THE CONFEDERATE DEFENSE OF CHARLESTON, SOUTH CAROLINA

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

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B.S., State University of New York Maritime College, Bronx, New York, 1979

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This study investigates the defense of Charleston, South Carolina, during the American Civil War. Charleston, during this period, is unique because of the diversified nature the military operations that took place there.

This study examines why the city's defenses and military operations developed as they did. It analyses a series of operations from the Union defense of Fort Sumter through the occupation of Morris Island. The blockade is also examined. This study provides reasons for the success of the Confederate defense and failure of Union offensive actions.

The story of Charleston is a good example of an effective defensive operation. Charleston was not captured but evacuated when threatened by Sherman's army. The example of Charleston also makes a strong case for joint military planning and operations.

A detailed physical description of Charleston, an explanation of marine navigation during the period, and historical precedents are also presented to enhance an understanding of the operations examined.

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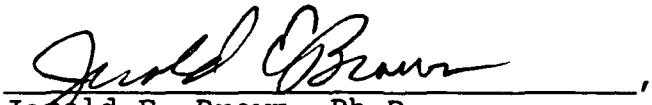
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The opinions and conclusion expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

THE CONFEDERATE DEFENSE OF CHARLESTON, SOUTH CAROLINA by LCDR Howard L. Stone III, USN, 134 pages.

This study investigates the defense of Charleston, South Carolina, during the American Civil War. Charleston, during this period, is unique because of the diversified nature the military operations that took place there. Combat took place both on land and on water involving fortifications, ironclads and other warships, obstructions, torpedoes, and a submarine. Amphibious, psychological, and mine warfare was practiced.

This study examines why the city's defenses and military operations developed as they did. It analyses a series of operations from the Union defense of Fort Sumter through the occupation of Morris Island. The blockade is also examined. This study provides reasons for the success of the Confederate defense and failure of Union offensive actions.

The story of Charleston is a good example of an effective defensive operation. Charleston was not captured but evacuated when threatened by Sherman's army. The example of Charleston also makes a strong case for joint military planning and operations.

A detailed physical description of Charleston, an explanation of marine navigation during the period, and historical precedents are also presented to enhance an understanding of the operations examined.

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INTRODUCTION

The defense of Charleston, South Carolina, during the American Civil War, is a unique and fascinating story in our history. What makes it unique is the diversified nature of the modes of warfare that took place there. Such diversification occurred despite unusually clear cut operational objectives for each side. Union goals were to deny the Confederates the use of Charleston as a seaport and capture the city. Confederate goals were to resist capture and preserve Charleston as a strategic seaport. Despite these concise goals, the belligerents carried out at least fifteen distinctly different modes of warfare there during the course of the war. These modes include:

1. Combat between fortifications
2. Use of artificial illumination
3. Maritime blockade
4. War against civilian commerce
5. Sinking of blockships and use of obstructions to deny navigation
6. Naval riverine operations
7. Combat between ships
8. Combat between ships and shore fortifications
9. Amphibious assaults

10. Mine warfare both on land and sea

11. Siege operations against fortifications

12. Torpedo attacks against ships

13. Psychological warfare in the form of long range artillery fire against civilian targets

14. Joint service operations, both in the offense and defense

15. Submarine warfare.

Why did the character of military operations in Charleston assume such a diversified nature? The military significance of Charleston changed during the course of the war. It was the scene of events that precipitated actual hostilities between North and South. As the "Cradle of Secession," Charleston held symbolic importance for both sides. As the war progressed, Charleston became one of the South's principal ports for blockade running. Blockading it effectively became a matter of growing urgency for the North as successful blockade runners generated both embarrassment and questions of legality in international eyes. The fate of Charleston, however, did not determine the fate of the Confederacy. At the end of the war, Ulysses S. Grant wrote during William T. Sherman's march across Georgia and South Carolina that he "did not regard the capture of Charleston as of any Military importance."[2]

Union efforts against Charleston nevertheless persisted through out the War despite its waning importance. Losses in personnel were heavy but not large when compared to the great battles and campaigns waged elsewhere. The Union Navy did suffer its heaviest losses of ships off Charleston, including three ironclads sunk and many more damaged. The failed efforts against the defenses of Charleston broke the careers of several military leaders.

In answering the basic question of how such diversification developed, this thesis will also address related questions. Why were these particular modes of warfare chosen? How were they integrated? What made them effective or ineffective? Why were the Confederate efforts successful and the Union efforts failures?

The answers to the basic and related questions hold the significance of this study. For the professional military person, the story of Charleston is a good example of an effective defensive operation. The defense of Charleston can be considered successful because it withstood the assaults of the Union forces arrayed against it for that purpose. The Confederate garrison evacuated only when Sherman's army threatened to cut off the city and isolate its defenders. Confederate reasons for defending Charleston closely match the purposes of such operations as expressed in current U. S. Army doctrine. The

Confederates sought to:

1. Defeat enemy attacks

2. Gain time

3. Concentrate forces elsewhere

4. Control key or decisive terrain

5. Wear down enemy forces as a prelude to offensive operations

6. Retain strategic, operational, or tactical objectives.[3]

Lessons of the Charleston campaign make a strong case for joint military planning and operation across all three levels of war, strategic, operational, and tactical. It provides examples of military operations which failed when overriding political considerations or personal ambitions displaced sound military judgment.

The defense of Charleston will also interest the layman. Many principles and techniques of warfare practiced at Charleston persist in similar form today. Notable examples are mine warfare, submarine warfare, and amphibious operations. A study of military operations in Charleston can clarify perceptions of military operations during the Civil War in general. To say that the Union Navy was not prepared to conduct a blockade of the South, as is commonly held, is an over-simplification of the situation and an unwarranted indictment of the professionalism existing

in the navy at that time. Effectively blockading the South was a task of staggering magnitude. No navy of that period, including the enormous British Royal Navy, could have accomplished such a task without great expansion. Lastly, the courage, sacrifices, and efforts made by those on both sides is a vital part of our heritage which should not be forgotten.

To relate the entire history of Charleston during the Civil War is beyond the scope and purpose of this thesis. Instead, this work focused on selected events during the course of the war, the examination of which will answer this thesis' basic and related questions. The blockade of Charleston affected and was affected by the defenses of the city and is also examined. A detailed physical description of Charleston, an explanation of marine navigation during the period, and historical precedents are provided to enhance an overall understanding of these events.

Recent works that describe Charleston's Civil War history include E. Milby Burton's The Siege of Charleston 1861-1865 (1970) and P. C. Coker III's Charleston's Maritime Heritage 1670-1865 (1987). Older books of note include John Johnson's The Defense of Charleston Harbor (1890) and Quincy A. Gillmore's Engineer and Artillery Operations Against the Defenses of Charleston Harbor in 1863 (1868).

The Official Records of the Navies in the War of the Rebellion (1894-1922) and The War of the Rebellion: Official Records of the Union and Confederate Armies (18801901) also contain a wealth of information.

ENDNOTES

[1]This is adaption of a list contained in the Introduction of E. Milby Burton's, The Siege of Charleston, 1861-1865 (Columbia: University of South Carolina Press, 1970), XV. I have revised Burton's list using more conventional military terms, deleted his item (5) "Ferocious hand-to-hand combat," and adding combat between fortifications, war against civilian commerce, and joint operations.

[2]U. S. Grant to E. M. Stanton, January 7, 1865, The Papers of Ulysses S. Grant, ed. John Y. Simon, 18 vols. (Carbondale and Edwardsville: Southern Illinois University Press, 1985), 13: 240.

[3]U.S. Army, FM 100-5, Operations (Washington: Department of the Army, 1986), 131-134.

CHAPTER 1

FORCES SHAPING CHARLESTON'S MILITARY OPERATIONS

It is helpful to begin by examining influential factors in three seemingly unrelated areas to achieve a better understanding of events in Charleston during the Civil War. These are: the geography of the area, historical precedents, and the technological state of naval gunnery during the Civil War.

Geography influences all military operations. The sea and Charleston are inescapably linked such that a geographical understanding must extend to marine areas as well. The belligerents' ability to use the sea is dependent, not only by the capabilities of their vessels, but also by their ability to navigate in coastal waters which, for mariners, are the most treacherous. Techniques available to navigate in these dangerous waters are also described since they affected military operations and are unfamiliar to many.

The history of previously successful and unsuccessful military operations against Charleston is significant. Many similarities exist between earlier and later events. Charleston's defenders derived and successfully applied

useful insights from the history of the area. The Union failed to appreciate historical precedents that could have provided them the basis for a successful plan to capture Charleston.

The capabilities of naval gunnery at the time of the Civil War, although it is only one of several technical areas influencing operations, uniquely shaped events. Naval gunfire was largely successful against shore fortifications throughout the war. Charleston was an exception which illustrates why naval gunfire was successful in some cases but unsuccessful in others.

The city of Charleston (see Fig. 1) sits at the head of a natural harbor on a narrow peninsula formed between the Ashley and Cooper Rivers. To the west of the city and harbor lies James Island bounded on its west by the navigable Stono River. Separating James Island from the mainland as its northern boundary is Wappoo Creek which runs between the Stono and the Ashley Rivers. It is navigable by shallow draft vessels and provides a path to the city from the open ocean. Just north of the Wappoo Creek runs the strategically important Savannah and Charleston Railroad. To the east of Charleston lies Mount Pleasant, bounded to its north by the Wando River which feeds into the Cooper River. Seaward of Mount Pleasant and James Island are a system of barrier islands. Northeast

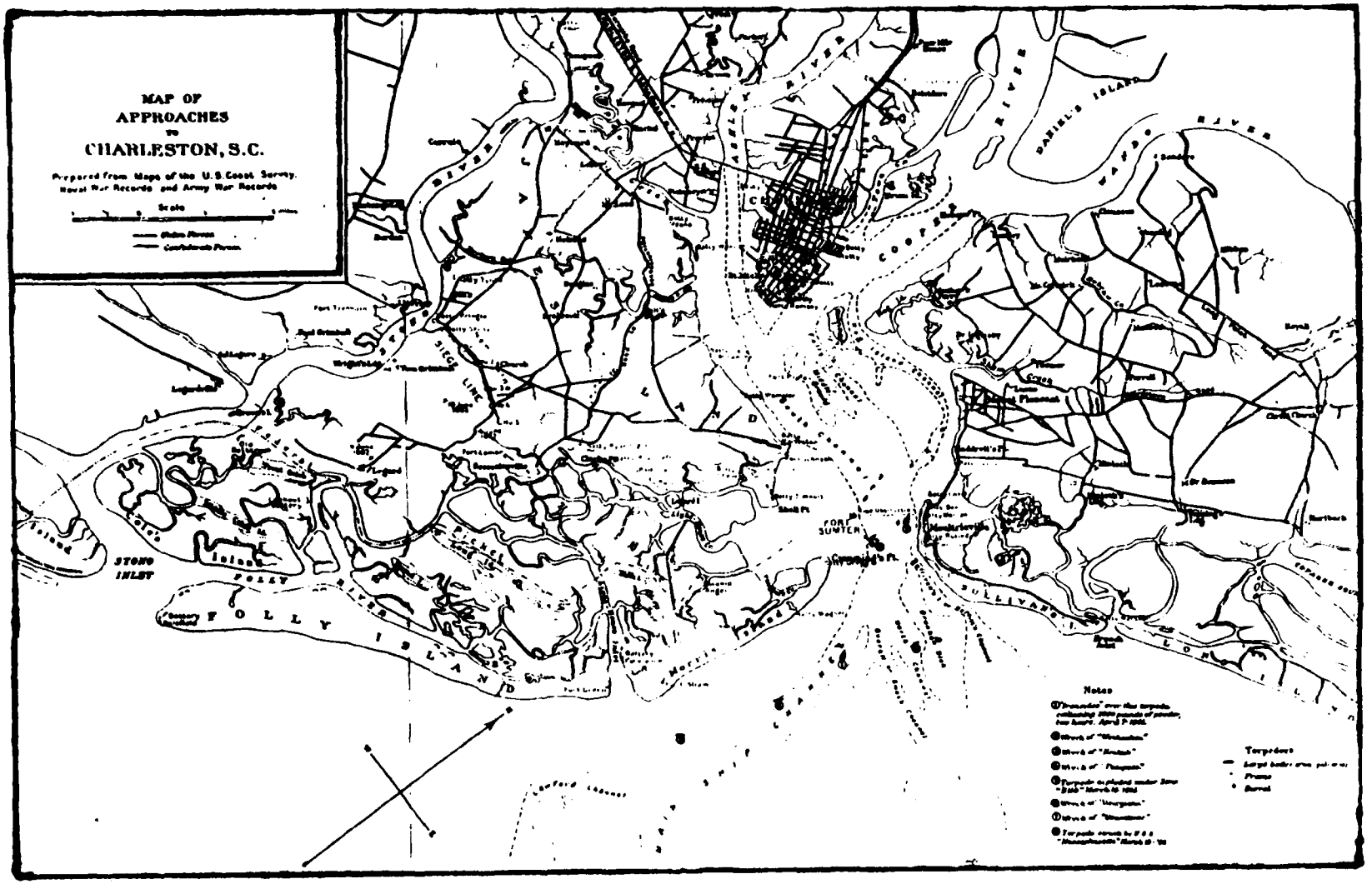

Fig. 1. Map of approaches to Charleston, South Carolina.
SOURCE: O. R. N., I-XIV.

of the harbor mouth is Sullivan's Island, to the southwest, Morris Island. The harbor mouth is approximately 2300 yards wide with the ship channel running on the Sullivan's Island side. Long Island, present day Isle of Palms, is northwest of Sullivan's Island, across Breach Inlet. Folly Island is southwest of Morris Island separated by Lighthouse Inlet. The Stono River separates Folly Island and Kiawah Island farther to the southwest. Cole's Island is inland of Kiawah and Folly Islands at the mouth of the Stono River. Salt marshes, crossed by rivers and tidal channels, are inland of all the barrier islands. Access by boat within the marshes varies with state of the tide. These marshes, with winding streams, channels, and soft, deep mud, form a major obstacle for access to the city.[1]

The hydrography of the waters around Charleston greatly favors the defense. The ship channels into Charleston at the time of the Civil War were significantly different than they are today. The nature of the port is such that tides and river currents scour deep channels where land areas constrict flow. Tidal currents deposit scour material offshore where it forms shallow sand bars. The location of these channels and bars can change over time. Tidal currents, virtually irresistible, shift or break up solid objects, such as ships, sunk in the channels. New channels may also be formed around obstacles. The

changing nature of these channels requires that they be sounded from time to time so that hazards to navigation can be discovered as they form. Dredging can help to keep the channels open but the effects are not permanent.

Ships entering through these tortuous and changing channels used a variety of navigation aids and techniques to assist their safe passage. The quickest, and often safest, way for ships to enter port was to hire pilots, or other seamen familiar with the channels, to guide them in. Local and national authorities marked channels and hazards with buoys. The had to be attended frequently to ensure they did not shift position or get lost. Pilots' local knowledge of buoyage was invaluable the ships using the channels. Denying attackers the use of pilots and buoys was one of the first steps that defenders could take to make their port more secure.

Detailed charts and terrestrial aids could be used if pilots and buoys were not available. Soundings taken with leads tipped with tallow determined depth and bottom sediment composition. The depth of water, corrected for state of the tide, and type of bottom sediment gave an indication of the ship's location on the chart. At the time of the Civil War, this was a highly refined art and charts were heavily detailed with bottom composition information.

Navigation ranges, formed by two fixed and charted objects in line with the desired track, were used where available. The objects forming the range need not have been deliberately placed. Prominent buildings or natural features could be used if accurately charted. When the range was kept visually aligned, the ship was on a known line of position. Change in the visual orientation of the two objects indicated the ship had departed its desired track and a course correction was required. This method allowed for precise piloting and was safe if the range markers were available. Ships could also approach a single charted point along a line of position prescribed by a compass azimuth with a change of the object's compass bearing indicating a deviation from track. This was a less precise form of the range method. The range method was very useful and difficult to deny if natural objects or major buildings such as churches or fortifications formed the ranges.

Ships could take compass bearings of charted terrestrial objects and cross plot them on a chart to determine their position. However, in the days before gyro compasses which indicate true direction consistently, this lacked precision and was probably of limited use for safe piloting. Horizontal angles between three known terrestrial objects could be measured with sextants and

plotted on a good chart. This was a precise means of navigation but difficult to accomplish on a moving ship and more suitable to surveying. Ships could estimate ranges to objects ashore of a known height by determining vertical angles with a sextant. This also was imprecise and more suited to offshore navigation where margins of safety were greater.

Ships had the capability to navigate safely in the vicinity of enemy held shorelines provided they had accurate charts even if the enemy removed or shifted aids to navigation. In general, warships, particularly the larger ones, had navigating capability than merchant ships by virtue of better equipment and manning. Governments recognized that their ships required a capability to enter ports held by hostile forces.

During the Civil War, four channels led to the mouth of Charleston harbor. This fact, coupled with the dynamic nature of the harbor approaches, greatly hindered Union efforts to seal off the port. The Main Ship Channel crossed the bar on a northwesterly heading 4500 yards east southeast of Light House Inlet. Buoys marked the channel entrance, turning points, and principal hazards. The depth of water over the bar was thirteen feet at mean low water and eighteen feet at high water. A second entrance to the Main Ship Channel, known as Lawford's Channel, was located

to the southwest with an available depth of water of seven feet at mean low water. Once across the bar, the channel turned to a northerly heading and deepened significantly to as much as twenty-four feet in some areas. It closed Morris Island from 3000 to 1500 yards. A forward range formed by beacons just east of Fort Moultrie, marked this channel. Ships entered the harbor mouth on a northwesterly heading from a point 1000 yards south of Fort Moultrie passing within 750 yards of the fort. The shallow water at the bar in the Main Ship Channel had the most profound impact on naval operations against Charleston throughout the war. This bar precluded the navy's most heavily armed ships, steam and sail driven frigates mounting as many as fifty guns, from entering the harbor. The most powerful ships available at the start of the war which could enter the harbor were the shallower draft sloops typically mounting fewer than twenty guns.[2]

Southeast of the harbor mouth was Swash Channel, with a limiting low water depth of nine feet over the bar. A buoy marked its entrance approximately 6000 yards from the harbor mouth, and it could be easily navigated by aligning the spire of St. Michael's Church in the city over the salient of Fort Sumter. Approximately 750 yards north of Swash Channel was the North Channel. It was a narrow channel marked by buoys closer to the harbor mouth

but with dangerous shoal water close in on either side. Ships using it ranged on a beacon at Castle Pinckney and its available depth was eight feet at mean low water.

The last major channel into the harbor was named after the coastal surveyor who had discovered it just before the war. Maffitt's Channel, also known as the Sullivan's Island Channel, was perhaps the most difficult to navigate. It was entered from inshore of Rattlesnake Shoal roughly 7000 yards south of Long Island. This channel passed within 500 yards of Sullivan's Island and was buoyed only for the last mile before entering the harbor. It's limiting depth was said to be eleven feet at low water but the proximity of shoal water and swift currents made it prudent that vessels be of shallower draft.[3]

The geography of the Charleston area affected British operations against the city during the American Revolution. In 1775, a British land and naval force under Major General Henry Clinton attempted to seize and hold Fort Sullivan on Sullivan's Island to seal off the harbor. Fort Sullivan, on the site later to be occupied by Fort Moultrie, was sited to rake ships in the main ship channel as they entered the harbor mouth. He also planned to ford Breach Inlet with troops and attack the fort from the rear. The attack failed when Fort Sullivan defeated the British warships which had anchored off the fort to bombard it. The land

attack also failed when Clinton found Breach Inlet unfordable and colonial troops fought off the British when they attempted to cross the inlet in small boats.[4]

Clinton made a second attempt to take Charleston in 1780. With a much larger force, he used Royal Navy gunboats in the rivers and estuaries southwest of Charleston to support his land forces as they moved to occupy James Island. Again supported by Royal Navy gunboats, his forces used small boats to enter the Ashley River through Wappoo creek. They then crossed the Ashley above the city and established themselves on Charleston Neck. The Royal Navy heavy warships entered the harbor by passing Fort Moultrie with a favoring wind and a flood tide. Once in the inner harbor, the British warships were out of effective range of American guns and were subsequently able to land troops in Mount Pleasant. These troops completed the encirclement of the city which surrendered on May 12.[5]

The Revolution provided Charlestonians several insights into the defensibility of their city which they later applied when devising their Civil War defense system. Land batteries alone could not prevent entry of a powerful fleet into the harbor nor were obstructions alone sufficient. The inner harbor required a strong defensive system to prevent operations within the harbor should the outer system be penetrated. James Island, with its

supporting waterways, provided an avenue of approach to the city which could be further exploited by an attacker supported by naval vessels. The area's natural obstructions were an important part of the defense system. The city could be cut off by an attacker and required secure access and escape routes. Possessing mastery of the seas, a forward support base in South Carolina, and an advantage in manpower, the Union and the British had several key advantages in common.

