerline of the paddle wheel shaft and to the

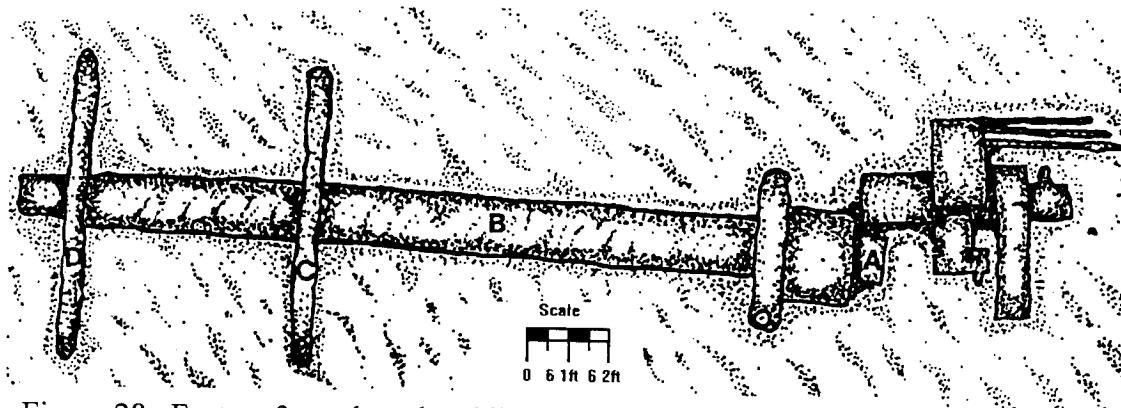


Figure 28. Feature 3, starboard paddle wheel assembly.

connecting rod. The connecting rod was originally attached to vessel's engine and rises above the shaft five feet six inches long inches and eight inches thick.

Feature 4

Feature 4 consists of one section of steam pipe with a flange at one end (A-Figure 29). The entire pipe measures eight feet ten inches long and one foot three inches wide. Component "B" is circular in shape and Richard Lawrence suggests that was the head of coal chute.

Feature 5

Feature 5 consists of a variety of pieces, with the most outstanding being the opposite end of the walking beam found in Feature 2. Section "A" in Figure 30 contains the front links "a" and "b" which connected to the engine's crosshead and the walking beam. Shaft "a", is one foot eleven inches long, shaft "b" is six feet ten inches long, and both are eight inches in diameter. Part of the walking beam bands are shown as "c" and "d" in the figure. Band piece "c" is six feet six inches long and five inches in width. Band piece "d" is eight feet nine inches long, and ranges from four to eight inches in

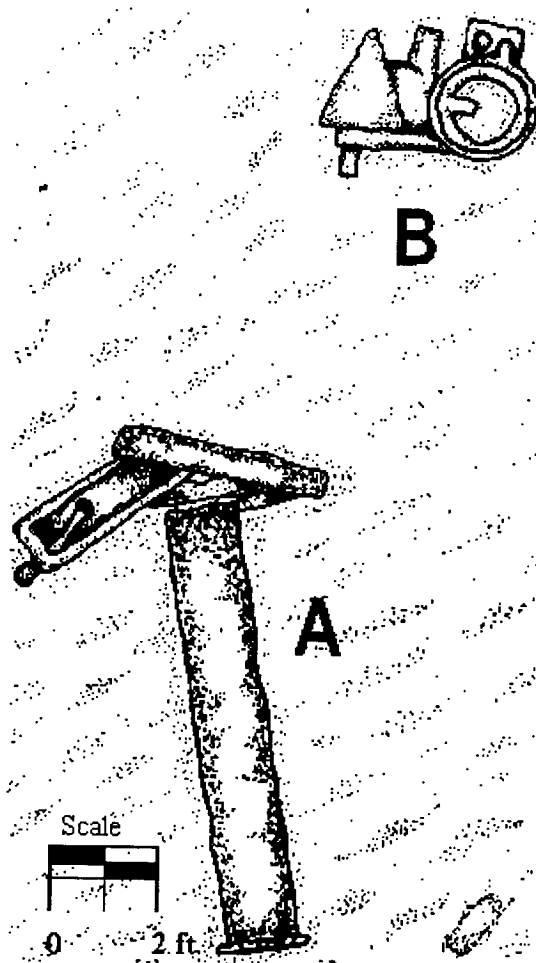


Figure 29. Feature 4, Steam pipe and coal chute head.

thickness. A clamp four feet ten inches from the junction of the bands is visible on band "c", it is seventeen inches long and four inches in thickness. Section "B" in the figure is the center or web of the walking beam, "e" in Figure 30. The clamps on the bands secured the web to the bands. The web, "e", is six feet six inches long and tapers from a width at its thickest point of five feet ten inches down to four inches at its distal end. The web had a central trunnion, which fit into a massive pillow block on the A-frame and

