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CHARLESTON'S CIVIL WAR "MONSTER GUNS," THE BLAKELY RIFLES

C. R. HORRES, JR.*

FOLLOWING THE DEVASTATION OF FORT SUMTER BY LONG-range rifled artillery in the summer of 1863 and the impending loss of Morris Island, the situation appeared grim for General Pierre G.T. Beauregard and his beleaguered Confederate defenders of Charleston. A little over two years after the firing on Fort Sumter, the tides of war had changed dramatically for the Confederacy. With a fleet of twenty-three Union warships and an estimated 10,000 Union troops less than ten miles away, the possibility of Charleston falling into Union hands had become more likely. Indeed, as Beauregard affirmed to South Carolina Governor Milledge L. Bonham, preparations were underway to defend the city street by street until its complete destruction.¹

The private citizens and military officials in besieged Charleston clung to the hopes inspired by two immense imported Blakely rifles. Many felt the guns held the promise of saving the city. Such expectations were placed on the capabilities of these technologically advanced artillery weapons that some felt the fate of the Confederacy rested on their success. The guns did not perform as the Confederates hoped; indeed, they hardly performed at all. But their story makes up a fascinating chapter of the war that took place at the edge of modern times.

Charleston's natural barriers, extensive interior lines, and strong fortifications presented significant obstacles to a force intending to conquer the city by land. Several Union advances onto James Island had established that the Confederates were prepared to defend the land accesses to Charleston. A more serious threat was posed by an invasion of the mainland or by the forced entrance of the Union's powerful naval fleet into Charleston harbor, such as had resulted in the untimely surrender of New Orleans in 1861. Adding to this possibility was the presence of large numbers of ironclad monitors. These two-gun warships had been built within a few months of the *Monitor-Merrimac* battle and were massed as a fleet against Charleston in April 1863. Encased in iron plate with guns mounted in rotating iron turrets, the monitors represented a significant

*Independent researcher, Del Mar, California. The author wishes to thank Ethel Seabrook Nepveux and Warren Ripley for their helpful comments and suggestions during the preparation of this article.

¹Alfred Roman, *Military Operations of General Beauregard* (New York: Harper Brothers, 1884; repr., New York: Da Capo Press, 1994), Vol. II, pp. 503-504.

advance in naval warfare at a time when most warships were constructed of wood. During most of 1863-1864, six or seven remained on station off Morris Island and frequently probed the harbor defenses, slamming their fifteen-inch diameter shells into the forlorn Fort Sumter. Numerous gunboats and a formidable ironclad ship known as the *New Ironsides* were also stationed off Charleston. The *New Ironsides* carried an impressive assortment of weapons, including two Parrott rifles capable of firing 100-pound projectiles and fourteen Dahlgren smoothbores, seven each to the port and starboard, firing eleven-inch diameter shells. Its solid three-inch armor plating backed by sturdy oak planking had withstood the best that Fort Sumter and Battery Wagner could offer.²

The question remained how to defend the city if the feared ironclads broke through the outer harbor defenses. Beauregard had four defensive elements to protect the inner harbor — artillery, warships, mines, and obstructions. The mainstay of the harbor defenses was artillery; Charleston had accumulated a considerable number of heavy guns, predominantly eight-inch and ten-inch smooth-bore columbiads. By the end of the war Charleston District had almost 250 artillery pieces. These had been placed at White Point at the tip of the Charleston peninsula and at various locations along the waterfront and around the harbor. Castle Pinckney, in the Cooper River, was armed with two ten-inch diameter smooth bores, and sand was piled against its vulnerable brick walls. Fort Ripley, an unarmed 70-by-70-foot fort, built on pilings on a shoal area in the middle of the harbor the previous year, was ordered to be reinforced and armed. Brigadier General Roswell S. Ripley, commander of Charleston District, formulated a defense plan that involved three circles or zones of fire depending on how far the ironclads penetrated the harbor. The first was centered on a line between Fort Sumter and Fort Moultrie, the second on a line between Fort Sumter and Fort Ripley, and the third centered in a triangle between White Point, Battery Glover on James Island, and Castle Pinckney.³

The second element of harbor defense was to battle the ironclads on the water. Small rowboats and boarding parties were organized and equipped with ladders to attack the ironclads under the cover of darkness. In addition, much money and effort was expended by the Confederate navy and citizens of Charleston to build ironclad rams. These craft rarely ventured

²John Johnson, *Defense of Charleston Harbor, 1863-1865* (Charleston, S.C.: Walker, Evan & Cogswell Co., 1890; repr., Germantown, Tenn.: Guild Bindery Press, 1994), p. 212, App. B., xxi-xcix.

³Johnson, *Defense of Charleston Harbor*, p. 259; *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies* (Washington, D.C.: Government Printing Office, 1880-1901) (hereafter *Official Records-Armies*), Series I, Vol. 14, pp. 620, 733-734; Roman, *Military Operations of General Beauregard*, Vol. II, p. 507.

out of the harbor because they lacked efficient steam engines to maneuver their excessive weight in the strong currents. It was also doubtful that their armor plate would have withstood a battle against the more heavily armored monitors at close range. Beauregard was all too familiar with the fragility of the ironclad rams to depend exclusively on them. Nevertheless, the C.S.S. *Palmetto State* and *Chicora* were stationed off Fort Johnson, constantly manned and ready to engage the monitors should they enter the harbor. A much stronger ram, *Charleston*, was under construction during this critical period.⁴

Underwater mines and obstructions formed the final elements of harbor defense. As a result of its largely defensive role in the Civil War, the South developed considerable expertise in the use of explosive mines both on land and in navigable inland waters. The term used to describe these devices during the war was "torpedoes," whose meaning since has changed. Massive mines, built from powder-filled boilers equipped with electric detonators operated from shore, were planted in the Ashley River and Hog Island channels. A double row of torpedoes (mines) guarded the channel between Fort Ripley and Castle Pinckney. Beauregard reported that he had 125 torpedoes placed in Charleston waters. Shallow passages were obstructed with wood piles and the main ship channel was blocked by a difficult-to-maintain boom made of ropes and wooden floats.⁵

Of the means at their disposal, artillery was preeminent in the minds of the Confederates as a defense against the ironclads. Artillery had proven its value by defeating Admiral Samuel F. Du Pont's fleet in April 1863. The *Keokuk*, an experimental ironclad, was actually damaged so badly by Fort Sumter's artillery that it later sank. The more heavily armored monitors were a different story. Although numerous dents and gouges reminded the crews not to get too close to the Confederate guns, the monitors had proven practically invincible to the most powerful weapons of the Confederacy. Their round turrets deflected all but the most direct hits of the spherical cannon balls and led Confederate munitions designers to develop a variety of pointed or flat-faced cylindrical shot, known as bolts, to fire from the smooth-bore ten-inch diameter columbiads. Despite these improvements, Beauregard knew he needed a massive piece of artillery to fight the ironclads and petitioned Confederate Congressman William Porcher Miles to lobby the secretary of war to authorize the casting of a fifteen-inch columbiad at the Charleston arsenal. Although he received authorization

⁴Roman, *Military Operations of General Beauregard*, Vol. II, p. 507; Johnson, *Defense of Charleston Harbor*, p. 34.

