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NAVAL STRATEGY DURING THE
AMERICAN CIVIL WAR

by

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Preface

This paper examines effectiveness of naval strategies of both the Union and Confederacy during the American Civil War. In addition, some of the technological innovations are examined, paying particular attention to their impact to the war and to the future of military affairs. I chose the topic for three primary reasons. First, I had a personal interest in the Civil War. Second I wanted to expand my knowledge of other services within the defense establishment. And finally, I sought to increase my personal understanding of military strategy.

I would like to express my gratitude to my advisor, Dr. Howard M. Hensel, for the advice and assistance he has provided me during this project.

Abstract

The objective of the research project is to examine how the Union and Confederate naval strategies and new naval technologies affected the conduct of the American Civil War. With regard to the Union Navy's strategy, the effectiveness of the blockade, Western River Campaign, and amphibious operations were examined. Discussions on the Union blockade also touch on the effectiveness on Confederate blockade runners. The Confederate strategies of using privateers and commerce raiders are examined. Confederate coastal and river defenses are examined within the context of new technology, specifically with respect to ironclad ships and the use of mines, torpedoes, and submarines.

The paper shows how naval strategy did play a major role in the outcome of the Civil War. Although it cannot be said that naval strategies were singularly decisive, they certainly were vitally important and often overlooked in history books.

Chapter 1

Union Naval Strategy

The conduct of the American Civil War, and the strategies involved, have been studied extensively. Volumes have been written on the subject. And although a considerable amount has been written on the Navy's role in the war, analysis has revolved primarily around the Army's ground campaigns and the Navy's role is often overlooked. In fact, a major strategic problem for the Union was to determine how to employ its naval superiority against a continental army. Naval experiences during the Revolutionary War and War of 1812, consisting of defensive tasks of commerce raiding and coastal protection, did not prepare the Union Navy for a role as an invader.

This paper will examine the contribution of the navy to the Union victory in the Civil War. Specifically, it will examine three major areas of strategy: Union Naval strategy, Confederate Naval strategy, and naval technological developments during the Civil War.

This chapter will examine three major areas of Union Naval strategy: the effectiveness of the Union naval blockade from the Chesapeake Bay to the Rio Grande River; the effectiveness and lessons learned from joint Army and Navy operations, particularly on the Atlantic Seaboard; and the Navy's contribution in the Western Theater, primarily on the Tennessee, Cumberland, and Mississippi Rivers.

Union Naval Blockade

On 19 April 1861, in response to Confederate President Davis's revival of the use of privateers, President Abraham Lincoln proclaimed a naval blockade of seceded ports and proclaimed that any vessel interfering with U.S. merchants would be treated under piracy laws.¹ The blockade was not as successful as originally hoped for as the South proved to be more resourceful than originally assumed, and it did not completely deprive the Confederacy of food, arms, and ammunition. Although blockade-runners primarily brought in commercial or "luxury" items, the Confederacy would have been without much needed arms, bullets, and ammunition without the blockade-runners. At least 400,000 rifles (over 6% of their modern arms), 3,000,000 pounds of lead, and two-thirds of the salt peter required for gunpowder were smuggled through the blockade.²

Several analysts indicate that the naval blockade was not critical in the economic defeat of the South. They instead tout the collapse of the rail system in the South as the prime factor in its defeat. In addition, some believe that a feeling of religious guilt triggered a collapse in morale in the South, causing ultimate defeat. Other researchers point out that the blockade was easily penetrated, that Confederate leaders were largely unconcerned about the economic effects and, the Confederates were much more resourceful in producing war materials than originally assumed. These arguments have been countered by other researchers who contend that, although the collapse of the rail system may have been a major reason for the defeat, the blockade starved the South of needed replacement rails, locomotives, and rolling stock. Also, the Union Army's major victories did not occur until the South was suffering from blockade induced shortages. U.S. Secretary of State, William Seward, pointed out that cotton prices were four times

greater in Europe than in New Orleans and wrote "...Judged by this test of results, I am satisfied that there was never a more effective blockade."³

The criticisms of the blockade seem to focus on the level of imports that still were shipped into the South. There may be some other major effects of the blockade that are overlooked such as the level of exports (and resulting reduction of purchasing power), disruption of intraregional movement of goods (especially fodder and meat), and the inability to import bulky materiel such as rail iron (contributing to deterioration of railroads and ability to support the war effort).

Throughout the war, a vast majority of attempts to run the blockade were successful (over 70%). However, the number of attempts declined dramatically (e.g. 3,579 in 1861 to 723 in 1864) as blockade-runners had to rely on specialized steam powered ships and the supply of ships that could attempt a run became restricted. The fact that over 2,700 round trips were successful between 1862 and 1865 seems impressive until compared with the fact that prior to that time, an average of 1,900 vessels annually sailed into New Orleans alone. In addition, new vessels used by blockade-runners (shallow draft, low silhouette, and higher speed) burned expensive smokeless coal, which contributed to the high cost of smuggled goods. Other factors contributing to the increased cost of carriage included the need to use less cargo-efficient vessels, inability to choose ports freely, longer turnaround times in port which were under blockade, and the need to transfer cargo to blockade-runners in Caribbean ports. This increased cost of carriage eroded the purchasing power of the Confederacy.⁴

Although the blockade did affect the level of imported goods into the South (discussed later), the effects on Southern exports of staples may be the most important

achievement. Exports of cotton to Europe, the most important Southern export, slipped from up to three million bales per year to 700,000 bales during the entire war.⁵ This shortfall in revenue to the Confederacy is striking. Southern revenues from exports (cotton, sugar, molasses, tobacco) out of New Orleans alone dropped from over \$185 million in 1859-1860 to a low of \$29.7 million in 1861-1862. During the war the South produced about six million bales of cotton (most of it stored until the war's end) and exported between 1.5 and 1.9 million bales (much of it across the lines with Yankees), or about one-ninth of pre-war volume. To make up for this loss of volume, Southerners would need to receive nine times pre-war prices to overcome the deficit.⁶

The revenue shortfall contributed to the lack of purchasing power, and Confederate governments had to wait for foreign-produced arms, munitions, and iron-plate for warships, as they attempted to scrape together adequate funding. And though sufficient war materials were imported to keep the troops supplied, higher shipping costs and losses to Union blockaders raised the cost to the Confederacy.

In addition to the blockade's effects on imports and exports, internal movement of goods was also disrupted. Coastwise trade was an important part of pre-war economy. The blockade made it impossible for Southerners to transfer produce from region to region using coasters. This caused the South to rely even more heavily on the rail system, which raised costs and did not allow these resources to be used to directly support the troops in the field. For example, prior to the war large quantities of Northern packed meat were shipped down the Mississippi River for consumption in New Orleans, or shipment to gulf ports and other river towns. And over 50,000 head of cattle were shipped through the Gulf each year to New Orleans from Texas and other Western

sources. Texas cattle shipments ceased almost immediately with the onset of the war, and without such Trans-Gulf shipments, Southerners were unable to make up for lost shipments of meat from the North.⁷

Grain production within the South was adequate to meet their needs. The Mississippi Valley was the main importing region for grain, while the Atlantic Seaboard states were the main producers. Most of the grain shipped along the Atlantic went by sailing vessels and much of the wheat received internally was shipped to Richmond by canal. Water transportation was the most efficient means of moving any bulky items over a long distance and water transportation was a large factor in the Southern economy. Again, an increased reliance was placed upon both the rail system and wagon transportation with the loss of the water transportation. And the rail system was already being taxed with increased demands for movement of goods in order to supply the new concentration of men and animals in the armies and in Richmond.⁸

Coupled with the increased demands on the railroads, the pre-war rail infrastructure provided a fragile foundation for the logistical system needed by the Confederacy. The original intent of many railroads was to ship cotton to port or navigable rivers, and the systems were sometimes incompatible. Different gauges, incomplete lines between cities, gaps in lines (particularly east-west), and dependence on Northern/foreign suppliers plagued the South. In addition, almost all lines were single-tracked, severely limiting ability to surge rail production. These deficiencies were not likely to be corrected during the war and the blockade would force the South to rely on domestically produced railroad supplies.⁹

Receipts dropped and the railroad companies were in financial difficulty from the start of the war. In addition, carrying capacity of the Southern railroads diminished as the war continued. This, coupled with the increased rail shipments to those ports still operating (e.g. Wilmington), tied up a significant portion of their limited rail capacity. Shipments of raw cotton into Wilmington South Carolina clogged inbound freight and hampered the ability to ship supplies from the deep South to armies in North Carolina and Virginia. Confederate military leaders complained of the diversion of rail traffic.¹⁰