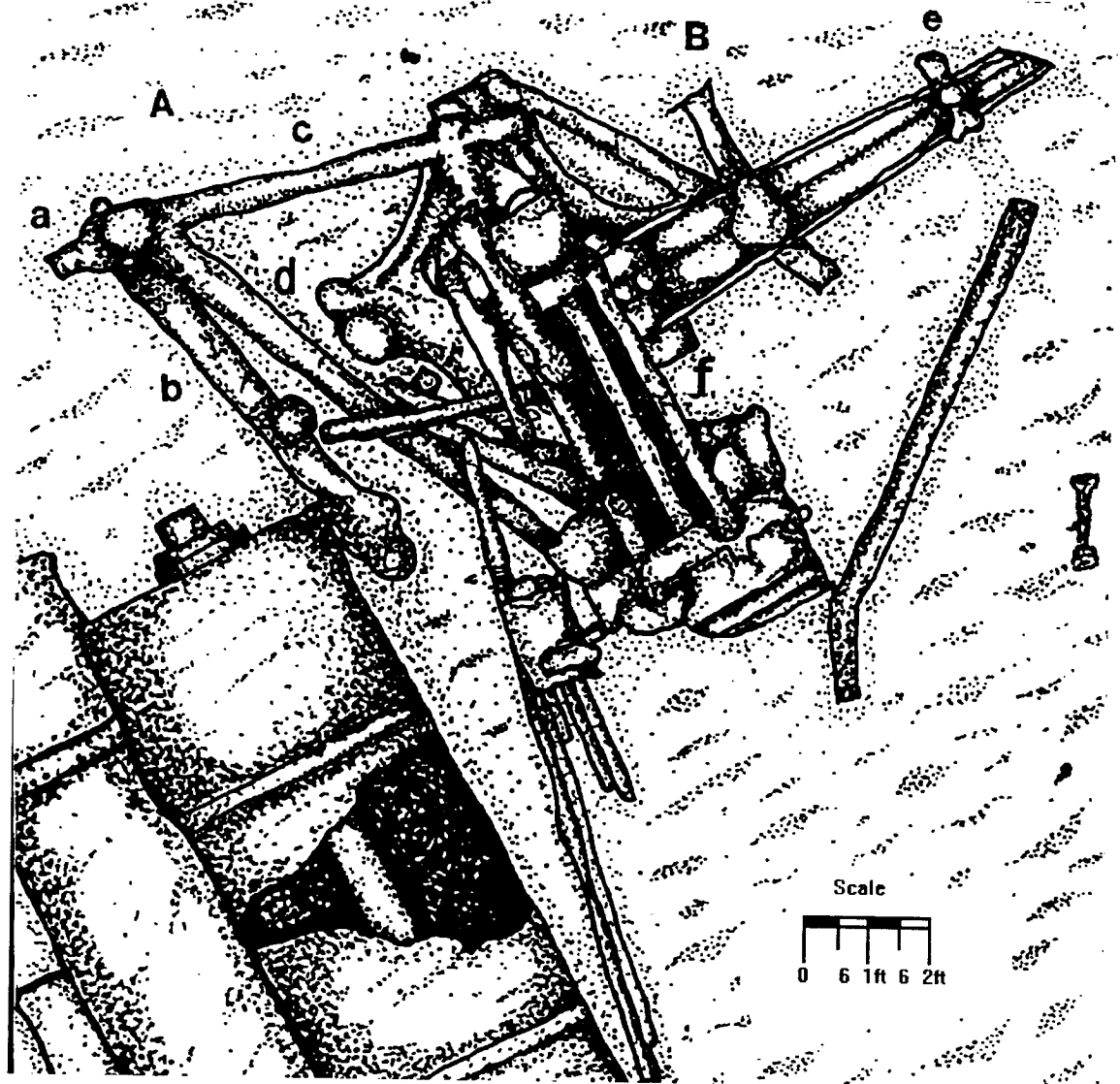


Figure 30. Feature 5, Walking beam components.

allowed the beam to pivot. Part "f", in my opinion, is likely the articulation point for the walking beam, and is six feet three inches long and one foot four inches wide. The free-

hand drawing in Figure 31 helps illustrate the articulation. The other components in feature 5 are currently unidentified.