Near the end of the Civil War, Rear-Admiral David D. Porter gave his views of coast defense in a letter to the Secretary of the Navy. These views summarized navy war experience to date against Southern coast defense systems and illustrate the technological state of naval capabilities against coast defense systems at the time. In Porter's opinion - borne out by war experience - when armored vessels could get close enough (within one mile) and bring enough guns to bear (fifteen to one) to drive artillerists from their batteries, the capture of a fort was only a matter of time, particularly when a properly equipped land force was combined with the naval attack. A large number of guns was required to sustain a rate of fire which would keep the defenders from their guns. Not all of the attacker's guns needed to be of the heaviest caliber but some required sufficient power to defeat the

structure of the work. Guns mounted en barbette, even when separated by distance or heavy traverses, were vulnerable. Casemented batteries were little better than guns mounted en barbette because casements could be defeated by heavy naval guns, specifically, the 15-inch Dahlgren. To have the best chance of success, coast batteries needed to be sited out of range of heavy naval units and be supplemented with obstructions and a force of ironclads and rams. Porter advocated future fortifications of earthworks equipped with monitor-type turrets.[6]

Charleston's coast defense system defeated Union naval efforts for several reasons, including some alluded to in Porter's letter. The range of naval guns was limited by their mountings. Naval gunnery experts considered long range fire impractical due to inaccuracies caused by the ship's motion. The 15-inch Dahlgren gun fired a 440 pound solid shot or 330 pound shell which was capable of defeating the protection of any of Charleston's batteries. These guns were mounted solely on monitors whose turret construction limited the gun's maximum elevation to seven degrees and range to 2420 yards. In general, by virtue of their stable firing platforms and gun carriages permitting greater gun elevation, shore batteries significantly out-ranged naval batteries. Furthermore, a monitor's rate of fire of one round per gun every five

to seven minutes meant that a heavy volume of fire could not be maintained. Achieving the requisite volume of fire to drive gunners from their guns and protect attacking vessels, particularly unarmored ones, required many guns and many ships. Charleston's shallow coastal waters and large opposing gun batteries prevented the Union navy from concentrating sufficient firepower to defeat harbor fortifications. Only at Battery Wagner, isolated on Morris Island, was this achieved.[7]

Charleston's defensive success cannot solely be attributed to its coastal fortifications. Obstructions and naval units played a vital supporting role. Land defenses were sufficient to defeat land attacks until Sherman's army threatened in 1865. Where the actual strength of the defensive work was questionable, the Union's perception of its capability often sufficed. Lack of Union resolve, deficient planning, and a failure of joint army-navy cooperation on an operational level also enabled Charleston to remain in Southern hands almost to the war's end.

ENDNOTES

[1]United States Coast Survey, A.D. Bache Superintendent, chart, Preliminary Chart of Charleston Harbor and it's Approaches, 1858.

[2]Paul H. Silverstone, Warships of the Civil War Navies (Annapolis: Naval Institute Press, 1989), 21-49.

[3]Preliminary Chart of Charleston Harbor and it's Approaches, 1858.

[4]P.C. Coker III, Charleston's Maritime Heritage 1670-1865 (Charleston: CokerCraft Press, 1987), 79-85.

[5]Coker, 103-114; David Ramsey, M.D., The History of the American Revolution, ed. Lester H. Cohen, 2 vols. (Indianapolis: Liberty Fund, Inc., 1990), 478-479.

[6]Rear-Admiral David D. Porter to the Secretary of the Navy, February 1, 1865, Viktor Von Schelia, A Treatise on Coast Defense: Based on the Experience Gained by Officers of the Corps of Engineers of the Army of the Confederate States (Westport: Greenwood Press, 1971), 158-173.

[7]Spencer Tucker, Arming the Fleet, U. S. Navy Ordnance in the Muzzle-Loading Era (Annapolis: Naval Institute Press, 1989), 120-121.

CHAPTER 2

THE START OF HOSTILITIES

When Major Robert Anderson assumed command of the U. S. Army garrison in Charleston in November 1860, he confronted a situation of enormous complexity. Great tension and fervor for secession existed in Charleston, with the installations owned by the U. S. Government standing as obstacles to a clear break from the Union. These installations included Forts Moultrie and Sumter, Castle Pinckney, and the United States Arsenal in downtown Charleston. A memorandum of verbal instructions to Major Anderson clearly shows the unenviable nature of his orders.

> You are carefully to avoid every act which would needlessly tend to provoke aggression...you are not, without evident and immediate necessity, to take up any position which could be construed into the assumption of a hostile attitude. But you are to hold possession of the forts in this harbor, and if attacked you are to defend yourself to the last extremity. The smallness of your force will not permit you, perhaps, to occupy more than one of three forts, but an attack on or attempt to take possession of any one of them will be regarded as an act of hostility, and you may then put your command into either of them which you deem most proper to increase its power of resistance. You are also authorized to take similar steps whenever you have tangible evidence of a design to proceed to a hostile act.[1]

Tasked with protecting United States interests in an increasingly hostile city, Major Anderson's command was

in such poor condition that it precipitated his predecessor's relief. Numbering seventy-five officers and men in two badly under-strengthened artillery companies and a band, his troops were both ill-suited and ill-prepared for a major defensive effort.[2]

Three permanent defensive fortifications existed in Charleston when Major Anderson assumed command. The smallest was Castle Pinckney, located 1200 yards east of the city on Shutes Folly Island. Pinckney was a small, round shaped, brick fort with one tier of casements which the army had constructed starting in 1808. It commanded the inner harbor to prevent hostile naval operations as had occurred during the British siege in 1780. When built, Pinckney was Charleston's primary harbor fortification. Considered thoroughly antiquated by 1860, it was not garrisoned but occupied by a caretaker who performed limited maintenance. Pinckney's guns, four 42-pounders, fourteen 24-pounders, and four 8-inch seacoast howitzers were, however, mounted.[3]

By virtue of technical advances which increased the effective range of coastal artillery and its larger size, Fort Moultrie (see Figs. 2 and 3) replaced Castle Pinckney as the the harbor's main defense in the years following the War of 1812. By 1860, Charleston's U. S. Army garrison was headquartered there. Fort Moultrie's

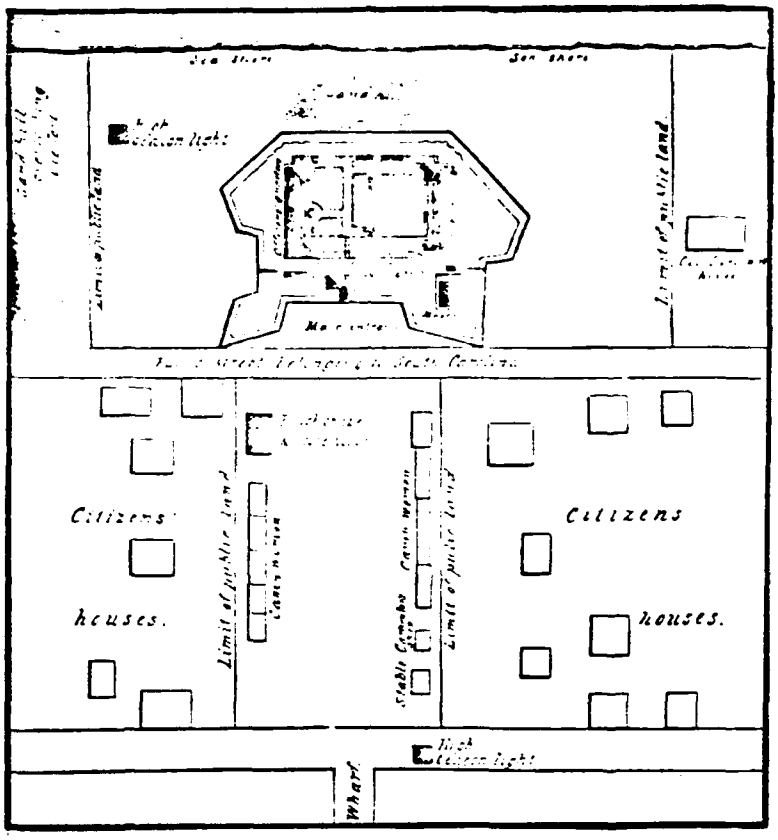

Fig. 2. Fort Moultrie and surrounding areas.
SOURCE: Crawford, 63.

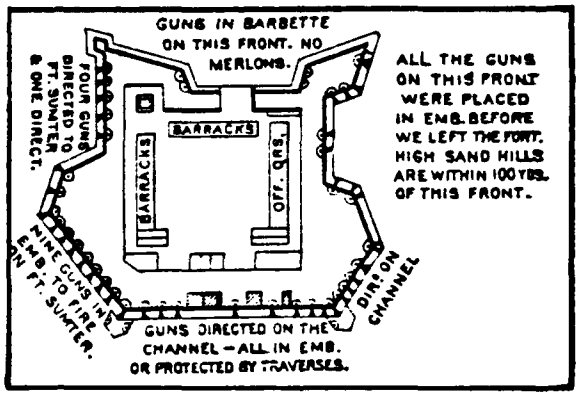

Fig. 3. Fort Moultrie interior arrangement and disposition of guns as of Union evacuation December 27, 1860.
SOURCE: O. R. A., I-I, 146.

structure in 1860 was basically unchanged since its completion in late 1809. It consisted of 16 foot high brick walls with guns mounted en barbette. Moultrie's 1860 armament consisted of sixteen 24-pounders, fourteen 32-pounders, ten 8-inch columbiads, five 8-inch sea-coast howitzers, and seven field pieces.[4]

Fort Moultrie had several recognized weaknesses. Its location made it susceptible to damage from natural forces. Hurricanes destroyed the first two forts on the site and in the late 1820's, beach erosion was threatening the fortification then existing. In response to this and as part of a nationwide coastal fortification building program, the Secretary of War approved plans in December 1828 for a new fortification, named Fort Sumter, to be built on a shoal opposite of Fort Moultrie (see Figs. 5 and 6). Army engineers started construction started shortly thereafter. Built of brick, Fort Sumter was the largest of Charleston's permanent fortifications. Its designers intended it to mount as many as 146 guns, en barbette and in two casemented tiers, with a garrison of 650 men. Although not situated as close to the main ship channel as Fort Moultrie, the five faces formed by its pentagonal design gave it good command of the mouth of the harbor as well as the middle harbor. Its weakest face, the base of the pentagon, faced James and Morris Islands. Due to

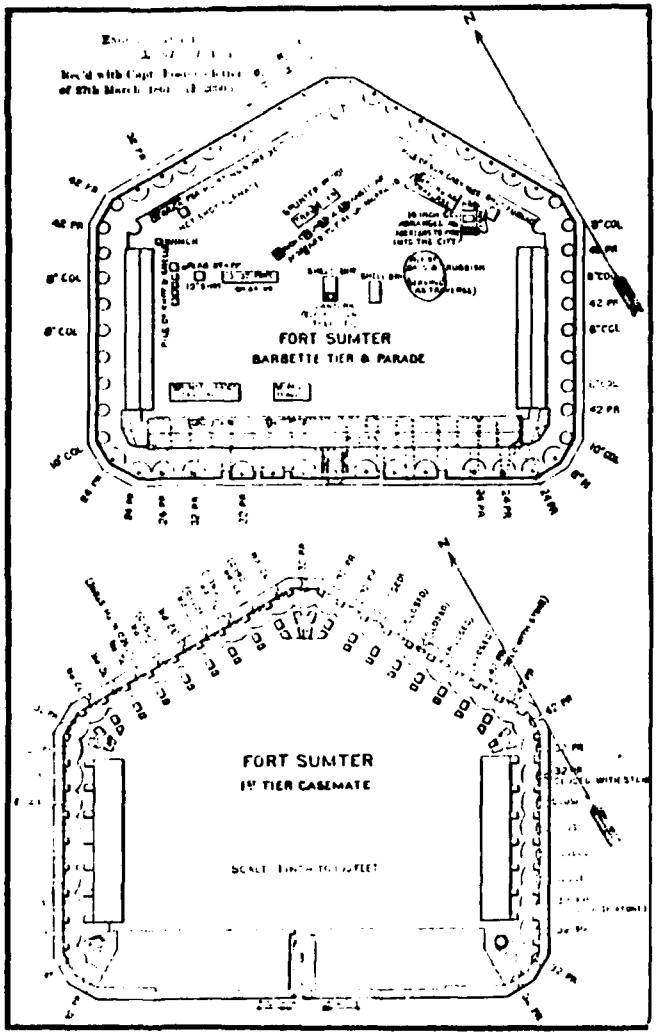

Fig. 4. Fort Sumter internal arrangement and disposition of guns as of April 12, 1861.
SOURCE: O. R. A., I-I, 225.

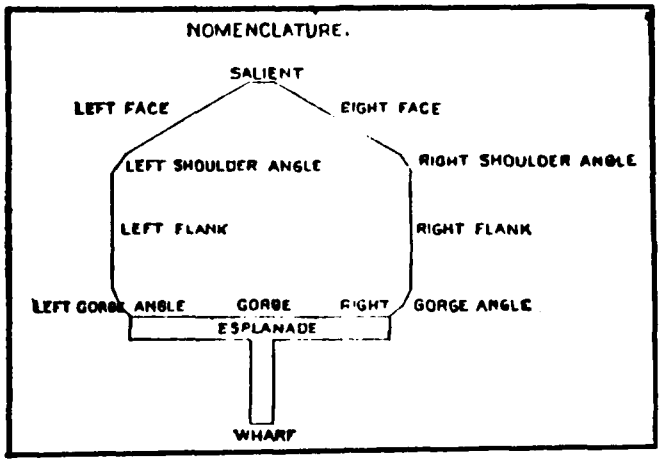

Fig. 5. Nomenclature of Fort Sumter.
SOURCE: O. R. A., I-I, 213.

the ambitious nature of its design, which included building a man-made island, and limited funding that constrained coast defense construction in the years preceding the Civil War, Fort Sumter was not completed when Major Anderson assumed command. Most of its structure was complete as were its four magazines stocked with nearly 40,000 pounds of powder. Seventy-eight guns were on hand although most were not yet mounted and implements for serving all the guns were incomplete. A renewed effort to complete Fort Sumter had been ongoing since the summer of 1860 due to the deteriorating political situation in the South. Over 100 men were engaged completing gun tiers, detail work, and preparing living areas for a garrison.[5]

In addition to the three existing fortifications, Fort Johnson, located roughly one mile west of Fort Sumter on James Island, was also within Anderson's area of responsibility. It was the site of Charleston's oldest fortifications, although none existed there in 1860. Quarters for officers and men, in uninhabitable condition, and a stone watch tower were all that remained of earlier fortifications.[6]

Major Anderson was well aware that the South Carolinians would make efforts to seize control of the U. S. Government facilities in Charleston. Each of the three fortifications in his area of responsibility

presented unique capabilities and vulnerabilities. The guns of Castle Pinckney commanded the heart of the city and for this reason Anderson considered it the safest site for his command. Its armament, sufficient to threaten city inhabitants directly, did not allow for control of the Main Ship Channel and outer harbor. Reinforcement reaching it from outside of the city under hostile conditions would be nearly impossible. Fort Moultrie commanded all of the channels leading to the harbor and was armed and outfitted. It was, however, particularly vulnerable to land attack. Situated in the midst of private residences on Sullivan's Island and surrounded by low sand hills, good cover was available for an attacking land force which would also hinder reinforcement. Furthermore, sand had been allowed to accumulate around its low walls to the extent that attackers could gain access to the fort's interior without ladders. The design of the fort lacked bastions or other provisions to direct fire along its seaward faces to repel ground assault. Fort Sumter, although not complete, was for Anderson's purposes, the strongest and most defensible fort in the harbor. It presented the potential to control access to the city from the sea and would be the most easily reinforceable. Access to its walls required boats which simplified defense against storming.[7]

Upon assuming command, Anderson took immediate steps to improve his situation. Having requested reinforcement and instituting a program of drill to correct his men's training deficiencies, he turned his attention to improving the fortifications themselves. Captain J. G. Foster was the officer in charge of engineering operations in Charleston. Although responsible to the Corps of Engineers, he nevertheless cooperated with Major Anderson in preparing Charleston's fortifications for any eventuality. Foster contracted workmen to make habitability improvements to Castle Pinckney in anticipation of garrisoning. Work continued on Fort Sumter including stone work, preparing barracks for garrisoning, and mounting guns. As suggested by Major Anderson, the mounting of guns capable of bearing on Fort Moultrie was delayed to preclude their use against the garrison in Fort Moultrie should Sumter be seized by the South Carolinians.

Foster expended great effort to improve Fort Moultrie's capability to resist land attack, a threat which constant drilling of South Carolina military units made clear. Workers removed sand from around the fort's walls and built a ditch and counterscarp. A bastionette was added to the northwest corner and two flanking caponieres added to the seaward faces, extensions which permitted fire along the main walls. Finally, work crews built

merlons to protect gun crews and the infantry defenders who were considered vital to the successful defense of the fort. Nothing could be done about the private residences and sand hills on private property around the fort without provoking the local population, a situation Anderson was strictly ordered to avoid.[8]

On December 26, 1860, less than a week after the signing of the Ordinance of Secession, Anderson, convinced by constant threats that Fort Moultrie was to be attacked by South Carolinian forces, evacuated his command and their dependents to Fort Sumter. The work in progress to make Fort Moultrie more defensible had not been completed and created vulnerabilities in addition to those already existing. In response to this move, considered as bringing on a state of war, South Carolina Governor F. W. Pickens ordered state troops to seize the Charleston Arsenal, Castle Pinckney, and Fort Moultrie.[9]

Anderson's move to Fort Sumter, a bold act accomplished without bloodshed and at great risk in view of the strong emotions running among the local population, greatly simplified his military problem. Work could proceed on Fort Sumter with clear purpose by the considerable force of civilian workmen, many of whom the army engineers had hired from out of state. The possession of Fort Sumter gave Anderson the perceived capability to control access

to Charleston by oceangoing ships. Although the ability of warships to run past coast defense fortifications had been previously demonstrated, Fort Sumter itself had not been so tested. Weakly garrisoned as it was, Fort Sumter still possessed the heaviest armament of the harbor fortifications and was considered a great threat, particularly if reinforced.