⁵*Official Records-Armies*, Series I, Vol. 14, p. 620; Vol. 28, Pt. 2, p. 300; Roman, *Military Operations of General Beauregard*, Vol. II, p. 507; Gen. G.T. Beauregard, "Torpedo Service in Charleston Harbor," *The Annals of the War* (Philadelphia: The Times Publishing Co., 1879; repr., New York: Da Capo Press, 1994), p. 521.

from Secretary of War James A. Seddon to cast the gun, this task appears to have exceeded the capabilities of not only the Charleston arsenal but those of the Confederacy, for none of the 50,000-pound smoothbores was ever made in the South. After waiting nearly a year, Beauregard probably knew that the successive reports of delays from the arsenal meant he would not get his heavy gun.⁶

THE HOPES OF CHARLESTON'S DEFENDERS WERE BOLSTERED

in their darkest hours by the arrival at Wilmington of two 12.75-inch rifled guns from England. On August 18, 1863, with Union shells raining upon Fort Sumter, Beauregard telegraphed Brigadier General William H.C. Whiting at Wilmington, "There are two Blakely guns, carriages, and 60 tons of shot on *Gibraltar*, belonging to John Fraser & Co., which have hastened here with utmost speed. Permit no delay." Colonel William Lamb, commandant of Fort Fisher at the entrance to Wilmington, reported on August 21 that "The Gibraltar came in this week with two of the largest cannons I know of in the World." The defenders of Wilmington were not eager to see the huge cannons go to Charleston and urgently protested to Richmond not to send both.⁷

Beauregard wasted no time requesting both for Charleston. His request to Secretary Seddon was supported on August 20 by Colonel J. F. Gilmer, chief of the Confederate Engineering Bureau. Even Congressman Miles pleaded with General Whiting on August 21: "I appeal to you not to keep from General Beauregard, in this hour of Charleston's sore trial, either of the Blakely guns." Beauregard directly telegraphed General Whiting to hurry the second Blakely on September 1, 1863. General Whiting felt that he did not have the right, under orders of President Jefferson Davis, to send the second gun. Yet given the imminent danger, Charleston prevailed in its request for both guns and on September 5 Secretary Seddon ordered the second sent to Charleston.⁸

These unique cannons were known as Blakely rifles and were said to have cost £10,000 sterling, or approximately \$600,000 Confederate for the pair and one hundred rounds of ammunition. By comparison, adjusting for inflation to August 1863, a forty-two pounder, about one-sixth the weight

⁶*Official Records-Armies*, Series I, Vol. 14, p. 676; Roman, *Military Operations of General Beauregard*, Vol. II, p. 39. Warren Ripley, *Artillery and Ammunition of the Civil War* (New York: Van Nostrand Reinhold, 1970), p. 82.

⁷*Official Records-Armies*, Series I, Vol. 28, Pt. 2, p. 291; Richard D. Steuart, "The Long Arm of the Confederacy," *Confederate Veteran* 35 (1927), p. 253; J.B. Jones, *A Rebel War Clerk's Diary* (Philadelphia: J.B. Lippincott & Co., 1866), Vol. II, p. 27.

⁸*Official Records-Armies*, Series I, Vol. 28, Pt. 2, pp. 294, 329, 330, 343.

of a Blakely, would have cost about \$12,600 Confederate.⁹

The Blakely rifles were purchased in conjunction with the John Fraser Company of Charleston, famous for its blockade-running activities, and delivered to the Confederacy. The correspondence of Charles Prioleau of Fraser, Trenholm and Company in Liverpool to George Alfred Trenholm of the John Fraser Company in Charleston, suggests that Captain Alexander Theophilis Blakely persuaded Major Caleb Huse, the Confederacy's minister of munitions in England, to let him build the two experimental rifles on the account of the Confederate government. They were designed by Blakely, a former Royal Artillery captain, who already had designed and fabricated a number of successful smaller-caliber rifles for the Confederacy and the Union. The Blakelys were cast by the George Forester & Co., Vauxhall Foundry, and measured 194 inches from muzzle to breech. When the guns were completed, Major Huse needed to find a steamer to transport them. Charles Prioleau offered the Confederate government the opportunity to buy back at cost the former propeller steamer *Sumter* to transport the guns. The *Sumter* recently had completed an illustrious history as a Confederate commerce raider under Captain Raphael Semmes. Fraser, Trenholm and Company had purchased the ship from the Confederacy and renamed it *Gibraltar*. Although verbally agreeing to purchase the ship, Huse had not completed the transfer before the ship sailed for America. Prioleau later was to remind Major Huse of this obligation, estimating the freight on the Blakelys at £20,000.¹⁰

The *Gibraltar* had to be strengthened and modified to carry the guns. Cranes were needed to load them, along with 150 solid shot weighing 650 pounds each and fifty shells weighing 450 pounds each. *Gibraltar's* holds were not designed to accommodate the sixteen-foot length of the guns in a horizontal position. This necessitated storing the guns standing upright in special slings and gave the ship the appearance of having two additional smoke stacks.¹¹

The *Gibraltar* began the month-long trip from Liverpool on July 3, 1863,

⁹Josiah Gorgas, "Notes on the Ordnance Department of the Confederate Government," *Southern Historical Society Papers* 12 (January-February 1884), p. 94; Richard Cecil Todd, *Confederate Finance* (Athens: University of Georgia Press, 1954), p. 198; Ripley, *Artillery and Ammunition*, p. 40.

¹⁰Ethel Trenholm Seabrook Nepveux, *Alfred Trenholm and the Company That Went to War* (Charleston, S.C.: Comprint, 1973), p. 65; Charles Prioleau to George Trenholm, Oct. 22, 1863, Charles Prioleau Papers (28-624-3), South Carolina Historical Society, Charleston (hereafter SCHS); Ripley, *Artillery and Ammunition*, pp. 148-155, 157, 340; Raphael Semmes, *Memoirs of Service Afloat During the War Between the States* (Secaucus, N.J.: Blue and Gray Press, 1987), p. 345; Charles Prioleau to Major C. Huse, June 5, 1863, Theodore D. Wagner Papers (11-448-2), SCHS.

¹¹Stephen R. Wise, *Lifeline of the Confederacy* (Columbia: University of South Carolina Press, 1988), pp. 119-120; Nepveux, *Alfred Trenholm*, pp. 64-65.

with clearance for Nassau. The existence of the guns was known to the Union, most likely through Union spies in Liverpool, and on July 20, 1863, special orders to capture the *Gibraltar* were issued by Gideon Welles, U.S. secretary of the navy, to the commander of the North Atlantic Blockading Squadron. It was reported that Captain E.C. Reed bravely sailed the *Sumter* (*Gibraltar*) into Wilmington through the shot and shell of the blockade in broad daylight because of a breakdown of its steam propulsion system. The appearance of a ship under full sail in daylight had confused the blockaders into believing it was one of their own. Passengers arriving on the *Gibraltar* spread the rumor that the guns weighed twenty-two tons and the carriages sixty tons and that they could be fired with accuracy and immense effect seven miles.¹²

General Whiting reported to Secretary Seddon that he was ready to send the first Blakely to Charleston on August 22, four days after their arrival in Wilmington. Lifting and moving such huge objects presented his engineers a significant challenge. The gun weighed nearly 50,000 pounds and the carriages complete with all accessories weighed 58,000 pounds. Specially adapted rail cars had to be built to transport them from Wilmington. The journey across the numerous rivers between Charleston and Wilmington over wooden trestles must have caused considerable anxiety since the gun alone weighed as much as a locomotive engine of the day. The route involved transport to Florence, South Carolina, on the Wilmington and Manchester Railroad and then on the Northeastern Railroad to Charleston, a distance of almost 200 miles. On August 25, 1863, the carriage for the first Blakely was reported to have arrived at the Northeastern Railroad Terminal and occupied seven railroad cars. The gun itself arrived in Charleston on August 29.¹³

¹²*War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Navies* (Washington, D.C.: Government Printing Office, 1894-1927) (hereafter *Official Records-Navies*), Series I, Vol. 9, pp. 127-128; "Charleston's Home Defence," *Charleston Yearbook 1883* (Charleston, S.C.: News & Courier Book Presses, 1883), p. 560; Jones, *A Rebel War Clerk's Diary*, p. 21.

¹³*Official Records-Armies*, Series I, Vol. 28, pt. 2, p. 302; George W. Rains et al., *Report of Board of Officers on the Facts Connected with the Bursting of the Large Blakely Gun in the City of Charleston in September 1863*, Sept. 24, 1863, Confederate Subject File BG, p. 3, National Archives; Claude C. Sturgill and Charles L. Price, "McCabe's Impression of the Bombardment of Charleston, 1863," *South Carolina Historical Magazine* (hereafter SCHM) 71 (October 1970), pp. 266-268; Francis Trevelyan Miller and Robert S. Lanier, *The Photographic History of the Civil War* (New York: Review of Reviews Co., 1911; repr. Secaucus, N.J.: The Blue and the Gray Press, 1987), Vol. 3, p. 287; Francis K. Middleton to "Harry" (Harriott Middleton), Aug. 26, 1863, Cheves-Middleton Papers (12-164-17), SCHS; *Official Records-Armies*, Series I, Vol. 28, Pt. 2, p. 313. A weight of 50,500 pounds is estimated from dimensions reported by the Confederate Navy Office of Ordnance and Hydrology and from a knowledge of the density of cast iron and bronze.

