

A Comparison of the Construction of
Castle Pinckney and Fort Moultrie in 1809

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Abstract

This paper explores the construction of Castle Pinckney and Fort Moultrie in 1809 by identifying and examining the engineers who designed the forts, the construction crews that built them, and the unique layout and design of each structure. The purpose of this study is to recognize the engineer and work crew responsible for the construction of Castle Pinckney and to determine if they were the same who constructed Fort Moultrie. The research conducted examined sources from various databases, including the College of Charleston, and National Park Services personal library along with various public resources found on the internet. The information was then compiled and compared, and it was concluded that Castle Pinckney and Fort Moultrie were both designed by Engineer Jonathan Williams and that the construction of the two forts was overseen by Major Alexander Macomb.

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Chapter I

A Comparison of the Construction of Castle Pinckney and Fort Moultrie in 1809

The general goal of this research is to compare the construction of Castle Pinckney and Fort Moultrie in 1809 by identifying and examining the engineers who designed the forts, the construction crews that built them, and the unique design of each structure. The ultimate purpose of the project is to recognize the engineer and work crew responsible for the construction of Castle Pinckney and to determine if it was the same who constructed Fort Moultrie.

The Topic

Castle Pinckney, located on Shute's Folly in the Charleston Harbor, is one of the few remaining horseshoe-style (U-shaped) fortresses known to exist in the United States. The fort was named after Charles Cotesworth Pinckney, a revolutionary war veteran and an ambassador to France during George Washington's presidency who was "famous for his stand against United States payment of any tribute" (Nomination Form, 1970, p. 3) to the British government. Castle Pinckney was originally built in 1794 based on orders from President George Washington to construct a fort built out of logs and sand, as part of the American coastal defense program known as the "first system". After it was destroyed by a hurricane in 1804, it was rebuilt in 1809 as part of the "second system" of coastal defenses, which began because of the growing threat of war with Britain. Since then, it has been modified many times to suit the needs of its inhabitants and defenders ("A Chronology", 2013). During early American conflicts such as the War of 1812, Castle Pinckney did not see much action. However during the Civil War, the fort served as a defensive structure and a stockade for Union prisoners-of-war. After the Civil War, a navigation light was installed and Castle Pinckney was used as a storehouse by the War

Department Ordnance. In 1924, President Coolidge nominated Castle Pinckney as a national monument, and Castle Pinckney was classified as a historical landmark for a short period of time, until the site was deemed not historically significant enough and was declassified (“A Chronology”, 2013). Since then, the Castle and its surrounding acres have been owned by the Army Corp of Engineers, State Ports Authority, South Carolina Shriners, and the Sons of Confederate Veterans, who currently own the Castle. In 1967, most of the wooden infrastructure on the island was destroyed by a fire. Today, the remains of the original structures have either been buried or begun to deteriorate (“Hot time on Castle Pinckney”, 2011).

Fort Moultrie was originally constructed in 1776 on the southern tip of Sullivan’s Island as a defensive measure against British forces threatening to take control of South Carolina. This location was considered strategic because the entrance to the Charleston Harbor was protected by the Charleston Bar, an area of sandbanks with channels that directed all incoming ships to the southern tip of the island, where they would be in range of Fort Moultrie’s guns (“The Battle of Sullivan’s Island,” n.d.). The fort played an integral role in the Revolutionary War during the Battle of Sullivan’s Island, and afterwards was named after Colonel William Moultrie in honor of his role. In 1798 the second Fort Moultrie was constructed after the first fell into disuse and began deteriorating. Shortly later in 1804 a hurricane destroyed the rebuilt fort, and in 1809 the third Fort Moultrie was constructed out of brick using Congressional funds.

Alexander Macomb, a member of the Army Corp of Engineers, directed the fort’s construction and was in charge of contracting local materials, along with strengthening all Charleston defensive systems (“A General Timeline,” 2011). Because Macomb’s militiamen were not willing to perform manual labor, he was forced to acquire federal funds in order to pay for slave labor (“A General Timeline,” 2011). The new structure was built a short distance

behind the original fort. After completion in January of 1809, the finished fort was taken over by the Army. During the war of 1812, Fort Moultrie prepared for a British attack but did not end up seeing any action (“A General Timeline,” 2011). The fort later received damage from a hurricane in 1822 and a fire in 1823, and was abandoned later in favor of Fort Sumter in 1860. Despite having been rebuilt in the 1870’s, by 1885 the fort was partially buried in sand and rubble, and required renovations by Secretary of War William C. Endicott who had been charged with the modernization of national coastal defenses. Although still identified as an Army installation, the fort did not see action during the World Wars due to the development of more advanced weaponry which deemed older defenses as irrelevant. When the Army left in 1948 Fort Moultrie went to the State of South Carolina, until 1960 when ownership of Fort Moultrie and its surrounding property was transferred to the National Park Service, who still own and manage it today as part of the Fort Sumter National Monument.

While a great deal is known about the history of Castle Pinckney, research concerning who is responsible for the construction of the castle is lacking. The exact engineer and work crew who constructed the Castle remain unidentified. However, First Lieutenant of the Army Corp of Engineers Alexander Macomb is credited for the construction of Fort Moultrie and Fort Johnson along with other similar South Carolina coastal fortifications. Therefore, the hypothesis of this thesis is that Alexander Macomb is also responsible for the building of Castle Pinckney. This gap in knowledge creates a need for research on the construction of Castle Pinckney.