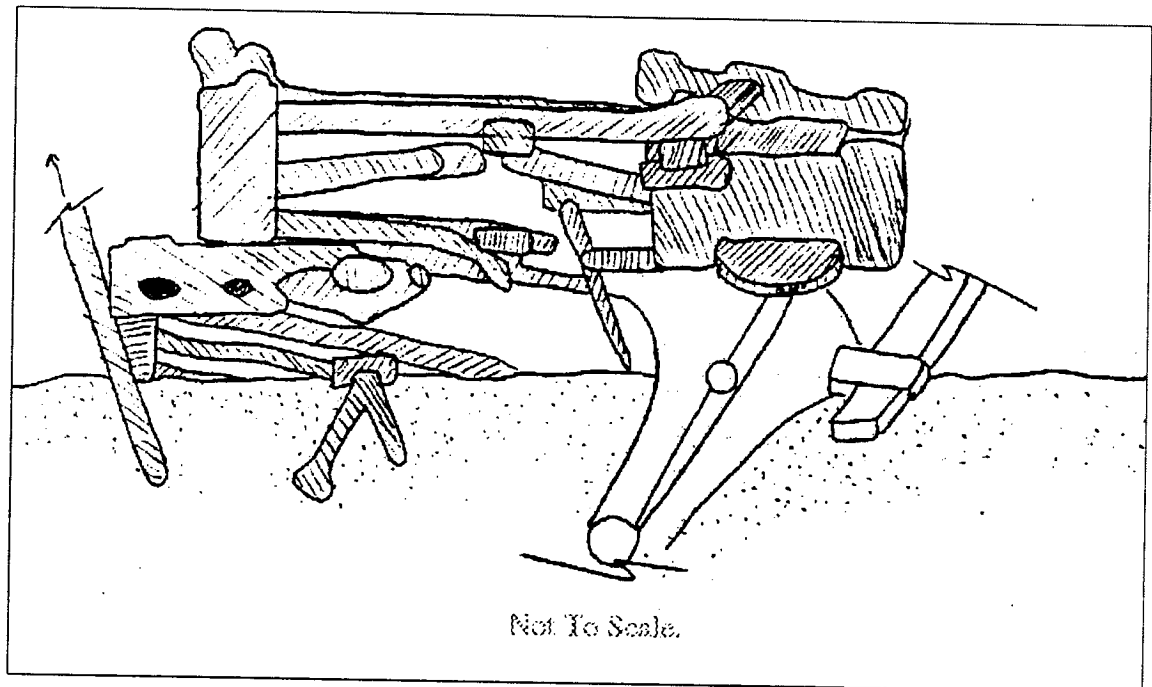


Figure 31. Walking beam components, side view.

Feature 6

This rather amorphous iron piece with double wall construction is likely a piece of the ship's boilers. It is two feet four inches in length and two feet in width (Figure 32).

Feature 7

Feature 7 consists of the vessel's single-cylinder steam engine (Figure 33). Section "A" of the figure is the engine's cylinder, measuring fourteen feet three inches long, approximately four feet eight inches at its widest point, and resting on its side partially buried on the sea floor. The cylinder itself appears to have a bore of approximately four feet. Point "a" is where the piston shaft emerges out of the cylinder head. A large crack is located four feet three inches from the cylinder head, and

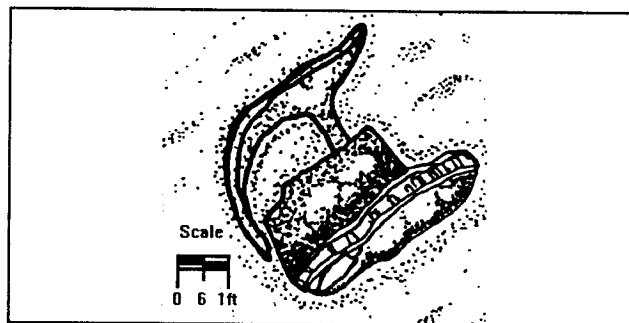


Figure 32. Feature 6, Boiler Fragment.