Another effect of the blockade on the war effort was that the development of the Confederate Navy was severely limited. With the blockade of the mouth of the Mississippi River, New Orleans shipbuilders were forced to bring iron and machinery they needed from Virginia by rail and the poor system was inadequate for transporting these materials. In addition, Southern industry had a limited capacity to produce these products. For example, they could not manufacture boilers and engines for ironclad warships, nor could they roll iron sufficiently thick for plating the ships. Had the South had access to British production facilities, this would not have been a major problem for the Confederate Navy.¹¹

Finally, many bulky products, in particular railroad iron and machinery, were precluded from shipment into the Confederacy due to the extremely high cost of transportation. So even though the blockade did not completely shut off imports, it did restrict the import of critical material needed to support the war machine. This was especially important since the South had limited ability to produce some of this bulky material.¹²

As the Federal blockade became tighter, small-volume and high value commodities were preferred by blockade-runners, certainly not bulky iron rails and railroad equipment. And their blockade-running vessels were smaller and less efficient. Southern railroads might have been able to ship required supplies and equipment without the blockade. But as it was, they were hard pressed to even maintain existing infrastructure, let alone make needed improvements to meet increased demand as discussed above. It was estimated that the South would need almost 50,000 tons of rails annually just to maintain the existing system and that iron mills in the South were capable of supplying less than half of that.¹³

So it seems that, although the naval blockade was not the critical, defining factor in the Union success, it did deny the Confederates vital purchasing power, raise the costs of imported goods (reducing volume of imports), and severely disrupt the movement of goods internal to the South. There were no dramatic victories by the navy, but their efforts did contribute to a gradual exhaustion of the Confederacy's ability to carry on a sustained war effort.

Joint Army and Navy Operations in the East

The Union Navy also directly supported the army in joint operations. This was a new facet of warfare and many valuable lessons were learned during the Civil War. In fact, the true value of joint operations was probably not appreciated until the end of the war. But early joint tactics were very successful at Hatteras and Port Royal, which led to some strategies that had to be un-learned by the Federals.

In 1861, Maj Gen Benjamin Butler commanded a small Union force at Fort Monroe. He noted that the Confederates were fortifying Hatteras Island on the North Carolina

coast, as a base to support Southern privateers. He proposed a joint raid to destroy the forts there, and was authorized to dispatch 860 infantry and an artillery company to do that and then close the inlet with stone ships.¹⁴

The operation itself was a tactical failure. The troops landed three miles north of the forts, Clark and Hatteras, and the landing boats crashed. The army troops were not a factor in the operation, as they were stuck overnight on the beach without supplies. Fort Clark ran out of ammunition during the naval bombardment and was abandoned. Howitzers put in with the troops on the beach effectively cut off supplies to Fort Hatteras, and her guns were not capable of reaching the Federal ships. The fort surrendered as the magazine was about to explode. As a result of this operation, the Navy felt that shore batteries could be defeated by naval bombardment alone. What they had overlooked was that the forts were improperly sited, they were poorly constructed and poorly armed, and so were not defensible against any attack in force.¹⁵ The Navy would later realize that their bombardments could be matched with well-constructed works, with shoals, mines and channel obstructions, which would prevent naval run-bys (as performed by Farragut in New Orleans).

At this point, there was disagreement over whether to proceed with these joint operations to take control of the Southern ports. Proponents urged haste, before the Confederates were able to move in shallow draft gunboats to patrol them. In the end, Lincoln felt that taking the ports would signal an inability to blockade and that Britain might recognize the Confederate States of America. So the blockade remained the first priority for the Union Navy. In addition, Gen Winfield Scott felt the bulk of the army was needed to protect Washington and disapproved of any offensive action at this time.

Capt Louis Goldsborough and Capt Samuel DuPont both were supporters of the blockade, so further support of joint amphibious operations declined.¹⁶

DuPont had also planned a joint operation to capture Port Royal. He spent considerable time researching types of ships and troop requirements, and came up with a detailed plan utilizing both army and naval forces. The two forts at Port Royal (Fort Walker and Fort Beauregard) were unfinished and underarmed at the time of attack. In November 1861, gale-force winds hit the force as they approached. In the end, there were no landing craft or ammunition left, so no joint operation was possible. DuPont was still able to take the unfinished Fort Walker with naval bombardment alone and the “lessons” learned at Hatteras were reinforced (although had Fort Walker been armed as intended, DuPont would have met with disaster). The two lessons were: 1) that the Navy could take such fortifications alone (which would be a hard lesson to un-learn; and 2) the strategic effect and role of joint operations (that a large fleet and fair sized army had secured a permanent foothold at a vital spot on the enemy coast).¹⁷

When George McClellan was selected as Union General-in Chief in November 1861, joint army and navy operations became an essential element of his strategic plans. McClellan respected mass and firepower, but realized that an army couldn't be bludgeoned to death. Railroads provided internal lines of communications and that, coupled with the new telegraph system, increased the enemy's ability to attain strategic concentration. Rail lines of communications were highly vulnerable for the invader. An alternative was water transportation for operations and logistic support, and the naval supremacy provided this for the Union and denied it to the Confederacy. He also appreciated sea power and its ability to insert invading armies quickly and unexpectedly

against strategic points. These theories were based upon his experiences in the Mexican Wars.¹⁸

Gen McClellan felt that the slow and uncertain process of the blockade was futile, and that it was not enough to destroy the Virginian army or seize Richmond, as long as the Confederacy still maintained the resources to support an army and move those resources intact. McClellan intended to use the great Southern waterways to his advantage. The Mississippi, Tennessee, and Cumberland Rivers would be used to split the Confederacy and seize east-west rail lines. He could push into the sounds of North Carolina and up the rivers to disrupt Richmond's lines into the Deep South (forcing the Army of Virginia to disperse for lack of supplies). He could entrench along the Charleston and Savannah railroad from beachheads in Port Royal South Carolina, and threaten both cities while preventing reinforcements. He could seize rail junctions at Mobile AL and cut commerce between middle Tennessee and western Mississippi. McClellan felt that the Confederate generals, in order to free themselves from this deathgrip, would be forced to attack fortified Union positions (which could not be taken while protected by Union warships and gunboats).¹⁹

Proposed joint amphibious operations began to meet with serious problems early on. For example, Augusta GA was vital to arms production and a key rail junction for the Confederacy. In November 1861, it was unfortified and easily accessible by the Savannah River. Gen Sherman was unable to capitalize on this situation as he lacked sufficient ammunition and he still had undisciplined troops. There were also problems as Sherman and DuPont failed to cooperate fully or reach agreement on tactics. Both Sherman and DuPont did agree afterwards that the lack of significant success was due to

the lack of proper advance planning and preparation to exploit initial successes, often having to wait for resupply. Sherman also thought that unity of command would have solved some of these problems.²⁰

As the war progressed (or failed to progress) in the east, joint amphibious operations began to fall out of favor, but important lessons were learned as the Navy continued to contribute. McClellan had planned to take Richmond by rapid movement using the railroad and Navy transportation up the York River. That campaign failed, yet still showed the flexibility and offensive power of a strategy using joint operations. Reed indicated the failure was due to a failure of resources and a lack of interservice cooperation at critical times. Yet the campaign demonstrated the great advantages of water lines of communications for logistical and strategic purposes. The South could not contend one-on-one with the Union Navy, and was only able to use their own navy for defensive purposes. And during the Peninsular Campaign, Gen Franklin's assault division was a precursor to the coming revolution in amphibious tactics. Yet that revolution was to wait as army engineers ignored the Navy and were occupied for three years building railroad bridges.²¹

As a side note, the Peninsular Campaign was also hindered by McClellan's failure at communicating his plans to national leaders. And he overlooked the considerable political pressure to use the Army of the Potomac. Ultimately, in March 1862, Gen McClellan was relieved of his command. His successor as General in Chief, Maj Gen Henry Halleck failed to exploit the Union Navy's command of the sea, and the strategic potential it provided. Halleck disapproved of joint operations. And without exploiting

the coastal gains for further advances, the manpower to hold those ports and forts required valuable manpower that might have been better employed in other theaters.

Even though joint amphibious operations did not remain an integrated part of the Union's strategic plan, some operations and valuable lessons continued to be learned. In the battle of Charleston in April 1863, the Federals learned that when conducting an amphibious assault against strong enemy positions, the key to success was systematic and continuous employment of overwhelming fire and constant communication between the ships and shore forces. Those lessons were reinforced in late 1864 at the first attack on Fort Fisher in Wilmington. The Navy again realized that it was not possible to defeat a fort single-handedly and that they had to work with the Army as a tactical team. Finally, with the capture of Wilmington and Fort Fisher in 1865, the Federals abandoned previous wasteful strategies and used integrated waterborne offensive. Here the Union took full advantage of superior naval power and exploited their command of the water to rapidly bring about victory. This may have been the only time efficient joint tactics were used. But coming in the closing months of the war, it was probably too late to demonstrate the true potential of joint amphibious operations. The vast majority of joint operations were characterized by a failure to anticipate and provide for contingencies, and a failure to adequately plan for follow up to successes.