In an attempt to fill the existing gap in research concerning the construction of Castle Pinckney in 1809, the overall governing question of the study is –“What individual and labor force is responsible for the design and construction of Castle Pinckney and are they the same entities that built Fort Moultrie?” Precise aspects of the construction process will be addressed

through a break-down of the governing question into more specific sub-questions, which include first and foremost, “Who built Castle Pinckney and Fort Moultrie? Who were the individuals who made important contributions to the construction of Castle Pinckney and Fort Moultrie? Did the same individuals work on both forts? How do the designs of the forts compare?” The field of study for this project is American history and it can be qualified as an area study since it pertains most to Charleston History.

Key Terms

Bastion: A well-fortified protruding section of a fort wall

Casemate: Protective compartment surrounding a piece or pieces of artillery

Embrasure: Opening in wall for artillery

En Barbette: French term meaning that guns are placed to fire over the top of a parapet (versus through embrasures)

Parapet: low protective wall situated along upper edge of fort walls

Redoubts: temporary or supplementary block-shaped defenses

Terreplein: level surface for guns to be mounted on

Rationale

This research would prove to be of value to the owners and managers of the two fortifications. First of all, information concerning the construction of Castle Pinckney would fill serious information gaps. Castle Pinckney is considered by many to be a valuable historical site, due to its existence “for such a long period of time, reflecting a number of colorful and significant events from the Colonial through the Confederate periods” (Fant, 1970), and a more complete understanding of its construction and architecture could be applied to existing knowledge concerning other similar architecture. Secondly, if the research concluded that

Alexander Macomb is responsible for the building of Castle Pinckney, then it would be logical to compare the structure of Castle Pinckney to that of the other works which Macomb is responsible for. Langhorne and Lewis (1978) also suggest that because of its specific structure and shape, Castle Pinckney will prove to be helpful in examining other similar fortresses built during the eighteenth century using similar techniques. This study would attempt to fill all of the aforementioned gaps by identifying the entities responsible for the building of Castle Pinckney and therefore pave the way for future research that could analyze the construction of Castle Pinckney more thoroughly.

Methods and Evaluation

The researcher proposed that a thorough examination of any records pertaining to the construction process of Castle Pinckney and the coastal defensive system work of Alexander Macomb in Charleston be completed. Resources for this research study were looked for in the following locations: the College of Charleston Library, the South Carolina Historical Society office, the Park Services Library at Fort Moultrie, Library of Congress online database, and the internet. The methodological approach was to perform a meta-analysis in hopes of gathering qualitative data concerning the construction of Castle Pinckney. Sources such as historical records from the National register, biographies about Alexander Macomb, and architectural surveys were examined thoroughly in order to determine the answer to the governing question.

Implications

If the researcher's findings suggest that Alexander Macomb is responsible for the construction of Castle Pinckney in 1809, then he would receive full responsibility for the improvements made to Charleston defenses during that time period. By determining what labor force was employed to construct Castle Pinckney the researcher could potentially fill a major gap

concerning not only Castle Pinckney's history, but also the history of Fort Moultrie if evidence is found that supports they were built by the same entities.

Significance

This study is significant because it provides vital background information on the history of the construction of Charleston's defenses. Research on the construction of Castle Pinckney contains many gaps, and any additional information will add significantly to previous understandings. It is also significant because Castle Pinckney has been identified as one of the few remaining horseshoes style structures in the world, and Langhorne and Lewis (1978) suggest that because of its specific structure and shape, Castle Pinckney will prove to be helpful in examining other similar fortresses built during the eighteenth century.

Applicability

The thesis will be relevant when applied to other studies concerning horse-shoe style fortresses and may also be used to compare and contrast Charleston harbor defensive structures built by Alexander Macomb. If the findings indicate that Alexander Macomb was responsible for the construction of Castle Pinckney in 1809, then Castle Pinckney may be not only be directly compared to the few remaining horseshoe style structures in the United States, but also may be used to identify common characteristics between Castle Pinckney and other structures, such as Fort Moultrie, which Alexander Macomb is responsible for constructing.

Chapter II: Review of Literature

Castle Pinckney, located on Shute's Folly in the Charleston Harbor, is one of the few remaining horseshoe-style (U-shaped) fortresses known to exist in the United States. Langhorne and Lewis (1978) suggest that because of its specific structure and shape, Castle Pinckney will prove to be helpful in examining other similar fortresses built during the seventeenth century. The site played a role in the Civil and Revolutionary Wars and even temporarily served as prison ("A Chronology", 2013). An earlier version of Fort Moultrie, constructed by Alexander Macomb and located on the southern tip of Sullivan's Island, played an integral role in the Revolutionary War during the Battle of Sullivan's Island when Charleston forces successfully fended off the British.