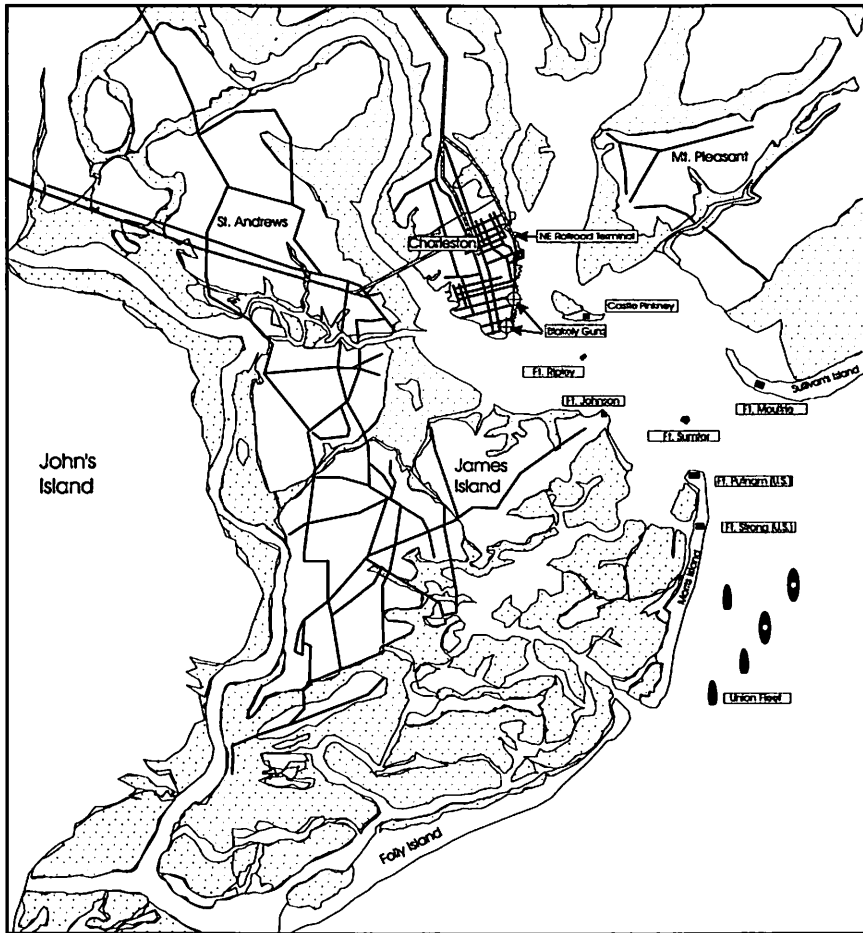
Although few details are available to describe the unloading and transport to the batteries, this must have been a remarkable production. The standard equipment for lifting heavy cannons was known as a gin and consisted of a tripod arrangement of large poles at the top of which was mounted a block and tackle. It is highly likely that the Blakelys would have required two gins, one at each end, since the standard issue strained to lift an 18,000-pound columbiad. A similar two-gin arrangement has been described for lifting fifteen-inch Rodmans weighing 50,000 pounds. As the Union learned in moving the large Parrott rifles on the beach at Morris Island, cannons could be rolled by strapping wood around the diameter to create a smooth circumference larger than the protruding trunions. Because the Blakelys were much too heavy for wagons or carts of the day, a temporary railroad track was laid down King Street to assist in moving the gun from the railroad station to White Point.¹⁴ These activities did not go unnoticed by the residents of the city. Augustine Smythe noted that on the afternoon of August 30, only one day after its arrival, the first Blakely was lying on the corner of Hasell and King streets, about half the 1.5-mile distance to its mounting site at the White Point Battery. Merchant Jacob Schirmer recorded on August 31: "Our prospects grow darker and darker every day and hour.... We are now putting up an extraordinary gun at Battery in hope of doing something there."¹⁵

Beauregard originally intended to put the first Blakely in the city and the other in Battery Wampler on the James Island side of the harbor. A short time later it was determined to place both at Battery Ramsey at the foot of Meeting Street from which they would have a field of fire sweeping from Fort Johnson to Mathewes' Ferry Point at Mt. Pleasant. The site of the first Blakely gun battery, on the tip of the peninsula approximately where South Battery intersects East Battery, was perilously close to nearby houses. Although the site was reported to be ready for both guns on September 4, only one would be mounted there. Eventually, the other was mounted in a battery built on the North Central Wharf at the foot of Cumberland Street known as Fraizer's (Fraser's) Wharf Battery. This battery was behind the site where the U.S. Customs House now stands and was constructed by filling in the foundation of the primary wharf used by the John Fraser Company.¹⁶

¹⁴Ripley, *Artillery and Ammunition*, p. 99, 239; *Official Records-Armies*, Series I, Vol. 28, Pt. 2, p. 248; J. Cutler Andrews, *The South Reports the War* (Princeton, N.J.: Princeton University Press, 1970), p. 328..

¹⁵Augustine Smythe to "Mother," Aug. 30, 1863, Smythe-Stoney-Adger Collection (24-7-9), SCHS; Jacob Schirmer, entry dated Aug. 31, 1863, in the Jacob Schirmer Diaries (11-567-10), SCHS.

¹⁶*Official Records-Armies*, Series I, Vol. 28, Pt. 2, p. 314, p. 337; Arthur M. Wilcox and Warren Ripley, *The Civil War at Charleston* (Charleston, S.C.: The News and Courier and Evening Post, 1991), p. 40; Nepveux, *Alfred Trenholm*, p. 7.



Charleston harbor in 1863 showing the locations of the Blakely batteries. Union forces occupied Morris Island and the waters of the outer harbor. Illustration courtesy of the author.

Batteries, built from mounds of earth, were three-sided affairs open to the rear. The front wall faced the expected direction of enemy fire while the side walls protected the gun and crew from nearby shell bursts. Bomb-proof magazines, constructed by covering sturdy log-cabin-like structures with more than twenty feet of earth, were located nearby to store the supplies of gunpowder. Batteries and magazines typically were covered with grass sod to prevent the wind from blowing the sand away.¹⁷ From

¹⁷*Atlas to Accompany the Official Records of the Union and Confederate Armies* (Washington, D.C.: U.S. Government Printing Office, 1891, repr., New York: Random House, 1983), Plate XLIV.

their respective sites, these powerful guns could command the inner harbor.

By September 2 the first Blakely had arrived at White Point and crews were completing the foundation and carriage. News reached Richmond that one of the Blakelys was mounted in Charleston by September 7.¹⁸

COMPARED TO THE TYPICAL CONFEDERATE ORDNANCE, THE Blakelys were years ahead in technology. In the words of General Beauregard, "These magnificent specimens of heavy ordnance were, apart from their immense size, different in construction from anything I had ever seen." The Blakelys were designed to be mounted on sophisticated cast-iron carriages to facilitate operation. Held by its protruding trunions that allowed the barrel to tilt up and down, the gun was supported in a massive four-wheeled top carriage. The wheeled top carriage allowed the weapon to be loaded and then advanced along the bottom carriage into the firing or "in battery" position. As the weapon fired, the reaction would force the entire top carriage backwards. The sliding friction against the bottom carriage dissipated the energy and reduced the forces on the gun and carriage. By comparison, the large columbiads of the day were mounted on wooden carriages equipped with wheels on eccentric axles that were engaged to lift the top carriage just clear of the sliding surface of the bottom carriage in order to be rolled into battery. Once in battery, the eccentric axles would be turned to lower the top carriage onto the sliding surface so that the reactive force of the firing could be absorbed by sliding friction. Frequent firing loosened the wooden frame and periodic tightening of the bolts was required.¹⁹

The Blakely system, a more robust and easier-to-use arrangement, kept the top carriage on its wheels throughout the movement and used a band brake system on its large railroad-style rear wheels to lock them during firing. The large rear wheels of the top carriage had an outer rim that rested upon cast-iron rails of the bottom carriage and an inner rim around which a circumferential band containing protruding studs could be tightened to prevent rolling. Smaller front wheels freely rolled upon separate cast-iron rails. The bottom carriage upon which the top carriage moved front and back was of the "center pintle" variety that allowed the entire mechanism to pivot completely about a circular iron track laid in the ground. Typical of center-pintle mounts, the Blakelys were designed to fire over the surrounding protective earth parapet, as opposed to firing through embrasures (openings) in a parapet. Embrasures provided additional

¹⁸Augustine Smythe to "Mother," Sept. 2, 1863, Smythe-Stoney-Adger Collection (24-7-9), SCHS ; Jones, *Rebel War Clerk's Diary*, Vol. II, p. 36.