Naval Strategy in the Western Theater

Operations in the West were paramount to the Union strategy in the Civil War, and the Navy was to play a pivotal role on the Mississippi, Tennessee, and Cumberland Rivers. That theater developed into one of movement as the Union fought to seal off the Mississippi and Gulf Coast. The administration felt that by controlling the Mississippi

Valley, the Confederacy could be split in half and critically weakened.²² And Tennessee was important to both the North and the South. From eastern Tennessee, Senator Andrew Johnson and Representative John Maynard remained in Washington while other regions sent representatives to the Confederate Congress. Nashville was an important producer of war material and was an important rail junction, along with Chattanooga, Decatur AL, and Corinth MS. The only large operating salt, lead, copper, and niter mines were located in the mountainous eastern counties, which contained over two-thirds of the Confederate mineral wealth.

Brig Gen U.S. Grant and Flag Officer Andrew H. Foote planned to take Fort Henry on the Tennessee River and Fort Donnelson on the Cumberland River, driving a wedge into the lines of Confederate general Albert Sidney Johnston. This would force Johnston back on his main position, guarding the Memphis and Charleston Railroad. There had been a lack of action in Tennessee, owing to poor communications and bickering among the Union generals. Even Johnston wondered why the Federals, with their superior resources, were waiting so long to take action. In the meantime, the Confederates were able to complete Forts Henry and Donnelson and arm them with a few heavy guns. Also, more arms were beginning to arrive from Europe and new ordnance factories in the South.²³

When President Lincoln ordered that all Union forces would advance on 22 Feb 1862, Gen Halleck gave Grant and Foote the responsibility to carry out the order. The greatest deficiency for the South was on the water. They were far outclassed in the production of gunboats as there was no shipyard, naval construction, skilled workers, and iron for plating or marine engines at the beginning of the war. Even with that, there was

no guarantee that joint Army and Navy operations would succeed and these operations could fail based upon minor details. This was due to the primitive organization and command structure that was not well suited to such operations. In addition, no formal doctrine or procedures existed for joint operations. Finally, production of ironclads was slow, even for the North. And quality was sometimes poor, with finished ships not meeting specifications. Nine ironclads and 38 mortar boats were on order, but the shipyard was attempting to build all ships simultaneously, with the result that no ships were being delivered.²⁴

Foote felt that the Federals could take Fort Henry with four ironclads and some troops to permanently occupy the structure once taken. In early February, Grant and Foote began their attack and sealed off Fort Henry. The Confederates abandoned the fort on 6 February and moved on to Fort Donnelson.²⁵ As it turns out, similar to joint successes on the Atlantic Seaboard, victory may have been as much due to good luck as to the destructive nature of naval gunfire. At the time, ironclads had never before been tested against earthen fortifications. And neither Grant nor Foote were aware of several factors that had played in their favor. Inexperienced gunners had manned the fort and the river had risen to a level which flooded the fort's magazines. In addition, explosions and mechanical accidents early in the action had rendered useless the ordnance that was most effective against the armored ships. In effect, the men of the fort may have feared its own weapons more than they feared the enemy.²⁶

Grant immediately moved to follow the Confederates to Fort Donnelson. The success had given him confidence in Foote's flotilla and he seemed to ignore the lack of physical damage done to Fort Henry. When he reached Donnelson, Grant had to wait on

the Navy. Foote initially was reluctant to attack Donnelson, as his gunboats had not held up well against the fire at Fort Henry and several ships had to return to Cairo IL for repair. The gunboats also had to go back down the Tennessee River and return up the Cumberland to reach Fort Donnelson. Grant and Foote soon laid siege to Donnelson and the fort fell on 16 February 1862.²⁷

Again, other factors were at work in the surrender of the fort, and there appeared to be no urgency for the Confederates to surrender when they did. Apparently, the Confederates had already decided to give up the fort and were only holding on until the heavy guns, ammunition, and other stores were moved south during the withdrawal from Bowling Green, Clarksville, and Nashville. In any event, the Federals had made great gains in the theater. Union forces advanced up the Cumberland River and had taken Nashville, following its evacuation on 23 February. Foote's gunboats patrolled as far as Florence AL and were able to protect Federal recruiters and cotton agents. And the Mississippi River was open to the Federals as far as Island No. 10 on the Kentucky-Tennessee border. So the Union forces held strategic positions and Gen Halleck was preparing joint operations against Island No. 10 and New Madrid, which fell to Union forces on 13 March 1862. In April, the city of New Orleans fell to naval forces under Admiral Farragut and in May, ships sailed up the Mississippi, capturing Baton Rouge. The city of Vicksburg MS proved tougher to capture and naval attacks by ships from the north and south, in June 1862, were unable to take the city.²⁸

Eventually, a year later in July 1863, Vicksburg would fall to the Federals and the Navy played a major role in that operation. Key to that victory was transportation of Army troops across the Mississippi south of the city, naval bombardment in support of

the siege of Vicksburg, and resupply of Federal troops via the water lines of communication.²⁹

In summary, the Union Navy was able to play a key role in the Western Theater of the Civil War, and joint operations with the Army were crucial to the Union victory. First, the water lines of communication for support of the Army were much safer and more stable than the railroads for an invading army. And the Navy, with its superiority over the Confederates, obviously was instrumental in utilizing these waterways. Second, although luck was a big factor in many victories, naval bombardment in support of attacks on confederate forts and gun batteries played a role in their defeat. And jointly, the Army and Navy were able to isolate the forts from Southern support and force the garrisons to evacuate. Third, as the Union forces progressed deeper into Confederate territory, naval gunboats were able to control the waterways and protect the forces, while providing swift, effective transportation for the armies.

Conclusion

Overall, the Union Navy played a major role in winning the Civil War, although it was not the most important factor. During the war, important gains were also made regarding doctrine and procedures in naval and joint Army and Navy operations.

The naval blockade of the South, which did not turn out to be the major determining factor of the war as some had envisioned it would be, was never able to completely seal off the Confederacy and strangle it to death. However, the blockade was able to put a large dent in Southern commerce and severely hamper the Confederates' ability to carry on the war effort. In particular, the blockade was effective in curtailing Southern exports of staple goods, thereby reducing the purchasing power of the South. The blockade

severely altered the movement of internal goods, which put added burdens on the overtaxed Southern rail system. And finally, even though blockade-runners were able to smuggle in many arms and ammunition, they were unable to bring in bulky items such as iron plating and rail iron. This further exacerbated the deterioration of the Southern railroad system.

One goal of amphibious operations was to avoid the long, drawn out nature of a blockade and the strangulation of the Confederacy as envisioned in the Anaconda Plan. By taking advantage of the mobility and power afforded the Federals by the command of the sea, the Army would be better able to disrupt and control the Confederate rail lines of communication and deny water lines to them. The Union had difficulty fully integrating the Navy and joint amphibious operations into their planning, and the Navy continually tried to go it alone. As such, although contributing often to Union successes, joint operations in the East were never truly effective until the end of the war. The true potential of joint amphibious operations were never really shown.

Joint operations appeared to be more effective in the Western Theater. Although luck was certainly a player in some of the Federal successes and the learning process was arduous, Union efforts progressed to show some truly effective joint operations. This was especially true at Vicksburg. The overarching lesson learned in these operations (both in the East and West) is that greater success comes from true joint cooperation. In most circumstances, no one service can do a better job on its own. And truly integrated planning, communication, and joint fire (overwhelming) are key to success.

Notes

¹ Anderson, Bern *By Sea and By River* (Westport CN: Greenwood Press, 1962), 25-26.

Notes

² Eisenschiml, Otto and Ralph Newman *Eyewitness: The Civil War As We Lived It* (New York: Grosset and Dunlap, 1956), 349; Surdam, David G. "The Union Navy's Blockade Reconsidered," *Naval War College Review* LI, no. 4 (Autumn 1998): 85.

³ Eisenschiml and Newman *Eyewitness: The Civil War As We Lived It*, 349; Surdam "The Union Navy's Blockade Reconsidered," 86-88.

⁴ Anderson *By Sea and By River*, 218-219; Surdam "The Union Navy's Blockade Reconsidered," 88-89.

⁵ Surdam "The Union Navy's Blockade Reconsidered," 90.

⁶ *Ibid.*, 98-99.

⁷ Anderson *By Sea and By River*, 230-232; Surdam "The Union Navy's Blockade Reconsidered," 95.

⁸ Surdam "The Union Navy's Blockade Reconsidered," 95-97.

⁹ *Ibid.*, 97-98.

¹⁰ *Ibid.*, 101-102.

¹¹ *Ibid.*, 102, 104.

¹² *Ibid.*, 94.

¹³ Eisenschiml and Newman *Eyewitness: The Civil War As We Lived It*, 360; Surdam "The Union Navy's Blockade Reconsidered," 94.

¹⁴ Anderson *By Sea and By River*, 48.