Overview of the Development of American Coastal Defenses

According to McGovern and Smith (2006), coastal forces were established originally in the United States in order to "defend vulnerable points against sudden attack and to buy time for the nation to assemble its manpower." Early coastal defenses were built to protect important harbors and potentially intimidate invaders and therefore deter conflict. From 1783-1867, American defensive structures were constructed under the jurisdiction of three systems, known as the first, second, and third system. These three systems made up the Colonial and Revolutionary Period of coastal defense. Although defensive measures were directed by local legislature for the most part, the United States Congress assumed overall responsibility for construction. The first system, which existed from 1794-1806, was motivated due to European conflict. The general coastal defense structure during this time period was described as "cannon in open works with earth parapets, generally unrevetted, with blockhouses or redoubts to defend them from land attack". Engineers and state legislators were allowed to direct the construction of

these forts with minimal interference from the federal government. In 1798, increased tension with France led to a rapid reinforcement of coastal defense. After the tension subsided, coastal defenses were allowed to slowly decay until the beginning of the second system of defense, which commenced in 1807 and concluded in 1815. The second system was initiated because of a growing threat of war with Britain, which called for a more intricate building system. A new method of creating “masonry faced earthen forts with increased use of circular or elliptical segments” along with the use of cannons that were able to fire through openings in the fort walls, became widely used during this time period. By the conclusion of the War of 1812, there existed at least 60 separate first or second system works protecting American harbors across the nation. The third system was created by Board of Engineers in 1816 and lasted until 1867, when the age of modern coastal defense began. This third system was much more organized and uniform than the two which preceded it, and was intended to be more permanent.

History of Castle Pinckney

Because of its location in the Charleston harbor, Castle Pinckney has played an important role in the history of Charleston, South Carolina during American conflicts such as the Civil and Revolutionary Wars. Langhorne and Lewis (1978), speculate that Shute’s Folly was originally inhabited by native aboriginal groups, who relied on the location of Shute’s Folly as a reliable site for fishing and gathering. In 1794, President George Washington ordered the original Fort Pinckney to be built out of logs and sand. The fort was named after Charles Cotesworth Pinckney, an ambassador to France during George Washington’s presidency who was “famous for his stand against United States payment of any tribute” (Nomination Form, 1970, p. 3) to the British government. Later in 1809 the fort was completely reconstructed after the original structure was decimated by a hurricane in 1804. Since then, it has been modified

many times to suit the needs of its inhabitants and defenders. During early American conflicts such as the War of 1812 and The Revolutionary War, Castle Pinckney did not see much action. However during the Civil War, the fort served as a defensive structure and a stockade for Union prisoners-of-war. In 1865, twenty-five soldiers convicted of mutiny were executed and buried on the island. After the Civil War, a navigation light was installed and Castle Pinckney was used as a storehouse by the War Department Ordinance. In 1924, President Woodrow Wilson nominated and established Castle Pinckney as a national monument. However Congress deemed the site not historically important enough and it was disqualified as a national park and transferred to the care of the Army Corp of Engineers (“A Chronology”, 2013). In 1953 the Army Corp of Engineers transferred ownership back to the National Park Service after the property was declared “surplus property”. In 1956 the General Services Administration acquired the property and a plan to turn the property into a sewage treatment plant was considered but not brought to fruition. The South Carolina State Ports Authority purchased the land from the General Services Administration in 1958 for \$12,000, with plans to use the site as a “dredge spoils disposal area” (Janiskee, 2009). A second plan to transform Castle Pinckney and Shute’s Folly, this time into a state park and museum, was proposed by the South Carolina State Ports Authority but disbanded in 1962 due to a lack of monetary resources. The South Carolina Shriners were granted ownership of the island for use in their crippled children’s program, however they only owned the property for a year before returning it to the Ports Authority. Since then, the Castle and its surrounding four acres have been owned by the National Parks Service, Army Corp of Engineers, State Ports Authority, South Carolina Shriners, and the Sons of Confederate Veterans, who currently own the land. In 1967, most of the wooden infrastructure on the island was destroyed by a fire. Today, the remains of the original structures have either been buried or

begun to deteriorate (“Hot time on Castle Pinckney”, 2011). Shute’s Folly and Castle Pinckney are considered by many to be historically valuable because of the island’s isolated location in the middle of the Charleston harbor that has allowed archeologists to examine a relatively untouched slice of American history.

History of Fort Moultrie

In January of 1776, a member of the continental congress named John Rutledge received information concerning plans for British forces to take control of South Carolina (“The Battle of Sullivan’s Island,” n.d.). In March of 1776, Colonel William Moultrie began to oversee the construction of a defensive fort on the tip of Sullivan’s Island. This location was considered strategic because the entrance to the Charleston Harbor was protected by the Charleston Bar, an area of sandbanks with channels that directed all incoming ships to the northern tip of the island, where they would be in range of Fort Moultrie’s guns (“The Battle of Sullivan’s Island,” n.d.). The original fort was described as “an immense pen 500 feet long, and sixteen feet wide, filled with sand to stop the shot” (“Fort Moultrie”, n.d.). The fort was first constructed of palmetto logs, and had two-inch plank platforms to support the guns. Two months after it was ordered to be built, Charles Lee, a general in the Continental army, found the fort to be square shaped with “palmetto walls, 16 feet wide and filled with sand” rising “10 feet above wooden platforms for the soldiers and guns” (“Fort Moultrie”, n.d.). On June 2, General Charles Lee landed with American forces and began preparing for a British attack. On June 8, 1776, before construction of the fort was complete, it was attacked by the British, who had previously scouted out the island and its defensive system using British frigates (“The Battle of Sullivan’s Island,” n.d.). The cannon fire from the British ships did not have a significant effect on the spongy, absorbent, palmetto-log walls of the fort (“The Battle of Sullivan’s Island,” n.d.). The American forces were

able to successfully hold off British forces who retreated later in the day (“Fort Moultrie”, n.d.). This battle is known as “the first decisive American victory,” (“The Battle of Sullivan’s Island,” n.d.), and was used as “important propaganda for the Patriot cause” (“Fort Moultrie”, n.d.). The fort was named after Colonel William Moultrie in honor of his role in the Battle of Sullivan’s Island. After the Revolutionary War, the fort fell into disuse and began to deteriorate.