Governor Pickens, acting as Commander in Chief of South Carolina's military forces, took immediate steps to counter the threat posed by Fort Sumter and prevent its reinforcement. In addition to seizing Fort Moultrie, Castle Pinckney, and the U. S. Arsenal, he ordered all communication to and from Fort Sumter cut off. He took control of all aids to marine navigation in South Carolina and directed all United States Lighthouse inspectors to leave the state. State representatives had the Rattlesnake Shoal lightship towed into the harbor and removed or relocated harbor buoys and beacons. The South Carolina Navy stationed guardships off the bar and off Fort Sumter to identify approaching vessels and provide early warning should they prove unfriendly. Governor Pickens ordered a battery to be built on Morris Island out of the range of Fort Sumter's guns to cover the Main Ship Channel. State forces erected the battery comprised of four 24-pounder field pieces. Additionally, the South

Carolinians established a post at Fort Johnson on James Island. They also commenced repairs to the guns disabled by Major Anderson's men during to evacuation. In Washington, state representatives continued diplomatic efforts to achieve a peaceful settlement.[10]

On January 9, 1861, the Morris Island Battery fired on and forced the steamship Star of the West to give up an attempt to deliver 200 troops, arms, and provisions to reinforce Fort Sumter. In response, Anderson threatened to fire upon any vessel passing within range of Fort Sumter's guns should the action not be disclaimed. Anderson deferred action pending receipt of instructions from Washington. The War Department's response, received January 21, supported Anderson's action in not firing in defense of the Star of the West thus avoiding a general engagement. This communication also informed him that no further attempt at reinforcement would be made unless necessary for his safety or "a successful defense of the fort."[11]

After their successful defeat of the reinforcement attempt and being convinced that Anderson would not attempt to close the harbor, the South Carolinians eased the restrictions imposed on Sumter's garrison. The governor allowed the garrison unrestricted use of the mail and even the purchase of fresh provisions until shortly before the

fort's surrender. Free use of the mail enabled Anderson and Foster to transmit detailed reports of preparations made against them almost until the time of the fort's surrender. Fresh provisions permitted the garrison to stretch the rations they had brought with them from Fort Moultrie. This was particularly important since the civilian workers and dependents were also subsisting on these rations.

The threat that Fort Sumter posed to Charleston became even more real following Major Anderson's threat to close the port to shipping. Governor Pickens directed that a board of senior officers and engineers convene and determine the best means to operate against Fort Sumter and to control those military operations. The board ruled out an assault against the fort as too costly in lives and uncertain to succeed. It recommended the erection of batteries of heavy ordnance for an "incessant bombardment and cannonade." Should the bombardment fail to dislodge the garrison or weaken it sufficiently to assure a successful assault, the garrison would be starved out. To prevent reinforcement, the board recommended that the channels to the harbor be blocked or covered by gun batteries.

Governor Pickens approved the board's recommendations and directed implementation by the state forces under his

command. Using guns from the United States Arsenal, Fort Moultrie, and Castle Pinckney, the South Carolinians set to work building batteries for three 8-inch Columbiads each at Fort Johnson and on Cummings Point. A mortar battery was also built west of Fort Moultrie on Sullivan's Island at the point closest to Fort Sumter. To close Maffitt's Channel, the South Carolinians sited a battery 1400 yards east of Fort Moultrie. To supplement the battery which had fired on the Star of the West, four hulks were sunk in the Main Ship Channel at the bar. This use of marine obstructions, which the Union would repeat later in the year on a larger scale, had the effect of not closing that channel but further limiting the size of ship that could enter the harbor. This was important because the deepest channel was also the least protected.[12]

On February 23, the Provisional Government of the Confederacy began to involve itself materially with the military situation in Charleston by sending Major W. H. C. Whiting to Charleston to conduct an engineer's reconnaissance. Whiting was a respected military engineer and former U. S. Army officer. His report expressed the opinion that so much emphasis was being placed on the batteries on Cummings Point, one of which was iron plated, their intent to breach Fort Sumter from this point was obvious and could therefore be countered. Furthermore,

not enough emphasis was being placed on harbor defense or to counter reinforcement. Whiting's report was difficult for Governor Pickens to accept; nevertheless, he relinquished control of military operations against Fort Sumter to the Provisional Government.[13]

Due to the importance of the standoff taking place in Charleston, the Provisional Government took control of military operations in Charleston despite the many difficult tasks it was facing in becoming established. The government selected a West Point-trained ex-U. S. Army engineer, Pierre G. T. Beauregard, to command. He was appointed a brigadier-general and authorized by the Confederate War Department to raise up to 5,000 troops in the Provisional Forces of the Confederate States.[14]

Assuming command on March 6, Beauregard found among the South Carolinians "a great deal of zeal but little professional knowledge and experience." He requested and received the services of several other professional military officers, including Major Whiting. With Whiting as a trusted and heavily empowered assistant, Beauregard directed the establishment of a harbor defensive system with an offensive capability. He recognized that the Confederates' greatest advantage in the upcoming confrontation was the weak state of Sumter's garrison. He therefore made the prevention of reinforcement the Confederate's highest

priority. Seeing that reinforcement could come by small boat via Lighthouse Inlet or the Folly and Stono Rivers west of Fort Sumter, the Confederates established field works to counter that contingency. Beauregard also anticipated that the Union might attempt reinforcement under the cover of darkness. In addition to posting a naval patrol outside of the harbor equipped for night time signaling, Drummond lights for illuminating the channels leading to Fort Sumter were obtained from New York and emplaced on Sullivan's and Morris Islands. The South Carolina Navy prepared and stationed fire hulks, old ships loaded with combustibles, which, when ignited, would illuminate Fort Sumter's southwest side.[15]

General Beauregard's plan for offensive batteries was to form a "circle of fire" around Fort Sumter. His placement of batteries exploited Fort Sumter's design weaknesses which were common among American coastal fortifications of the time. Designed along lines very similar to the broadside armed men-of-war they were to counter, these forts concentrated firepower at the expense of protection. Heavy masonry walls concentrated around the face of the guns protected them against projectiles with a flat trajectory such as would come from warships. To maximize the number of guns per given area, designers provided no protection between individual guns.[16]

Warships had more severe design constraints forcing greater design compromise than shore fortifications. Heavy gun batteries on ships were limited in number by the buoyancy of the ship's hull but also had to be mounted to achieve optimum stability in a seaway. Mounting guns too high in a hull could cause a ship to heel excessively in heavy seas or high winds and be lost by capsizing or taking on water through submerged openings. Mounting guns low in the hull gave the ships a greater tendency to return to an upright position. If the ship's center of gravity was too low, however, the ship's rolling motion was too rapid and accurate gunfire made much more difficult. The optimum gun placement resulted in a ship sufficiently stable to remain upright but not so stable as to preclude the ship from having a slow rolling motion. Compared to a rapid roll, a slow roll enhanced accurate firing by making it easier to fire guns while bearing on their targets.

The necessities of warship design gave shore fortifications an advantage over ships in that guns could be mounted high in the fort without the concern for stability problems. This gave shore guns advantages in range, accuracy, and a descending trajectory to their projectiles which better enabled them to penetrate ship's decks vice heavy sides. Fort Sumter's heaviest armament, 8- and 10-inch columbiads, were on the fort's highest level

en barbette without overhead cover. These design practices made Fort Sumter's guns vulnerable to enfilade fire. Taking advantage of this vulnerability, Beauregard strengthened his batteries and placed them to not only cover reinforcement routes but also to enfilade barbette guns (see Fig. 6).

The heavy gun batteries on Morris Island, poorly positioned for breaching due to the oblique angle in relation to Sumter's gorge wall and right flank, enfiladed the barbette of the right face. Since it faced Fort Moultrie, Anderson had not armed it. The Morris Island batteries' primary function was to cover Sumter's gorge which was the fort's normal supply point. Breaching was a secondary role. Fort Moultrie's position did not favor enfilade fire. It could provide a heavy volume of fire and was strengthened with a glacis and merlons for the effort. Beauregard situated batteries west of Fort Moultrie to enfilade Sumter's most heavily armed flanks. The Confederates built one battery behind an abandoned summer home directly opposite Sumter's salient and did not unmask it until just before the April 12 bombardment. Causing consternation to Sumter's defenders, this battery rendered reinforcement from Sumter's left face dangerous. Heretofore, this had been the only site practical in view of coverage on the other sides from the Morris Island and

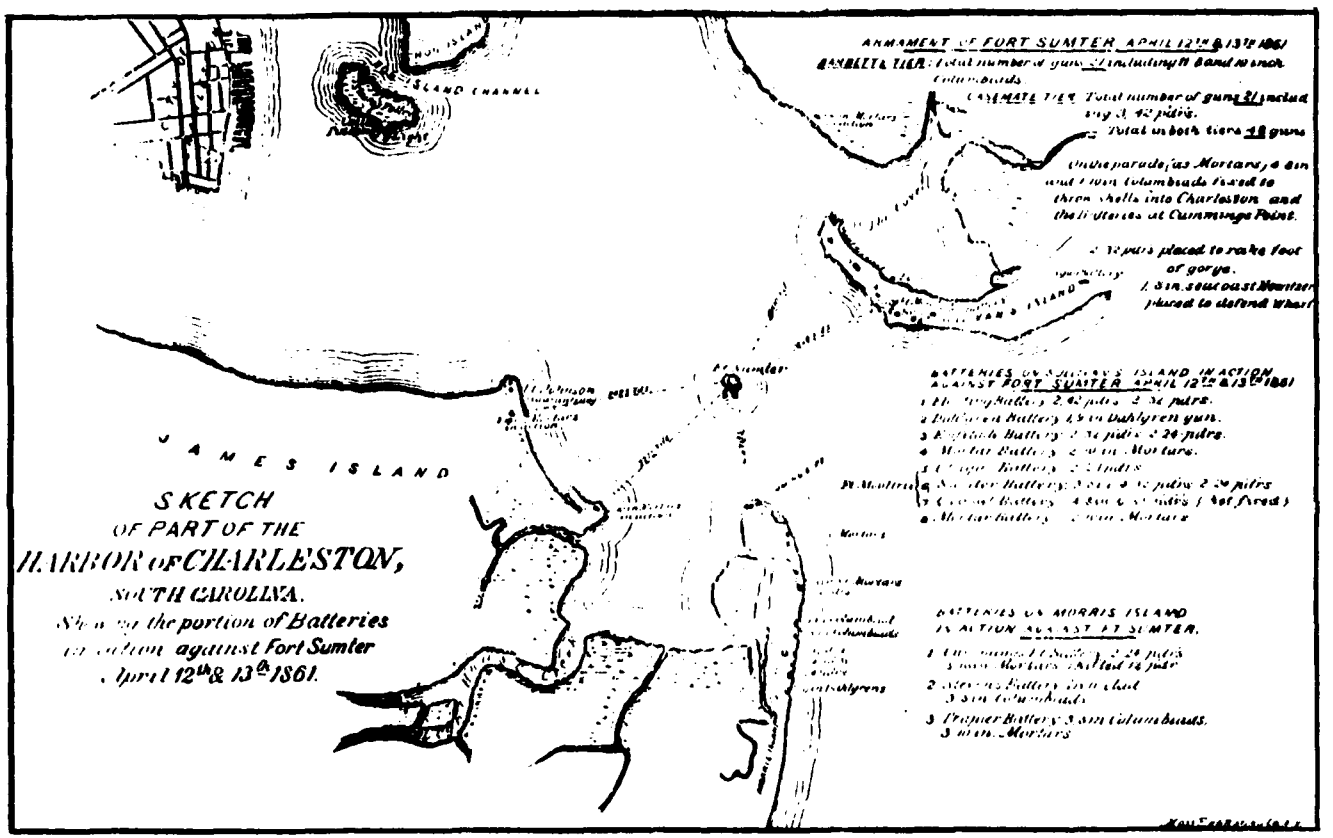

Fig. 6. Disposition of Confederate batteries used against Fort Sumter April 12-13, 1861.
SOURCE: Crawford, 472.

Fort Moultrie batteries. Mortars, most of which had to be brought from outside of Charleston, situated at Forts Moultrie and Johnson, on Morris Island and in Mount Pleasant commanded all areas of Sumter's interior.[17]

In January, the Confederates started constructing an iron-plated floating battery, the brainchild of a former U. S. Navy officer, Captain John Hamilton, and an army engineer, Major James Trapier. Iron plating ships was not a new idea. The French and the English had devised self-propelled iron-plated gunboats during the Crimean War. The French had also completed their first true ironclad ship, the Gloire, in 1859 to which the English had responded by building the revolutionary frigate Warrior. The United States also had laid down its first ironclad warship in 1854. Dubbed the "Stevens Battery" after its designer and builder who never completed it due to excessive design changes that he attempted during construction. The press well publicized all of these vessels as a matter of national pride and their particulars were well known.[18]

The Confederate floating battery was a barge with an iron-plated casement on one side pierced for four guns, 32- and 42-pounders. Completed in March, it provided protection and mobility in a combination shore batteries could not match. Sumter's defenders, who had watched its construction, feared it as having the potential of being

brought in close to weak points of Sumter's walls to open breaches. The Confederates used it as a mobile battery to place guns in positions where the urgency of the situation or nature of the ground did not allow erection of field works. Prior to the April 12 bombardment, they moored the floating battery at the west end of Sullivan's Island to augment the enfilade battery. It completed Beauregard's "ring of fire."

Major Anderson and Captain Foster watched and reported in detail the South Carolinians' preparations. Buoyed by false expectations of a peaceful settlement, they nevertheless continued preparations to make Sumter as defensible as possible and ready for reinforcement. Using the engineer's civilian workforce which remained in the fort until the end of March, Foster and the garrison accomplished much to increase Sumter's offensive and defensive capabilities. They mounted or relocated the fort's guns in response to threats posed by the Southern batteries. Where lifting equipment or carriages were not available for the 8- and 10-inch columbiads, they mounted these guns as mortars in the fort's parade.

The garrison made preparations to repel ground assault against the fort's walls which included the use of land mines at the fort's entrance. They sealed unused gun embrasures and other openings in the fort's walls.

By fitting friction primers with long lanyards into 8-inch artillery shells, the garrison improvised large grenades to be dropped from the fort's walls. To provide some protection from mortar fire, the civilian workforce erected protective traverses until they expended available building materials. In addition to provisions, building equipment, and construction materials, shortages of other materials existed. Critical to the offensive power of the fort was a shortage of cartridge bags for the guns. The garrison used blankets and clothing as raw materials for additional bags but never were enough available for unrestricted fire.[19]

By the end of the first week of April, diplomatic efforts to resolve the problem of Fort Sumter's ownership were coming to an end. Abraham Lincoln decided to resupply Sumter, peacefully, if permitted, or by force and with reinforcements, if opposed. The War Department notified Anderson that the attempt would be made and would arrive just as his provisions were exhausted. Anderson resolved to stay in Fort Sumter and conditioned his responses to General Beauregard's last minute demands that he evacuate. Anderson's last response, the one that triggered the Confederate bombardment, was that he would evacuate by noon on April 15 unless he had received controlling instructions or resupply before then.[20]

Lincoln notified the Confederate government of his intentions to resupply Sumter. Representatives of the Confederate government notified their superiors that the expedition was enroute and would arrive prior to the 15th. The Southern government empowered General Beauregard to commence Sumter's bombardment if he could not compel its evacuation. The Confederates commenced the bombardment in the early morning of April 12, just as Sumter's reinforcements were arriving off the bar.[21]

The effect of Confederate fire on Fort Sumter was telling but deceptive in its implications for future design of fortifications. The threat posed by mortars and enfilade fire caused Anderson to opt not to man guns on Sumter's barbette tier. Not manning his heaviest armament no doubt prevented casualties on both sides. Mortar and hot shot from Fort Moultrie caused the most serious damage, burning barracks and wooden structures in the fort's interior. These fires cut off access to the principal magazine, threatened its powder, destroyed the fort's gates, and set off secondary explosions from grenades and shells which caused further damage. Sumter's walls, other than where fire had destroyed wooden barriers, were not breached by Confederate fire and few guns on the barbette tier were significantly damaged. This was probably due to the small

size of individual guns used, mostly 32- and 42-pounders, and fire that, by later standards, was inaccurate.[22]

The Confederate bombardment compelled Anderson to accept generous surrender terms offered by Beauregard. Resupply was futile given the placement of Confederate guns, even if attempted at night. Anderson's and Foster's letters gave no indication that they were aware of Confederate Drummond lights on Morris and Sullivan's Islands. The purpose of the fire hulks, which the Confederates had positioned after the Union mail was cut off to illuminate night reinforcement attempts, could not have escaped their notice. Anderson peacefully evacuated Fort Sumter on April 14 after firing a salute which caused the only fatalities of the bombardment.[23]

With Fort Sumter in Confederate possession, the nature of Charleston's fortifications changed to harbor defense. The first priority was the repair of Fort Sumter. The Confederates made only a limited effort to increase its resistance to land-based attack based on experience gained during the bombardment. They limited these improvements to providing additional protection to its magazines which were located in the angles of its weak base facing Morris Island. This was done using external cribworks filled with sand mounted on the outside of the gorge wall. Most of the work, however, consisted of

remounting guns, repairing masonry, and rebuilding quarters for its garrison. Beauregard ordered that batteries which had been directed against Fort Sumter, including all those on Morris Island, be dismantled. On Sullivan's Island, the Confederates re-oriented Fort Moultrie's guns for channel defense. They also strengthened the batteries east of the fort because of its position commanding the three northern channels at the mouth of the harbor. The Confederates named this battery, Battery Beauregard.[24]

Prior to his detachment in late May, General Beauregard surveyed the South Carolina coast and made recommendations for defensive works. Most significant to the defense of Charleston, he ordered the erection of batteries on Cole's Island overlooking Stono Inlet to deny access to the Stono River by naval vessels. The British had used the Stono extensively in their successful 1780 attack on Charleston. Beauregard also recognized the significance of Port Royal harbor south of Charleston, and the need for its defense, writing to Governor Pickens:

> ...the magnificent and important harbor of Port Royal can be effectively protected by two strong works on Bay Point and Hilton Head...and the steel-clad floating battery moored half way between the two, all armed with the heaviest rifled guns that can be made.[25]

The problem of defending Port Royal was that its entrance was two miles wide and had water deep enough to accommodate the largest Union warships. A weak defense being worse

than none, Beauregard recommended instead that small works be placed at the inner end of the harbor to prevent landings which could threaten the strategically important Charleston and Savannah Railroad. Beauregard's system of defenses sought to deny access to major waterways on the coast. It placed little emphasis on defensive lines inland of the coast since a land attack was not yet envisioned.[26]

Beauregard transferred to Virginia and Colonel R. H. Anderson assumed command on May 27, 1861. Anderson continued work on the defenses recommended by Beauregard. The Confederates established a telegraph system between the city and the forts in the harbor and on the Stono River. They tasked their naval units to monitor the Union blockading squadron which had appeared off the harbor and to prevent small craft from the harbor communicating with the Union ships. Gradually, Confederate defensive efforts waned and diverged from Beauregard's plan requiring a new threat to revitalize them.[27]

On April 19, President Lincoln proclaimed a blockade of Southern ports to be in effect and on May 1, the Navy Department appointed Flag-Officer S. H. Stringham to command the squadron responsible for the Atlantic coast blockade. Indicative of the many problems of setting up the blockade and the slow communications of the period was the fact that the Navy Department could not tell Stringham what ships

were assigned him. To find out, he would have to wait for his flagship to commission and transit to Hampton Roads where the ships were assembling. In the interim, the Navy Department assigned ships to blockade specific ports with the screw frigate Niagara being the first ordered to Charleston. Two days after ordering her to Charleston, the Navy Department changed her destination to the Gulf of Mexico where she was to be part of a large squadron being formed to interdict arms shipments through the very active ports of the gulf, principally New Orleans.[28]

Niagara left port prior to receipt of her new orders and consequently was the first ship to establish the blockade off Charleston arriving on the night of May 10. She spent her first few days off Charleston boarding numerous vessels, advising them of the blockade, and directing them to other ports. On May 12, Niagara captured the first prize off Charleston, seizing the ship General Parkhill from Liverpool, which had continued to close the coast and signal ashore despite Niagara's warning. Niagara left Charleston on May 14 when a steamer enroute to the Gulf Squadron delivered a copy of her revised orders. A continuous naval presence off Charleston was not an Atlantic Blockading Squadron priority until Stringham arrived at Hampton Roads and assumed more direct control of the blockade.[29]

Charleston proved deceptive to those estimating the number of ships required to effectively seal the port. The port, with its four channels to block, was like a funnel with its neck at the harbor mouth protected by shore batteries and shallow water. Blockading close to the mouth of the harbor required fewer ships but to be effective they had to be able to navigate in shallow water and operate under the guns of Fort Sumter, Sullivan's Island, and later, Morris Island. Blockading farther off shore protected the blockaders from shore battery fire but required many more ships to cover the longer stretch of coastline. In either case, a speed advantage of blockader over blockade runner could reduce the number of ships required.