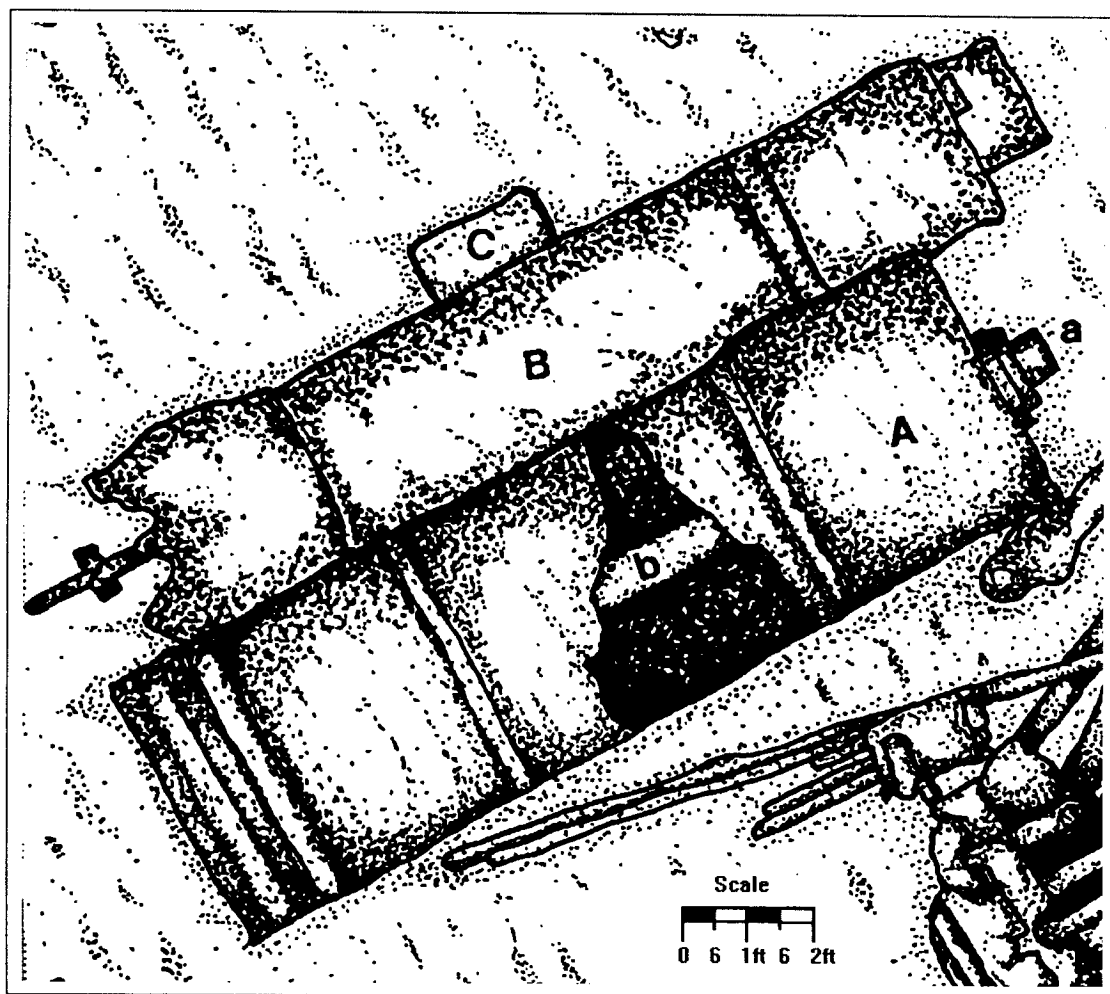


Figure 33. Feature 7, Steam cylinder and valve chest.

measures three feet eight inches at its widest point. Inside the cylinder the piston's rod is clearly visible (point "b"). Measuring the piston rod and the engine cylinder reveals that the engine had a stroke of approximately eleven feet. The engine's cylinder head has reinforcing spokes to lighten and strengthen it, approximately two inches in height, which radiate from the nineteen inch central hub. The condenser is not pictured in the drawing, but some portion may still be attached to the cylinder.

"B" is one of the engine's two valve chests. The end of the visible valve chest is broken off, revealing the remains of a poppet valve. The 1989 survey of the site by Professor Watts noted the presence of levers on the side of the valve chest. Those levers were probably the lift toes that were manipulated by the rocker arm to open and close the valves. The Fort Fisher Project survey did not make any note of the levers. "C" in the drawing is a beam attached to the side of the valve chest and engine is the highest point on the engine, emerging five feet nine inches above sea floor. This was possibly a bracket that supported the rockers or toes.

Feature 8

Feature 8 contains many artifacts, most as of yet unidentified. The largest object might be the engine's air pump, and hot well (Figure 34). Component "A" on the figure consists of a flat plate, six feet long, three feet four inches wide, with three, two inch wide ribs running down its length. The feature ends in a cone shape, four feet wide at its base and two feet wide at the cone's tip. Approximately one foot six inches from the cone's base and one foot four inches from the edge is a flanged pipe leading into the cone's interior, labeled "a" on the drawing. Eighteen inches beyond component "A" is a



Figure 35. Brass bilge strainer.

function, but it is probably one of the valves from the steam chest. It is fifteen inches long and seven inches wide. Refer to figure inset to see the valve's original appearance. Component "E" is a T-shaped section of steam pipe measuring three feet nine inches long. The cross of the "T" is one foot four inches long and the ends are thirteen inches in diameter. The pipe forming the stem of the "T" tapers to eight inches. Component "F" appears to be the "wheel" for a large valve.

Feature 9

Feature 9 consists of two large steam pipes that connected the boilers to the engine's valve chest (Figure 36). Pipe "A" is eighty one inches long, with a flange on one end measuring two feet five inches in diameter. The other end is broken off and is one foot seven inches in diameter. Forty one inches from the end is another flanged opening, one foot six inches in width. Pipe "B" is roughly T-shaped, with the head of the "T" four

four feet two inches in length, with a diameter of one foot seven inches. The stem of the "T" is six feet in length and one foot seven inches in width. Pipe "B" is probably the pipe that connected the two boilers and then fed the engine with a single pipe. The steam pipe in Figure 4 was probably associated with these two.

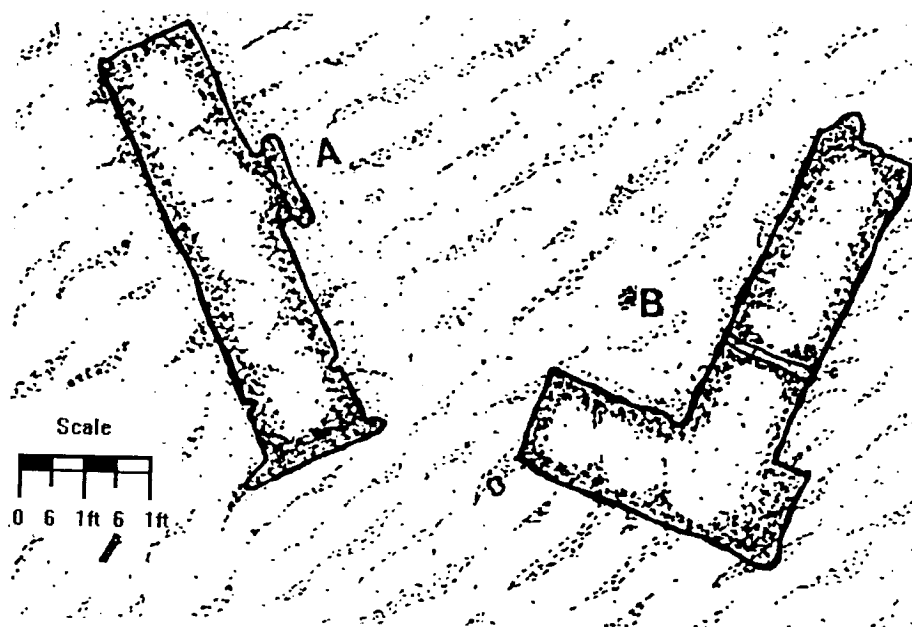


Figure 36. Feature 9, Steam pipes.