Maintenance of the fort ceased almost completely until 1793, when Congress “authorized the first system of nationwide coastal fortifications” (“Fort Moultrie”, n.d.). In 1798 the second Fort Moultrie was constructed but was destroyed by a hurricane shortly after in 1804. In 1809 the third Fort Moultrie was constructed out of brick using Congressional funds. Alexander Macomb, a member of the Army Corp of Engineers, directed the fort’s construction and was in charge of contracting local materials, along with strengthening all Charleston defensive systems (“A General Timeline,” (2011). Because Macomb’s militiamen were not willing to perform manual labor, he was forced to acquire federal funds in order to pay for slave labor (“A General Timeline,” 2011). After being promoted to Major, Macomb decided to recycle as many materials as possible from the original fort Moultrie’s and incorporate them into the construction of the third fort. The new structure was built a short distance behind the original fort. Colonel Williams, chief engineer of the United States, “reconsidered his original notion of having a multi-tiered fort built on this new site, instead opting for a single-level brick structure with three sides facing out onto Charleston’s ship-channels, and armed with guns mounted *en barbette* [a French expression meaning with only their gun-barrels protruding above its parapets, like whiskers bristling from a chin or *barbe*]” (“A General Timeline,” 2011). By June of 1808, Major Macomb had completed plans for the new fort and his work crew commenced construction, and by November, only the gateway remains unfinished. Macomb states in a letter to Washington

“This fort will be little inferior to any other work in the United States in point of magnitude and importance. It will mount on the sea-side twenty pieces of heavy metal, and contain a garrison of 300 men” (“A General Timeline,” 2011). On January 6, 1809, the fort is declared complete and ready for occupation. On December 19, 1809, direction of the finished Fort Moultrie was taken over by Lieutenant-Colonel John Smith of the Third U.S. Infantry Regiment, and in March of 1810, Macomb withdrew his laborers and concluded his defensive work in Charleston on orders from Washington. In 1811, Fort Sumter was built, therefore greatly strengthening Charleston’s defenses. In June of 1812, war was declared against Great Britain by Congress and President Madison. Fort Moultrie prepared for an attack by British Admiral Cockburn in July of 1813, and again in October of 1814 for another British attack, but did not end up seeing any action (“A General Timeline,” 2011). After the Treaty of Ghent was signed and the War of 1812 ended, Charleston militiamen who occupied the fort returned home, and the 4th U.S. Infantry regiment arrived to occupy the fort permanently. In September of 1822, a hurricane hit Charleston harbor and Fort Moultrie was damaged but still structurally intact. In October while the Fort was being cleaned a fire destroyed the Officer’s Quarters, which were rebuilt in June of 1823. After the secession of South Carolina from the union in 1860, Fort Moultrie was abandoned by Union troops in favor of Fort Sumter. By the end of the civil war Fort Moultrie was partially buried in sand that had been used to fortify its walls against the rifled cannon, which was capable of destroying brick walls. Defensive upgrades were applied to Fort Moultrie in the 1870’s, including new cannons, and concrete magazines and bombproofs (“Fort Moultrie”, n.d.). The fort was renovated again in 1885, when Secretary of War William C. Endicott was put in charge of modernizing national defenses, which included the installation of more modern weaponry on

Sullivan's Island. By the time the United States became involved in the World Wars, older defenses such as those at Fort Moultrie became irrelevant due to the introduction of airplanes.

Chapter III: Methodology

In 1804, a hurricane damaged fortifications located in the Charleston harbor, specifically Fort Moultrie and Castle Pinckney. These two defensive structures were rebuilt in 1809 as part of the second system of coastal fortifications. Army Corps of Engineer's Alexander Macomb was responsible for the rebuilding of Fort Moultrie, but the individuals and laborers responsible for the rebuilding of Castle Pinckney remain unidentified. The purpose of this study is to examine and compare the construction history of Castle Pinckney and Fort Moultrie in 1809, and then to determine who built Castle Pinckney in 1809. The governing question is: what individual and labor force is responsible for the design and construction of Castle Pinckney and are they the same entities that built Fort Moultrie? In order to thoroughly answer this question a meta-analysis will be conducted. The answer to the governing question will be presented in the form of qualitative data, and data collected could be anything ranging from government records to historical autobiographies.

Participants/Subjects

Participants and subjects were unnecessary, as the researcher reviewed historical sources and records.

Apparatus and Measures:

The materials used included sources collected from multiple locations such as libraries. They included but were not limited to: secondary sources such as books, magazine articles, government records, along with primary sources such as letters or biographical documents. These documents were similar to sources which had already proven to be useful, such as the evaluation completed by Brosnan (2013) and biographical articles such as those written by

Gardener (2006). The researcher gathered information from the National Park Service's personal library and the internet.