¹⁵ Anderson *By Sea and By River*, 48-51; Reed, Rowena *Combined Operations in the Civil War* (Annapolis, MD: Naval Institute Press, 1978), 12-15.

¹⁶ Reed *Combined Operations in the Civil War*, 18, 19, 21-22.

¹⁷ Anderson *By Sea and By River*, 52-61; Reed *Combined Operations in the Civil War*, 24-32; Reynolds *Navies in History* (Annapolis, MD: Naval Institute Press, 1998), 124-125.

¹⁸ Reed *Combined Operations in the Civil War*, 33-35.

¹⁹ *Ibid.*, xviii-xix.

²⁰ *Ibid.*, 46, 48, 55-56.

²¹ Reed *Combined Operations in the Civil War*, 133, 187; Reynolds *Navies in History*, 124-125.

²² Reynolds *Navies in History*, 123, 128.

²³ Eisenschiml and Newman *Eyewitness: The Civil War As We Lived It*, 148; Reed *Combined Operations in the Civil War*, 77.

²⁴ Reed *Combined Operations in the Civil War*, 77, 82-84.

²⁵ Anderson *By Sea and By River*, 92-93; Hensel, Howard M *The Sword of the Union* (Montgomery AL: Air Command and Staff College, 1989), 61.

²⁶ Eisenschiml and Newman *Eyewitness: The Civil War As We Lived It*, 150-151; Reed, *Combined Operations in the Civil War*, 84-85; Reynolds *Navies in History*, 129.

²⁷ Eisenschiml and Newman *Eyewitness: The Civil War As We Lived It*, 151-157; Hensel, *The Sword of the Union*, 62; Reed, *Combined Operations in the Civil War*, 85-86.

²⁸ Hensel, *The Sword of the Union*, 62-63, 68; Reed, *Combined Operations in the Civil War*, 91; Reynolds *Navies in History*, 129.

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²⁹ Boynton, Charles B. *History of the Navy During the Rebellion* (New York: D. Appleton & Co., 1868), 416.

Chapter 2

Confederate Naval Strategy

Blockade running and its effectiveness against the Union blockade were discussed in Chapter One. However, blockade running was but one facet of the Confederate naval strategy during the American Civil War. Since the overall military strategy of the south was defensive, the naval strategy was also defensive in nature. Confederate Secretary of the Navy, Stephen R. Mallory waged a multi-pronged strategy to include privateering, commerce raiding by the Confederate Navy, and the use of ironclads and unconventional warfare (mines/torpedoes and submarines) to defend southern rivers, harbors and ports. This section will analyze the effectiveness of Confederate privateers and commerce raiders during the Civil War, while the following section on technology will discuss the use of ironclads and unconventional warfare by the Union and by the Confederacy for coastal defense.

Privateering

Early in the war, President Jefferson Davis recognized Lincoln's announced intention of armed invasion of the Confederacy and issued a proclamation on 17 April 1861 which invited "all those who may desire, by service in private armed vessels on the high seas, to aid this Government in resisting so wanton and wicked an aggression, to

make application for commissions or letters of marque and reprisal to be issued under the seal of these Confederate States.”¹

Privateering was a means for a weaker nation to strike at the enemy’s commerce without having to build a large naval force of its own. The incentive for private citizens to attempt this (arm their vessels and capture enemy vessels) was primarily profit. Although the privateers were privately owned and armed, they held a commission from the belligerent government. That commission was the only distinction between privateering and piracy. Whether motivated by profit or patriotism, privateers had to ensure that their operations were conducted according to the laws of war. Otherwise, as was often the case historically, privateering degenerated into piracy.²

By the start of the war, there was a strong worldwide sentiment against granting letters of marque and reprisal. That sentiment had culminated in the Declaration of Paris in 1856. Produced by the European Congress, it stated that “privateering is and remains abolished.” The United States had declined to sign the declaration and as such, the Confederates felt unrestrained from using privateers. Although in 1861, privateering was still believed to be a powerful weapon, it was abandoned within a year. As the speed of communications increased and the police power of the state increased its reach, the practice became more a means of raising an emergency naval force to supplement the government’s naval power. The practice of privateering ended with the Civil War.³

The first of these privateers was a converted tugboat operating out of New Orleans, the *Calhoun*. In just one month after sailing from New Orleans on 16 May 1861, the *Calhoun* took six prizes. These were encouraging results and Secretary Mallory believed that the privateers would create panic among northern merchants, thus forcing the Union

to divert resources from the blockade of the south. Panic was created, but the Union was determined to maintain and strengthen the blockade despite the alarm.⁴

The Confederate Congress passed an act on 6 May 1861, which recognized the state of war and legitimized Davis' proclamation. The act was similar to the privateering law of the United States during the War of 1812 and that of the Colonies during the Revolution. To secure his commission, a prospective privateer had to file with the Secretary of State or collector of customs and provide a penal bond (\$5,000 or \$10,000 depending on crew size). Privateers were required to respect the rights of neutral powers and abide by the laws of war (acting with "justice and humanity"). To protect against illegal seizures, the captured ships papers and the "master or one or more of the principal persons" from the ship were to be sent to the Admiralty Court of the Confederate States. With only five percent of the prize money to be paid to the treasury, along with a reduced customs duty, practically the whole value of the prizes went to the shipowners, officers and crew.⁵

The defenseless merchantman was the most likely target of the privateer, but an incentive was offered to attack armed ships. The Confederacy would pay a bounty of \$20 for the destruction of enemy war vessels and \$25 for each prisoner brought to port and delivered into custody. Soon, an additional bounty was paid at the rate of twenty percent of the value of the destroyed ship, including the value of the ship's armament. To guard against piracy, the ship's commander was required to keep a regular journal and account of all transactions, to include all ports of stay and duration, prizes and probable value taken. The commander was then required to present his commission and journal to the

collector of customs whenever they put into a Confederate port. Failure to do so would result in the loss of commission and a fine of \$1,000.⁶

With the arrival of the steam sloop USS *Brooklyn* at the mouth of the Mississippi River in July 1861 came the turning point for privateering out of New Orleans. Now, the blockade was officially established at New Orleans. Although it was a relatively simple matter for blockade runners to avoid the sloop (she could guard only one of the three channels), she effectively put an end to privateering in the area. Even if any of the privateers could avoid her on the outbound trip, which would not be too difficult, the Federal ships could easily capture them and their prizes on the return trip. As a result, southern ports were no longer a safe haven and enthusiasm for privateering waned.⁷

Privateering still prospered for a short time off Hatteras Inlet in North Carolina, where the *Jefferson Davis* became the most successful privateer. But soon only the swiftest steamer could enter a southern port past the ever increasing number of warships in the Union blockade. With no harbor safely accessible, the role of the Confederate privateer slowly died. It became even riskier when President Lincoln declared that any individual caught privateering would be considered a “pirate” and punished as such. Now, blockade running became the more lucrative and safe business. By 1862, privateering was all but dead. Their ships were either used for coastal defense or converted to blockade runners. The Confederates struggled to succeed with privateers on the same level as had been seen in previous wars. But the practice was probably obsolete by this time, and there was nothing they could do to make it thrive.⁸ However, commissioned Confederate warships would soon take the war to the Union’s commerce and virtually drive the American merchant marine from the high seas.

Commerce Raiding

Privateering was only one form of commerce raiding and Secretary Mallory would commission Confederate warships to carry out offensive actions against Union commerce. In the end, these raiders would be better suited to harm northern commerce than privateers had been. In the hope that Union Secretary of Navy Welles would have no choice but to divert warships from the blockade, Mallory knew that he needed ships that could not be built in the south. These ships would have to spend long periods of time at sea, with no home ports to return to. Cargoes would be burned or sunk after removing usable supplies. If the cargoes of American ships belonged to foreign nationals, the ships would be released on a ransom bond, payable to the Confederacy at the end of the war. With commerce destruction, not defeat of the Union Navy, as its objective, Confederate cruisers were told not to engage the enemy unless absolutely necessary. The key difference between privateers and Confederate Navy cruisers was one of motivation. Above all, naval crews were motivated by patriotism rather than the promise of easy riches.⁹

Since 1846, Britain's dominance of the world maritime commerce was threatened as American merchant traffic had tripled. The oceans were filled with American flagged vessels by the summer of 1861 when the first Confederate raiders took to the sea, a fact that the British envied and feared. Worldwide trade had increased by 300 percent leading up to the war, with American ships carrying seventy percent of that increase. The American merchant marine appeared invincible, and English citizens were happy to accept gold and cotton from the Confederates in exchange for arms, ammunition,

supplies, blockade runners and cruisers. In addition, British citizens participated actively as crewmembers: looting, burning, and sinking the American merchant marine.¹⁰