Feature 10

Feature 10 is a large amorphous mass of metal parts, mostly pipes and plates, nine feet long and four feet at its widest point (Figure 37). The components have fused together and it's very difficult to determine their original function. They may have been plates and tubes from the ship's boilers.

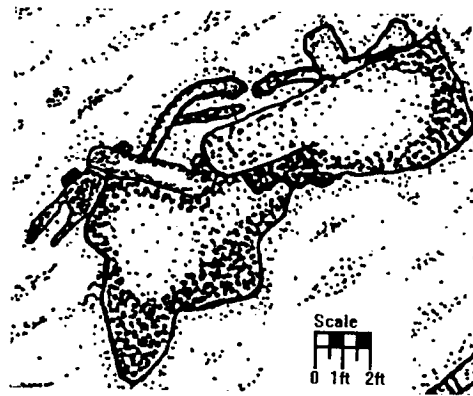


Figure 37. Feature 10, Plates and pipes.

Feature 11

Feature 11 contains a large artifact, with double wall construction visible (Figure 38). It is roughly oval in shape with a center section six feet in length, and a jumble of parts is attached to, or sitting next to the main piece. There is a small round aperture, labeled "a" on the drawing, at one end. The aperture is roughly one foot two inches in diameter, and leads down into the artifact. Two bricks were found inside the aperture, and two were found outside. The double wall construction, "b" on the figure, indicates this was possibly part of the ship's boiler or the ship's galley. The bricks may have been part of the boiler bed and the area in front of the boiler to insulate it from the wooden hull. The relative small size of the piece might indicate that it could have been part of a small steam boiler for a donkey engine used to power winches for cargo transfer.

Feature 12

The feature in Feature 12 (Figure 39) is roughly cylindrical with a series of studs protruding from the larger end. It is seven feet in width, and five feet nine inches in

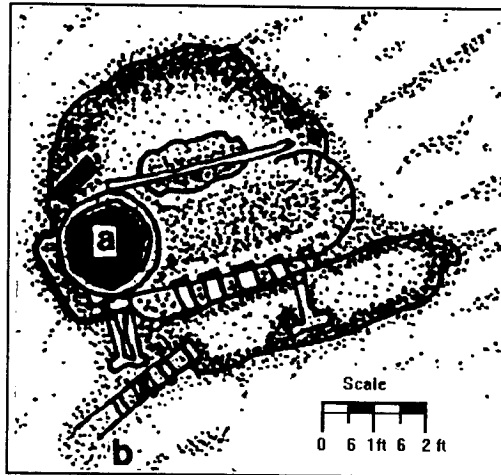


Figure 38. Feature 11, Boiler fragment.

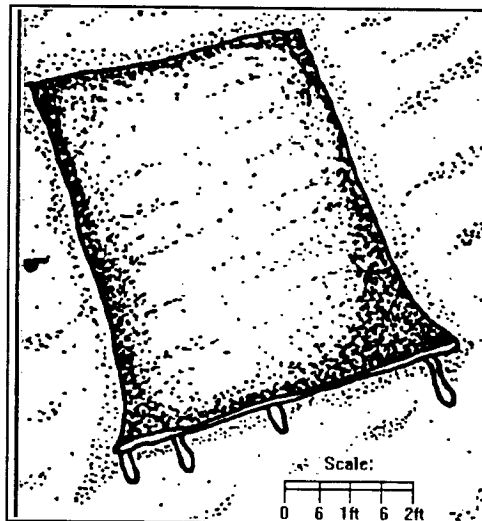


Figure 39. Feature 12, Steam drum.

length, with the four protruding studs seven to eleven inches in length. The piece is composed of plates riveted together and is likely part of the vessel's steam drum.

Feature 13

This component is a large, perforated concave piece, almost buried in silt, four feet five inches in length (Figure 40). It has a series of four holes, from eleven inches in diameter to one foot five inches in diameter. It appears to be a section of one of the ship's boilers.

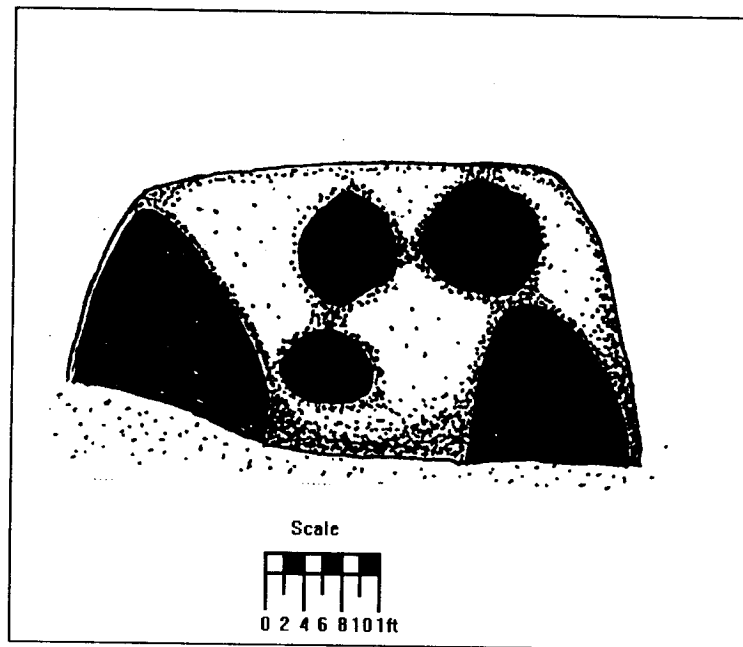


Figure 40. Feature 13, Boiler fragment.