Procedure:

The researcher first read and analyzed sources provided by the mentor, along with other sources located on the internet. Then, the researcher compared the construction of Castle Pinckney and Fort Moultrie and determined if the entities responsible for the construction of Castle Pinckney could be conclusively identified from the research. The data was analyzed qualitatively and displayed in chart and paragraph format with specific citations to back up the conclusion.

Evaluation:

The worth of the researcher's data was judged by examining how accurately the researcher answered the governing question by identifying the entities responsible for the construction of Castle Pinckney. The data is to be considered valid if it can be concluded that it has been drawn from reliable sources.

Conclusion

A possible conclusion that could be drawn from this study would be that Alexander Macomb built Castle Pinckney using methods similar to those used to construct Fort Moultrie. This conclusion would confirm the researcher's hypothesis. Another possibility would be that another unidentified individual and work crew were responsible for the construction of Castle Pinckney, which would negate the proposed hypothesis.

Chapter IV: Findings

A Comparison of the Construction of Castle Pinckney and Fort Moultrie

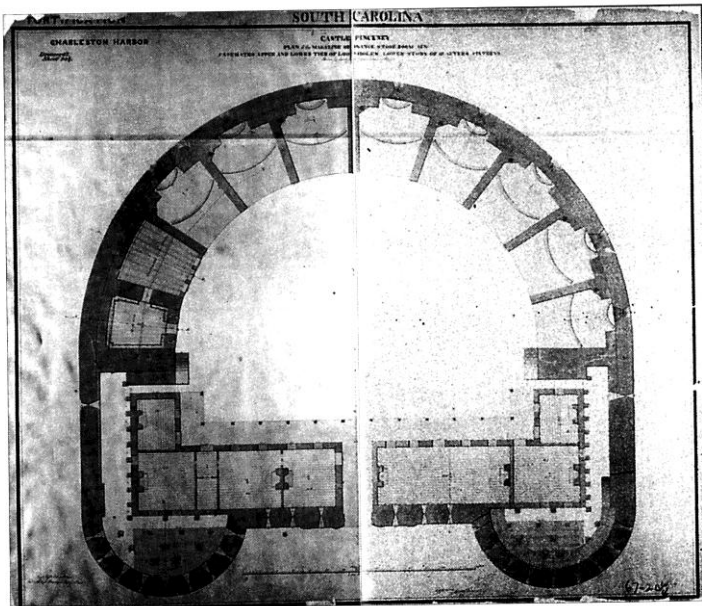
	Castle Pinckney	Fort Moultrie (III)
Location	-Shute's Folly	-Sullivan's Island
Fort Design	-Horseshoe style - Casemated -Curved side facing water -Semi-circular bastions -Through-wall masonry	-Through-wall Masonry -Three sides facing channel -Angular Bastions -Six-sided
Designer/Architect	-Chief Engineer Jonathan Williams	-Chief Engineer Jonathan Williams
Engineer in command	-Major Alexander Macomb	-Major Alexander Macomb
Materials used	-Masonry: Wando river factory bricks, mortar composed of lime, oyster, cement, and sand aggregate	-Masonry: Wando river factory bricks, mortar composed of lime and oyster-shell aggregate
Ordnance	-Nineteen guns mounted on two tiers, first tier in casemates, second tier mounted <i>en barbette</i>	-Battery mounted <i>en barbette</i> , designed to mount thirty guns
Workers or labor force used	-Paid laborers	-Slaves hired out by masters
Engineering/ Architectural Drawings	-First drawings in 1807 -Drawings from 1810 depict fort as almost complete	-Original drawings completed by Macomb sometime before 1811 -More recent drawings by

		Historic American Buildings Survey (HABS)
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Fort Design

Castle Pinckney was built to defend against naval attacks, and its innovative “castle” design, “circular in form and lacking angular bastions [such as those at Fort Moultrie]” (“Rethinking Castle Pinckney”, 2012) set a new standard for coastal fortifications. Jonathan Williams based the design of Castle Pinckney off of “contemporary french fortification theories” (“Rethinking Castle Pinckney”, 2012). According to Brosnan (2013), “the original design [for

Castle Pinckney] included two tiers of casemated cannons with additional weapons [mounted] en barbette on the terreplein,” however due to cost “overruns for all period fortification” the design was reduced to a single tier of casemated cannons (Brosnan, 2013). The exterior walls of the fort were fifteen feet high and six to seven feet thick at the base, and formed a shape similar to that of a horseshoe. The fort was constructed so that



Layout of Castle Pinckney

during high tide the waters of the harbor came nearly to the exterior walls. The semicircular sea-facing side of the fort contained casemates for cannon, along with space for additional artillery to be mounted “en barbette”. Young (1938) reports that this section of the Castle also contained a powder magazine and “a powder room for filling cartridges” (p. 8). The land-facing side of the

fort was made up of a straight wall with two semicircular bastions at each end of the wall which protruded and featured two levels of “openings for small arms to defend against land side attack” (Weirick, 2012, p. 23). The straight wall between the two semicircular ends not only provided multiple openings for defensive small arms fire, but also served as vents for fresh air and light. This rear wall also contained four soldiers’ rooms and four officers’ barracks, and was divided by a sally port in the middle, which was the sole entrance to the fort (Young, 1938). Officers’ quarters and barracks were located directly behind this wall, allowing soldiers to fire through the openings in case of attack. Weirick (2012) described the barracks as “a two story building of load-bearing masonry walls with eight heated rooms on each story and floored with wood planks” (p. 24). Additionally, the sea-facing side of the barracks supported a two story porch that offered a view of the parade ground and casemates located on the opposite side of the fort. Weirick (2012) states that the barracks could “uncomfortably house two hundred officers and enlisted men” (p. 25).