The CSS *Sumter* was the first Confederate raiding vessel. Originally the *Havana*, a bark-rigged steamer that had plied the waters from New Orleans to Cuba, she was placed under the command of Raphael Semmes, who had the small ship converted into a small but deadly warship. By 18 June 1861, Semmes had completed the conversion and took her down the Mississippi, where she was able to elude the USS *Brooklyn* and head to sea on 30 June. Within three days, Semmes had captured his first ship, the *Golden Rocket*, off of Cuba. The *Golden Rocket* was traveling empty, to pick up cargo in Cuba. Most of the Caribbean ports would not admit the *Golden Rocket* as a prize of war since Britain had by this time declared neutrality. With no other practical choice, Semmes destroyed the captive Union merchant ship.¹¹

The Union merchant fleet was composed primarily of sailing ships, which sailed along well known sea lanes, riding the prevailing winds. It was easy for Semmes and other commerce raiders to follow these sea lanes and find easy victims. It was not so easy to profit by the captured cargoes and ships. Nor was it easy, with international laws and regulation of neutral states, to maintain the operations of the raiders. Raider captains were often forced to trick local port authorities and break the local laws in order to supply their ships. Some ports wouldn't even allow the captured ships to enter, even if just to let them transfer the crew to shore. Often, the raiders would transfer the captured crew to a neutral or Union merchantman carrying a cargo belonging to a neutral. The raider captain and the Yankee captain would negotiate the release of the ship on a ransom bond, based upon the value of the cargo. In essence, the Yankee captain signed a bond to be

paid to the Confederacy six months after a peace treaty was signed. In the end, there was no Confederate government to receive such a payment.¹²

On 19 January 1862, the *Sumter* reached Gibraltar, low on coal and badly in need of repair. Using his influence, Horatio Sprague, the U.S. Consul, convinced private dealers not to sell coal to Semmes and the *Sumter*. Soon, the USS *Tuscarora*, USS *Ino*, and USS *Kearsarge* arrived and blockaded the *Sumter*. Realizing that he could never escape, Semmes discharged his crew, except for a small caretaker crew, and returned to England with most of his officers. In her short, six-month career, the *Sumter* had captured eighteen ships.¹³ Although she proved unsuitable for her role as a raider, this success in only six months proved to both Semmes and Secretary Mallory that the strategy of commerce raiding was valuable. The limitations of these early raiders (*Sumter* and *Nashville*) reinforced the belief that the type of ship required could not be built in the south. To implement his plan, Mallory sent agents overseas to buy or build these ships. The most famous, and effective, of these agents was James Dunwoody Bulloch.¹⁴

Bulloch soon became indispensable to the Confederacy. He proved to be a skilled negotiator, able to capitalize on the British sympathies for the South, and to find and exploit loopholes in the British neutrality laws. Bulloch was born and raised near Savannah, Georgia and in 1839, at the age of sixteen, he became a midshipman on the frigate *United States*. In 1844, he graduated second in his class at the Philadelphia naval school. Immediately after the first action at Fort Sumter, he offered his services to the Confederacy and arrived in Montgomery on 7 May 1861. Mallory immediately asked him to go to Europe as his agent. (As an aside, Bulloch often visited his half-sister Martha and her son, who remembered Bulloch as “Uncle Jimmie.” After the war, while

Bulloch remained in Britain as a businessman, his nephew Theodore would grow to become the 26th president of the United States.)¹⁵

There were a total of eight Confederate cruisers and all but the *Sumter* and *Nashville* were built in British shipyards. It was Bulloch who bought the three that did the majority of damage to the American fleet. These were the CSS *Florida*, the CSS *Shenandoah*, and the dreaded CSS *Alabama*, which was commanded by Captain Raphael Semmes. The other, lesser known ships were the CSS *Georgia*, CSS *Tallahassee*, and CSS *Chickamauga*.¹⁶

The most successful of these was the *Alabama*. In its design, Bulloch insisted upon a wooden ship since it could be easily repaired by a ship's carpenter and major repairs could be made in almost any dry-dock. In addition, under the strain of heavy ordnance, the wooden decks were more resilient and stronger than metal decks. Bulloch took great personal care in her construction, attending to details as he sought to create a cruiser which was capable of sustaining its operations without depending on foreign ports.¹⁷

From the time he arrived in Liverpool, Bulloch found himself under the watchful eyes of Federal agents, reporting to American Consul Thomas H. Dudley. Bulloch regarded his mission as extremely secret. Only a few highly placed officials in the Confederacy knew of his assignment. Dudley was determined to gather evidence, which would allow the British government to detain the new ship. He blamed himself for failing to get that evidence before the *Florida* had sailed from Liverpool. To counter these attempts, Bulloch had to create a legal maze which would mask true ownership of the new ship, named the *Enrica*. This made for frustrating work for Dudley's customs

agents and spies that maintained vigilance over the ship's progress. On 15 June 1862 the *Enrica* weighed anchor for her first trial run.¹⁸

The *Enrica* left British waters just in time, as the British government had ordered her seized just hours before she escaped. Bulloch had chartered the *Bahama* to carry Semmes and his officers to meet the *Enrica* and the *Agrippina*, which transported the Confederate ordnance, ammunition, stores, and coal. Semmes and his officers arrived in the remote harbor of Terceira, in the Azores, on 20 August. The other ships were already there, and supplies were being loaded aboard the *Enrica*. On 24 August Semmes sailed his new ship into neutral waters and commissioned her the CSS *Alabama*.¹⁹

Semmes decided to attack the Union whaling fleet in the Azores and was extremely successful. In the first eleven days, the *Alabama* was able to destroy ten ships at a value of \$232,000. The cost of the *Alabama* was \$228,000, so the cost to the Confederacy was repaid in the first eleven days. Through 1863, the commerce raiders were in their prime. At least three were at sea at all times. Between the *Alabama*, *Georgia*, and *Florida*, sixty seven Federal ships were captured. Fifty-one were burned, with the remainder being released or bonded. Hunting was so good that they didn't realize that their time was running out.²⁰

Abraham Lincoln had refused to weaken the blockade efforts in order to mount a campaign against the Confederate cruisers, although he was under pressure to do so. However, the Union Navy was growing rapidly, from 427 to 588 ships during 1863. As the navy grew, warships could be spared to patrol the high seas and the shipping lanes that the commerce raiders preyed upon. After nearly twenty months at sea, the *Alabama* was sorely in need of repair with seams opening, joints loosening, and boilers nearly

burned out. On 10 June 1864 she arrived in port at Cherbourg on the French Normandy coast. With her arrival, the American Minister in Paris telegraphed the news to the USS *Kearsarge*, which was anchored off the Dutch coast thirty miles away. With the arrival of the *Kearsarge* on 14 June, the fate of the *Alabama* was sealed. The *Alabama* sailed out to meet the *Kearsarge* and, overmatched by a larger ship with a superbly drilled crew, was sunk after ninety minutes of battle.²¹

After sailing 75,000 miles, and capturing sixty-five Union merchantmen (burning fifty-two) at a value of \$4,613,914, the sinking of the *Alabama* was the beginning of the end for the Confederate raiders, although there were some future successes. After the *Alabama* and *Florida* were both lost in 1864, Bulloch searched for a replacement and purchased the *Sea King*, which was converted into the CSS *Shenandoah*, the last of the cruisers.

The *Shenandoah* brought raiding to the Pacific and Arctic Oceans, hitting the whaling fleet hard. Ironically, most of her efforts were carried out after the Civil War had ended. On 2 August 1865, Captain James I. Waddell learned that Lee and Johnston had surrendered, all the field armies were gone, Jefferson Davis was in prison, and the world's navies were searching for the *Shenandoah*. Of the thirty-two vessels she had destroyed, twenty-one had been destroyed and four bonded after the end of the Civil War. Waddell headed first for Australia and then England. The *Shenandoah's* voyage ended in Liverpool on 6 November 1865, surrendering to the British government. In her short career, the *Shenandoah* had destroyed ships and cargo valued at \$1,361,983.²²

Conclusion

The depredations of the Confederate cruisers created a diplomatic war, which would last for seven years between Britain and the United States. Known as the *Alabama* Claims, they were fueled even more by the fact that so much of the *Shenandoah's* work had been done after the war. Eventually in 1872, the Geneva Tribunal hearing the claims awarded the United States \$15,500,000. A court was created in the United States to hear the merchants' claims for losses from the raiders. In spite of the fact that Britain had to pay damages and that the United States had won the Civil War, Britain won undisputed dominance of maritime commerce (which would last for another eighty years) as the American fleet was decimated.²³

In the end, the commerce raiders of the Confederate Navy destroyed 257 Union ships. This number amounted to about five percent of the Union merchant fleet and 110,000 tons of shipping. As the raiders gained more successes, insurance rates began to skyrocket and shipowners became less willing to pay exorbitant rates. Frightened ship owners began to sell off their fleet to foreign owners, amounting to another 800,000 tons. More than 100 American ships had changed to neutral flags. More than half of the merchant fleet vanished during the war, making this the most effective Confederate strategy of the Civil War. And it was all accomplished with only eight warships. Yet it was not enough to overcome the superior size and infrastructure of the Northern military. The Union had refused to weaken the blockade in order to attack the raiders and so the strategy had ultimately failed. In spite of being well planned and skillfully executed, commerce raiding had not been able to affect the outcome of the war.²⁴

Notes

¹Campbell, Thomas R. *Fire and Thunder: Exploits of the Confederate States Navy* (Shippensburg, PA: Burd Street Press, 1997), 1; Robinson, William Morrison, Jr. *The Confederate Privateers* (New Haven: Yale University Press, 1928), 13.