Determining the types of ships to employ on blockade stations was a process of experience coupled with ship availability. Different types offered different advantages and disadvantages. Large pre-war types such as steam frigates and sloops had the advantages of high speed, large coal capacity hence long on station time, and senior commanders who could exercise experienced judgment and carry out command and control functions over several ships engaged on distant stations. The frigates and sloops suffered from deep drafts which limited their effectiveness and by the fact that their numbers were limited by expense and time required to build. Steam ships procured from commercial

sources had the advantage of relatively immediate availability. Many were of high speed, large coal capacities, shallow drafts, and in good material condition. Many were not. One commanding officer wrote of his newly chartered screw steamer:

> ...this vessel is not coppered, and I learn she has not been docked for over twenty-one months...The deck which was laid aft is in a very leaking condition ...As to the seagoing qualities of this vessel with her present battery, she is not safe...She has been several times ashore and in backing so much has heated journals...The boiler leaks...The vessel leaks 60 inches in twenty-four hours...[30]

Sailing vessels could also contribute successfully to the blockade. Not requiring coal, they could remain on station longer and with less support. Although they lacked the higher speeds of steam ships and could be becalmed, they were frequently faster under sail than steam ships under sail alone. Sail warships were generally faster by design than the sail merchant ships they blockaded. Many of the smaller sailing ships acquired either as purchases or as captures were of shallow draft and suited to operate close inshore against small sailing ships operating on coastal trade routes.

Gradually, the effectiveness of the blockade off Charleston grew, with the numbers of captures slowing rising. With the exception of one brief period during the war, it was never perfect. Early countermeasures to the blockade were simple. The removal of aids to navigation hindered

the inshore operations of blockaders. During the attempt to relieve Fort Sumter, the transport Baltic ran aground briefly on Rattlesnake Shoal as a consequence of the removal of the Rattlesnake Shoal Lightship. Other ships would touch bottom there until the shoal was buoyed by the Union. The small number and lack of shallow draft ships off Charleston enabled many ships to pass inshore of the blockade. As they would throughout the war, ships would leave port at night or during periods of low visibility. Often, particularly early in the war, the simplest expedient for a blockade runner was to divert to an unblockaded port such as Wilmington.[31]

There was a direct, though limited, military threat to the blockaders other than that posed by shore batteries. On May 19, the ex-steam tug Lady Davis, which had been commissioned in the Confederate Navy and armed with a rifled gun and a 24-pounder howitzer, got underway from Charleston to engage the Perry, a brig blockading Savannah. Lady Davis instead captured an American merchant ship which was taken to Beaufort. Small sail driven blockaders, especially those armed with smooth bore artillery, were vulnerable to attack from small Confederate steamers which could fire upon them from longer ranges with rifled guns during periods of calm winds. Union commanders recognized this vulnerability which influenced the stationing of purely sail driven blockaders.[32]

Charleston achieved its notoriety by becoming the site of events that precipitated the start of hostilities between North and South. Major Anderson played a key role in this. Caught in a situation where military considerations were overwhelmingly displaced by political realities, he made the best use possible of available resources to accomplish a higher goal. His efforts to defend United States' property demonstrated to the Confederates that the United States was willing to resist Southern advances even if that brought about hostilities. Whether Anderson could have resisted longer, as some writers speculate, is immaterial. Once the Confederates fired upon Fort Sumter, greater events overtook Fort Sumter's importance as a Union outpost. Furthermore, unless the surrounding Confederate batteries had been captured, making resupply practical, the Union could not have held Fort Sumter for any great length of time. The fact that Anderson carried out his defense of Fort Sumter without loss of life is a tribute to his leadership and judgment.

General Beauregard's role in operations against Fort Sumter was profound. His role shows the value of competent, technically capable, leadership to a military operation. From a position of undisputed command, he very effectively coordinated the efforts of thousands of amateur soldiers to achieve an operational goal. His military skills were

well suited to this task. His placement of gun batteries against Fort Sumter conforms to what is found in The Artillerist's Manual written by Lieutenant John Gibbon in 1860. His success was the result of accurately assessing his own force's military capabilities, recognizing correctly his opponent's center of gravity, and formulating and executing a sound plan to achieve his goals.[33]

The beginnings of some of the technical revolutions that took place during the Civil War occurred during this period. The Confederates demonstrated the value of iron plates as armor. More significantly, they recognized that better use of their limited iron resources could be made by armoring floating batteries instead of shore batteries where natural materials were readily available and sufficient for the purpose. The floating ironclad battery moored at the end of Sullivan's Island was the predecessor of the casemented ironclad rams that were built throughout the Confederacy. The Confederates also saw some of the potential of rifled artillery. They used a 12-pounder Blakely gun, the only rifled artillery piece available to either side in Charleston, and were impressed by its accuracy and ability to penetrate deep into Sumter's masonry walls. Rifled weapons became the ones of choice when available.

To say that Fort Sumter was an outmoded fortification is simplistic. Fort Sumter's main purpose was to subject

ships attempting to enter the harbor to a high volume of fire in the short period of time the ships were within range of its guns. Fully manned and armed, Sumter could accomplish this. Sumter was a cost effective alternative to a more defendable, but more expensive, fortification. When subjected to attack in ways not envisioned or not planned for by its designers, Fort Sumter and others like it fared poorly.

The throes that the Union's navy underwent conducting the blockade started in the days immediately following Fort Sumter's surrender. It is hard to dispute the navy's unpreparedness to blockade the South. It is far easier to argue that the ability to conduct a blockade of such a great magnitude was a capability few countries could afford. That such a navy would have been funded in the years before the Civil War is inconceivable. The primary failing of the planners of the blockade was of slow recognition of the magnitude of the task in light of the efforts the Confederates would take to circumvent it.

ENDNOTES

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[6]"The Harbor - Its Forts, Lights, and Jetties," Yearbook, 1883, City of Charleston (Charleston: The News and Courier Book Presses, 1883), 476.

[7]Robert Anderson to S. Cooper, November 23, 1860, O.R.A., I-I, 74-75.

[8]Robert Anderson to S. Cooper, November 28, 1860, O.R.A., I-I, 78-79.

[9]Robert Anderson to S. Cooper, December 27, 1860, O.R.A., I-I, 3-4; F. W. Pickens to D. F. Jamison, December 28, 1860, O.R.A., I-I, 252.

[10]Edward Rowe Snow, Famous Lighthouses of America (New York: Dodd, Mead and Company 1955), 195; Burton, 16; Robert Anderson to S. Cooper, December 30, 1860, O.R.A., I-I, 114.

[11]Robert Anderson to F. W. Pickens, January 9, 1861, O.R.A., I-I, 134; J. Holt to Robert Anderson, 16 January 1861, O.R.A., I-I, 140.

[12]Crawford, 208-209; J. G. Foster to Joseph G. Totten, January 12, 1861, O.R.A., I-I, 137-138.

[13]Jefferson Davis to W. H. C. Whiting, February 23, 1861, O.R.A., I-I, 258; Crawford, 271-272; F. W. Pickens to Jefferson Davis, February 27, 1861, O.R.A., I-I, 258-259.

[14]L. P. Walker to F. W. Pickens, March 1, 1861, O.R.A., I-I, 259; L. P. Walker to P. G. T. Beauregard, March 1, 1861, O.R.A., I-I, 260.

[15]G. T. Beauregard to L. P. Walker, March 11, 1861, O.R.A., I-I, 274; G. T. Beauregard to L. P. Walker, March 6, 1861, O.R.A., I-I, 25-27; Alfred Roman, The Military Operations of General Beauregard (New York: Harper & Brothers, Franklin Square, 1884), 38; H. J. Hartstene to W. G. Dozier, April 11, 1861, Official Records of the Navies During the War of the Rebellion, hereafter referred to as O.R.N., I-IV, 261-262.

[16]Roman, 36.

[17]J. G. Foster engineer journal, October 1, 1861, O.R.A., I-I, 16-18.

[18]Paul H. Silverstone, Warships of the Civil War Navies (Annapolis: Naval Institue Press, 1989), 15; E. Milby Burton, The Siege of Charleston, 1861-1865 (Columbia: University of South Carolina Press, 1970), 23; H. M. S. Warrior has been preserved and restored and is presently on display in Portsmouth, England.

[19]G. W. Snyder and T. Seymour to Robert Anderson, March 24, 1861, O.R.A., I-I, 213-216.

[20]Robert Anderson to G. T. Beauregard, April 12, 1861, O.R.A., I-I, 14.

[21]Simon Cameron to Theodore Talbot, April 6, 1861, O.R.A., I-I, 245; L. P. Walker to G. T. Beauregard, April 11, 1861, O.R.A., I-I, 301.

[22]J. G. Foster Engineer Journal, October 1, 1861, O.R.A., I-I, 20-25.

[23]Robert Anderson to S. Cameron, April 18, 1861, O.R.A., I-I, 12.

[24]Gillmore, 54; R. S. Ripley, "Charleston and its Defenses in the Late War," Yearbook, 1885, City of Charleston (Charleston: The News and Courier Book Presses, 1885), 348.

[25]G. T. Beauregard to F. W. Pickens, May 16, 1861, O.R.A., I-LIII, 167-168.

[26]Roman, 51.

[27]R. H. Anderson to F. W. Pickens, July 4, 1861, O.R.A., I-LIII, 177-178; R. H. Anderson to F. N. Bonneau, June 10, 1861, O.R.A., I-LIII, 177.

[28]Gideon Welles to S. H. Stringham, May 1, 1861, O.R.N., I-V, 619-620; Gideon Welles to W. W. McKean, May 2, 1861, O.R.N., I-IV, 367-368; Gideon Welles to W. W. Mckean, May 4, 1861, O.R.N., I-IV, 155-157.

[29]W. W. Mckean to Gideon Welles, May 21, 1861, O.R.N., I-IV, 176-177; S. H. Stringham to Gideon Welles, May 13, 1861, O.R.N., I-V, 629.

[30]J. P. Gillis to S. H. Stringham, July 11, 1861, O.R.N., I-V, 789-790. The reference to the ship not being coppered refers to the practice, still in use today, of sheathing a wooden ship's underwater hull with thin sheets of copper to prevent attack by wood boring organisms such at the teredo worm. Ships not coppered, particularly when operating in warm water, would require frequent drydocking to minimize damage. The reference to heated journals refers to main engine bearings weakened by being overheated and which could fail without warning killing or injuring personnel and seriously damaging the ship's engine.

[31]G. V. Fox to S. Cameron, April 19, 1861, O.R.N., I-IV, 244-245; Gideon Welles to S. H. Stringham, June 25, 1861, O.R.N., I-V, 746-747.

[32]T. P. Pelot to R. C. Gilchrist, July 3, 1861, O.R.N., I-V, 655-657.

[33]John Gibbon, The Artillerist's Manual (New York: D. Van Nostrand, 1860), 447.

CHAPTER 3

THE DEFENSE STRENGTHENS

By the first summer of the war, the problems of maintaining an effective blockade of the South were more obvious to the Navy Department. The difficulty of keeping ships on station grew as the distance from the squadron's coaling stations at Hampton Roads and Key West increased. Many stations, even those as important as Charleston, had to be left unblockaded for periods when ships had to depart for coal. Flag-Officer Stringham estimated that he required no less than twenty to twenty-five vessels, in addition to small vessels in the Chesapeake, to make the blockade strict in his area of responsibility. The inefficiency of the blockade was also gaining political significance. Advertisements appearing in England for regular steamship service from Liverpool to Charleston, with connecting rail service to New Orleans, Mobile, and Savannah, proved particularly embarrassing to the Union administration. Of greatest concern to the North was that, in accordance with international law, the legality of the blockade largely depended on its effectiveness. Challenges to the blockade

from abroad were an additional problem the North wanted to avoid.[1]

In June 1861, the Navy Department formed a board of officers to examine problems of the blockade. Board members included its president, Captain Samuel F. Du Pont, a very senior and respected naval officer with blockade experience from the Mexican War, Major J. G. Barnard, an authority on harbor defense, and Alexander Dallas Bache, head of the United States Coast Survey, who was very familiar with the United States' coastal areas. The Blockade Board, notable for its joint army-navy membership, outlined coastal conditions, recommended points to be seized for advanced bases, recommended that blockading forces be divided into four squadrons covering specific geographic areas, and provided other blockade recommendations.[2]

With regard to operations against Charleston, the board's findings had several profound effects. Establishing a forward operating base near Charleston greatly improved the efficiency of blockade operations by increasing the number of ships which the Union could keep on station and brought the blockade commander closer to his area of operations. A forward base on enemy territory required the cooperation of the War Department to provide troops to maintain the lodgment. The War Department could augment troops assigned to the lodgment and use them limited

operations in the surrounding areas, such as a move against Charleston. Du Pont's participation on the Blockade Board also gave him the opportunity to study the geography of the coast and problems of the blockade. When he was later designated to command the South Atlantic Blockading Squadron, responsible for the coasts of South Carolina, Georgia, and Florida, he was already very familiar with his area of operations.

The War Department examined the problem of taking Charleston early in relation to the reinforcement of Fort Sumter. In March 1861, the War Department realized that, although Fort Sumter could be reprovisioned for a short period of time, holding Fort Sumter required the capture of all the opposing Confederate batteries. Benefiting from the unusually good intelligence provided by Major Anderson and Captain Foster, Winfield Scott estimated he required 25,000 troops and six to eight months to raise and train them for the operation. Because of the large amount of resources required and little to be gained from the effort in the War Department's viewpoint, the capture of Charleston did not figure in the army's early war aims.[3]

Chief among the Navy Department Blockade Board's recommendations was the formation of a joint expeditionary force to seize advance operating bases for blockaders on the Southern coast. The Navy Department designated Captain

Du Pont, now assigned command of the South Atlantic Blockading Squadron, the naval component commander for this effort. Brigadier General Thomas W. Sherman commanded 12,000 troops with which to occupy the lodgment. Although Du Pont's instructions left the selection of the points to seize to him, the Assistant Secretary of the Navy, Gustavus Fox, persuaded him to move first against Port Royal. Fox placed more value on the advantages that Port Royal offered as a port than problems of defending it once taken. Du Pont captured Port Royal on November 7, 1862, after overpowering its defenses with the heavy firepower which the port's deep waters permitted him to bring to bear.[4]

The Union capture and occupation of Port Royal with a large land force created great turmoil throughout the coastal regions of South Carolina, Georgia, and Florida and a frenzy of defensive efforts resulted. The expedition's objectives, deliberately vague beyond those of establishing a base for blockaders, worked to the North's advantage by denying the Confederates clear points on which to concentrate their defenses. Charleston's seaward defenses had received the lion's share of local resources and were considered sound. The presence of a large land force, however, less than sixty miles from the city, shocked and threatened its inhabitants and military leaders deeply.

The Confederate government determined the destination of the Union expedition shortly after its sailing. Richmond responded by combining the coasts of Florida, Georgia, and South Carolina into one Military Department under the command of Robert E. Lee. Lee took advantage of the limited Union Army movements following their arrival in Port Royal to re-orient his department's defensive strategy to a system of interior lines of defense. He wrote:

> Wherever his fleet can be brought no opposition to his landing can be made except within range of our fixed batteries. We have nothing to oppose to its heavy guns, which sweep over the low banks of this country with irresistible force. The farther he can be withdrawn from his floating batteries the weaker he will become, and lines of defense...have been selected with this view.[5]

Charleston, designated by Lee to be defended from the coast, was an exception to the general scheme of coastal defense. To augment the existing coastal fortifications, the Confederates encircled the city with a system of field fortifications and entrenchments. The strongest lines were built on James Island between Light House Creek and the Wappoo Creek to counter attack from the south, the most immediate threat. The line extended across Charleston Neck and on to the mainland to the Northeast of the city. Batteries on Cole's Island, which Lee recognized could be isolated and defeated, he retained to deny access to the Stono River. Lee also assigned naval officers to the city's fortifications to serve as ordnance experts to

improve the batteries' efficiency and make up for the shortage of trained artillery officers that plagued the defenders.[6]

One of Du Pont's first projects, after arriving in Port Royal, was an attempt to close the ports of Savannah and Charleston with blockships. These were old ships, seaworthy enough to transit under sail, filled with stone to be purposely sunk to block channels. Du Pont was less than enthusiastic about the idea writing to his wife, "This was a hobby of [Gustavus] Fox's which nothing could put out of his head." Du Pont, and members of his staff, were well aware of the dynamic nature of the coast and the power of tidal currents to either break up obstructions or form new channels. Nevertheless, they carefully planned and executed their efforts with the hopes that the obstructions would last for several months thus supplementing the efforts of the ships on station to effectively close the ports. The Union sank the first contingent of ships on the bar at the main entrance to the Main Ship Channel on December 20, one year after South Carolina's passing of the Ordinance of Secession.[7]

The effects of the first "Stone Fleet," and of a second sunk January 25-26, 1862, off Rattlesnake Shoal to block Maffitt's Channel, were not as expected. Robert E. Lee, wrote that the first sinking was

> ...the abortive expression of the malice and revenge of a people...indicative of their despair of ever capturing a city they design to ruin.[9]

He concluded correctly that an attack on Charleston was not an immediate Union objective and that he could concentrate his defensive efforts elsewhere.