Jonathan Williams discarded his original multi-tiered fort design for Fort Moultrie and instead decided on “an enclosed brick work, presenting three sides to the channel, with its battery mounted en barbette” (Bearrs, 1968, p. 20). The fort was built in a somewhat irregular shape, with two angular bastions projecting from the northwest and northeast corners, between which Fort Moultrie’s main gate and guardhouse were situated. The main powder magazine was located within the northwest bastion of the fort. The three walls facing the channel were built opposite of the main gate wall. On either side of the middle wall which faced the main-ship channel were the southwest angle and southeast angle walls, which faced Fort Sumter and Maffitt’s channel, respectively. Between the channel-facing sides and the main gate wall stood the eastern and western sides of the fort, each of which included smaller gates known as

posterns. The interior of the fort included two sets of soldiers' barracks, the West or No. 1 Barracks which were situated along the western side of the fort and the North or No. 2 Barracks, which were built parallel to the Northern main gate wall. The officers' barracks were located

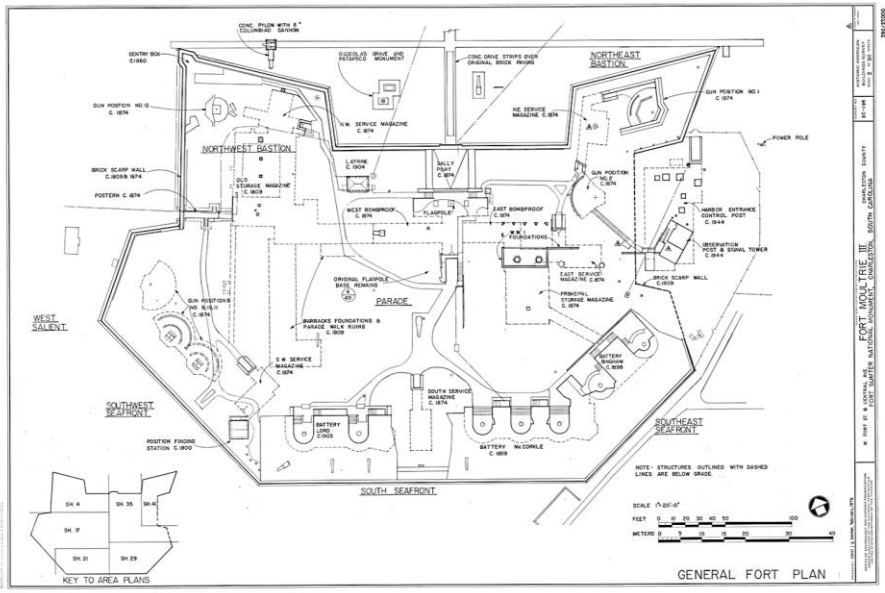
along the eastern side of the fort. These three sets of barracks created an open rectangular space between them where the parade ground was located. Originally, the fort "was intended to be encircled by a ditch approximately 30 feet wide and six feet deep"

("Battlefields in Motion," n.d.),

however the sand dunes which surrounded the fort proved to be difficult to keep out of the trench. Upon Fort Moultrie's completion in 1809, it was described by Secretary Eustis as "an enclosed work defended by bastions and batteries of masonry, and designed for 30 guns, seven of which were [already] mounted, with a brick magazine and barracks for two companies" ("Battlefields in Motion" n.d.).

Designer/Architect and Engineer in Command

In December of 1805, the South Carolina legislature ceded to the national government the property rights to Fort Johnson, Fort Moultrie, and Castle Pinckney, so that the Federal government could take on the expenses of restoring these coastal defenses. In 1806, Colonel



HABS (1933)

Jonathan Williams sent Alexander Macomb, one of the first United States Military graduates, to “make a study of the harbor and its defenses” (Bears, 1968, p. 4). November of 1806, Williams was ordered to organize the temporary and permanent coastal defenses in Charleston, and to leave the newly promoted Captain Macomb in charge of beginning construction. Young (1938) states that Major Alexander Macomb was given “direct supervision over the new work on Shute’s folly, as well as over the construction then underway at Forts Moultrie, Mechanic, and Johnson, in the same harbor (p. 7). In 1807, now Chief Engineer of the Army Corp of Engineers Jonathan Williams visited Charleston and filed reports on Fort Moultrie, Fort Johnson, and Castle Pinckney, declaring the sites as “heaps of rubbish”, unfit in their current condition for any further use as defensive structures (Bears, 1968, p. 10). Williams recommended to Secretary Dearborn that the long term plans for Fort Moultrie should be to rebuild it as a “triple-tiered casemated work”. In June of 1807, disputes between the Americans and the British caused by the British ship *Leopard*’s firing on the American frigate *Chesapeake* motivated the federal government to send Macomb to Charleston to “place the forts in condition to resist naval bombardment” (Bears, 1968, p. 14) Macomb provided Fort Johnson with cannonry as a temporary fix, and then proceeded to complete further temporary renovations on the sites of all three forts, and in addition Fort Mechanic. Official permanent renovations began on the Charleston defenses in January of 1808 after funds were approved by Congress and Macomb was provided with a budget for building expenses. The Preservation Society of Charleston (n.d.) states that “By the end of 1808, Fort Johnson was complete and armed, and masonry construction was underway at Fort Moultrie and Fort Pinckney.”

