FORT MACON
RAMPARTS
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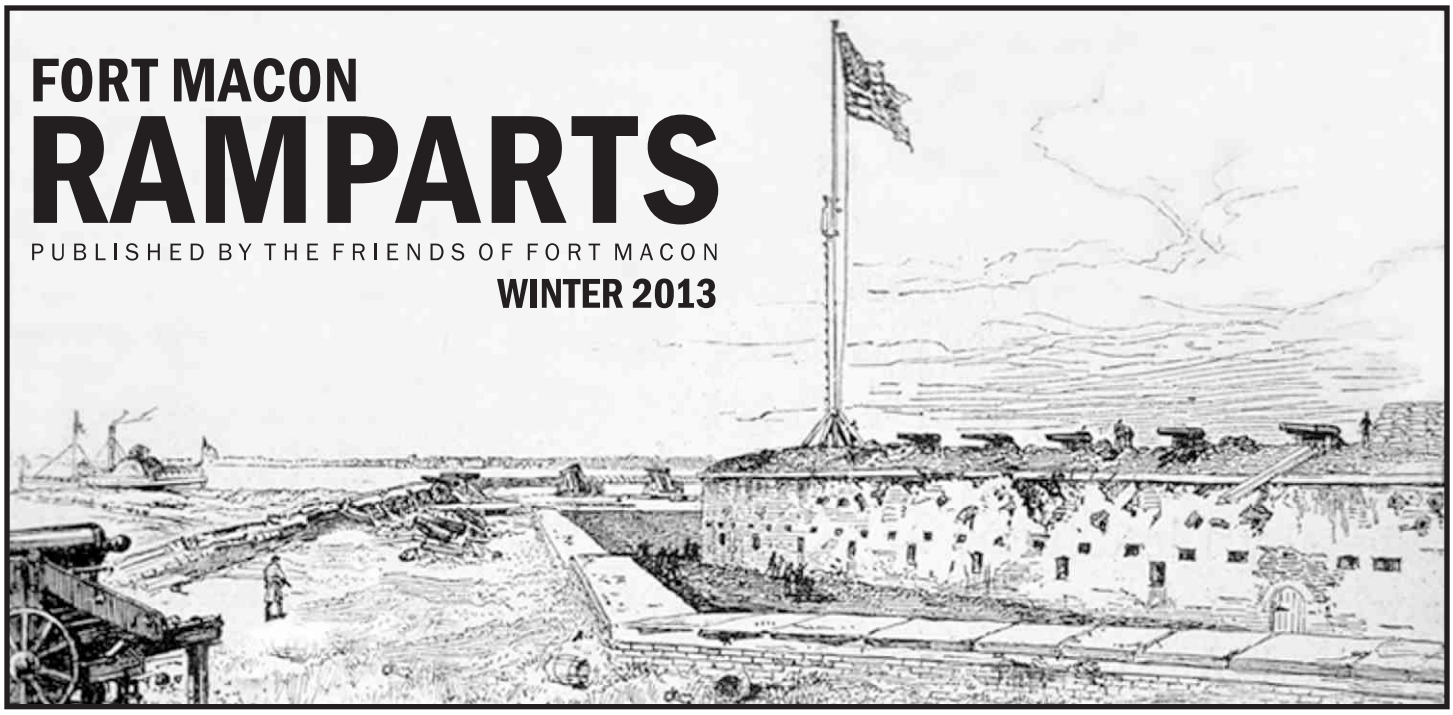
WINTER 2013



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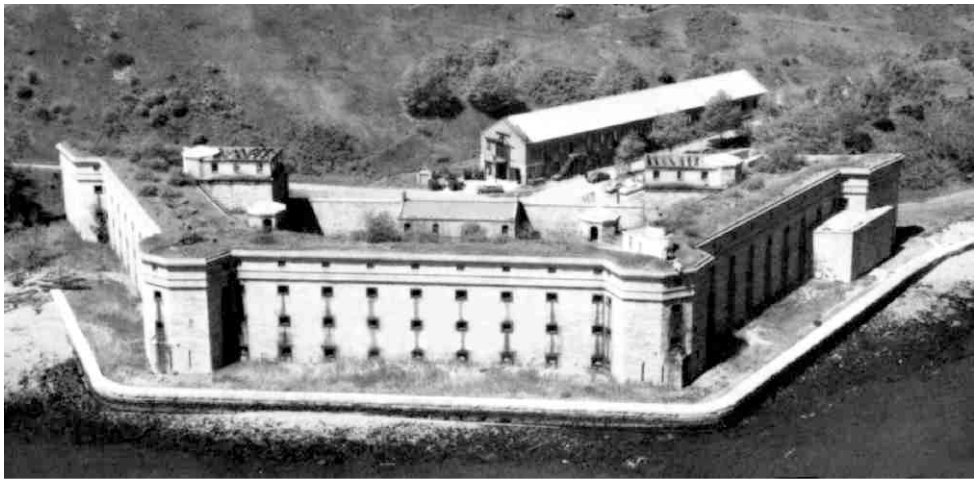
FORT MACON AND THIRD SYSTEM FORTS