The blockage of Charleston's channels was short-lived with the wrecks starting to break up almost immediately. The Confederates were able to survey the obstructions, despite the presence of blockaders, and provide charts and instructions for blockade runners to avoid the obstructions while they existed. The numbers of blockaders off Charleston was also too small to enable them to derive any real benefit from the channel obstructions before natural forces removed them. A more important and beneficial use was found for many of the ships procured by the Navy Department and not sunk. Several, considered by Du Pont as too valuable for their intended purpose, were retained at Port Royal as storeships, wharfs, and, most innovatingly, floating machine ships for the maintenance and repair of blockaders. The real benefit the Union derived from the "Stone Fleets" came indirectly from the services the ships not sunk provided, making it easier to keep blockaders on station.[9]

In March 1862, Robert E. Lee transferred and was succeeded by his second-in-command, Major General John

C. Pemberton. Pemberton was an unpopular leader who, as Roswell Ripley wrote after the war, had "peculiar ideas" about coastal defense. In reality, Pemberton took Lee's strategy of defense from interior lines to an extreme. He saw the many waterways around Charleston as a great weakness that would be exploited by the enemy using numerous, armored gunboats passing the defending batteries. His solution was to further withdraw defensive lines to the city itself which would be given enormous firepower using guns from the harbor fortifications. Pemberton proposed to dismantle and destroy the fortifications after removing their guns. He was satisfied that, "however great might be the injury to the city itself from bombardment, his [the enemy's] feet could be kept from polluting its streets."[10]

Among Pemberton's controversial decisions was the evacuation of the batteries on Cole's Island. These heavy batteries, located outside the James Island defensive lines, had previously denied the Union navy access to the Stono River. The Confederates also considered these batteries as denying the enemy the use of Folly and Morris Islands which were not fortified. In response to objections from his subordinates, Pemberton choose a site, again controversial, on Morris Island for a battery to prevent the enemy from approaching Fort Sumter. Subsequently named

Battery Wagner, this fortification would later play an important role in Charleston's defense.[11]

Fugitive slaves in the stolen Confederate steamer Planter communicated news of the Confederate withdrawal of guns from Cole's Island almost immediately. Within days, Union gunboats entered the Stono River. On May 30, the commander of naval units in the Stono reported:

> We are in as complete possession of the river as of Port Royal, and can land and protect the army whenever it wishes. Beyond the reach of our guns I, of course, can not be responsible.[12]

The Union Army had seriously contemplated moves against Charleston since earlier in the year. In February 1862, George B. McClellan outlined a strategy of moving against Charleston once Savannah had been neutralized by the capture of Fort Pulaski and sufficient forces had been built up. The Union subsequently captured Fort Pulaski on April 11. In May, Brigadier General H. W. Benham, who had replaced T. W. Sherman, proposed a plan to move against Charleston to Major-General David Hunter who commanded the Department of the South. Using available forces, Benham proposed an advance across Wadmalaw and John's Islands to James Island. From there, rifled siege ordnance, which had exceeded expectations against Fort Pulaski, would be used on Fort Sumter. Hunter now decided to take advantage of the opportunity presented by the abandonment of the Cole's Island batteries and establish a lodgment on James

Island using army transports and navy gunboats for support.[13]

On June 2, Hunter occupied the southwestern portion of James Island with approximately 14,000 troops. His intention was to occupy James Island and move against Charleston when sufficiently reinforced. He may have felt that by establishing a position within six miles of Charleston, the War Department would seize the opportunity and reinforce him sufficiently to capture the city. Hunter returned to his headquarters at Hilton Head on June 10 after turning over command of the James Island forces to Brigadier General Benham.[14]

Benham's orders were to

> ...make no attempt to advance on Charleston or to attack Fort Johnson until largely reinforced or until you receive specific instructions...You will however provide for a secure intrenched encampment...[15]

Operating under these orders, Benham attacked an outwork the Confederates built on a narrow strip of land between marshes at the town of Secessionville on June 16. Benham was convinced that the safety of the lodgment depended on his capturing this work which was manned by 500 troops backed by several pieces of heavy artillery including an 8-inch columbiad. The Confederates repulsed Benham's troops in what a naval officer referred to as "another version of New Orleans and Bunker Hill." The Confederates suffered

some 200 casualties while inflicting nearly 700 on the Union.[16]

What came to be known as the Battle of Secessionville shocked the Union Department of the South. The casualties suffered there were the heaviest yet suffered in a single day in the theater. Hunter charged that Benham had violated his orders by assaulting the position and subsequently had him arrested and sent North. The War Department stripped Benham was of his rank and he spent much of the remainder of the war trying to recover it. Nothing was gained for the North by the effort other than experiencing the folly of bayonet assaults against rifle- and artillery-equipped field fortifications. Benham's difficult lesson may not have been lost on the Union Army in the Charleston theater. Future attacks on fortifications were heavily supported with artillery. The Confederate James Island defense lines were not seriously challenged until late in the war.[17]

For the Confederates, Secessionville was a major victory which grew in significance following the Union withdrawal from James Island in early July. The Union withdrawal was not a result of the defeat at Secessionville. Brigadier General Wright, Benham successor, considered his position on the island sufficiently strong to be maintained for a considerable period. With no real

expectations of receiving enough reinforcements to continue against Charleston, however, there was little point in staying on the Island. With the height of the summer drawing near, the threat of disease in the low marshy areas dominating Union operating areas on James Island, must also have been a consideration.[18]

Loss of control of access to the Stono River was a disaster recognized at the highest levels of the Confederate leadership. In July, Jefferson Davis, via the Confederate War Department, ordered the re-establishment of the Cole's Island batteries only to find the continued presence of Union gunboats preventing it. Natural forces combined with the Union Navy to frustrate Confederate efforts to regain control of the Stono. Swift tidal currents carried away and destroyed obstructions which also had to be placed where Confederate batteries could protect them from removal by the Union. The Confederates did develop a tactic to counter the gunboats which met some success. They secretly positioned artillery under cover which refrained from firing until the gunboats were heading downstream. In January 1863, Confederate troops using this tactic captured the Union gunboat, Isaac Smith.[19]

Pemberton's contention that the Stono could not have been adequately defended is not without merit. Union monitors, with their inherently shallow drafts, did operate

on the Stono later in the war. Pemberton did overestimate the capabilities of the armored ships that the Union could get into the Stono. Monitors, with only two very heavy guns and slow rates of fire, were poorly suited for riverine operations. Union river ironclads, such as the Cairo Class used on the Mississippi, with their more numerous gun batteries, were far more suitable for Stono River operations. These types of ships, however, were even less seaworthy in open waters than monitors and would have been very difficult to get to Charleston. Pemberton's decision to abandon the Cole's Island batteries was, at best, premature. It gave the Union a tactical advantage which they held tenaciously to the end of the war.[20]

Pemberton's ideas did have some beneficial effects on the defenses of Charleston. During his command, the Confederates commenced efforts to obstruct the harbor mouth which would seriously impair Union plans. He also continued efforts to obtain powerful ordnance to bolster the city's defenses. This was important due to the fierce competition in the Confederacy for such resources. Although he lost the South Carolinian's confidence, the Confederate War Department considered Pemberton to have been "doing all that a zealous, active, and intelligent officer could do." He was still in the War Department's good graces when General Beauregard relieved him in September 1862.[21]

As early as July 1862, months before resuming command, Beauregard anticipated that the next Union attack against Charleston would involve monitors passing Forts Sumter and Moultrie to gain access to the city. He warned, in private correspondence to Charleston's district commander who was a subordinate of Pemberton's, that the channel between the two had to be obstructed. By this time in the war, the Monitor had engaged the Virginia in Hampton Roads and had also engaged Confederate Batteries on the James River proving her armor's protective qualities. The North had many monitors under construction but none yet completed. Beauregard's premonitions were justified in October when he received the first of several warnings from the War Department that the Union Navy was preparing an attack on Charleston.[22]

Shortly after assuming command and examining the existing state of the city's defenses, Beauregard convened a conference of his senior commanders and principal staff officers to examine the problem of defending Charleston against a force of ironclads. The conference, which included naval officers, concluded that the enemy's most likely course of action was a daylight attack with fifteen or twenty ironclads passing the outer batteries and forts to bombard the city. The chain and wood boom under construction to span between Fort Sumter and Sullivan's

Island, which was proving difficult to complete, could be forced. It could not be depended on to deny access to the inner harbor. The biggest concern was that, if ironclads entered the inner harbor, there was little to prevent them from operating with impunity against the city. The gun batteries then in place, were weakly constructed and armed with guns too few and too light to be effective against ironclads at the ranges involved. Two ironclad gunboats, then nearing completion, were an important auxiliary strengthening the harbor works.[23]

Beauregard considered these two ironclad gunboats indispensable. From his writings during the period, he perceived their primary purpose as self propelled armored batteries to assist with the defense of the inner harbor. He also understood their potential against wooden ships no doubt influenced by the Virginia's successes in Hampton Roads the previous March. In December, he ordered the Wappoo Cut to be be dredged sufficiently to permit the gunboats, now completed and named Palmetto State and Chicora, to enter the Stono River and help the Confederates reclaim Cole's Island. In January, he convinced Captain Ingraham to make attack on the blockaders outside the harbor.[24]

Palmetto State and Chicora were part of the Confederate naval building program started prior to the

Virginia's famous engagement with the Monitor. Richmond Class sister ships (see figure 7), the pair were typical of the Confederate casement-type ironclads, better suited for harbor defense duties than offensive roles. Their inclined, armored casements, consisting of four inches of iron plate on a thick wooden backing, were simple to construct and gave a greater effective armor thickness against projectiles fired on a flat trajectory such as from other ships. Large amounts of armor and wood were required, however, which made the ships heavy, less stable, and of deep draft. Their fatal flaw was weak engines which had been removed from other ships due to short supply. Consequently, they were slow and, as they aged, increasingly unreliable. Both were equipped witn rams and later, spar torpedoes, which the ships' slow speeds made virtually impossible to use except in a surprise attack. Slow speed also made them vulnerable to attack by boarding parties, still a viable naval tactic during the Civil War. Applying grease to the outside of the casements hindered boarders from reaching the top of the casement which was open and covered with gratings for ventilation. The Confederates changed their gun armaments from time to time but generally four to six heavy rifles were carried.

Chicora's and Palmetto State's attack on the blockaders on January 31, 1863, was an attempt to raise

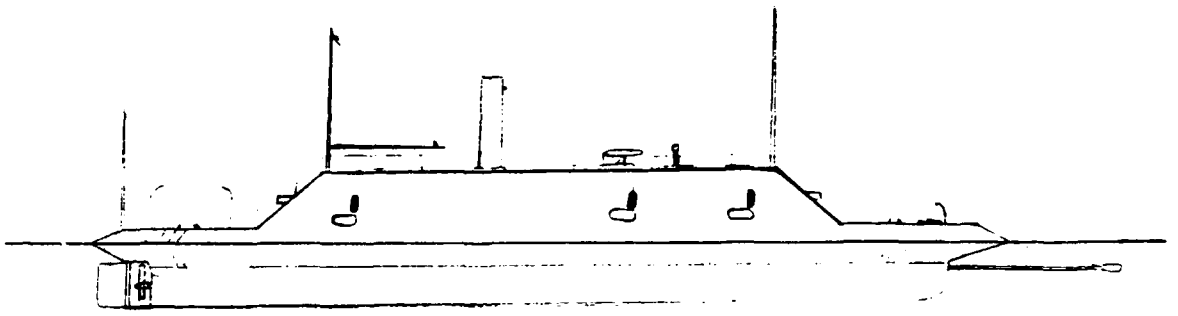

Fig. 7. Confederate Ironclad Chicora (Palmetto State similar).
Armament: Spar torpedo, two 6.4" Brooke rifles, two 8-inch Dahlgren smoothbores.
Dimensions: length 172'6", draft 12'.
Armor thickness: 4".
SOURCE: P. C. Coker III, Charleston's Maritime Heritage 1670-1865 (Charleston: CokerCraft Press, 1987), 225.

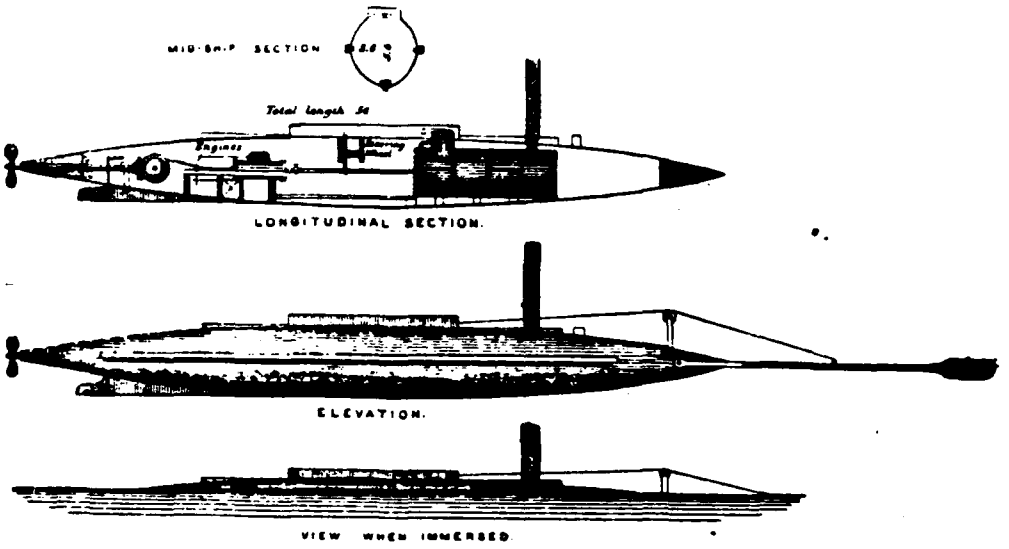

Fig. 8. Confederate "David" torpedo boat.
Armament: spar torpedo
Dimensions: length 54', draft 5'
SOURCE: ORN, I-XVI, 399.

the blockade, by legal technicality, as well as a test of the ironclads' capabilities prior to the anticipated arrival of Union ironclads. The two gunboats succeeded in damaging several blockaders and compelled the Mercedita to surrender. The limitations of the Confederate gunboats was dramatically shown, however, when the damaged blockader Keystone State, with one paddlewheel turning under dying steam pressure, was able to outrun and escape from Chicora. Beauregard and Ingraham, exaggerating their success, proclaimed the blockade lifted. Despite their vigorous arguments, even in the years after the war, their claims were ignored.[25]

The gunboats were not the only innovative efforts with disappointing results the Confederates had to contend with. Throughout the fall of 1862, it was becoming increasingly clear that the boom between Sullivan's Island and Fort Sumter was a failure. The engineers designing it envisioned a heavy chain suspended between wooden floats spanning the channel. In practice, the wooden floats became waterlogged and could not support the weight of the chain. During brief periods when the chain had been deployed, tidal currents caused links to part. Using shorter lengths of chain and different anchoring arrangements failed to solve the problems. A second obstruction, designed and deployed by the same engineers, consisting of lengths of

heavy line to entangle ship's propellers, was more resistant. This rope obstruction, originally intended to supplement the boom, remained in use after Beauregard ordered work on the boom ceased.[26]

The Confederacy's efforts to develop anti-ship torpedoes started early in the war and is described in detail in Milton F. Perry's, Infernal Machines. Charleston's unique contributions to mine warfare involved efforts to incorporate torpedoes with the boom obstruction which would complicate Union ships' efforts to penetrate it. Contact detonated torpedoes were quickly seen by the boom's designer, Dr. Cheves, as impractical due to masses of timber drifting with the tides. Command detonated torpedoes were required and the Engineer Department started experiments with remote electrical detonation. The Confederates deployed two enormous electric torpedoes, made from marine boilers filled with 3000 pounds of powder, prior to the April attack by Du Pont's ironclads. Just prior to this attack, New Ironsides moored directly over one in the Main Ship Channel off Battery Wagner and was saved when the torpedo failed to explode. A failure of the torpedo layer's engine caused too much electrical cable to be paid out. Due to excessive resistance in the extra length of cable, the torpedo's fuse did not arc when energized. Other problems experienced by the Confederates

with electric torpedoes included water intrusion and abrasion of the detonating wires caused by tidal currents.[27]

Beauregard enthusiastically embraced alternatives to the boom and the gunboats. One of his engineers, Captain Francis D. Lee, designed an armored ram which, to Beauregard, seemed the answer to the inner harbor defense problem. Army engineers contracted civilian workers to construct the craft but progress languished in competition for scarce resources with ironclad gunboats under construction for the Confederate Navy. Little information is available about this ram, named Torch, perhaps because it was not a Confederate naval vessel. From Lee's list of materials required to complete the ram, it was a large vessel, about one-third the size of Chicora and Palmetto State, displacing several hundred tons. Beauregard's efforts to get materials to finish the Torch were tenacious. In frustration over trying to get armor plate, he wrote a friend, "I have written and telegraphed on the subject until my hand is hoarse." The ram was eventually completed without armor and made one unsuccessful attack with a spar torpedo on New Ironsides. Her large size, lack of armor, and possibly balky engine may have made it imprudent to operate her against the blockaders, especially when more efficient craft were later devised.[28]

While progress lagged on his ram, Captain Lee involved himself with the development of contact fuses for torpedoes. In February 1862, he proposed fitting contact-fired torpedoes on spars suspended in front of small boats. He successfully demonstrated an experimental version in March by sinking a hulk with small, unmanned, torpedo-equipped boat. Earlier in the year, Beauregard had ordered General Ripley to organize and train boarding parties to use against ironclads penetrating to the inner harbor. Lee's experiments now presented a new and far more lethal weapon for these boarding parties to use. In addition to the oar-propelled boarding boats, the Confederates fitted spar torpedoes on the Torch and on the gunboats. Davids were small, stealthy, steam-powered boats, and a logical development of the early oar-powered torpedo boats (see figure 8).[29]

Admiral Du Pont gave Charleston's defenders a great deal of time to prepare for the attack anticipated by Beauregard. The Navy Department, specifically Assistant Secretary Gustavus Fox, originated the idea of attacking Charleston with monitors and compelling its surrender to a strictly naval force. Du Pont, aware of the magnitude of the defenses he faced and the limitation of the monitors, attempted to dissuade the Navy Department from this plan. He went so far as to stage a demonstration of the monitors'

unsuitability for attack against fortifications by using them in an attack on Fort McAllister, a seven-gun earthwork south of Savannah. Despite his best efforts, the Navy Department insisted the attempt be made and in March 1863, Du Pont resigned himself to it.[30]

Even with his personal reservations, Du Pont carefully planned and prepared for the attack. He coordinated with General Hunter so that, although the army was to play no active role in the attack, they would be ready to occupy Charleston after the surrender. On March 28, Hunter's troops started landing on James Island. Du Pont's plan was to enter the harbor in a column lead by the monitor Weehawken which he equipped with a device to explode torpedoes at a safe distance ahead. His ships would then silence Fort Sumter, penetrate the Confederate barrier between Sumter and Sullivan's Island, and enter the inner harbor where his ships would compel the city to surrender. His force consisted of seven monitors, each mounting two guns, New Ironsides, carrying eighteen guns, and Keokuk, a two-gun casement ironclad which had the weakest armor and shallowest draft (see figures 9, 10, and 11).[31]

The attack, which took place on April 7, was almost precisely what the Confederates had prepared for. Upon approaching the rope entanglements and its many buoys

Fig. 9. Union Passiac Class monitor (Weehawken, Patapsco, Nantucket, Nahant, Montauk, Catskill, and Passiac involved in April 7, 1863 attack on Fort Sumter).
Armament: one 11-inch and one 15-inch Dahlgren smoothbores.
Dimensions: length 200' draft 11'6".
Armor thickness: 11" turret, 5" sides, 1" deck, 8" pilothouse.
SOURCE: MacBride, 23-25.

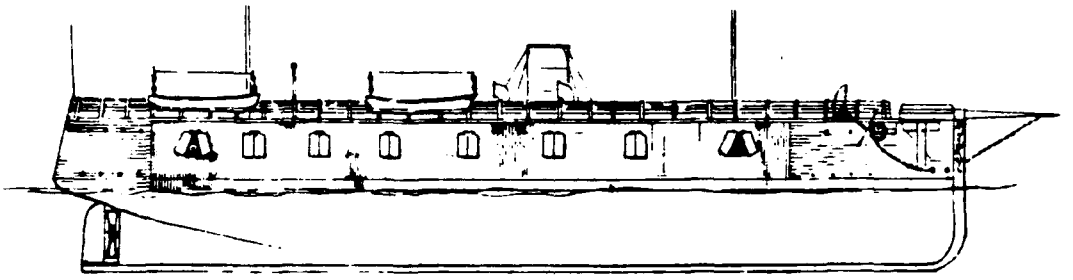

Fig. 10. Union broadside ironclad New Ironsides.
Armament: two 150-pounder rifles, two 50-pounder rifles, fourteen 11-inch Dahlgren smoothbores.
Dimensions: length 232', draft 15'8".
Armor thickness: 3 - 4.5" sides, 1" deck, 10" conning tower.
SOURCE: MacBride, 68-69.