Feature 14

Feature 14 is a pair of folding stock anchors, and they mark the most seaward portion of the wreck. Anchor "A" (Figure 41) rests with one fluke and part of the stock on the seabed. It is seven feet six inches in overall length, with a fluke to fluke measurement of four feet five inches, and a stock measurement of five feet ten inches. On anchor "B" the flukes are nearly buried in the seabed, along with one half of the stock.

The length of the exposed portion of the anchor measures 78 inches, and the links of a heavy chain are still visible in the eye of the anchor (Figure 42).

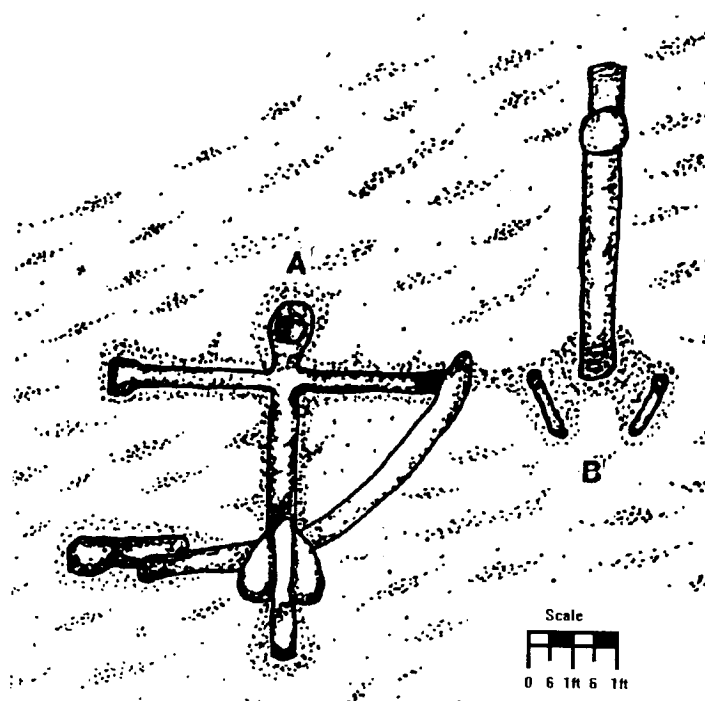


Figure 41. Feature 14, Anchors.

The site map illustrates the disarticulated nature of the site. Few components are located near where they would have been in the vessel's original configuration. Certain things do stand out-both those things present and those not found on the wreck site. No evidence of the hull was located during the investigation, although one diver did locate a rectangular piece of wood within the wreck site. Richard Lawrence suggested that the wood was not part of the hull, but simply jetsam brought in by the current. Given the size

of the boilers, it appears strange that so few fragments that can be attributed to them.

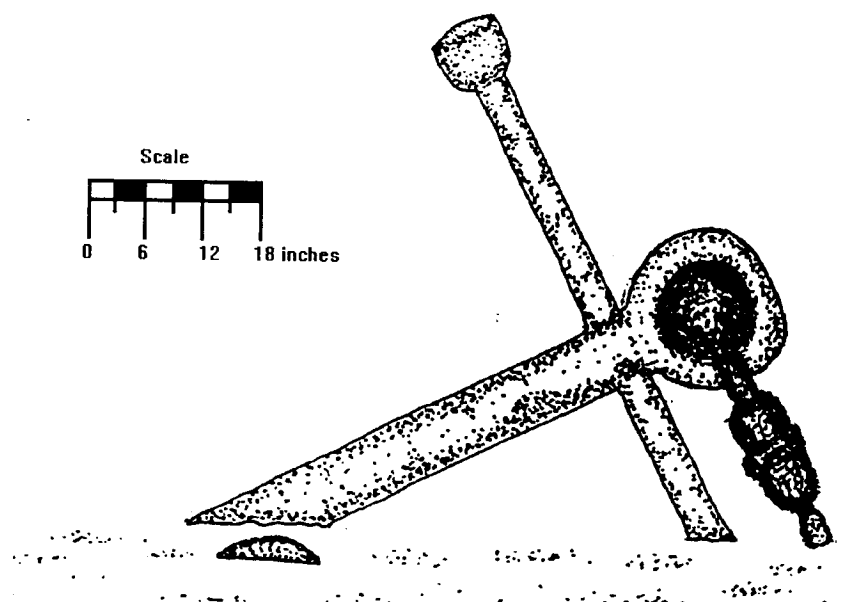


Figure 42. Anchor, side-view.

Figure 14 seems to show that one or more of the boilers was relatively intact not long after the vessel went aground. There are several pieces that could have been parts of boiler tubes, and one part of the wreck contains a mass of iron plates and tubes fused together, but these would only comprise a minor part of the vessel's two massive boilers. It is unlikely the boilers were salvaged during or after the war. The engine was much more valuable, and no record of salvage on the site has been located. In all, the lack of boiler and hull remains is probably a function of the violence of the storm that broke the ship apart coupled with strong erosion forces and destructive marine organisms.