¹⁹Beauregard, "Torpedo Service," p. 524; Ripley, *Artillery and Ammunition*, pp. 207-208.

protection for the gun and crew but limited the field of fire.²⁰

The Civil War was a transition period in the centuries-old artillery science. Both sides began to recognize the value of rifled artillery. Rifling was designed to impart a spinning motion to a projectile as it passes through the barrel. This motion provided several advantages over smooth-bore cannons. First, the spinning continues after the projectile leaves the barrel and stabilizes the projectile in flight, much as a spinning top can stand on its point. This stability permits projectiles to be elongated and streamlined to minimize air resistance in flight, allowing rifled projectiles to be heavier than cannon balls of equivalent diameter. For example, the Blakely 12.75-inch-diameter solid cylindrical shot was twenty inches long and weighed 210 pounds more than the 440-pound, fifteen-inch-diameter solid spherical shot of the monitors. Another advantage was that, unlike rotating cannon balls that could strike a target at any orientation, the spinning rifled projectile could be predicted to land nose first, thus allowing the use of fuses that could explode the shell on contact with a target.

The method of rifling employed in the Blakelys was unique. In American-made rifled artillery, the most common method of rifling was to equip the projectile on its base with a rim of soft material, such as lead, that would be expanded into spiraling grooves upon discharge. British-designed rifles, such as the Blakelys, Whitworths, and Armstrongs, required the projectiles to have protruding flanges, flats, or studs to engage the rifling. The Blakely used a system in which four slanting external flanges made of brass were fastened to the exterior of the projectiles with several screws or rivets. These were designed to mate with corresponding spiraling grooves in the bore of the rifle. The 12.75-inch-diameter shells and bolts were accurately turned in a lathe so that there was no discernible gap between the body of the projectile and the bore of the rifle when loaded.²¹

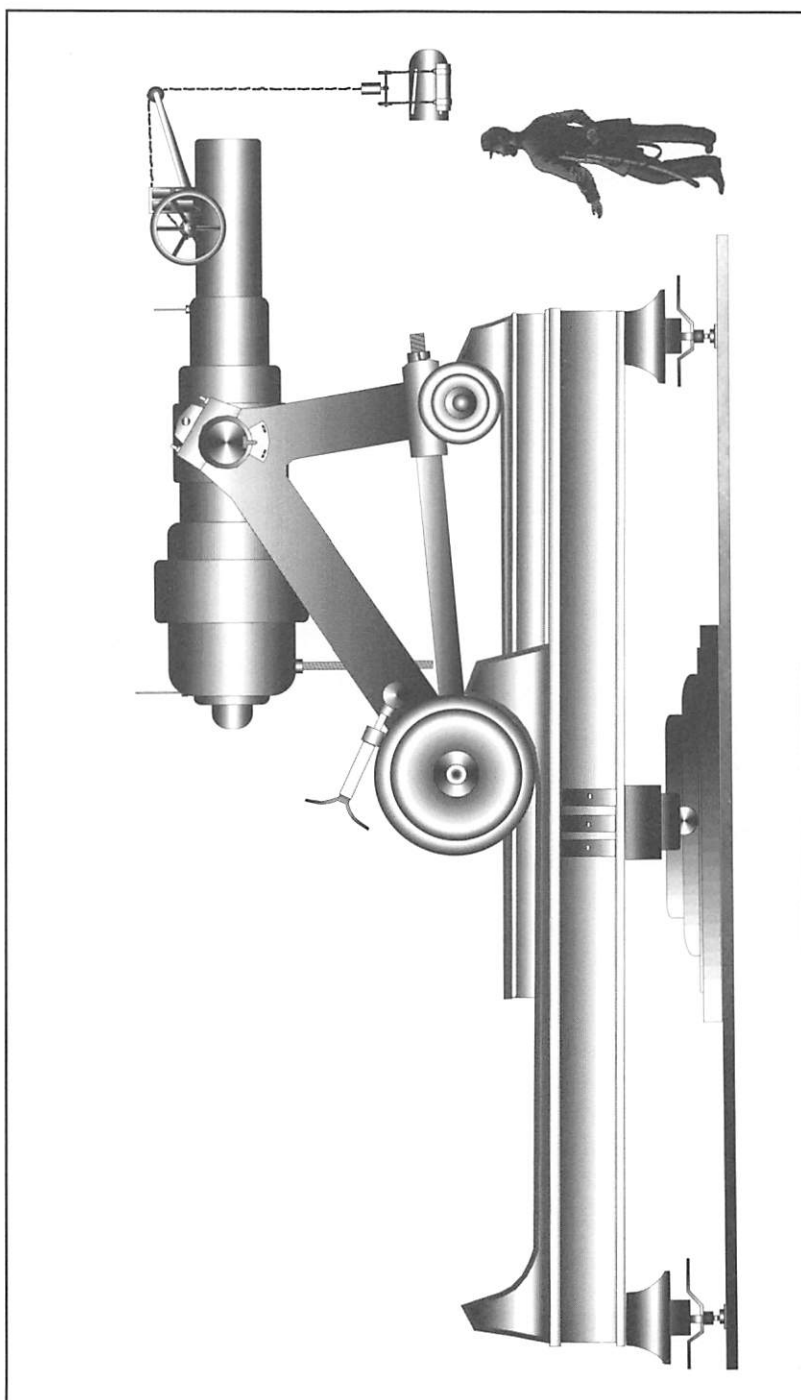
The Blakelys could fire powder-filled shells twenty-two inches long, weighing 470 pounds, or twenty-inch long solid cylindrical bolts weighing 650 pounds.²² Since these weight extremes exceeded the lifting power of the gun crew to place the projectile into the muzzle, a special lifting crane with a chain reel mechanism was mounted on the barrel to lift the projectile in place. The lifting sling was designed to allow the projectile to rotate about its axis like a rolling pin while suspended at the muzzle. Rotation was necessary to permit alignment of the flanges of the projectile with the rifling grooves in the barrel.

Loading and firing these giants was a complicated process. The

²⁰Miller and Lanier, *Photographic History of the Civil War*, "Forts and Artillery," Vol. 3, pp. 121-122.

²¹Rains, "Report of the Board," pp. 2, 4; Ripley, *Artillery and Ammunition*, pp. 158-159.

²²Rains, "Report of the Board," p. 4.



A composite drawing of Charleston's 12.75-inch Blakely rifle based on paintings, sketches, and photographs of the 1863 installation. Courtesy of the author.