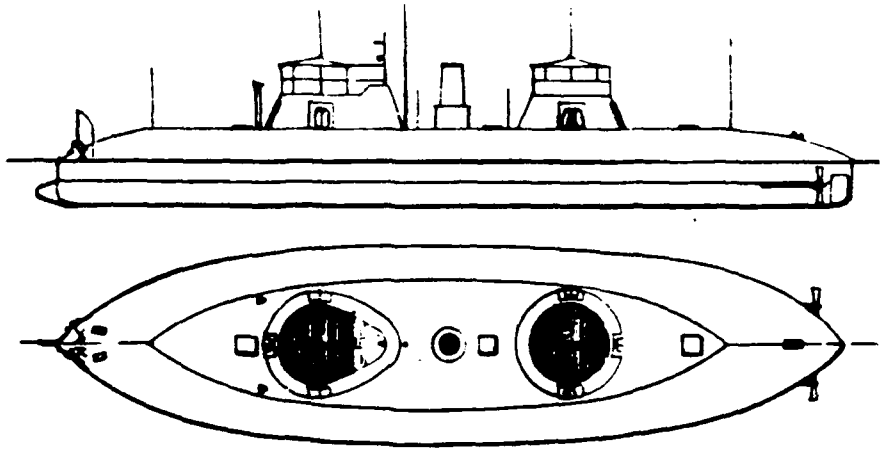

Fig. 11. Union casement ironclad Keokuk.
Armament: two 11-inch Dahlgren smoothbores.
Dimensions: length 159'6", draft 8'6".
Armor thickness: 4 inches.
SOURCE: Robert MacBride, Civil War Ironclads (Philadelphia: Chilton Co., 1962), 70.

supporting the lines, Weehawken's captain, not understanding the nature of the obstruction, decided not to risk getting his ship trapped in it. The ships astern of him became confused by Weehawken's movements and swerved out of line. The deep draft and under-powered New Ironsides, with Du Pont embarked, became unmanageable in the shallow waters outside the main channel, and had to anchor beyond her guns' effective range of Sumter. The attack degenerated into a melee in the center of the Confederate outer "ring of fire" formed by Fort Sumter, a battery built on Cummings Point in anticipation of the attack, and Fort Moultrie and the other batteries on Sullivan's Island.[32]

The results of the attack were decisive. In less than two hours, heavy sustained fire from sixty-nine Confederate guns forced the ironclads to retire. In the months before the attack, the Confederates greatly increased the firepower of the batteries in the outer "ring of fire." Sumter's barbette tier, looking down on the monitors, was armed almost entirely with 8- and 10-inch columbiads and rifled 42-pounders. All the monitors were damaged including several whose turrets or individual guns were disabled. Keokuk was so riddled she had to withdraw after firing only three rounds. She later sank off Morris Island where the Confederates were able to salvage her guns. The results of the first day's action convinced Du Pont that further

such attacks would be fruitless and risk loss of ships which could later be salvaged by the Confederates. As a result of this attack and his unwillingness to continue operations to capture Charleston, the Navy Department relieved Du Pont of his command.[33]

Du Pont's attack failed, as he knew it would, because the offensive power of the monitors did not allow them to deliver sufficient firepower to suppress the fires of the fortifications engaged. The monitor's armor gave them protection that was a great advance over wooden ships but at a cost to the number of guns they could carry. These guns had to be very large to defeat enemy armor and deliver devastating damage with as few rounds as possible. Fort Sumter was designed to deliver a high volume of fire in a short period of time. Its guns were individually weaker than the monitors' but sufficient, particularly as upgraded by the Confederates, to eventually break down the laminated armor plates on the monitors with repeated heavy blows. The number of projectiles fired gives a good impression of the Confederate's overwhelming volume of fire delivered. Confederate guns fired 2209 rounds, with 520 hits, compared to 154 fired from the Union guns, a ratio of over fourteen to one.[34]

Torpedoes and obstructions were a threat Du Pont, unlike Farragut at Mobile Bay, chose not to ignore. One

of his monitors, the Montauk, hit and was damaged bv a torpedo in the Ogeechee River less than six weeks before. Weehawken set off a torpedo during the attack but was not damaged. The power of the obstructions was not tested but their presence was sufficiently threatening to force the Union away from their desired course of action. After the engagement, Beauregard wrote of the Union Navy, "their monitors are humbugs; more terrible in imagination than reality."[35]

With the fall of Port Royal, the defenders of Charleston gained a real and immediate threat against which to plan their defense of the city. The possibility of land attack against the city forced the Confederates to encircle the city with entrenchments. The also modified existing deıenses to counter new Union weapons such as ironclads. They resorted to new technologies and innovations to counter new Union weapons and help make up for their own resource shortfalls.

The actual Union efforts against Charleston had no real chance of achieving their purposes. More damaging than the setbacks themselves were the benefits derived from them by the Confederates. The "Stone Fleets" divulged Union intentions which Lee used when planning his defenses. Stono River operations and the Battle of Secessionville warned the Confederates that the James Island avenue of

approach to Charleston was viable in Union eyes. Du Pont's attack tested the harbor's defenses and divulged the monitor's capabilities and limitations. The defeat of Du Pont's ironclads fully justified the efforts the Confederates had been making on their defenses.

Beauregard's return to Charleston marks the beginning of the ultimate refinement of Charleston's defenses. His command climate encouraged innovation and tests of new weapons in combat where possible. The weaknesses of the Confederate ironclad gunboats were thus found before great reliance was placed on them. His willingness to embrace and staunchly support new technology distinguish him from his contemporaries. As a result, the defenses of Charleston achieved a depth and diversity which greatly complicated Union efforts against the city.

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[15]D. Hunter to H. W. Benham, June 10, 1862, O.R.A., I-XIV, 46.

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CHAPTER 4

CHARLESTON WON AND LOST

Union operations on Morris Island caused the final shaping of Charleston's defenses. These operations forced the Confederates to strengthen their inner harbor defense system and to place more reliance on innovative measures such as torpedoes and torpedo boats. It also gave the Confederates the opportunity to regain control of a portion of James Island which previously had been lost as a result of Union control of the Stono River. This advance on James Island allowed the Confederates to erect a new line of fortifications which were far more efficient to defend. Their superbly executed defense of Battery Wagner, an outstanding example of a delaying action, gained the Confederates time to improve their defenses. Of greater strategic significance to the Confederates was that the defense of Battery Wagner allowed them time to divert blockade runners to other ports with minimal losses to the Union Navy off Charleston.

The objective of the Union occupation of Morris Island was the reduction and capture of Fort Sumter. With Fort Sumter in Union hands, the navy could then pass into

the inner harbor and ultimately compel the city to surrender. Its secondary goal was to increase the efficiency of the blockade. Control of Morris Island gave the Union control of the Main Ship Channel. Blockaders could then be stationed inside the bar thus denying one route for blockade runners and bringing blockaders closer to the mouth of the harbor. The occupation of Morris Island, therefore, was not part of a clearly defined plan to capture Charleston. Its sequel following the reduction of Fort Sumter was the general notion that the navy would enter the inner harbor and compel Charleston's surrender. The Union still considered Fort Sumter the key to the harbor's defenses.[1]

Union efforts on Morris Island originated with orders from the White House. Upon receipt of word that Du Pont's April attack on Fort Sumter had failed, Abraham Lincoln sent orders to Du Pont not to withdraw the ironclads from their positions inside the bar off Morris Island. Amplifying his desires to Du Pont and Hunter, Lincoln wrote, "We still hope that by cordial and judicious co-operation you can take the batteries on Morris Island and Sullivan's Island and Fort Sumter." These orders reached Hunter just in time to prevent withdrawal of Union troops from Folly Island.[2]

The failure of the navy to reduce Fort Sumter caused Abraham Lincoln and the War Department to seek out a commander professionally qualified to undertake the effort. Brigadier General Quincy A. Gillmore, who achieved notoriety for the reduction of Fort Pulaski earlier in the war, volunteered and was chosen for the task. Gillmore specified that cooperation with the navy was essential to his plans to attain a lodgment on Morris Island. Du Pont, anticipating the arrival of his own relief, hesitatingly agreed to support the army's effort.[3]

Gillmore choose to occupy Morris Island because manpower shortages precluded consideration of other courses of action. He requested additional troops after suffering heavy losses July 11 and 18. So critical was the Union Army's manpower situation at that time that General Halleck severely chastised Gillmore writing:

> You were distinctly informed that you could not have any additional troops, and that it was only on the understanding that none would be required that I consented to your undertaking operations...now, at this critical junction, comes your urgent but unexpected application for 8,000 additional troops...It is, to say the least, seriously embarrassing.[4]

The occupation of Morris Island started with a carefully planned and executed joint amphibious operation which demonstrated that the army and navy could cooperate effectively. The arrival of Du Pont's relief, less than a week before the operation commenced, enhanced navy

support. Rear Admiral John A. Dahlgren, the navy's premier authority on naval gunnery, provided the South Atlantic Blockading Squadron with revitalized leadership as Gillmore did for the Department of the South. The cooperation of these two men enabled the Union to achieve success on Morris Island. When this cooperation later failed, the Union ceased to make significant progress against Charleston's defenses.

The Union amphibious assault took place on the morning of July 10, when Union troops crossed Lighthouse Inlet from Folly Island to Morris Island. They were supported by army batteries on the north end of Folly Island which Union engineers had constructed secretly in the two weeks leading up to the attack. Navy howitzer-equipped small boats supported the attack's left from creeks behind Morris Island while Union Navy ironclads covered the right. The attack quickly overwhelmed Confederate defenders manning batteries at the south end of the island who were then harried by naval gunfire as they retreated to Battery Wagner. The Union attack fell prey to the summer heat and reached its culminating point within musket range of Battery Wagner. The Confederates repulsed subsequent assaults on Battery Wagner on July 11 and 18, inflicting heavy losses Gillmore could ill-afford.[5]

General Beauregard had anticipated further Union operations against Charleston after the repulse of Du Pont's ironclads when it became apparent that Union troops were not abandoning Folly Island. A key factor in his ability to anticipate Union moves was the recovery of a Union Navy signal book from the wreck of the Keokuk off Morris Island. This allowed the Confederate Signal Corps to decipher visual signals between the Union Navy and Army, including messages between Gillmore and Dahlgren. Beauregard also knew that Gillmore now commanded the Department of the South and he studied Gillmore's operations against Fort Pulaski. Armed with this knowledge, intercepted signals, and his own professional military expertise, Beauregard, with one notable exception, anticipated almost all of the major Union moves against Charleston's defenses. The one notable exception was the Union landing on Morris Island.[6]

Beauregard and his District Commander, General Ripley, both argued vehemently during and after the war that they were not surprised by the July 10 landing on Morris Island. Both claimed that Richmond was culpable for the loss of Morris Island as a result of withdrawing infantry from Charleston for use elsewhere in the Confederacy. At very least, Beauregard and Ripley were surprised by the ferocity and degree of coordination of the Union attack. Confederate correspondence in the

Official Records just prior to July 10, does not show any indications of anticipation of this attack through warnings or dispatch of reinforcements. There are numerous examples of anticipation of later Union attacks in the Official Records including transcripts of intercepted signals. Slow progress with the erection of defensive batteries on the south end of Morris Island resulted in a dispute between General Ripley and Beauregard's engineer department. Had attack at this point been anticipated, Beauregard would have personally ensured the progress of these works. On July 23, Beauregard ordered trees and brush removed from the western part of Long Island overlooking Breach Inlet. Similar vegetation on Folly Island had concealed the construction of Union batteries which, if seen, would have disclosed Union intentions.[7]

On July 12, Beauregard convened a conference of his senior commanders to determine if an attempt should be made to recapture the Union-held portions of Morris Island. The conference determined that any attempt would have to be conducted at night to achieve surprise and minimize interference from the Union Navy. The consensus of the conference was that assembling the necessary troops and completing the operation in one night was impractical. If not completed in one night, large numbers of Confederate troops would be exposed at daybreak to naval gunfire.

Beauregard resolved to hold as much of Morris Island as possible for as long as possible and use the time to develop other defenses.[8]

The Morris Island offensive gave Beauregard the opportunity and motivation to improve Charleston's defenses in two vital areas. The Confederates considered their lines on James Island between Secessionville and Fort Pemberton on the Stono River near Wappoo Creek as the least efficient and most vulnerable of their defenses. If the Union Army penetrated them, Union batteries could then be erected close to the city. On July 16, Confederate troops attacked Union skirmishers on James Island pushing them back towards Cole's Island. The Union Army, heavily engaged on Morris Island and preparing for a renewed assault on Battery Wagner, withdrew from James Island. This seemingly modest gain in ground (see figure 12) allowed the Confederates to build a new line of fortifications between Secessionville and the nearest point on the Stono River. These new lines were half the length of the more interior lines and could be defended with far fewer troops. This was important since armed and trained troops were one of the Confederacy's scarcest resources.[9]

Having studied Gillmore's operations against Fort Pulaski, Beauregard knew that, sooner or later, Fort Sumter would be silenced. He therefore directed that guns be

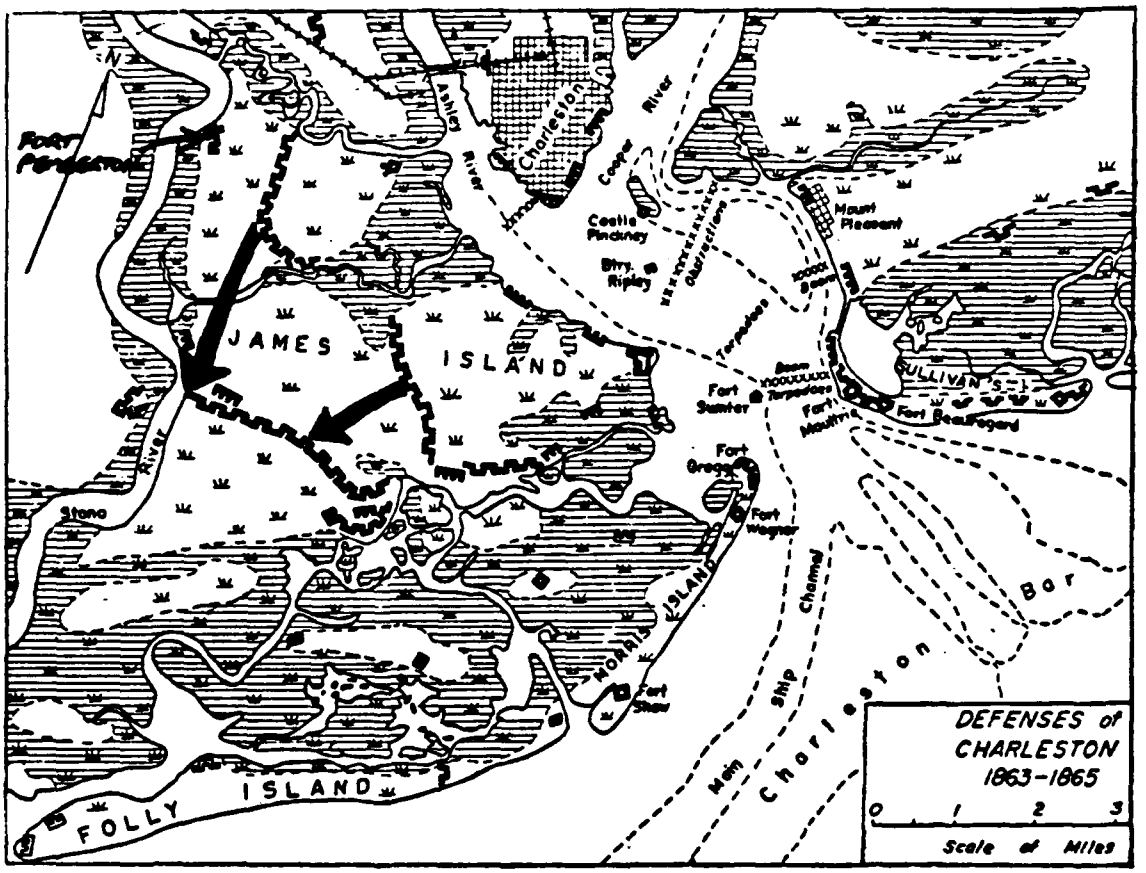


Fig. 12. Advance of Confederate James Island defense lines following Union occupation of Morris Island.
SOURCE: R. Ernest Dupuy and Trevor N. Dupuy, The Compact History of the Civil War, (New York: Hawthorn Books, Inc., 1960), 269.

removed from Sumter to strengthen the inner and outer harbor defenses as fast as positions could be prepared for them. By September 5, Sumter had been heavily damaged by Gillmore's rifled artillery but half of its guns had been saved and removed to other positions about the harbor. The Confederates were able to move even more guns in later months.[10]

Once the Union established themselves on Morris Island, Beauregard considered the defense of Charleston to be a contest of engineering writing:

> With sufficient time, labor, and long-range guns, our success is very probable, owing to plan of defense adopted. Otherwise, it is doubtful in proportion to the lack of those three elements of success.[11]

Confederate efforts on Morris Island sought to hold Battery Wagner, and therefore the rest of Morris Island, for as long as possible but with minimal loss of life. Beauregard ordered additional batteries established on James Island to hinder Union erecting their own batteries and sapping towards Battery Wagner. He also ordered Wagner's garrison reduced to the minimum number required to repel assault and repair damage. These troops were also to be rotated frequently to rest at less arduous posts to ensure their fitness. In addition to artillery fire from Wagner and James Island, snipers harassed Union sappers. Confederate fire proved bothersome enough that Gillmore frequently called on Dahlgren to suppress Wagner's fire with naval

gunfire. The Confederates also buried torpedoes in front of Wagner. These torpedoes, converted from artillery shells and marine torpedoes, caused several casualties to Union troops. The Union troops also considered them defense against assault by the Confederates who were equally terrified of them.[12]

The repulse of the July 18 Union assault of Battery Wagner forced Gillmore into taking Wagner by siege. Gillmore's troops were sufficiently advanced on Morris Island to erect batteries for rifled artillery capable of reaching Fort Sumter. Breaching fire from Union Army batteries commenced on August 17 from ranges of over two miles. One battery was erected in the marshes west of Morris Island on an innovative floating platform. This battery, equipped with an 8-inch Parrott rifle, opened fire on the city of Charleston on the night of August 21. Gillmore claimed this to be an experiment to test the endurance of heavy guns under severe firing conditions. He claims not to have expected any military results from long range fire into the city which ceased after the gun burst following the thirty-sixth round. Artillery fire was later resumed from other batteries following the capture of Battery Wagner. On Christmas Day, 1863, one of the heaviest bombardments took place with 134 shells landing in the city. Gillmore could only had hoped that this terror

attack on civilian targets would convince Charleston's defenders to surrender the city vice allow its destruction.[13]

The Confederate response to Gillmore's initial attack on the city was condemnatory. As the attacks continued, however, Beauregard realized that they would have little military significance for several reasons. Much of the city within range of Gillmore's guns had been destroyed by a devastating fire in December 1861, and had not been rebuilt. Confederate authorities also moved many civilians and critical military headquarters and material out of the city or to its northern outskirts. Previously committed to defending the city "to the last extremity," Gillmore's harassing fire, causing relatively few civilian casualties and negligible loss of military material, did not overawe Beauregard."[14]

Beauregard continued to use conferences of his senior officers to determine their consensus regarding critical defense matters. At the end of the first week of Gillmore's bombardment of Fort Sumter, Beauregard ordered a conference of his senior engineers to be held at Fort Sumter to determine the defendability of the work and the advisability of abandoning it. The board met on August 24 by which time Fort Sumter had been heavily damaged and possessed only three operable guns. The board agreed that, with

repairs undertaken during lulls in firing, the fort could be held. An infantry force of between 250 and 500 men could defend the work against enemy assaults in small boats. Beauregard embraced the report resolving to hold Fort Sumter "even in ruins."[15]

Beauregard's determination that Fort Sumter could be held had a profound impact on the Union Navy and the Union efforts against Charleston. Before he could attack Charleston from the inner harbor, Dahlgren had to figure out a way to pass the obstructions between and defended by Fort Sumter and the Sullivan's Island batteries. An infantry force on Fort Sumter was a serious threat to Dahlgren because clearing the obstructions required men working in the open in small boats or on deck who could be hit by small arms fire. The worst situation would be if a ship became entangled in the obstructions and then could not clear itself because of Confederate fire. Dahlgren felt that his ships could suppress the fire from Sullivan's Island but not if he also had to suppress fire from Fort Sumter at the same time. The navy could pass the obstructions only if Fort Sumter was completely silenced either by capturing it or by fire from army batteries.[16]

By September 5, Battery Wagner was rapidly becoming untenable as a result of intense Union fire and the nearness of Gillmore's sap. Beauregard, not willing to needlessly

sacrifice Wagner's garrison, ordered Morris Island evacuated on the night of September 6-7. The Confederates had carefully prepared for the evacuation and it was executed with little loss.