²Campbell *Fire and Thunder*, 2; Robinson *The Confederate Privateers*, 1-2.

³Robinson *The Confederate Privateers*, 2-3.

⁴Delaney, Dr. Norman C. "Strategy and Tactics," *The Confederate Navy: The Ships, Men and Organization, 1861-65*, ed. Dr. William N. Still, Jr. and Dr. William S. Dudley (Annapolis, MD: Naval Institute Press, 1997), 195; Campbell *Fire and Thunder*, 4-5.

⁵Campbell *Fire and Thunder*, 4; Delaney *The Confederate Navy*, 195; Robinson *The Confederate Privateers*, 18, 20-22.

⁶Robinson *The Confederate Privateers*, 22-24.

⁷Campbell *Fire and Thunder*, 6; Delaney, "Strategy and Tactics," 197.

⁸Campbell *Fire and Thunder*, 18; Delaney "Strategy and Tactics," 197; Robinson *The Confederate Privateers*, 2, 343.

⁹Delaney "Strategy and Tactics," 196-197.

¹⁰Hearn, Chester G. *Gray Raiders of the Sea* (Camden, ME: International Marine Publishing, 1992), xiii-xiv, 1.

¹¹Hearn *Gray Raiders*, 6; Time Incorporated *The Blockade: Runners and Raiders* (Alexandria, VA: Time_Life Books, 1983) 146.

¹²Time *The Blockade: Runners and Raiders*, 146-148.

¹³*Ibid.*, 148.

¹⁴Delaney "Strategy and Tactics," 197; Hearn *Gray Raiders*, 7.

¹⁵Delaney "Strategy and Tactics," 197; Hearn *Gray Raiders*, 7.

¹⁶Delaney "Strategy and Tactics," 197; Hearn *Gray Raiders*, 8.

¹⁷Hearn *Gray Raiders*, 153.

¹⁸*Ibid.*, 154-155.

¹⁹Hearn *Gray Raiders*, 158-160; Time *The Blockade: Runners and Raiders*, 149.

²⁰Hearn *Gray Raiders*, 170.

²¹Time *The Blockade: Runners and Raiders*, 152-160.

²²Delaney "Strategy and Tactics," 199; Hearn *Gray Raiders*, 294-301.

²³Hearn *Gray Raiders*, 301, 308-309.

²⁴Delaney "Strategy and Tactics"; Hearn *Gray Raiders*, xiv-xv; Time *The Blockade: Runners and Raiders*, 148, 161.

Chapter 3

Naval Technology

The American Civil War saw the introduction of several technologies into naval warfare. For example, the Civil War saw the first widespread use of steam power as more than just an augmentation of sails, the use of steam powered launches, the first use of submarines, and the introduction of torpedoes (or mines) into naval warfare. Perhaps the most notable new technology that came into widespread use, was that of ironclad warships, which began replacing the all-wooden ships. Of course the most famous incident involving ironclad ships was the battle of the Merrimac and the Monitor.

This new technology had a profound effect on several aspects of naval warfare at the time. The ironclads certainly affected the vast buildup of the navy, not only in the ships themselves but also in the type of weaponry, as larger guns were required in combat. The new class of ships also affected several of the land campaigns that were waged (e.g. the Union's peninsular campaign). We also saw the beginnings of joint operations in this campaign.

This chapter will provide some background on the Navy during the period leading up to the Civil War, a brief description of the battle of the Merrimac and the Monitor, and a discussion of some of the strategic implications of this new technology.

Background

Like other navies of the time, the U.S. Navy was in the middle of a transition from sail to steam as the Civil War approached. Up to that point, steam engines had provided an auxiliary to the sail on seagoing ships. Steam plants of the time were inefficient and used a lot of coal. In 1842, the first steam driven screw-propeller warship, the Princeton, was ordered by Congress.¹

During the 1850s Congress awoke to the need to modernize the navy. As of 1853, the United States had only 18 steamers. During the period from 1854 to 1859, 30 were added to the roles. Six were first class steam frigates with screw propellers. The best known of this class was the Merrimac. Twelve were steam sloops with propellers. Admiral Farragut's flagship, the Hartford, was among this class. As a side note, the Southern senators made sure that the draft of these ships was too deep to sail into southern harbors before voting to approve their construction.²

An important change during this time was the design of heavy ordnance. As early as 1844, big guns designed by John Ericsson (who also designed the Monitor) and Capt Stockton were demonstrated on the Potomac River. During this demonstration, the final round fired from Stockton's "Peacemaker" exploded and blew up the gun, killing Secretary of the Navy T.W. Gilmer. President Pearce narrowly escaped the same fate as he had gone below just before the incident. In 1847 Lt John A. Dahlgren began designing successively larger guns by measuring barrel pressure when fired, then increasing the caliber. The navy's new steam frigates had guns with 9, 10, and 11-inch bores. There were even some with 13-inch bores which fired 280-pound projectiles.

These smooth bored guns could fire both shells and shot. Guns of less than 8-inch caliber were rifled and very accurate.³

As early as 1842, Congress authorized the construction of an ironclad steamship. Construction was delayed and, in fact, the ship was never completed. By the beginning of the Civil War, the navy was without any ironclad ships. Just prior to the outbreak of the war, in 1861, the Navy had 90 ships. Of those, 21 were unserviceable and only 42 ships were in commission.⁴

Merrimac and Monitor

The battle between the Monitor and Merrimac in March 1862 climaxed the revolution from wood, sail, and smoothbore solid-shot batteries to iron, steam, and rifled shell-firing pivot guns. The USS Merrimac was commissioned in 1857 as a 3,200-ton wooden frigate; powered by a 3-masted sailing rig and auxiliary steam engine with screw propeller. Scuttled by the US Navy during the evacuation of Norfolk in April 1861, the Merrimac was raised and rebuilt by the Confederate Navy as ironclad ram CSS Virginia. A slanting wooden structure overlaid with 4-inch-thick iron casements, forged from railroad tracks enclosed Virginia's main deck. She had 10 rifled guns and a 4-foot-long ram. The Monitor was a 987-ton all-iron, steam-powered turret ship designed by John Ericsson. Monitor's single revolving cylindrical turret, of 8-inch thick iron plate, housed two 11-inch smoothbore guns, over a flat low-freeboard deck (likened to a cheese box on a shingle).⁵

The Virginia and five small gunboats steamed out of Norfolk towards Newport News on 8 March 1862 and immediately attacked the anchored 30-gun Union sailing sloop Cumberland. While shot from the Cumberland deflected off Virginia, the latter

bludgeoned the wooden ship and then rammed the Cumberland, sending her to the bottom with 121 of its crew. The Virginia then turned fire on the 40-gun sailing frigate Congress, who ran aground and was set ablaze. After Union shore batteries pounded the Virginia & wounded its skipper, she unleashed incendiary shells, which completely destroyed the Congress, with 120 men. Virginia, unable to follow the grounded Minnesota into shallow water, retired for the day.⁶

On 9 Mar, Virginia, intending to finish off the Minnesota, was intercepted by Monitor which had arrived over night. For 6 hours the 2 ironclads slugged it out, shells exploding off each other. Monitor, with a 12-foot draft, proved more maneuverable because of the shallow waters, while Virginia's 22-foot draft force it into the narrow deeper channel. Just before noon a Confederate shell struck the Monitor's small pilothouse, temporarily blinding the Captain. Monitor returned to shallow water & Virginia returned to anchorage. The battle was over, a tactical draw. Because the Confederates decided not to renew the action, the Monitor had succeeded by saving the wooden Union blockade fleet.⁷

As a result of this epic duel, the Union navy began building more monitors, and both navies developed more ironclads for coastal and riverine operations. Britain and other countries immediately began to follow suit, leading to seagoing battleships without sails.