Location

Castle Pinckney was built on the southern end of Shute's Folly, a flat, marshy, 65-acre island susceptible to erosion located at the mouth of the

Cooper River where it empties into the

Charleston harbor (Langhorne & Lewis, 1978).

Fort Moultrie III is located on the southern tip of

Sullivan's Island with a clear view of Fort

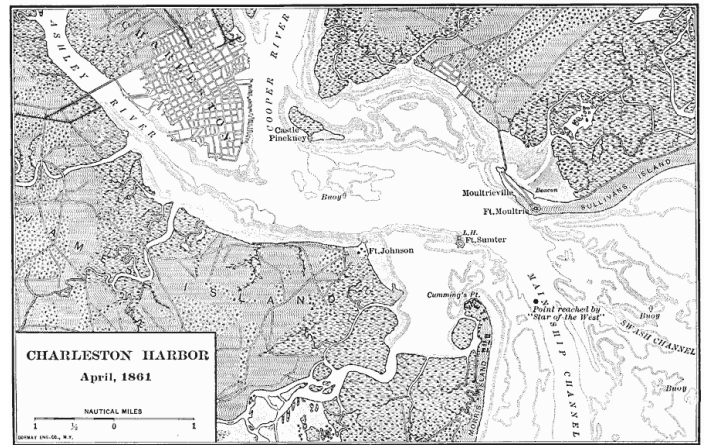
Sumter and the mouth of the Charleston Harbor

(Smith, 1978). This third version of Fort Moultrie

was constructed “ a short distance behind the old

redoubt's wave-battered remnants” (“Battlefields in

Motion”, n.d.) and therefore farther away from the shore of Sullivan's Island.



Charleston Harbor (1861)

Materials

The exterior walls of Castle Pinckney were constructed using durable handmade brick and lime mortar. Likewise, the walls forming the soldiers' barracks were built using the same brick and mortar, although they were not as thick as the exterior walls. Hart and Shepherd (n.d.) state that certain characteristics including the chemistry, color, and geographical location of Castle Pinckney suggest the bricks used to construct the fort originated from the Wando River region (p. 8). The mortar used between the bricks was composed of varying proportions of oyster, lime, cement, and sand aggregate (Hart & Shepherd, n.d.). Alexander Macomb salvaged much of the masonry from the previous Fort Pinckney for future use in Castle Pinckney. Likewise, materials were salvaged from Fort Moultrie II after the original barracks, officers' quarters, and bakehouse

were razed. The mortar used in the construction of Fort Moultrie was “composed of white lime with finely ground oyster shell-aggregate” (“Historic Structure Report” n.d.).

Ordnance

Originally, the design for Castle Pinckney David Weirick (2012) states that Castle Pinckney was designed to mount “a total of nineteen pieces of heavy artillery” that were mounted in two tiers which sat facing the harbor upon a “semi-circular wall, capable of protecting a broad 180 degree lateral range” (p. 22). The bottom tier was enclosed in eight protective brick casemates that helped support the weight of the upper tier of guns that sat upon the terreplein, meanwhile providing protection to the guns, which fired through embrasures in the wall. The upper tier of guns was situated “en barbette” behind a five-foot tall parapet that offered protection from enemy fire. In contrast, Rogers Young (1938) reported that thirty guns were mounted, “eight in casemates and the remainder en barbette” (p. 8). It is unclear whether either nineteen or thirty guns were mounted, however the early architectural drawings show that the fort was designed to mount nineteen guns.

Initially in 1808 Macomb reported that “[Fort Moultrie] will mount on the sea-side twenty pieces of heavy metal, and contain a garrison of 300 men” (“Battlefields in Motion, n.d.). In December of 1811, Secretary Eustis reported to the House of Representatives that Fort Moultrie III was designed to house a total of thirty guns mounted “en barbette”, and included “a brick magazine and barracks for two companies” (“Battlefields in Motion,” n.d.). On the outer rim of the original exterior ditch stood seven guns which served as an external battery.

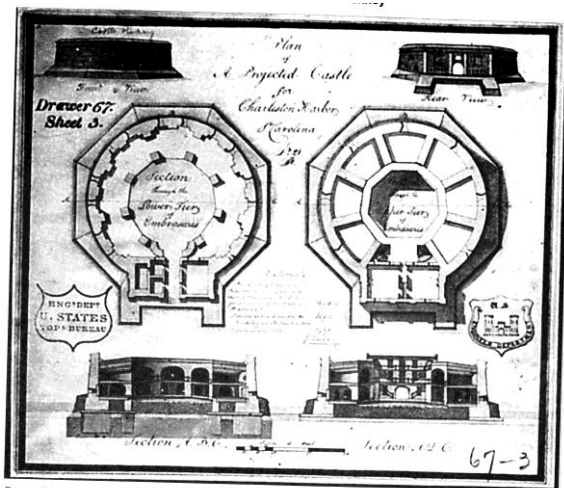
Workers/Labor Force

Bearrs (1968) states that Alexander Macomb was forced to hire “100 men at a wage of \$8 to \$10 per month each” (Bearrs, 1968, p. 16) to work on Castle Pinckney because the commander of the