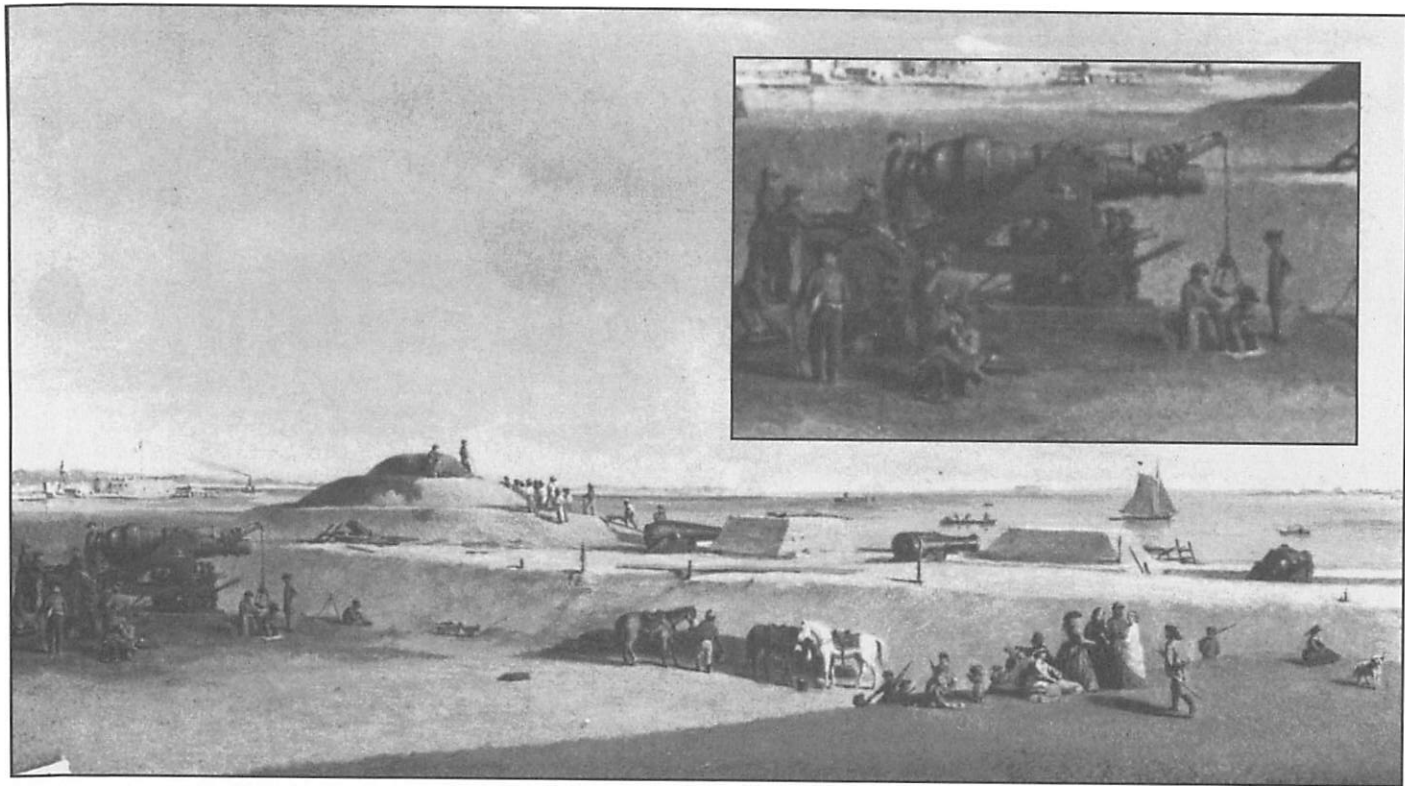
maximum charge of black powder required for the solid bolts was fifty pounds and was encased in a cloth bag that was pushed down the muzzle with a long ramrod until the bag seated in the reinforced breech. With the powder in place, a well-greased projectile was loaded in the lifting mechanism and cranked upward. Once at the muzzle, muscle power was needed to align the shell or bolt flanges to the four spiraling grooves. Using a ramrod, several men would push the projectile against the powder cartridge. They would then release the brake mechanism on the carriage wheels and roll the gun into its forward position until the front and rear wheels rested against curved stops built into the tracks of the bottom carriage. The bottom gun carriage tilted slightly downward from back to front to allow gravity to facilitate this movement. The brake mechanism was then reset on the carriage wheels by tightening the circumferential bands. A wire tool, known as a gimlet, was inserted into the breech vent of the cannon to pierce the powder bag, the vent was filled with priming powder, and a tube-like friction primer with a long lanyard attached was placed in the vent. The loading process was then complete.²³

The gun was aimed by elevating the barrel and pivoting the bottom carriage toward the target. Conrad Wise Chapman illustrated the Blakely with two vertical gun sights that would assist the aiming.²⁴ Based on the weight of the projectile and the amount of powder, a table of ranges was consulted to determine the degree of elevation required. Elevation was adjusted by means of a screw jack situated between the rear legs of the top carriage and the underside of the breech. Guns of this design could be fired from a nearly horizontal position to an elevation limit of about 30 degrees. The Blakelys incorporated a pointer on the right trunion to indicate the degrees of elevation of the barrel on a scale mounted to the carriage. The Blakely scale illustrated by Chapman indicates a maximum elevation of 30 degrees. Although maximum range for any given charge theoretically is obtained at 45 degrees, elevations above 30 degrees would place enormous stress on the gun and its carriage because the gun could not recoil effectively to absorb the reactive forces.

With the elevation set, the gun was ready to fire. Pulling the lanyard ignited the composition in the primer and forced flame down the vent which in turn ignited the powder in the chamber. Rapidly expanding gases propelled the projectile forward and the spiral grooves of the barrel developed the spinning motion that stabilized the projectile in flight. The ensuing roar and voluminous discharge of smoke would have been momentarily

²³Miller and Lanier, *Photographic History of the Civil War*, Vol. 3, "Forts and Artillery," pp. 121-122; Ripley, *Artillery and Ammunition*, pp. 222-228.

²⁴Conrad Wise Chapman, *White Point Battery, Charleston, December 24, 1863*, Museum of the Confederacy, Richmond, Va.; Philip Van Doren Stern, *The Confederate Navy: A Pictorial Review* (New York: Da Capo Press, 1992), p. 150.



The Blakely rifle can be seen at the far left of this painting, "White Point Battery, Charleston, Dec. 24, 1863," by Conrad Wise Chapman. The inset photo shows more detail of the rifle and its loading system. Photo courtesy of the Museum of the Confederacy, Richmond, Va.

deafening and blinding to the gun crew, and the action of the exploding powder upon the projectile produced an equal and opposite reaction on the 50,000-pound gun. This reaction would force the gun and its top carriage backwards along its bottom carriage two or three feet in less than one second. Before repeating the loading process, a large sponge would be dampened and used to clear the barrel of any remaining burning debris. The immense size of the guns and weight of the projectiles reduced the firing frequency considerably over the lightweight field artillery of the day. A well-served field gun could fire four rounds of canister in a minute; the fifteen-inch Dahlgrens of the monitors could fire about once every five minutes. Although not confined in a turret, the Blakelys would have taken much longer to reload and fire. During test firing it was reported that the loading went very slowly.²⁵

DURING THE CIVIL WAR WEAPONS BECAME HEAVIER AND eventually the ability of the gun to resist the forces of the discharge were at the limit of the strength of available materials. Cast iron, strong but brittle, was a favorite material for the larger bore weapons and accounts of cast-iron guns bursting with disastrous results to gun crews were numerous during the Civil War. The Blakelys had several design elements to resist the enormous forces generated by a fifty-pound charge of black powder, much more violent in its exploding than modern, controlled-burning gun powders.

Captain Blakely's methods of strengthening the guns included three elements, two of which were well known to the Confederacy. The third would prove to be a source of embarrassment for the artillery officers testing the gun's performance. As was commonly practiced in the manufacture of large guns, the body of the gun was massive; almost two feet of cast iron surrounded the powder chamber. Second, for added strength, four 3.75-inch-thick bands of five-inch-wide wrought iron were heated and forced onto the outside of the breech so that they formed a nearly continuous twenty-inch wide band over the chamber of the gun. Wrought iron is about twice as strong as an equivalent cast-iron element. When it cooled, the band contracted, applying a constrictive force to the gun body to oppose the expansion forces of the powder discharge. This was described as "initial tension." Third, a 1400-pound bronze cavity, weighing more than the standard bronze twelve-pounder field piece of the Civil War, extended through the rear of the breech. This revolutionary feature was believed to have been designed to act as an air-filled shock absorber for the discharge of the black powder. The vent, a hole drilled into the powder chamber

²⁵Ripley, *Artillery and Ammunition*, p. 228; Alvah F. Hunter, *A Year on a Monitor and the Destruction of Fort Sumter*, Craig L. Symonds, ed. (Columbia: University of South Carolina Press, 1987), p. 34; *Official Records-Armies*, Series I, Vol. 28, Pt. 2, pp. 387-388.

through which the powder charge was triggered to explode, was located just in front of the bronze chamber.²⁶

In the rush to get the Blakelys to Charleston, the instruction manual had been overlooked and the function of the bronze chamber was unknown. The gun crew believed powder should be loaded into this unusual chamber, but they realized that the grooves in the barrel and corresponding flanges did not allow the end of the projectiles to reach the bronze chamber. This created a gap of thirteen inches between where the projectile stopped and the assumed location of the powder charge. The artillerists were perplexed by this gap. On September 10 they were ordered to experiment with charges beginning with twenty-five pounds. They realized that the gun could not be fired with this small amount of powder because when placed in the bronze chamber the powder bags did not reach the firing vent, and they were forced to improvise. By adding several blank cartridges in front of the charge, they were able to fire the gun without a projectile.²⁷