In discussing the history of Fort Macon, we say it was a "Third System fort." What does that actually mean? To find the answer, one must go back to the early days of United States history. Third System refers to a defensive system of fortifications built to protect the coast of the United States. Fort Macon, then, was not just randomly constructed by the US Government, but instead was one part of a whole chain, or system, of forts. Obviously, if there was a "Third System," there had to be two previous systems, which there were. What follows is an examination of our country's early seacoast defenses and Fort Macon's place among them in comparison to other seacoast forts.

In the last decade of the 18th century, the United States was a fledgling country that found itself facing very powerful European neighbors with



Fort Richmond

formidable naval fleets at their disposal. Our Atlantic Seaboard was very long and vulnerable to a possible invasion and attack by these European powers. We had little means of defending ourselves since the US Army numbered only a few thousand men at this time, while the US Navy consisted of only a handful of warships. Fearing the constant turmoil among European nations such as Great Britain, France and Spain that might one day spill over to the United States, Congress appropriated money in 1794 to construct fortifications to secure the coast from possible attack. Work on this "First System" of fortifications inaugurated by the US Government dragged on intermittently until about 1803. Most of its forts were small and not made of permanent materials so that they did not last very long. Because Beaufort Harbor did not become a US port of entry until 1803, no First System fortifications were built there.

In the wake of strained relations with Great Britain in 1807, Congress appropriated funds for a better, more permanent system of fortifications that became the "Second System." Under this program, a small masonry fort known as Fort Hampton was built during 1808-09 to protect Beaufort Harbor. This fort secured the harbor against attack in the subsequent War of 1812 with Great Britain. Following the end of this war in 1815, however, Fort Hampton was abandoned and subsequently washed away during a summer hurricane ten years later.

During the War of 1812, meanwhile, the United States learned painful lessons about how inadequate even the improved Second System forts were against a determined enemy such as Great Britain that had a powerful army and navy at its disposal. Consequently, in 1816 a Board of Fortifications was formed to inaugurate what became the "Third System" of defensive fortifications. Heading the Board was Brigadier General Simon Bernard, a French military engineer of high esteem throughout Europe who was recruited by the United States following the fall of Napoleon. His vast knowledge and expertise in the art of fortifications brought a distinctively European influence to many of the early Third System forts built during his fourteen-year tenure with the Board. Many of these early forts were personally designed by him, including North Carolina's two Third System works, Forts Macon and Caswell.

The hallmarks of the Third System would center on sizeable new five- or six-sided forts built of permanent materials to give long lasting service, able to defeat enemy warships in a gun duel, and capable of resisting siege or assault for periods of ten to fifty days, which would provide enough time for relief forces to come to the fort's aid. They would have stout walls of well-laid brick or ashlar granite that would withstand considerable punishment from enemy artillery of that time, while barrel-vaulted rooms within the walls called casemates would provide protective chambers for the magazines and storerooms, as well as shelter from bombardment for the garrison. A chain of these forts was to be built to provide a comprehensive system protecting all major ports and harbors on the seaboard, as well as major river mouths and bays. This would ensure that enemy fleets would not be able to easily capture our ports for use as bases from which to operate, or gain access to the interior via inland waterways and rivers.

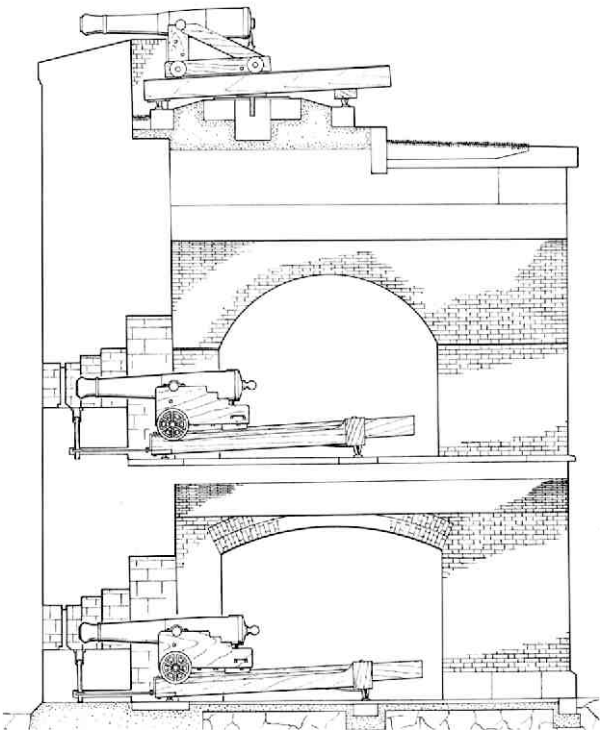
Construction on the chain of forts was carried out for more than fifty years that followed. Due to their expense and the limited number of engineers available to superintend their construction, only a few forts could be constructed at any one time. As some were completed, construction would then begin on others. The order in which the forts were to be built was based initially on a priority ranking of the most important harbors first. However, politics sometimes interfered with this ranking. For instance, North Carolina's two Third System forts, Macon and Caswell, were considered to be of only secondary importance, but through the vast political influence of North Carolina's eminent senator, Nathaniel Macon, both were among the first dozen forts to be started, which was years ahead of their allotted schedule.