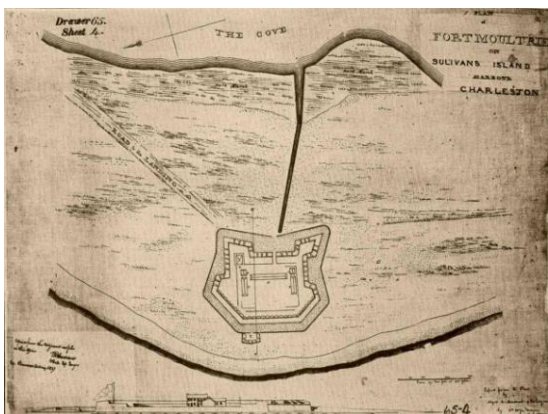
South Carolina militiamen insisted that “none but Negroes worked in the area”(Bears, 1968, p. 16) and refused to lend Macomb his men to work on the forts. According to “Battlefields in Motion,” (n.d.), when the militiamen refused to perform manual labor on Fort Moultrie Alexander Macomb was forced to instead use slaves hired out by their masters, a process which added unexpected expenses to the total cost of fortifying the Charleston Harbor. Whether or not slaves or hired men were used to build Castle Pinckney cannot be clearly determined from the sources examined.

Architectural Drawings

The first architectural drawings of Castle Pinckney, completed around 1807, are accredited to Engineer Jonathan Williams. A drawing done later in 1810 depicts Castle Pinckney as nearly complete, only lacking the protective parapet before the upper tier of guns (Weirick, 2012). A drawing completed in 1821 by Captain Poussin shows a completed version of Castle



Proposed Design for Castle Pinckney



Macomb's Original Drawing of Fort Moultrie

Pinckney. This drawing depicts Castle Pinckney as existing “mostly the same as when completed ten years earlier” (Weirick, 2012, p. 140). The original layout of Fort Moultrie in 1809 was also depicted in a simple architectural drawing done by Alexander Macomb sometime before his promotion from the rank of Major in 1811 (“Battlefields in Motion, n.d.). Later on, after the establishment of the Historic American Buildings

Survey in 1933, additional detailed drawings of the fort were done.

Chapter V: Discussion

Implications

The results of this study suggest that Alexander Macomb is responsible for overseeing the construction of Castle Pinckney and Fort Moultrie, and that Engineer Jonathan Williams of the Army Corp of Engineers can be credited with the design of the two forts. This means that both Alexander Macomb and Jonathan Williams receive a large amount of responsibility for the improvements made to Charleston defenses at the beginning of the second system of coastal fortifications. Both forts were enclosed brick works and were constructed out of similar materials. This implies that the two forts were built in a similar manner, and it is a possibility that the materials used to construct the two forts even originated from the same area.

Significance

The results of this study are significant because they pertain directly to the history of Charleston and its coastal fortifications, and provide relevant background information. Because Alexander Macomb can be credited with the construction of Castle Pinckney in 1809 along with the reconstruction of Fort Moultrie and Charleston's other coastal fortifications, his impact on the Charleston's defensive system is very significant. His work in Charleston is also significant due to the fact that up until the creation of the Army Corp of Engineers in 1802 and the beginning of the second system of coastal fortifications in 1807, foreign engineers were brought in to work on the construction of fortifications due a lack of domestic skill. His work in Charleston marks the end of major foreign involvement in fortifying the coast of South Carolina, along with the commencement of a new era of American engineering. Additionally, not much is known concerning the labor force used to construct Castle Pinckney and Fort Moultrie in 1809.

This research suggests that hired slaves are responsible for most of the manual labor used in the construction of the two forts. Since little is known about the origins and construction of Castle Pinckney and any additional knowledge is therefore valuable.

Applicability

Since Alexander Macomb and Jonathan Williams jointly designed and built Castle Pinckney and Fort Moultrie using similar materials and methods, it would be reasonable to infer that they applied these techniques when constructing other coastal fortifications located in Charleston, such as Fort Mifflin and Fort Johnson. Furthermore, the materials used, such as the sand-cement-lime-oyster mortar used in the construction of Castle Pinckney, could be compared to the mortar used in other coastal fortifications. Comparisons could also be made to determine whether other Charlestonian fortifications and structures were built using bricks that were produced by brick plants located on the Wando River, such as those used in the construction of Castle Pinckney. Furthermore, it would be reasonable to assume that since Macomb was forced to hire slaves to help construct Castle Pinckney and Fort Moultrie, he was most likely forced to use a similar labor force during the construction of other Charleston defenses. Since Castle Pinckney is also one of the last remaining horseshoe-style fortresses, it is important to know more about its layout and the manner in which it was built.

Limitations

This study was limited by a lack of data from which to draw conclusions from. Much of the information needed to completely answer the research question is not easily accessible due to the researcher's experience and age and to financial restrictions. For example, many historical

records have not been scanned and uploaded to the internet, so they are only available through access to the National Archives in Washington D.C. and Atlanta. The researcher is also not an experienced historian, and automatically faces certain limitations when attempting to complete new research.

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