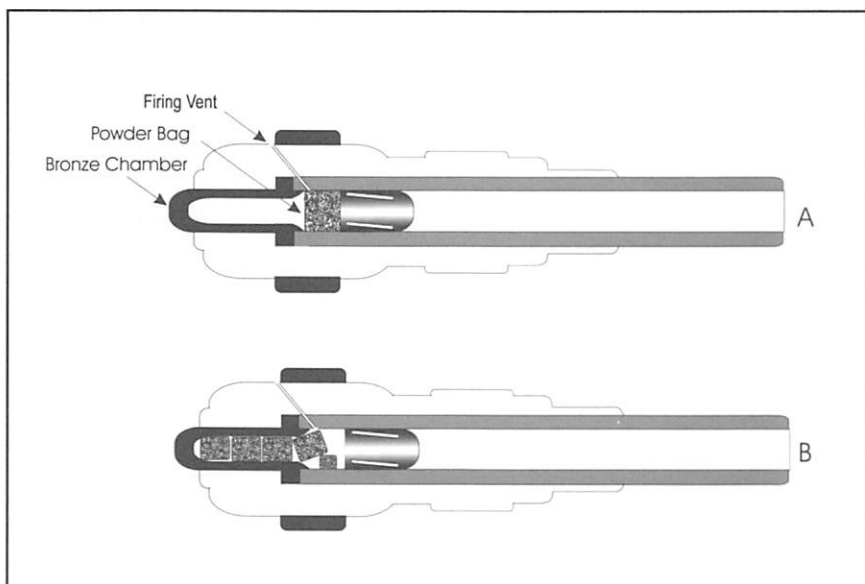
The next day, Captain Francis H. Harleston of the First South Carolina Artillery, still not understanding the purpose of the air chamber, inserted three cartridges directly into the bronze chamber and one in the bore for a total of forty pounds. He then filled the gap between the shell and the charges with a six-inch-thick wooden plug and inserted a well-greased shell containing only one pound of bursting powder. Captain Harleston elevated the gun to two degrees to minimize strain on the gun. He knew the Blakely gun's breech, ten inches from the depth of bore to the rear of the gun, was six inches less than that of a ten-inch columbiad. Even though they chose a light charge and nearly empty shell for the trial, they cautiously attached an extra-long lanyard and fired the Blakely from the protection of a nearby bombproof. The shell, fired from a height of about eighteen feet above the harbor, flew about 800 yards, then skipped an additional 200 yards across the water. The artillerist's caution was well warranted. This very first shot was disastrous to the Blakely; the bronze chamber ruptured and was forced back about a third of an inch. The motion cracked the cast-iron breech in eleven places radiating from the outside of the bronze chamber.²⁸

News of the disaster flashed to Richmond. On September 12 War Department Clerk John B. Jones noted in his diary, "We have tidings of the bursting of the Blakely gun at Charleston. I fear that this involves the fall of Charleston. Still Beauregard is there." The next day, Colonel Josiah Gorgas, the Confederacy's chief of ordnance, recorded the event in his journal in even more dire terms. "I am pained to hear of the bursting *on trial* of one of

²⁶Rains, "Report of the Board," pp. 2, 3; Miller and Lanier, *Photographic History of the Civil War*, Vol. 3, "Forts and Artillery," p. 120; Ripley, *Artillery and Ammunition*, p. 366.

²⁷Rains, "Report of the Board," p. 5.

²⁸*Ibid.*, accompanying sketch.



The Blakely rifles were designed (top drawing) with a bronze chamber at the rear, which apparently was to act as an air-filled shock absorber for the discharge of the black powder. When no instruction manual arrived with the first gun, the crew experimented with various means of loading it. As in the bottom drawing, three cartridges were inserted directly into the bronze chamber and one in the bore for a total of forty pounds. The gap between the shell and the charges was filled with a six-inch-thick wooden plug. When the gun was fired, the bronze chamber ruptured and was forced back about a third of an inch. The motion cracked the cast-iron breech in eleven places radiating from the outside of the bronze chamber. Illustration courtesy of the author.

the two 600 Pds. rifle Blakely guns just rec'd from abroad," he wrote. "In fact the bursting is a sort of national calamity so much was expected of these guns."²⁹

Within a few months of firing the disastrous shot, Captain Harleston would earn the unfortunate distinction of being the first officer to be killed at Fort Sumter. At the time of the damage, Captain Harleston's detachment appears to have been under the command of Major Ormsby Blanding of the First South Carolina Artillery, a unit that reported to Brigadier General Roswell S. Ripley. Much embarrassment was heaped upon General Ripley by the chief of ordnance, Colonel Josiah Gorgas, among others, for allowing such an act with the precious resources of the Confederacy. In Gorgas's words to General Samuel S. Cooper, adjutant and inspector general of the

²⁹Jones, *Rebel War Clerk's Diary*, Vol. II, p. 42; Sara W. Wiggins, ed., *The Journals of Josiah Gorgas, 1857-1878* (Tuscaloosa: University of Alabama Press, 1995), p. 80

Confederate army: "The destruction of this formidable gun was due to a want of forethought, unpardonable in an officer as experienced as General Ripley."³⁰

Rumors of the reasons for the failure of the weapon abounded. Emma Holmes recorded in her diary that a Richmond editorial faulted the artillery men for elevating the gun too high and that the ammunition was so costly that the manufacturer never tested the guns before shipping. Charles Prioleau wrote that given the method of procurement and Captain Blakely's reputation, "their failure is no surprise to me."³¹

The damage to the Blakely led to the convening on September 18, 1863, of a special board of artillery experts to investigate the cause of the failure. The board consisted of Colonel George W. Rains of the Augusta Arsenal, Lieutenant-Colonel Joseph Yates of the First South Carolina Artillery, and Major William S. Basinger of the Eighteenth Georgia Battalion. Each officer individually inspected the damaged gun and a report was issued to Beauregard's headquarters on September 24. The board determined that the gun was made of good materials but was weak in the breech by design, that the air-chamber concept was a valuable device, and that had the gun been properly loaded it would not have ruptured with the charge used. They even recommended that a special gunpowder be manufactured for the Blakely containing one-inch-diameter grains that would burn more slowly than the conventional mixtures of large and small grain cannon powder. Considerable experimentation with all manner of guns followed until the exact function of the brass cavity was deduced. The missing instruction manual arrived on September 17, 1863.³²

A conflict exists in the records as to whether Captain Blakely originally intended the bronze chamber to serve as an air chamber. Lieutenant J. R. Hamilton was in England during this period and saw the guns before they were shipped. He wrote that Captain Blakely never mentioned anything about the peculiarity of the chamber or its novel use as an air chamber. Rather, Captain Blakely had said something to Lieutenant Hamilton about igniting the charge from the fore end of the cartridge and allowing it to burn down into a narrow chamber. Lieutenant Hamilton added: "Even after seeing a copy of the examining board report, Captain Blakely has not

³⁰Official Records-Armies, Series I, Vol. 28, Pt. 2, pp. 522, 388 (Gorgas quotation); John Marszalek, ed., *The Diary of Miss Emma Holmes 1861-1865* (Baton Rouge: Louisiana State University Press, 1994), p. 309; C. A. Bennett, "Roswell Sabin Ripley, Charleston's Gallant Defender," *SCHM* 95 (July 1994), pp. 225-242.

³¹Marszalek, *Emma Holmes*, p. 308; Charles Prioleau to George Trenholm, Oct. 22, 1863, Charles Prioleau Papers (28-624-3), SCHS.

³²Rains, "Report of the Board," p. 18; Beauregard, "Torpedo Service," p. 525; Augustine Smythe to "Sister Sarah Annie," Sept. 28, 1863, Smythe-Stoney-Adger Collection (24-7-10), SCHS.

vouchsafed a single word in explanation, except to attribute the bursting to undue elevation."³³

John Brooke, the inventor of the Confederate Brooke rifle, had strong doubts as to Captain Blakely's intentions with regard to the bronze chamber and suggested to Colonel Gorgas and General Beauregard that they use it as a "gas chamber." Lieutenant Hamilton and William N. Brooke believed that John Brooke deserved recognition for realizing the value of an air chamber. Beauregard was so impressed with the invention that he modified a number of eight-inch columbiads to employ the air-chamber effect. The columbiads were banded and rifled and were "effectively employed against the Federal iron-clads."³⁴

Within a week of the damage, the first Blakely was taken down and left on the ground. It apparently lay there for some period of time while repairs were contemplated. In the meanwhile, the second Blakely had arrived in town and, although Beauregard initially ordered it returned to Wilmington, he countermanded his orders and had the Blakely temporarily placed on a wharf near the Northeastern Railroad depot. Although not specifically identified, this location may have been the Calhoun Street wharf or, more likely, the 650-foot-long wharf of the Charleston Gas Company on Charlotte Street. The Gas Company wharf had a sixty-six-foot-wide dock and was served by a railroad trestle. It would have been the closest to the railroad depot at the junction of Washington and Chapel street.³⁵

On October 2 the second Blakely was fired by Colonel Joseph Yates while mounted on a skid to validate the results. Beauregard wasted no time telegraphing Richmond of its success. Some of the trials may have been observed by the U.S. Navy. Aboard the ironclad *Catskill* serving picket duty on October 12, Lieutenant-Commander Greenleaf Cilley observed a gun fired three times from near the yard where the Confederate rams were being built. The shot struck between Battery Bee and Fort Sumter, a distance of about three-and-a-half miles. From the volume of smoke following the discharge he judged the piece was a very heavy one with a large charge of powder.³⁶

³³J.R. Hamilton to William N. Brooke, Jan. 22, 1864, in William N. Brooke to Col. Wm. Garnett, February 1864, Confederate Subject File BG, National Archives.