When the blockaders lost contact with *Arabian* the vessel was heading back towards Wilmington and the protection of Fort Fisher. Based on the positions and orientations of the engine, fragmented paddle shafts, and anchors it appears that the

vessel was either facing seaward when the storm destroyed her, or the violence of the storm rotated the vessel around to its final position.

The anchors which would have been carried in the bow and on-site they are located closest to the shore. The anchors are also in very close proximity to one another, probably indicating that there was no time to deploy them. The boiler fragments, steam drum, and steam pipes are located next within the debris field. When the vessel was afloat the boilers would have been the first major piece of machinery encountered proceeding aft from the anchors.

Next, the starboard paddle wheel retains a position close to the engine as it would have in the original configuration. A portion of the port paddle wheel shaft lies opposite the starboard paddle wheel, and is orientated at a slight angle. The walking beam appears to have collapsed to the starboard side, and fallen on each side of the paddle wheel shaft. This makes sense because the walking beam would have been positioned above the paddle shafts and the engine on the intact vessel. The air pump and hot well are close to the engine, similar to where they would have been when the vessel was intact. Finally, the port paddle wheel assembly is far removed from where it would have been on the intact vessel, but is on the proper side of the site to support the orientation hypothesis.

Considering the violence of the storm that broke the vessel apart and the ongoing strong erosional forces in the region, the fragmented nature of the wreck site is expected. The site is comprised almost entirely of metal components. Vessel components of a less durable nature probably disappeared not long after the vessel went to pieces. Some other artifacts may still survive if they are buried deep in the silt/shell mixture on which the site

rests. While site 0007NEI is not extensively preserved, it does contain enough data to satisfy the main objective of this thesis, identification of the vessel, which will be presented in the next chapter.

Chapter VII

Conclusion

Historical and archaeological research conducted on the *Arabian* revealed a well-traveled vessel that was associated with a unique period in both Canadian steamship and American history. Steamboats like the *Arabian* pioneered steam trade boom on the Great Lakes in the 1850's. Due to the highly competitive and over-stocked nature of the Great Lakes steamship trade the *Arabian* never enjoyed a great deal of success. Over her seven-year career as a passenger and mail steamer, she changed routes seven different times. This was not unique; even good working vessels could drive their owner into financial disaster. In spite of engineering a lucrative deal with the government, owner Andrew Heron must have suffered financial hardships from both the vessel's lack of a permanent commercial route and her two sinkings.

After the *Arabian* was forced out of the competitive steam trade by newer steamships, Heron sold her and she had a profitable career running supplies through the dangerous gauntlet of Union blockade vessels. She brought a variety of vital cargos to a desperate Confederacy. After making three successful runs the odds finally caught up and the *Arabian* ran aground after pursuit by Union forces. Due to the probable low purchase price the owners paid for the vessel, and because extensive modifications were unnecessary for her new role, the *Arabian* probably generated a profit for her owners.

Documentary research on the *Arabian* has uncovered information for this thesis never before integrated with the archaeological record. The research adds further depth

to the historical record concerning trade on the Great Lakes. A great deal of data was collected on the *Arabian's* Canadian days, including many valuable newspaper descriptions, illustrations of the vessel and personal observations from an individual who traveled on board. Concerning the vessel's career as a blockade runner, new insight has been gained that should add to the body of knowledge available for the American Civil War. At alternating points during the war both sides regarded the vessel with suspicion. Initially, subtle subterfuge was employed to get the *Arabian* to the United States, which was purchased with the intent of converting her into a blockade runner, by or in conjunction with Southern patriots. Her arrival in the United States left officials suspicious, but using a New York company as a front, and carrying an American crew, the vessel was allowed to travel from New York, ostensibly to Havana. The *Arabian* never arrived in Havana, instead arriving in Nassau, registered then to a British citizen.

However, the same subterfuge that allowed the *Arabian* to escape Union suspicions quickly earned the distrust of Confederate officials. After picking up a cargo in Nassau and heading to Wilmington, the Confederates seized the vessel and imprisoned her crew. This was in spite of the *Arabian* being purchased by a former southerner and a prominent Southern businessman being a partial owner. This illustrates the atmosphere of suspicion and paranoia against possible Union spies that pervaded the Confederate government at the time. The entire procedure prompted Confederate General Whitting to call the arrival of the *Arabian* in Wilmington "The most impudent procedure in the history of blockade running."

The two recorded cargoes brought by the *Arabian* to Wilmington also provide insight into what was needed in the port, or most likely what supplies would bring the most profit. The *Arabian's* first cargo was made up of everyday necessities like food stuffs and medicines, but also some special items like fancy hose for children and peppermint essence. Most interesting was the large amount, and variety of, liquor brought in on that first cargo.