Possession of Morris Island prompted Gillmore and Dahlgren to make unilateral efforts to seize the real prize of the operation, Fort Sumter, for their respective services. On September 8, each hurriedly planned and assembled forces for a boat assault on Fort Sumter that night. Dahlgren notified Gillmore of his intention to assault Fort Sumter that night, only to find that Gillmore was planning a similar operation. Dahlgren responded to Gillmore's suggestion of a joint attack by insisting that the force be led by a naval officer. Gillmore declined to cooperate as a result of Dahlgren's insistence on naval leadership and subsequently he canceled the army attack.[17]

Sumter's garrison easily repulsed Dahlgren's boat attack. Having received an ultimatum from Dahlgren demanding Sumter's surrender, the Confederates were prepared for the attack. Sumter's infantry force met the attacking force of sailors and marines with small arms fire, hand grenades, and thrown debris, inflicting twenty-three casualties and taking over one hundred prisoners which the Union blockade force could ill afford to lose. Dahlgren's attack, poorly planned and coordinated, was

virtually doomed to failure from the start. The Confederate response no doubt singularly impressed upon Dahlgren the power that even a ruined Fort Sumter possessed.[18]

By the end of September, Dahlgren had gained a greater appreciation for the Confederate defenses. His ironclads, while they had sustained hits which would long since have destroyed wooden warships, were nevertheless becoming battered from hard use. Their bottoms were fouled with marine growth drastically reducing their speed. Sustained firing against Fort Sumter and in support of army operations on Morris Island was causing their guns to wear out. Even before the Confederate evacuation of Morris Island, Dahlgren realized that his ships needed an extended period to refit and repair prior to attacking the inner harbor.[19]

Dahlgren also understood the changes Beauregard was making to the batteries encircling the inner harbor as well as on Sullivan's Island. Not only were the batteries he faced on Sullivan's Island receiving heavier guns, they were also being more widely spaced making it far more difficult to suppress their fire. This continuous line of batteries extended over a mile in length at the western end of the island. They were later characterized as second in strength in the Confederacy only to Fort Fisher in North Carolina.[20]

Dahlgren's naval gunfire was not technically capable of quickly disabling individual guns widely spaced and protected with heavy earthworks. Defeating shore fortifications at this time required many rounds bursting close enough and frequently enough to drive gunners from their weapons. Dahlgren could have assembled a larger number of guns by using his wooden warships. Wooden warships, however, were especially vulnerable to shell fire and could be quickly disabled or sunk. Shore batteries also outranged naval guns which, by doctrine, were designed for shorter range firing. The navy's largest wooden warships, frigates mounting up to fifty guns, were capable of enormous firepower and could potentially defeat shore batteries before sustaining excessive damage. Du Pont was able to defeat the Port Royal forts with heavy fire from the frigates Wabash and Niagara. Charleston's shallow waters prevented Dahlgren from using wooden frigates in this manner. His smaller wooden ships would have to have been used in great numbers and were also too valuable as blockaders to risk against shore batteries. Dahlgren was forced to rely on his ironclads and fire from army batteries on Morris Island when attacking Charleston.

By the end of September, Gillmore had acknowledged that his part of future operations against Charleston would be subordinate to the navy. Dahlgren, at this time, felt

that he could pass obstruction between Fort Sumter and Sullivan's Island with army assistance. He was far more concerned about his ironclads' chances in the inner harbor facing torpedoes, torpedo boats, armored gunboats, as well as heavy artillery fire. He therefore sent a gloomy prognosis of success to the Navy Department along with a request for five additional monitors to augment the seven he expected to have ready for his next attack. He wrote to Gideon Welles:

> This is the view which I take after a careful study of the works of the enemy and some experience in action with ironclads. I wish it were more satisfactory.[21]

By failing to accomplish the destruction of Fort Sumter's military capabilities, the *Union's Morris* Island operation failed to achieve its primary purpose. The operation did achieve its secondary objective, specifically, a more efficient blockade. It achieved this objective, not by creating an impenetrable screen which actually captured blockade runners, but rather with a deterrent effect. Once the Union held complete control over Morris Island, blockade runners chose not to challenge the reconfigured blockade.

Figure 13, showing successful transits and losses of steam powered blockade runners off Charleston through out the war, illustrates the effect the occupation of Morris Island had on blockade running. Prior to the war,

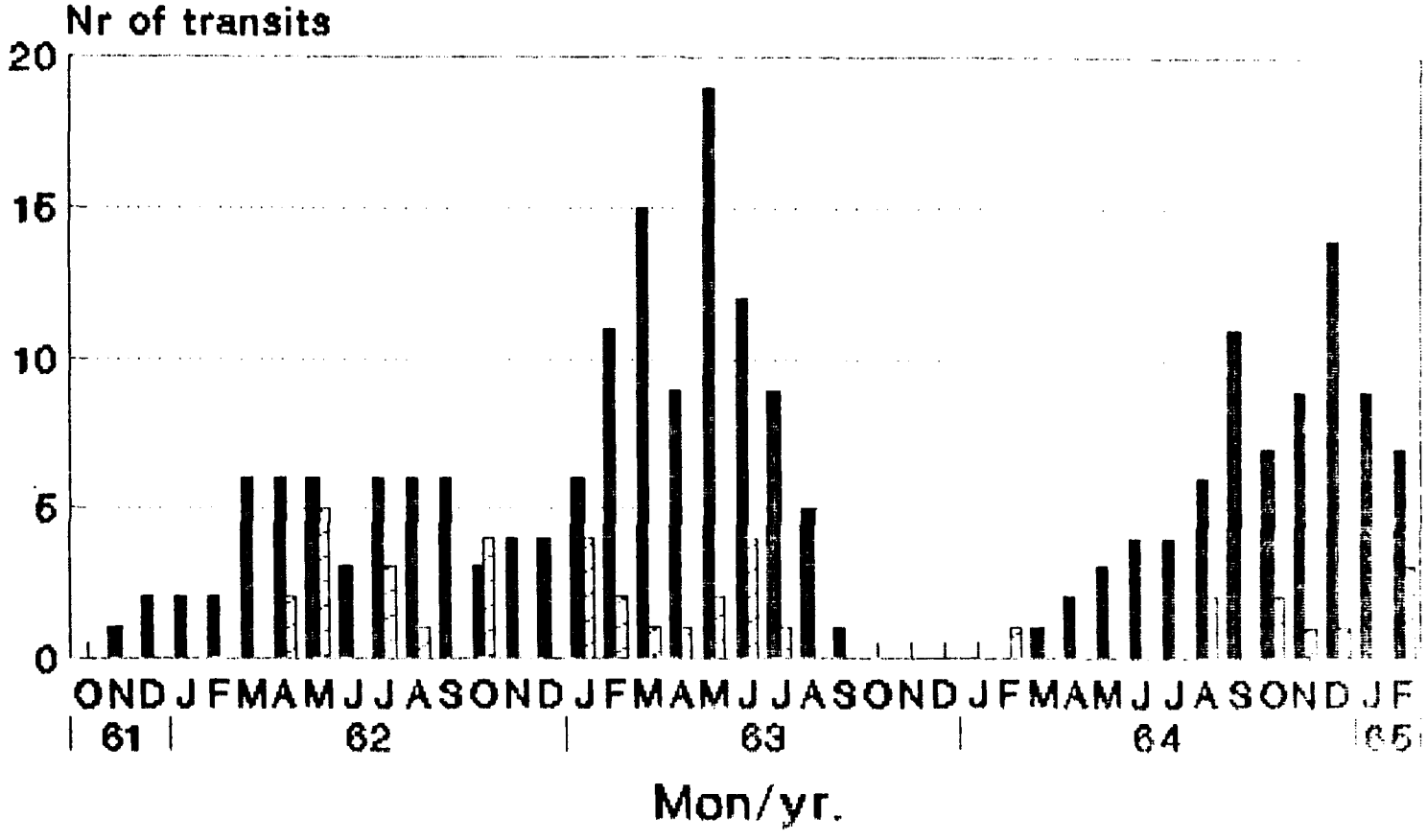


Fig. 13. Monthly successful transits and losses of steam driven blockade runners operating out of Charleston.

SOURCE: Compiled from Stephen R. Wise, Lifeline of the Confederacy, (Columbia: University of South Carolina Press, 1988), 251-281.

Charleston lagged behind New Orleans and Mobile in maritime commerce among the Southern ports. Compared to New Orleans, through which passed ten times more imports, Charleston was not a particularly active port. The blockade and Union advances in the South, elevated Charleston's strategic importance. By mid-1862, Charleston was one of only three ports, with rail communications to the interior, open in the Confederacy. In the first half of 1863, despite Du Pont's best efforts, Charleston was enjoying its heyday as a port for blockade running.[22]

Figure 13, by showing only steam driven blockade runner transits, does not give a complete representation of the effectiveness of the Union blockade off Charleston. Most of the shipping operating out of Charleston prior to the war was sail driven. Some of these ships were square riggers operating between Charleston and Europe. The majority, however, were small schooners and sloops operating on the coast carrying cargoes to Charleston's markets or for transshipment. Cotton, rice, turpentine, and tobacco were common cargoes. As more blockaders were assigned to Charleston, sail driven vessels fell easy prey to steam driven blockaders. Figure 14 dramatically shows the decline of sail driven trade in North and South Carolina throughout the course of the war. By 1864, the blockade destroyed

an entire mode of transport on the Carolina coast aggravating the South's serious internal transport problems.

Figure 15 shows that a significant number of sailing vessels were lost in the Charleston area. Here, the blockaders were particularly aggressive, seeking out ships engaged in local commerce as well as ships attempting to transit the blockade. Small boat expeditions from the blockaders often entered inland waterways to seize and destroy shipping. In February and March 1862, small boats from the blockader Restless captured or destroyed nine small sailing vessels carrying rice and corn to Charleston markets. Losses of sailing vessels grew so severe that Major General Pemberton, for a time, forbade all sail vessels from leaving the harbor.[23]

Beauregard feared that the loss of Morris Island would also mean loss of the use of Charleston harbor for blockade running. This, however, was not the case. Union control of the Main Ship Channel did not yield control of the other channels. When Gillmore's troops landed on Morris Island on July 10, the Union Navy entered the Main Ship Channel off Morris Island and stayed there until the evacuation of Charleston. Despite Dahlgren's stationing of a monitor on nightly picket duty at the harbor mouth, blockade runners continued to operate via Maffitt's Channel. Five blockade runners entered Charleston and four departed

	1861	1862	1863	1864	1865
Number of runs attempted:	602	252	82	2	5
Number of runs successful:	562	161	46	11	2
Number of unsuccessful runs:	40	91	36	9	3
Percentage of successful runs:	93	64	56	55	40

Fig. 14. Sail driven blockade running in North and South Carolina.
SOURCE: Marcus W. Price, "Ships That Tested the Blockade of the Carolina Ports." American Neptune, July 1948, 215-237.

	1861	1862	1863	1864	1865
Sail driven vessels captured or lost vicinity Charleston:	15	40	15	3	2

Fig. 15. Sail driven blockade runners and privateers lost or captured in the vicinity of Charleston or while enroute to or from Charleston.
SOURCE: Compiled from Price, "Ships That Tested the Blockade..." and O.R.N., Series I, vols 5-6,12-16.

between the Union landing on and the Confederate evacuation of Morris Island. One additional ship escaped after the abandonment of Morris Island. The sole blockade runner lost during this period was forced aground on Sullivan's, not Morris, Island. No further attempts were made to violate the blockade until the following February.[24]

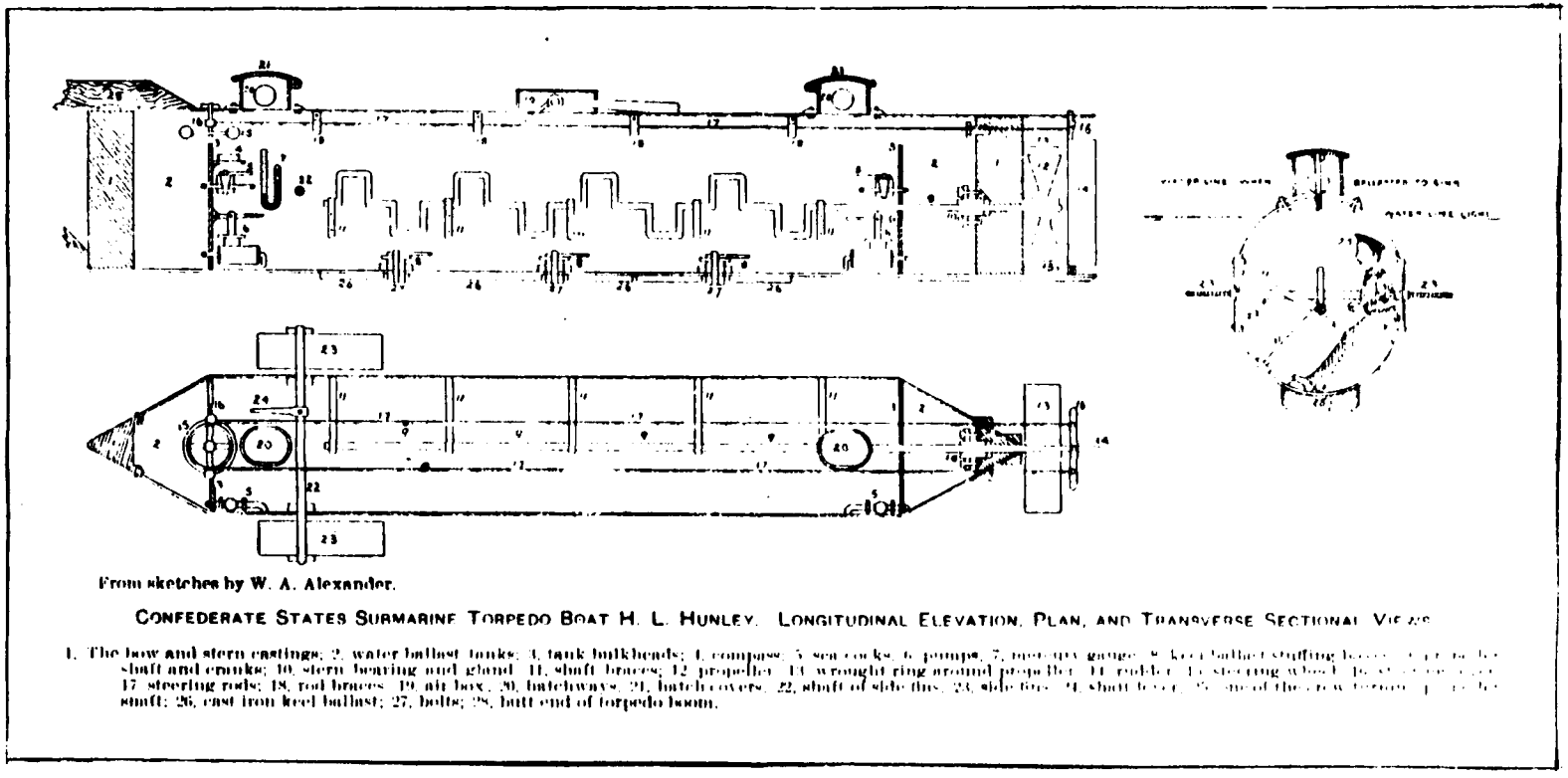
Several factors contributed to the resumption of blockade running into Charleston in February 1864. Throughout the war, blockade runners suffered from a Darwinian attrition. Slow, deep draft ships were captured, destroyed, or removed from the trade before faster ships were. The ships available for running the blockade in 1864 and 1865 were, on average, better suited for blockade running. Shallow drafts and high speeds were key, but not necessarily essential, attributes. Thirty percent of the blockade runners operating out of Charleston in 1864 and 1865 were built prior to 1861 and many of the ships were of too deep a draft to enter the harbor at all states of the tide. It was not the characteristics of the ships running the blockade that caused the resumption but rather, the willingness of ship operators to make the attempt.[25]

Confederate torpedo attacks on the blockaders off Charleston helped to generate renewed interest in blockade running. In October 1863, New Ironsides was damaged by

W. T. Glassel's attack in a David. Although there were no other successful David attacks against the blockaders, their presence, confirmed by periodic sightings, was threatening. Countermeasures taken against the Davids included booms and netting which restricted ships' movements, illumination with calcium lights, and extensive use of picket boats. Dahlgren advised his captains to anchor in shallow water to prevent submarine torpedo boats, whose existence he had intelligence of, from diving under the ships and to facilitate salvage if the ships were sunk. These elaborate countermeasures conspired to lessen the effectiveness of the blockade.[26]

The most dramatic and successful torpedo attack was made by the hand propelled submarine Hunley (see figure 16) which sank the Housatonic on February 17, 1864. Hunley, severely limited by its inefficient propulsion system, operated exactly as modern submarines do. It used its ability to submerge to evade Union picket boats and reach the blockaders outside the bar undetected. Hunley's spar torpedo, the predecessor of today's wire-guided torpedoes, was sufficiently large to sink Housatonic quickly giving the crew no chance to carry out damage control measures to save their ship.[27]

What made Housatonic's loss so shocking was not that it was done by a submarine. Dahlgren, although aware



From sketches by W. A. Alexander.

CONFEDERATE STATES SUBMARINE TORPEDO BOAT H. L. HUNLEY. LONGITUDINAL ELEVATION, PLAN, AND TRANSVERSE SECTIONAL VIEWS

1. The bow and stern castings; 2, water ballast tanks; 3, tank bulkheads; 4, compass; 5, sea cocks; 6, pumps; 7, [illegible] gauge; 8, keel ballast stuffing [illegible] shaft and cranks; 10, stern bearing and gland; 11, shaft braces; 12, propeller; 13, wrought ring around propeller; 14, rudder; 15, steering wheel; [illegible] 17, steering rods; 18, rod braces; 19, air box; 20, hatchways; 21, hatch covers; 22, shaft of side fins; 23, side fins; 24, shaft brace; 25, end of the crew [illegible] 26, cast iron keel ballast; 27, bolts; 28, butt end of torpedo boom.

Fig. 16. Confederate submarine torpedo boat Hunley.
Armament: spar torpedo
Dimensions: length 40', draft 4'
SOURCE: ORN, I-XV, 338.

of Hunley's existence, did not know it had sunk the blockader nor that it was lost in the attack. What made the attack so disturbing, and remarkable, was the distance off shore that it took place. Housatonic was blockading outside the bar nearly five miles from the harbor entrance. The attack demonstrated the Confederates' ability to attack blockaders far beyond the Union picket boats thus greatly increasing the threat they posed. Protective measures that the ships in the outside blockade could take, and still actively blockade, were limited to keeping in motion and increased vigilance. Keeping ships moving tended to create openings in the blockade which blockade runners could exploit.[28]

The result of the Confederate torpedo attacks was a weakened blockade. When blockade runners resumed their operations out of Charleston early in 1864, they found the Union Navy heavily burdened with protecting themselves from torpedo boat attack. In addition, the blockade runners found that the Union occupation of Morris Island had not closed the harbor mouth to them. On dark nights, using stealthy tactics which had served them well from the beginning of the blockade, the blockade runners were still able to enter and leave the harbor via the other channels.