³⁴William N. Brooke to Col. Wm. Garnett, February 1864, Confederate Subject File BG, National Archives; Beauregard, "Torpedo Service," p. 525.

³⁵"Cousin Anna Maria" to Augustine Smythe, Sept. 18, 1863, Smythe-Stoney-Adger Collection (24-7-10), SCHS; *Official Records-Armies*, Series I, Vol. 15, p. 110; Kimberly Grimes et al., *Between the Tracks: The Heritage of Charleston's East Side Community* (Charleston, S.C.: The Charleston Museum, 1987), pp. 18-27.

³⁶Beauregard, "Torpedo Service," p. 525; *Official Records-Armies*, Series I, Vol. 28, Pt. 2, pp. 387-388, Vol. 15, p. 36.

DESPITE THEIR RELATIVE WEAKNESS, THE BLAKELYS WERE apparently capable of extreme range for a Civil War weapon. The data from the October firing reported a 470-pound shell could reach 6600 feet at an elevation of only two degrees. To reach this distance with such a flat trajectory would require a muzzle velocity of about 1700 feet per second, which is considerably higher than any other large sea-coast weapon of the day. The board of officers examining the failure estimated an initial velocity of 1300 feet per second could be reached by the shell with maximum charge. The most probable source of error between these figures would be in elevation. An increase of only three degrees in elevation would have put the calculated muzzle velocity closer to 1000 feet per second, consistent with the Armstrong and Ames rifles of the day. Confederate artillery studies had found that an initial muzzle velocity of 1600 feet per second was a maximum for the much lighter twenty-four-pounders and 1000 feet per second was a safe limit. Another possibility is that the shell skipped across the water to reach 2200 yards, a common method of insuring that an in-line target would be hit. Civil War artillery wisdom against naval targets recommended firing low over smooth water to skip a shell into a ship or target as opposed to harmlessly overshooting by aiming too high.³⁷

If the Blakelys were able to develop an initial velocity of 1000 feet per second at maximum elevation, the figure of a seven-mile range rumored by the *Gibraltar's* passengers may have been correct. Serving aboard the Confederate ram *Palmetto State* in Charleston harbor, Augustine Smythe wrote that the range was six miles. Emma Holmes had also heard that the Blakelys were accurate at five miles and could shoot well to seven miles. Range figures for the largest Confederate sea-coast cannon, the ten-inch rifled and banded columbiad, indicate that at maximum elevation and a twenty-pound charge, solid shot could be fired 3.2 miles. The Confederate seven-inch Brooke rifle could fire a 100-pound shell an estimated 4.5 miles. By comparison, World War II sixteen-inch rifles could throw a 2340-pound shell 27.8 miles with muzzle velocities approaching 2700 feet per second. These sixty-eight-foot long guns weighed 146 tons and were mounted on carriages weighing thirty-nine tons. At roughly six times the mass of Charleston's Civil War Blakelys, these modern weapons had managed only about four times the range.³⁸

That the presence of the Blakelys was known to the Union and their

³⁷Official Records-Armies, Series I, Vol. 28, Pt. 2, pp. 378, 388; Rains, "Report of Board," p. 10.

³⁸Augustine Smythe to "Aunt Janey," Aug. 25, 1863, Smythe-Stoney-Adger Collection (24-7-9), SCHS; Marszalek, *Emma Holmes*, p. 308; Ripley, *Artillery and Ammunition*, pp. 369, 136; Erwin N. Thompson, *The Guns of San Diego, San Diego Harbor Defenses, 1796-1947*, Howard B. Overton, ed. (San Diego, Cal.: San Diego National Park Service, 1991), p. 109.

reputation feared is a matter of record. Deserters wasted no time telling Major-General Quincy Gillmore of the new and powerful guns. A spy returning from Charleston reported to U.S. Army General-in-Chief H. W. Halleck in Washington that the large gun had been repaired and planted on the battery in front of the city and that Beauregard had sent to Wilmington for another gun of the same kind. Gillmore wrote Halleck on October 20 describing the arrival of "the new 600-pounder" from Wilmington. Rear-Admiral John A.B. Dahlgren, U.S. Naval commander at Charleston, was aware of the details of the Blakelys by November. He knew where they were landed, that the first one placed at White Point had burst by blowing out its bronze breech plug and that the second had been placed on a wharf near the Northeastern Railroad and successfully fired. All this was learned from an engineer on the railroad who had deserted. Another deserter reported that he saw the White Point Blakely lying on the ground in November.³⁹

From his post on Morris Island, the articulate Henry James Gooding wrote that deserters from the Confederacy were telling preposterous stories of two "monster guns" placed in Charleston to block the passage of the ironclad *Ironsides*. "It is gravely asserted that the guns mentioned will throw a projectile weighing 700 pounds!" Gooding postulated that "may be Mr. Beauregard sends the rascals over here to scare us with tales of guns and men."⁴⁰

In April 1864 a group of ten men deserted from Battery Pringle on the Stono River and provided details of Charleston's defenses to U.S. Navy Lieutenant-Commander William Gibson. Despite a knowledge of the Fraizer's Wharf Blakely, they did not identify a Blakely among the seven guns reported at White Point, which suggests that repairs still were underway. A similar story identifying the Blakely as being at Fraizer's Wharf was told by a deserter from the ironclad *Chicora* in September 1864.⁴¹

The damaged gun eventually was repaired by local machine shops. Photos of the surviving breech at West Point illustrate the manner of repair. The protruding bronze chamber was leveled smooth with the breech and a flat, round plate was attached over the hole with a ring of eight large bolts, drilled and threaded into the breech. It appears that a relatively thin band was added to strengthen the damaged breech. Emma Holmes mentions the banding by the Cameron Foundry in her account of the bursting but believed that it required banding on arrival. General Beauregard noted that the injured Blakely gun was thoroughly repaired and made as efficient as

³⁹Official Records-Armies, Series I, Vol. 28, Pt. 2, p. 103, p. 111; Official Records-Navies, Series I, Vol. 15, pp. 110, 232.

⁴⁰Virginia M. Adams, ed., *On the Altar of Freedom: A Black Soldier's Civil War Letters from the Front* (Amherst: University of Massachusetts Press, 1991), p. 103.

⁴¹Official Records-Navies, Series I, Vol. 15, pp. 393, 678.

when first received.⁴²

The time required for the engineers to mount the Blakelys permanently is not clear. From the deserters' reports referenced above, it would appear that the Fraizer's Wharf battery was finished before the White Point battery. It is an undamaged Blakely that is in Conrad Wise Chapman's illustration of the Charleston Battery in December 1863. Since this illustration shows a partially mounted Blakely in different location from its intended battery, the second gun may have been the model for the preliminary sketch dated October 29, 1863. Another sketch dated October 23, 1863, is virtually identical to Chapman's rendition with regard to the temporary mounting and illustrates massive cast-iron cross-bracing between the front legs of the top carriage. Both illustrations show the Blakely mounted without the bottom carriage. The complex bottom carriage would have required considerable time to assemble and permanently mount.⁴³

CHARLESTON'S "MONSTER GUNS" WERE MORE OF A PSYCHOLOGICAL value than of actual military importance. The Blakeys' performance in battle against the monitors was never tested. They certainly outclassed the 20,000-pound, banded and rifled ten-inch columbiad that previously held the honor of being Charleston's largest sea-coast piece. With the nearest enemy target at a distance of nearly five miles, the opportunity to use them during the remainder of the war was very limited. Further, from the firing results, their use in battle may have proven less than satisfactory. It was reported that the bolts had a tendency not to follow the rifling which would allow the projectile to begin an end-to-end tumbling, greatly decreasing range and accuracy. For the bolts to escape the rifling, the flanges must have been sheared off during the firing. Coupled with the disastrous bursting of the first Blakely, these factors would cast great doubt on the value of the weapons.⁴⁴

The huge cost of the Morris Island campaign in lives and material, its relative lack of accomplishment, and the success of Union operations elsewhere kept the situation at Charleston at a stalemate through all of 1864. Charleston's Confederate defenders constantly strengthened their fortifications and prepared for invasion. The U.S. Navy forfeited the initiative gained by the army's conquest of Morris Island and reduction of

⁴²Ripley, *Artillery and Ammunition*, p. 159; Marszalek, *Emma Holmes*, p. 308; Beauregard, "Torpedo Service," p. 525.