The importance of the archaeological investigation is many fold. First, combined with the documentary investigation it helped establish the identity of wreck site, which had previously been a matter of conjecture. Historically, there is no doubt that the *Arabian* was lost offshore of Fort Fisher, contemporary personal and official communications confirm this. Historic research has revealed key details about the steamship, such as her being wooden hulled, and being outfitted with a walking beam engine. The stroke of the engine was eleven feet and the cylinder bore was four feet. Archaeological investigation revealed that the wreck site 0007NEI had a walking beam engine and was wooden hulled. A measurement of the steam cylinder on the site revealed that the engine had an eleven-foot stroke and a four-foot cylinder bore. Only one other vessel besides the *Arabian* went down in the area that could fit the description; the USS *Flambeau*, which ran aground shortly after the war. The *Flambeau* did have a walking beam engine and a wooden hull, but in addition she had a unique engine, which archaeologists have located on another site. There is little doubt that site 0007NEI contains the remains of the *Arabian*.

The archaeological investigation has gathered much more information on the *Arabian* site than was previously known. The number of 1850s era Canadian steamships that plied the Great Lakes was once fairly large, but few of those vessels have been archaeologically documented. The generated data in this thesis will contribute to the small body of knowledge on those important vessels. The information is also important in both understanding and preserving the cultural heritage found on this site and the rest of the Fort Fisher region. Finally, the historical and archaeological data would be invaluable in interpreting the site as a dive park/preserve for the public entertainment and education about the unique nature and technologies employed in the Civil War.

The archaeological and historical data accumulated on the *Arabian* and site 0007NEI will not make any drastic changes in views on Canadian maritime history, blockade running, or marine archaeology. Instead, the information will add greater detail and depth to all three subjects. Upon completion of this thesis the information will be added to the libraries of various institutions, like the Institute for Great Lakes Research, which rendered assistance with the research and requested a copy. Further personal research will be conducted on the vessel to find key items that are missing from the vessel's history, like the ship's plans. Many items relating to the vessel have been extremely hard obtain, like passenger lists and papers relating to the company that built the vessel. Hopefully in the future these items will be available and researchers can integrate the new information to further clarify the vessel's history.

Several new avenues of research need to be explored, such as the impact of the rail system on the Great Lakes steamship trade. And a detailed examination of the

influence of British and American technological innovations on the development of the Canadian steamship industry. Considering the popularity of wreck diving, if the site becomes a dive park, the research and underwater investigation will have much far reaching popular impact and accomplish a good deal for public education.

Chapter VII

Recommendations

One of the more intriguing aspects of the 0007NEI is the absence of hull remains. Richard Lawrence has stated that the most likely place for remnants of the hull to be is under the engine. It might be informative to dredge out a small section under the engine to search for those remnants. Examination of a hull section would provide invaluable insight into the period's ship building techniques. Dredging in other parts of the site may also reveal hull components, or possibly more pieces of the boiler.

Due to site conditions and the surrounding erosional processes site stabilization is not an immediate necessity. Recovery of the bilge strainer is necessary, both Richard Lawrence and UAU conservator Leslie Bright, now retired, have noted that it would make a good illustrative artifact and should be recovered and stabilized. In addition, during the project only one of the bricks found in the boiler fragment was examined. It would be helpful to find a maker's mark on the bricks and if there are any company records pertaining to the vessel.

The *Arabian* site is clearly one of the better dive sites within the survey area, and would make an admirable public dive park/preserve. It has some of the best overall visibility of any of the regional wreck sites, and has enough easily-recognizable artifacts. The site could be treated like another UAU established dive park, the wreck of the *Huron*. A large buoy could be secured near the site to allow boats to tie up. Beach

diving on the wreck site would be taxing and hazardous, due to the site's distance offshore, and strong tides.

The buoy should be permanently secured, and anchored a short distance seaward from the actual site. A line from the buoy anchor would lead directly to the site. This strategy would serve many purposes. It would prevent visiting vessels from anchoring directly above the site, thereby avoiding anchors fouling in and possibly damaging the wreck. This would also help keep dangerous boat propellers from passing over the divers. For maximum safety, a limit of one visiting vessel at a time could be posted. In the interest of fairness the site could have a dive time limit of one hour if many divers wanted to visit it on the same day.

At the site itself, a steel cable would travel from the buoy and lead to each of the wreck's diagnostic features, guiding the divers step by step along the site. At the start of this self-guided tour would be placed a large, permanently mounted map of the wreck site containing information about the vessel's background and her configuration. At each diagnostic feature a permanent plaque would describe what the divers were seeing and the *Arabian's* original shape and configuration

While the establishment of the *Arabian* site as a dive park along the lines of the *Huron* model is a workable goal, the best solution would be to make the *Arabian* site part of a larger dive park, which would incorporate some or all of the Fort Fisher wreck sites. Many of the sites have unusual features, like the engine of the *Flambeau*, or have a substantial amount of the vessel remaining, like the *Condor*. The wrecks found farther out like the *Stormy Petrel* and the *Aster* have good visibility and would make enjoyable

dives. Divers would have an excellent opportunity to see a variety of wrecked vessels: metal hulled vessels, paddle wheel steamers, and screw steamers. One wreck site has even retained a cannon.

Mooring buoys could be placed on each wreck and a strict limit of one vessel per buoy maintained, allowing several diver vessels to use the park observing proper safety measures. The educational opportunities are impressive, and would compliment the mission of the Fort Fisher Museum. The overall cost would not be prohibitive, but a great number of man-hours would be required to prepare the site and develop educational graphics. Annual maintenance costs would be minimal. The dividends would outweigh initial monetary and material outlays.

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