Beauregard considered the occupation of Morris Island to be the least damaging course of action that the Union

could have taken. Although great damage was wrought on Fort Sumter and on the city in the ensuing months, the Union gained little for their efforts while the Confederates strengthened their defenses. Dahlgren never received sufficient ironclads to attack the inner harbor. By October 1863, the Navy Department was satisfied that the occupation of Morris Island had solved the problem of blockading Charleston and was reluctant to risk its largest squadron of monitors in an endeavor whose success could not be assured. The loss of Weehawken in heavy, wintry seas off Morris Island on December 6, 1863, and the need to send New Ironsides north for repair of damages caused by the Glassel's torpedo, further hindered Dahlgren's efforts to gather sufficient strength.[29]

The War Department also lost interest in Charleston largely as a result of the lack of progress made by the navy which did not justify the commitment of the forces required. In response to an April 1864 proposal from Dahlgren for a joint attack on Long Island and Sullivan's Island, General Halleck wrote to General Grant:

> If the iron-clads and the large number of troops off Charleston for the last year could not take and hold Sullivan's Island, how can they expect to do it with forces diminished more than one-half?...it would simply result in the loss from active service of 5,000 troops to garrison it, without any influence on the coming campaign. It will require 60,000 men three months to take Charleston.[30]

Grant, now committed to the destruction of Robert E. Lee's

army as the North's principal war aim, did not see much to be gained from the capture of Charleston. Future Union Army operations were therefore limited to demonstrations intended to tie down enemy troops and prevent their reinforcing other Confederate armies.[31]

The Confederate defenders of Charleston achieved victory when the Union lost its resolve to capture Charleston and blockade running into the port was resumed. They had forced the Union to expend enormous resources, particularly naval forces, with little gained towards achieving the North's overall objective of defeating the Confederacy. Charleston's defenders continued to resist until a completely new and overwhelming threat, Sherman's army, promised to isolate the city. Rather than be lost in a hopeless, last ditch defense, the Confederates evacuated the city on February 18, 1865.

ENDNOTES

[1]Q. A. Gillmore report of Morris Island operations, Febuary 28, 1864, Official Records of the Armies During the War of the Rebellion (Washington: U. S. Government Printing Office, 1892-1922), hereafter referred to as O.R.A., I-XXVIII, Part I, 5-6.

[2]A. Lincoln to S. F. Du Pont, April 13, 1863, O.R.A., I-XIV, 440; A. Lincoln to S. F. Du Pont and D. Hunter, April 14, 1863, O.R.A., I-XIV, 441; D. Hunter to I. Vogdes, April 16, 1863, O.R.A., I-XIV, 444.

[3]Q. A. Gillmore to G. W. Cullum, May 23, 1863, O.R.A., I-XIV, 459; Q. A. Gillmore to S. F. Du Pont, June 26, 1863, Official Records of the Navies During the War of the Rebellion (Washington: U. S. Government Printing Office, 1894-1922), hereafter referred to as O.R.N., I-XIV, 298-299; Q. A. Gillmore to H. W. Halleck, July 4, 1863, O.R.N., I-XIV, 247.

[4]H. W. Halleck to Q. A. Gillmore, July 28, 1863, O.R.A., I-XXVIII, Part II, 29-30.

[5]Q. A. Gillmore report of Morris Island operations, February 28, 1864, O.R.A., I-XXVIII, Part I, 12; J. A. Dahlgren to G. Welles, July 12, 1863, O.R.N., I-XIV, 319-321.

[6]R. S. Ripley to T. Jordan, April 10, 1863, O.R.A., I-XIV, 893; G. T. Beauregard to J. A. Seddon, April 13, 1863, O.R.A., I-XIV, 898; G. T. Beauregard to R. S. Ripley, July 22, 1863, O.R.A., I-XXVIII, Part II, 217-218.

[7]G. T. Beauregard to S. Cooper, September 18, 1864, O.R.A., I-XXVIII, Part I, 71-72, R. S. Ripley to T. Jordan, August 29, 1863, O.R.A., I-XXVIII, Part I, 96-100; T. Jordan to D. B. Harris, July 23, 1863, O.R.A., I-XXVIII, Part II, 221.

[8]G. T. Beauregard to J. A. Seddon, July 20, 1863, O.R.A., I-XXVIII, Part I, 57-62; G. T. Beauregard to S. Cooper, July 14, 1863, O.R.A., I-XXVIII, Part II, 198.

[9]G. T. Beauregard to S. Cooper, September 18, 1864, O.R.A., I-XXVIII, Part I, 69-75; T. Jordan to D. B. Harris, August 9, 1863, O.R.A., I-XXVIII, Part II, 268.

[10]T. Jordan to D. B. Harris, July 25, 1863, O.R.A., I-XXVIII, Part II, 228; R. S. Ripley to A. J. Gonzales, August 2, 1863, O.R.A., I-XXVIII, Part II, 238; A. Rhett, commanding Fort Sumter, report of operations August 12 - September 4, O.R.A., I-XXVIII, Part II, 622; T. Jordan to R. S. Ripley, August 16, 1863, O.R.A., I-XXVIII, Part II, 287.

[11]G. T. Beauregard to S. Cooper, July 17, 1863, O.R.A., I-XXVIII, Part II, 205.

[12]T. Jordan to R. S. Ripley, July 15, 1863, O.R.A., I-XXVIII, Part II, 200-201; T. Jordan to D. B. Harris; July 13, 1863, O.R.A., I-XXVIII, Part II, 196-197; J. Dahlgren to G. Welles, January 28, 1864, O.R.N., I-XIV, 594-596; T. B. Brooks engineer journal, July 12 - September 7, 1863, O.R.A., I-XXVIII, Part I, 296, 310-312.

[13]Q. A. Gillmore report of Morris Island Operations, February 28, 1864, O.R.A., I-XXVIII, Part I, 16-23, 30; A. Rhett to T. Jordan, March 4, 1864, O.R.A., I-XXVIII, Part I, 686.

[14]G. T. Beauregard to Q. A. Gillmore, August 22, 1863, O.R.A., I-XXVIII, Part II, 58-59; H. Bryan to A. Roman, January 6, 1863, O.R.A., I-XXVIII, Part I, 682-684, G. T. Beauregard to F. W. Pickens, October 3, 1862, O.R.A., IXIV, 617-618.

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[16]J. A. Dahlgren to Q. A. Gillmore, September 29, 1863, O.R.N., I-XIV, 682-683.

[17]J. A. Dahlgren to Q. A. Gillmore, September 8, 1863, O.R.N., I-XIV, 608; Q. A. Gillmore to J. A. Dahlgren, September 8, 1863, O.R.N., I-XIV, 608-609.

[18]E. P. Williams to G. Welles, September 24, 1863, O.R.N., I-XIV, 628-630; G. T. Beauregard to S. Cooper, September 7, 1863, O.R.A., I-XXVIII, Part II, 344; S. Elliott to W. F. Nance, September 9, 1863, O.R.A., I-XXVIII, Part I, 725.

[19]J. A. Dahlgren to G. Welles, January 28, 1864, O.R.N., I-XIV, 590-601.

[20]John Johnson, The Defense of Charleston Harbor (Charleston: Walker Evans & Cogswell, 1890), XXVII.

[21]Q. A. Gillmore to J. A. Dahlgren, September 30, 1863, O.R.N., I-XIV, 684; J. A. Dahlgren to G. Welles, September 29, 1863, O.R.N., I-XIV, 680-681.

[22]Stephen R. Wise, Lifeline of the Confederacy (Columbia: University of South Carolina Press, 1988), 227, 251-259, 276-281.

[23]E. Conroy to E. G. Parrott, February 15, 1862, O.R.N., I-XII, 547-548; E. Conroy to J. R. Goldsborough, March 28, 1862, O.R.N., I-XII, 667; E. Conroy to J. R. Goldsborough, March 30, 1862, O.R.N., I-XII, 681-682; J. C. Pemberton to G. W. Randolph, June 24, 1862, O.R.A., I-XIV, 572.

[24]G. T. Beauregard to S. Cooper, September 18, 1864, O.R.A., I-XXVIII, Part I, 88; Wise, 253, 257, 317.

[25]Characteristics of blockade runners were gathered from Appendix 22 in Wise's Lifeline of the Confederacy and individual ship descriptions in Paul H. Silverstone, Warships of the Civil War Navies (Annapolis: Naval Institute Press, 1989).

[26]J. A. Dahlgren to G. Welles, October 7, 1863, O.R.N., I-XV, 10-11; J. A. Dahlgren order of January 7, 1864, O.R.N., I-XV, 226-227.

[27]J. A. Dahlgren to G. Welles, February 19, 1864, O.R.N., I-XV, 329-330; W. A. Alexander, "The Torpedo Boat Hunley," Southern Historical Society Papers, vol. XXX, 1902: 164-174.

[28]J. A. Dahlgren to G. Welles, April 6, 1863, O.R.N., I-XV, 394.

[29]G. T. Beauregard to S. Cooper, September 18, 1864, O.R.A., I-XXVIII, Part I, 67-68; G. Welles to J. A. Dahlgren, October 9, 1863, O.R.N., I-XV, 26-27; J. A. Dahlgren to G. Welles, December 6, 1863, O.R.N., I-XV, 161-162.

[30]H. W. Halleck to U. S. Grant, April 24, 1864, O.R.A., I-XXXV, Part II, 68.

[31]J. A. Dahlgren to G. Welles, April 21, 1864, O.R.A., I-XXXV, Part II, 67-68; U. S. Grant to Q. A. Gillmore, April 24, 1864, O.R.A., I-XXXV, Part II, 67; H. W. Halleck to J. G. Foster, June 29, 1864, O.R.A., IXXXV, Part II, 155-156.

CHAPTER 5

CONCLUSIONS

Charleston's military leaders devised the city's defenses to counter specific Union threats as they appeared. The immediacy of these threats was not constant and as a result, the city's defenses grew by surges. Innovation, combat experience, and their leader's personal skills, technical and managerial, steered Confederate efforts to defend their city. Innovation's roles were to counter new technology weapons being brought to bear on the defenders and to make optimum use of scarce resources. Combat experience, as it was gained, validated the effectiveness of the city's defenses and provided moral victories which helped to motivate further exertions. Confederate leadership provided accurate assessments of Union intentions and capabilities while giving direction to the formulation of Charleston's defenses.

Charleston's existing fortifications provided the Confederates both the initial threat, Anderson's occupation of Fort Sumter, and the raw materials with which to start building the city's defenses. To defeat the Union garrison and prevent the reinforcement of Fort Sumter, the

Confederates built additional fortifications on the islands surrounding the harbor mouth. Beauregard's leadership and expertise unified the early, amateurish efforts of the South Carolinians. He perceived a wider threat and forced the Confederates to take action to counter a greater number of possible enemy actions. Finally, their own bombardment of Fort Sumter gave the Confederates valuable insight about the strength of the fort and the performance of their own troops.

The Union occupation of Port Royal and perception of a threat to the city caused the next surge in the development of Charleston's defenses. This, and other Southern losses, convinced the Confederates of the need to adopt a system of interior lines of defense to counter the Union Navy. Work on Charleston's landward defenses started at this time in response to the Union's capability to conduct a land attack on Charleston. The engagement at Secessionville, following the Union advance into the Stono River, demonstrated the ability of field fortifications, armed with heavy ordnance, to resist assaults by large numbers of troops. At this same time, the introduction of Union ironclads caused the Confederates to diversify their defenses rather than rely solely on gun batteries.

Dupont's attack on Fort Sumter showed the Confederates the essential facility of their defenses and allayed their fears about the invincibility of Union ironclads. Forts Sumter and Moultrie, armed with a combination of heavy smoothbore and rifled artillery, outgunned a formidable naval force which had been deprived of its freedom to maneuver by Confederate obstructions. Beauregard was well aware that the Union would attack again. Rather than rest on his laurels he continued strengthening the city's defenses and he resisted the Richmond's efforts to weaken his forces.

The loss of Morris Island caused the final shaping of Charleston's defenses. The Confederates quickly realized that Gillmore's artillery would soon drastically reduce, if not eliminate altogether, Fort Sumter's power. As a result, the outer harbor defenses would never again be as strong as they had been when Du Pont's attack had been defeated. They chose to save Fort Sumter's guns while they could and strengthen the batteries on Sullivan's Island and in the inner harbor. By so doing, the city's defenses achieved a depth sufficient to make it prohibitively expensive for the Union to seriously challenge.

The Morris Island operation ended in a stalemate. The sufficiency of Charleston's defenses now allowed the Confederates to make advances against the Union. Using

weapons intended to defend the city, they disrupted the blockade sufficiently to encourage commercial blockade runners to again risk the Union blockade off Charleston. The blockade runners found the blockade not as tight as feared. This was a strategic victory which the Confederacy could not capitalize on.

Communications with the rest of the Confederacy was the real reason for keeping Charleston in Confederate hands. As the war progressed, however, the South gained a level of self-sufficiency which allowed it to continue the war effort with less reliance on outside communications. The Confederacy suffered more from inefficient war mobilization, poor cooperation between states, and deficient internal transportation systems. Charleston was not so important that large numbers of troops would have been sacrificed there needlessly.[1]

The British experience during the Revolution should have been instructive to the Union. Using their land and naval forces in symphony, the British captured the city by surrounding it and cutting its lines of communication. The Union could have done the same. As a rule, the Confederates abandoned defensive positions when they became untenable and avoided total loss of defending troops. The Confederates abandoned Cole's Island, despite the control of the Stono River it afforded, because of the

mere possibility that it could have become isolated. Later, they abandoned Battery Wagner save its troops from needless loss despite its yielding all of Morris Island to the Union. Even though Beauregard and others had avowed to defend the city street-by-street, when Sherman threatened it, Charleston's defenders evacuated the city. This was at a time when the fall of Fort Fisher on January 15, 1865, threatened to leave Charleston as the sole open seaport remaining in Confederate hands.

The Union failed to capture Charleston because they did not recognize nor operate against its critical center of gravity specifically, inland communications. By the time Du Pont attacked, Fort Sumter was no longer the center of the city's defenses as was commonly believed in the North. Pemberton had already exposed Charlestonians to the notion that fortifications could be easily defeated by ironclads and that defenses within the city itself were required. Gillmore's artillery attacks on civilian areas within the city had the potential to force the city to capitulate. One of the Confederates' greatest fears was of artillery bombardment of the city from James Island. Gillmore's attacks, however, were too weak to sufficiently terrorize the city or prevent its functioning as a port.

The courses of action that the Union did adopt against Charleston were insufficiently resourced and often

inefficiently conducted. Never did the Union feel it had sufficient resources in the Department of the South to consider operations inland of the coast. Those Union operations characterized by mutual cooperation between the army and navy were generally more successful than when service rivalries precluded cooperation. The success of the amphibious assault on Morris Island was greatly enhanced by joint cooperation. When this cooperation was not present, as during Du Pont's attack with ironclads and Dahlgren's small boat attack on Fort Sumter, the Union suffered failures. In summary, Union attacks on the city made little progress, wasted resources, and, by not achieving the capture of the city, allowed its defenses to be strengthened.

The weapons used on both sides in Charleston ranged from obsolescent to the latest technology. Technology, to a degree, made up for a lack of resources. Weapons that were used for their intended purposes were more effective than weapons, even of the latest technology, adapted to other uses. In this manner, Fort Sumter, upgraded with more capable artillery, was able to defeat Du Pont's ironclads. These same monitors, designed for use against other ironclads, had the capability of rapidly defeating Charleston's ironclad gunboats. They were ill-suited for attacks on fortifications for which they

had not been designed. Confederate Davids, built to attack ships in restricted waters, achieved little tactical success against the blockaders in open water where more effective countermeasures could be taken.

Mine and submarine warfare troubled the Union Navy off Charleston then as it does today. The mere threat of torpedoes adversely influenced Union Navy plans. Despite countermeasures, tragic losses were inflicted. On January 15, 1865, just one month before Charleston's evacuation, the monitor Patapsco hit a torpedo off Fort Sumter and quickly sank with the loss of sixty lives. This was despite extensive measures, including a screen of picket boats with drags, taken to prevent such loss. The loss of Patapsco showed that, even at the end of the war, Charleston's defenses were still extremely dangerous.[2]

The Confederate defense of Charleston shows military planners the necessity of choosing objectives which will achieve the desired end result. Each military service is uniquely suited to perform certain missions. When working together in a joint environment that makes the most of their unique capabilities, the effect is synergistic. Neither attackers nor defenders can rely on new technology systems to give a decisive advantage unless skillfully employed in ways for which the systems were designed. Conversely, denying an attacker the

effective use of such weapons by preventing their intended use deprives the attacker of that advantage and may leave him at a disadvantage. Additionally, the military must continually seek to improve its weapons and systems preferably as a result of testing under combat conditions, if not actual combat. Above all, Charleston shows that the personal leadership skills of the commanders involved is essential to the success of any military operation.

ENDNOTES

[1]Richard E. Beringer et al., Why the South Lost the Civil War (Athens: University of Georgia Press, 1986), 59-63.

[2]J. A. Dahlgren to G. Welles, January 16, 1865, Official Records of the Navies During the War of the Rebellion (Washington: U. S. Government Printing Office, 1894-1922), I-XVI, 171-175.

Glossary

Bark: A three-masted vessel, square rigged on the two forward masts and fore-and-aft rigged on the third mast.

Bastionette: As referred to by Captain Foster in the alterations made to Fort Moultrie, it is a projection, build at the tip of a salient, from which small arms fire can be directed along the fortifications walls.

Brig: A two-masted vessel, square rigged on both masts.

Caponiere: Structure built to direct enfilade fire on the moat or ditch of a fortification.

Columbiad: A smoothbore heavy artillery piece capable of firing shot or shell with a heavy charge at a high elevation. First invented in 1811, most of the models in use during the Civil War dated from 1858 or later. The Confederates rifled and added reinforcing bands to some guns increasing their range and accuracy. Heavy rifled artillery developed during the war made Columbiads obsolete.

Counterscarp: The exterior slope or wall of the ditch in a fortification.

Drummond Light: A device generating high intensity light by the combustion of oxygen and hydrogen on a calcium filament. The light generated was reflected by a concave mirror through a fresnel lens. With adequate gas pressure, good illumination at distances over one thousand yards was attainable.

Epaulment: A covering mass, or breastwork, designed to protect the troops behind it. It differs from a parapet in that an epaulment has no convenient arrangement, such as platforms for troops to stand on, for firing over it.

Frigate: A class of warship, ship-rigged, typically mounting forty to fifty guns on two decks. Later frigates were built with steam engines for propulsion.

Glacis: Gradual slope up to a fortification covered by the fire of the defenders.

Gyrocompass: An electro-mechanical device used aboard ships which indicates the direction of true north without errors induced by the ship's or the earth's magnetic fields.

Mean Low Water: The average height at any place of all the low water levels caused by tidal action. It is the water depth referenced on marine navigation charts.

Merlon: The section of parapet between two openings, or embrasures, of a fortification.

Rake: As used when describing naval gunfire, it refers to the direction of gunfire along the target ship's fore-and-aft axis. Projectiles fired to rake a ship traveled its entire length greatly increasing the amount of damage inflicted when compared to fire directed across the ship's beam.

Schooner: A vessel with two or more masts, all fore-and-aft rigged.

Ship: A vessel with three or more masts, all square rigged.

Sloop: A single-masted vessel either square or fore-and-aft rigged.

Sloop-of-War: A class warship which, during the Civil War, typically carried ten to twenty guns. Later sloops were steam propelled and most were ship-rigged. The largest sloops were better described as scaled-down frigates.

Traverse: A mound of earth, or other substance, between weapons or sections of a fortification to localize the effect of shell bursts and to minimize the effect of enfilade fire.

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