Strategic Implications

Although tactically, the battle was a standoff, the strategic consequences were far-reaching. Union Navy Secretary Welles ordered the Monitor not to be unduly exposed and not to go to Norfolk unattended. It was felt that the Monitor was the only thing that stood between the Merrimac and devastating destruction.⁸ The fear of these ironclads

and how it change the approach to strategy was expressed by Secretary of War Stanton, “The Merrimac will change the whole character of the war; she will destroy every naval vessel; she will lay all cities on the seaboard under contribution.”⁹ The Merrimac poked its nose out into Hampton Roads several times over the two months following the initial battle, as if to challenge the Monitor. The Monitor bristled and made ready to battle, but never took the bait.¹⁰

Assistant Secretary of the Navy Fox (the first captain of the Monitor) was impressed that the 11-inch guns failed to penetrate the armor of the Merrimac. He saw a discarded 15-inch gun at Fort Monroe and felt that it provided the answer. All future monitors would be armed with 15-inch guns and the Navy would experiment with 21-inch guns. In December 1861, Secretary Welles asked for the immediate construction of 21 ironclads. These low-freeboard turreted ironclads soon became known as monitors, and became a distinct class of ship. Although the monitors never lived up to the claims of their champions, their impact was such that monitors were still active in the 1920s for coastal defense. The last monitor was stricken from the Navy List in 1937.¹¹

General McClellan’s peninsular campaign towards Richmond VA was affected by the Navy in general, and the ironclads in particular. He realized that the channels of the main rivers could be used for water transportation of supplies and equipment, and naval gunboats could support his action.¹² When McClellan reached Fort Monroe in April 1862, he was told by Flag Officer Goldsborough that the threat of the Merrimac was too great and that he could not send ships up the James River as he had planned. This forced McClellan to shift his main effort to the York River. Navy gunboats supported McClellan and his army as they captured Yorktown.¹³

After capturing Yorktown, Union forces advanced steadily and the Confederates pulled back towards Richmond. This put Norfolk in a precarious position as its communications with Richmond were threatened and General Burnside was in a position to attack from the south (in fact president Lincoln had come to Hampton Roads to be close to the expected victory). The evacuation of Norfolk was ordered on 1 May by General Joseph Johnston. The Navy Yard was to be destroyed and the Merrimac was to be moved up the James River as far as possible. Flag Officer Tattnall lightened the ship to reduce the draft to 18 inches. But she still could only be moved a few miles. Then on 11 May, as Federal troops approached her anchorage, the Merrimac was set ablaze by Tattnall. Once her magazines exploded, the most powerful ship of the Confederate Navy was completely destroyed.¹⁴

The destruction of the Merrimac radically changed the strategic situation, as the James River could now be used freely by the Union forces. As the Monitor and a second, smaller ironclad, the Galena, pushed up the James in support of General McClellan they demonstrated the value of joint operations. The gunboats easily took out one Confederate battery and ranged in close to a second so that the wooden gunboats could run by as the ironclads were heavily engaged.¹⁵

When the ships reached Jamestown (after a delay due to the grounding of one of the ships), Flag Officer Goldsborough sent the Monitor and the semi-armored gunboat Naugatuck upriver with the aim to shell Richmond into submission. They came upon obstructions on the river and the hastily built Fort Darling on Drewry's Bluff, eight miles below Richmond. Although they failed to get past Fort Darling, they were heavily shelled and proved their durability.¹⁶

But more importantly, their attempt to reach Richmond and shell it into submission was entirely a naval undertaking. There was no army participation and so lacked the one feature that might have caused Richmond to fall. Had a few troops attacked in concert with the ironclads, even the Confederate officers at Fort Darling agreed that they could have captured the fort. Then the road to Richmond would have been wide open, with no defenses between the fort and the city.¹⁷

Naval guns also protected the army as they were forced back from Richmond during the Seven Days Battle. Even Robert E. Lee reported (to Jefferson Davis) that he was unwilling to follow McClellan and expose his troops to the fire from the Union gunboats, which thereby assured the security of the federal army (Anderson, p. 84). It has been contended that “the Union Navy saved McClellan’s army from probable destruction on the bank of the James, but it got no thanks or credit for that job from the army leaders.”¹⁸

Mines and Submarine Warfare

Technology developments during the Civil War had effects more far-reaching than the war itself. Developments of the Civil war acted on the nature of war in general. Armies were supplied by steamships, which operated on the rivers and over 3,500 miles of coasts, with some 144 entrances. During this period, we saw the use of the first electrically operated torpedo, or mine; the duel between ironclad warships; the first sinking of a ship by a submarine; the first machine gun; the first railway guns; the first use of wire entanglements; and the first metal cartridge for the first breech-loading rifles.¹⁹

Self-propelled torpedoes as we know them had not been invented during the Civil War. What are today known as mines, were then called torpedoes. Part of what made

them famous was the phrase of Admiral Farragut at New Orleans, “Damn the torpedoes, full speed ahead!” The idea of mines was not new. But by 1860, the invention of the percussion cap made ignition of the mine much easier. During the Civil War, the Confederates favored the use of mines much more than the Federals. The Confederate navy was much weaker than that of the Union and so they were drawn to its use. In addition, mine warfare was quite appropriate for the riverine fighting that was prevalent. Mines not only damaged ships, but also the threat of mines made Union sailors much more cautious.²⁰

The first mine was discovered in the Potomac River by Union forces on 8 July 1861. It was about four and a half feet long and eighteen inches in diameter. This mine was quite primitive, with a lighted fuse at the top, which floated above the surface of the water. The Federals discovered the mine and extinguished the fuse before it could explode. The first ship sunk by a mine was the ironclad *Cairo*, sunk in December 1862 on the Yazoo River. To take advantage of this new weapon, the Confederates created the Torpedo Bureau and located it in Richmond VA. The bureau was responsible for examining all maritime inventions and for mining the sea approaches to the South.²¹

A common type of mine was a pile mine, used in shallow waters. Iron poles were driven into the ground and a charge (about 50 pounds) was placed at the end. These mines would explode on contact. These stakes were placed in fixed positions, at fixed depths, where an attack might be expected. Often two chains were used, one to anchor the mine and one to fix the angle of the mine itself. They would explode underwater. The water would direct the blast towards the ship, which has a weaker structure than the surrounding water. In order to completely block a river, a wooden framework would be

set up beneath the water, with strong stakes pointing down the river. At the head of each stake would be a simple artillery shell with a percussion type fuse. These mines would be placed every two to three feet of the stream width.²²

Floating mines were also used extensively. Initially, these mines were exploded using a line stretched to an observation post on shore. Observers would then pull the line to explode the mine as a ship passed over it. Fuses that ignited on contact later replaced these. With these percussion fuses, the Confederates could lay the mines at known depths. They also increased the number of fuses on each mine to increase the chances that they would explode. These were spring trigger fuses, and were susceptible to corrosion. This may explain the sometimes small losses experienced by the Federals in heavily mined waters. Such was the case in Mobile Bay in 1864 (even though mines in that engagement sank the 1,000-ton *Tecumseh*). In deeper water, a canister would be anchored to a weight. The mine would float at the end of a chain. A sufficient number of percussion fuses would be fitted to the top of the mine to ensure that at least one would fire on contact.²³

To counter these mines, Union forces would use a small boat to find the mines, then throw a rope around them and either tow them away or blow them up. The Confederates then invented what was called a “turtle” mine. These were small mines fitted with pull-release firing pins, which were attached to the moored torpedo by a line. If anyone attempted to pull up the moored mine, the smaller “turtle” mine would explode (hopefully beneath the small Union boat).²⁴

A first in the Civil War was the application of electricity as a firing method. It was discovered that by passing electricity through a fine wire, enough heat would be

generated to ignite gunpowder. A line of mines would be submerged, connected by wire. Copper telegraph wire, insulated with hemp and rubber was used. On-shore observers would monitor the mines using a series of markers. If a ship passed over the markers, they would connect the wire to a battery in order to ignite the fuse. The resistance of a length of wire was usually not figured into the equation and, as often as not, the mines would fail to explode.²⁵

Another method used by the Confederates was to simply place a floating mine in the water, and allow the current to carry the explosive downstream to the enemy. This method was usually used against a group of ships sailing upriver. These floating mines would be studded with percussion caps and explode whenever they struck an object. Mines would often explode harmlessly against floating debris. To overcome this, the Confederates devised another approach, using a spring firing pin, which was restrained by a cross-bolt attached to a screw rod and propeller. As the mine stopped against a stationary object, such as a boat, for any length of time, the current would turn the propeller until it unscrewed from the mine. This released the firing pin and the mine exploded.²⁶

Another innovation during the Civil War was the “Spar Torpedo,” which was used to more effectively carry the war to the Federals. In this setup, a small boat would be fitted with a long wooden spar. At the end of the spar would be the mine, with either a percussion firing devise or a firing pin mechanism, which was controlled by a line to the boat. The boat would sail up to the enemy and lower the crew would lower the spar to below the water line. The mine would be about twenty feet in front of the attacking boat and would either explode upon contact with the target or the crew would pull the line to

detonate the mine. This maneuver was usually done at night, when it was harder to be detected. This method was frequently used and, in fact, was also used by other navies well into the 1880s.²⁷