⁴³Chapman, *White Point Battery*; Ripley, *Artillery and Ammunition*, p. 158; Anonymous Sketch of Blakely Gun at Charleston dated Oct. 23, 1863, in Richard H. Bacot Manuscript File, South Caroliniana Library, University of South Carolina, Columbia.

⁴⁴Ripley, *Artillery and Ammunition*, p. 75; Johnson, *Defense of Charleston Harbor*, p. 71.

Fort Sumter by not pressing an assault on the harbor. As months passed, the ironclad fleet was in constant need of repairs and rarely gave Admiral Dahlgren the full strength he desired to challenge the harbor defenses.⁴⁵

While Charleston was holding its own, the situation in other theaters rapidly deteriorated for the Confederacy. Sherman's success at Atlanta in September 1864 threw the entire coastal defense plan into turmoil. For Wilmington, Charleston, and Savannah, no longer was the threat from the sea but from the interior. General William T. Sherman marched unopposed to Savannah and in five days forced the surrender of a city that had stubbornly resisted three years of attack from the sea. In January 1865 Sherman feigned a move toward Augusta, then launched his seasoned legions against undermanned and weakened South Carolina defenders. No massing of troops could be made in South Carolina to give battle, and opposition to Sherman's army consisted only of delaying actions. When Sherman reached and burned Columbia, the Charleston defenders were ordered to North Carolina to join an army being formed under the newly reinstated General Joseph E. Johnston.⁴⁶

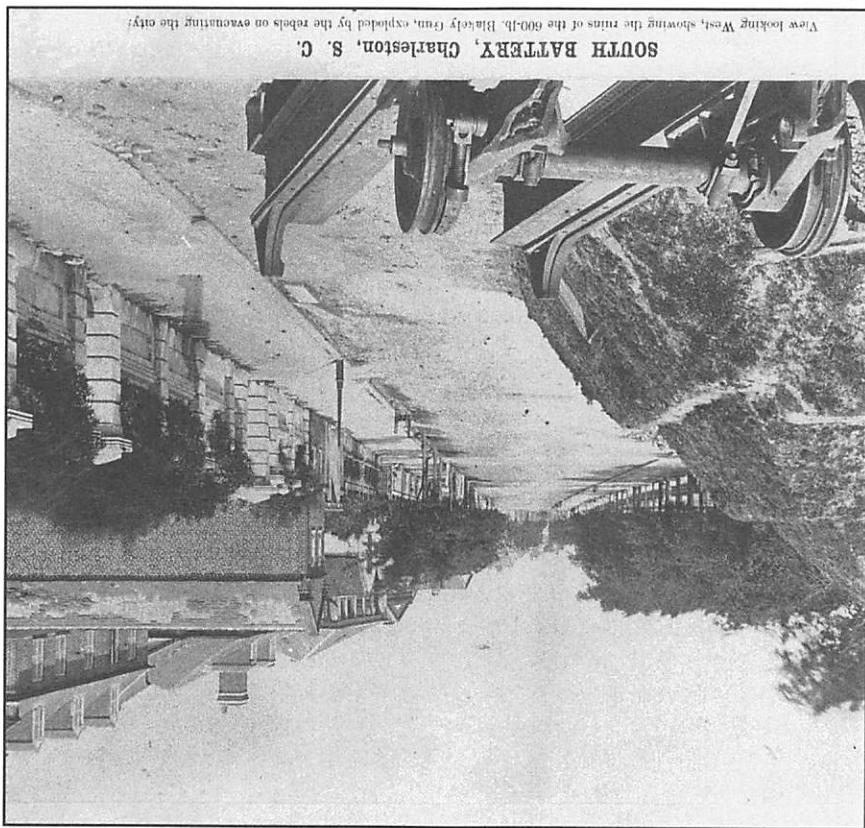
The Confederates were determined not to leave weapons and supplies in Charleston that could be used against them. Beauregard personally had planned the details of the evacuation of Charleston and on February 15 ordered Lieutenant-General William Joseph Hardee to execute those plans. As much as could be moved by rail was brought away, but the ironclad rams and the Blakelys were impossible to remove quickly. On the evening of February 17 the rams were destroyed in spectacular explosions of their powder magazines, and the Blakelys, which had been overcharged with powder and fired, burst into hundreds of fragments. The explosion at the White Point battery left a huge block of the breech on the ground and blew a 500-pound fragment into a roof three houses away, where it remains to this day. Amazingly, the repairs to the breech survived the destruction of the gun, attesting to Beauregard's opinion of the repair work.⁴⁷

When the Union occupiers came over from Morris Island, the Blakelys were beyond recognition. Only the bottom carriage of the gun located on White Point remained largely intact following the bursting, but the Fraizer's Wharf carriage was severely damaged. With Charleston's defenders in North Carolina, the much reviled monitors were now able to enter the inner harbor without firing a shot. In a tribute to their two-year campaign, the officers of the monitor *Catskill* were photographed in Charleston harbor with an array of Blakely and Brooke shells and bolts on the foredeck. Like the Blakely guns, the Confederacy was in the process of being demolished.

⁴⁵*Official Records-Navies*, Series I, Vol. 15, p. 592.

⁴⁶Burke Davis, *Sherman's March* (New York: Random House, 1980), pp. 116, 139.

⁴⁷Roman, *Military Operations of General Beauregard*, Vol. II, p. 357, 348; Burton, *Siege of Charleston*, pp. 320-321.



The carriage of the Blakely was left near the corner of South Battery and East Battery for many years. Photo from the collections of the South Carolina Historical Society.

Within two months, Richmond had fallen, Lee surrendered his army at Appomattox, and Johnston was entreating Sherman to stop the fighting.⁴⁸ In the years following the Civil War, U.S. Army engineers collected many of the Confederate weapons. Most of the obsolete weapons were headed to the scrap heap and a few were to become souvenirs. The large piece of the Blakely breach from White Point was transported to the Charleston Arsenal and then to the grounds of the U.S. Military Academy at West Point. Several bolts and shells were taken to the museum at the

⁴⁸Miller and Lanier, *Photographic History of the Civil War*, Vol. 3, pp. 120 (small insert entitled "View from the Rear" is of Fraizer's Wharf Blakely), 173; Roman, *Military Operations of General Beauregard*, Vol. II, p. 395.

Washington, D.C., Naval Yard. For eighteen years, thirty of these massive cylinders of iron were used as a border to protect a piece of the Revolutionary War fortifications preserved on Marion Square. In 1883 they were replaced by a wrought-iron fence in an attempt to beautify the square. The fencing appears on the commission's books as costing \$87.70 and a receipt for \$50 is noted for that year. It is possible that this receipt represented the scrap value of the bolts. Although most of the iron has been lost to the recyclers, part of the Blakely battery remains at Charleston. The foundation of the White Point gun mount was rediscovered by a crew installing a sewer line in 1976. The twelve-by-twelve-inch pine beams that supported the gun and its iron tracks were in relatively good condition after being buried beneath the roadway for more than a hundred years and they were reburied after the work was complete.⁴⁹

The defense of Charleston was a major concern of the Confederacy and many innovative means were employed in that endeavor. It is man's nature to seek a sanctuary in a time of crisis; yet, like so many of the dreams and aspirations of the Confederacy, Charleston's "monster guns" proved but a fleeting hope to a cause that was not to be.

⁴⁹Ripley, *Artillery and Ammunition*, p. 340; Alice R. Levkoff and Robert Whitelaw, *Charleston, Come Hell or High Water* (Columbia, S.C.: R.L. Bryan Co., 1975), p. 50; *Charleston Yearbook 1883*, pp. 466, 12, 160; Warren Ripley, "Civil War Gun Platform Found," *Charleston Evening Post*, Jan. 15, 1976, p. 1.