In order to accommodate this tactic, a new class of warship was developed. These ships became known as the “Davids,” in obvious reference to the biblical story of David and Goliath. The David was a small, steam-propelled ship, shaped much like a cigar. The ship had ballast tanks that were used to take on water and, as an enemy ship was approached, sink to a level where only a small pilothouse was visible. The ships were also painted a blue-gray shade to further conceal it. The David would have a long spar; a percussion fired mine (about 100 pound charge) on the end. The tactic was to sink to just below water level and drive hard into the enemy ship in order to set off the mine. Then the David would back off and depend on its small exposure for safety. These ships had some success in Charleston harbor.²⁸

The first *David* attacked the USS *New Ironsides* in October 1863, causing serious hull damage. The Confederates eventually built about twenty of these ships²⁹

The next step in this evolution was the submarine itself. This was a difficult step to take and was only done once during the Civil War. The CSS *Hunley* was a true submarine, named for its inventor, Horace L. Hunley. This twenty-five foot long ship was actually human powered. Its propeller was driven by hand cranks from inside the ship by its eight-man crew. The captain of the ship was in the conning tower, located in the front of the ship. From there he controlled the rudder and two horizontal fins; so the ship could dive and surface. The *Hunley* had water ballast tanks at the front and rear, and would submerge until it was just below the water. (The ballast tanks were filled using

valves and emptied using hand pumps.) At that point the crew would crank the shaft to get underway. They were capable of reaching three knots in calm water and would use the fins to dive deeper. Candles were used to both provide light and to serve as a warning as oxygen ran out. Their attack strategy was the same as that used by the *Dauids*.³⁰

On 17 February 1864, just off Charleston, the *Hunley* attacked and sank the USS *Housatonic*. This was the first ever sinking of a ship by a submarine. The *Housatonic* was on duty just off the coast when at approximately 8:45 P.M., an officer spotted something in the water. That something was the *Hunley*, but by then it was too late. Moments later, a powerful explosion detonated against the hull of the sloop, and she sank quickly. The attack occurred in only twenty-seven feet of water and all but five of the crew of the *Housatonic* were able to climb onto the rigging and survived.³¹

Unfortunately, *Hunley's* captain, Lt George E. Dixon and the crew of eight were not so lucky. The *Hunley* sank and the entire crew perished in the attack. In fact, before Dixon and a crew of six were successful in sailing the *Hunley*, thirty-three men (including Horace Hunley) were killed during trials. The ship sunk three times during initial trials, killing all men on board.³²

The Union experimented with submarine-type ships, resembling the small submarines of modern time. The *Pioneer* was thirty feet long, with a crew of six to thirteen, and could reach a speed of four knots. The Federals never used these ships operationally. In 1863, the Union also experimented with “rocket-propelled submarine torpedoes.” Several demonstrations were unsuccessful and the concept was not pursued further. In any event, Admiral Farragut felt that mines were not worthy of a “chivalrous nation” and would not permit the Union to sue them for most of the war.³³

On the other hand, the Confederates placed more confidence in mines than they did in naval artillery, which was ineffective against ironclad warships. In fact, they experienced considerable success and their system of laying mines is still in use today. The USS *Commodore Jones* was sunk by minefields at Drury's Bluff, and mines were used to defeat a joint Army and Navy expedition up the James River in May 1864. And in December 1864, General U.S. Grant sent two gunboats up the Roanoke River to destroy a railroad bridge at Weldon, sixty miles south of Richmond. The gunboats were unable to reach their target due to mine in the water. This was a critical target, as Robert E. Lee had only one remaining rail line of communication between Petersburg VA and Wilmington SC. The Confederate "torpedo service," led by Lt Hunter Davidson, was able to sink some of the Union navy's most powerful warships. The Union navy lost seven ironclads, including four monitors, eleven wooden warships, and numerous transport vessels to submarine explosions. That does not include the many ships laid up for repair by mines. During the war, even the heaviest artillery fire proved ineffective against ironclad warships.³⁴

The Union proved quite resourceful in developing countermeasures to the Confederate mine warfare. Various tactics using nets, drags, spars, and iron chains were at times successful in preventing the mines from touching ships and exploding. And, as with most weapons and obstacles used in war, mines and submarines were most successful if covered by supporting fire. Even the most mine-infested waters could be cleared relatively quickly if the ships dragging for mines were left unmolested. But mines and submarines both proved to be long lasting inventions, that would prove to be

extremely effective in warfare well into the future, both remaining important weapons today.

Conclusion

In the end, the Union Navy was able to play a crucial role during the Civil War, both in the blockading actions in the Atlantic Ocean and on the gulf coast; in the western campaigns on the Mississippi, Tennessee, and Cumberland Rivers; and in direct support of the army in their campaigns (particularly in McClellan's peninsular campaign). In conjunction with that, the new technology that was rapidly introduced during this epic struggle greatly affected the strategic planning and effectiveness of tactical maneuvers of both the confederate and the federal forces. Not only was steam power revolutionizing naval warfare, but larger weaponry, submarines, torpedoes/mines and joint operations were also greatly influencing the conduct of the war. One of the most influential technology breakthroughs was the advent of the ironclad warship, which directly affected the introduction of new weapons and strategy that impact us today.

The durability of the ironclads was such that the larger naval guns became standard on all warships. And the ships struck such fear into the strategic planners of the day that entire campaigns and tactics were altered for the duration of the conflict. And as the Union Navy gained the upper hand in these technologies, it further reduced the Confederacy's ability to carry on a sustained war. In conjunction with the other emerging technologies, the ironclads signaled a revolution in naval technology that has lasted until the 21st century

Notes

- ¹ Anderson, Bern *By Sea and By River; The Naval History of the Civil War* (Westport, CN: Greenwood Press, 1962), 7.
- ² *Ibid.*, 8.
- ³ *Ibid.*, 7,9.
- ⁴ *Ibid.*, 8.
- ⁵ Reynolds *Navies in History* (Annapolis, MD: Naval Institute Press, 1998), 126.
- ⁶ *Ibid.*, 126-127.
- ⁷ *Ibid.*, 126-127.
- ⁸ Anderson *By Sea and By River*, 77.
- ⁹ Eisenschiml, Otto and Ralph Newman *Eyewitness; The Civil War as We Lived It* (New York, NY: Grossett & Dunlap, 1956) 136.
- ¹⁰ Boynton, Charles B. *History of the Navy During the Rebellion* (New York, NY: D. Appleton & Co., 1868) 91.
- ¹¹ Anderson *By Sea and By River*, 78.
- ¹² Hensel, Howard M. *The Sword of the Union: Federal Objectives and Strategies During the American Civil War* (Montgomery, AL: Air Command and Staff College, 1989) 29, 70.
- ¹³ Anderson *By Sea and By River*, 78-79.
- ¹⁴ Boynton *History of the Navy During the Rebellion*, 90.
- ¹⁵ Anderson *By Sea and By River*, 80.
- ¹⁶ Boynton *History of the Navy During the Rebellion*, 95.
- ¹⁷ Eisenschiml *Eyewitness*, 91.
- ¹⁸ Boynton *History of the Navy During the Rebellion*, 98.
- ¹⁹ Evans, David L. III *The Technological Accomplishments of the American Civil War* (Wash D.C.: Georgetown University, 1947), 2.
- ²⁰ Hogg, Ivan. V. *Weapons of the Civil War* (Greenwich CT: Brompton Books Corp, 1987), 125.
- ²¹ Drury, Ian & Tony Gibbons *The Civil War Military Machine: Weapons and Tactics of the Union and Confederate Armed Forces* (New York: Smithmark Books, 1993), 187; Evans, *Technological Accomplishments*, 42-43.
- ²² Hogg, *Weapons of the Civil War*, 126-127.
- ²³ Drury & Gibbons, *The Civil War Military Machine*, 188-189; Evans, *Technological Accomplishments*, 44; Hogg, *Weapons of the Civil War*, 127.
- ²⁴ Hogg, *Weapons of the Civil War*, 128-129.
- ²⁵ *Ibid.*, 129.
- ²⁶ *Ibid.*, 130.
- ²⁷ *Ibid.*, 130.
- ²⁸ Drury & Gibbons, *The Civil War Military Machine*, 184; Hogg, *Weapons of the Civil War*, 130.
- ²⁹ Drury & Gibbons, *The Civil War Military Machine*, 184.
- ³⁰ Drury & Gibbons, *The Civil War Military Machine*, 188; Hogg, *Weapons of the Civil War*, 130.
- ³¹ Drury & Gibbons, *The Civil War Military Machine*, 155.
- ³² Hogg, *Weapons of the Civil War*, 130.

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³³ Evans, *Technological Accomplishments*, 45; Hogg, *Weapons of the Civil War*, 130.

³⁴ Drury & Gibbons, *The Civil War Machine*, 186; Evans, *Technological Accomplishments*, 44-46.

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