As the decades passed, the various forts fell into two distinct construction styles that reflected prevailing schools of thought on fort construction in Europe. The early forts of the Third System (some of those built around New Orleans, Mobile, Pensacola, Hampton Roads and Narragansett Bay, RI) were built according to the traditional French school based on the works of master French fortifications designer Sabastien le Preste de Vauban (1633-1707), whose innovations on fortifications and siege warfare had dominated Europe for a century and a half. The Vauban style emphasized forts with large perimeters (traces) with partially or completely encircling outer defense walls, and extensive outworks and earthen slopes (glacis) that covered most of the fort from view and protected its masonry from enemy artillery fire. Although this was the style's great advantage on one hand, it also could be a disadvantage on the other because enemy assault troops could easily advance up the slopes and gain access into the fort. For this reason Vauban-style forts usually relied on large projecting salients at each angle called bastions that served to funnel enemy assault troops into kill-zones

between them where the enemy could be hit simultaneously from the front and each side. For those forts of this style that were too small to have bastions, which included Forts Macon and Caswell, the sunken area between their outer and inner walls (the Ditch) became the kill-zone where flanking galleries like those under the outer wall of Fort Macon gunned down enemy troops pouring over the fort walls.

For Vauban-style forts, the main cannon armament was usually made to fire from behind a parapet on top of the fort, or "en barbette." This was the major disadvantage of this style, where a fort's total firepower was limited by how many cannons could fit behind the parapet, and the fact both the cannons and gun crews were exposed to enemy fire. The exposure to enemy fire was one of the most serious problems to plague Fort Macon during the bombardment of the fort on April 25, 1862, during the War Between the States.

The second style of fortifications to appear in the Third System was that of the perpendicular fort as put forth by Frenchman Marc-René, Marquis de Montalembert (1714-1800) in challenge to Vauban's traditional theories on fortifications. Although criticized in his own country, Montalembert's proposals were accepted in other countries, including the United States. His forts were multi-story casemated "tower forts" with multiple tiers of cannons firing from the casemates through protected gun ports, or embrasures, in addition to the barbette tier of cannons on top. In this way, the horizontal rows of cannons on each story doubled, tripled or quadrupled the number of cannons that could bear on any single front. The embrasures minimized the exposure to enemy fire of all the gun crews except those on the barbette tier on top. Also, such forts needed only a small trace in areas where land was confined, yet could literally mount hundreds of cannons stacked up for defense. It was virtually impossible for enemy assault troops to scale their tall walls to gain access inside. One disadvantage of these forts was that the ground was not always able to sustain the heavy weight of their multiple stories of masonry, thereby frequently limiting the number of tiers that could be supported without sinking.



Cross section of a tower fort

Fort Morgan, AL

However, their main disadvantage, and a significant one, was the fact their walls had no protection and were completely exposed to the full force of enemy artillery fire. Nevertheless, US Army engineers came to embrace the tower fort concept, and most of the Third System forts built from the late 1820s onward were of this style.

In all, a total of 38 new forts, including Fort Macon, comprised the Third System, although many of the later ones were never completed. In addition, four other forts from previous systems were so heavily reconstructed and renovated for inclusion in the system that they are sometimes considered to be "new construction" Third System forts. The chain of forts stretched from Maine to Louisiana, and also included two on the West Coast at San Francisco Bay. Despite the styles in which they were constructed, there is a wide variance in the sizes, shapes, armaments and construction features of the different Third System forts. What follows are some facts regarding the system.

The largest Third System fort (in area): Fort

Monroe, at Hampton Roads, VA. This fort, intended for an armament of 371 guns and a garrison of 2450 men, sprawls over 63 acres, with a perimeter of 1 1/3 miles. The parade ground alone is 40 acres in extent and has streets with houses. In comparison, our Fort Macon has a perimeter of one-quarter mile enclosing about 2.8 acres. It was intended for an armament of 61 guns and a garrison of 300 men.

Fort Monroe, Hampton Roads, VA

The largest Third System fort (in strucuture): Fort Jefferson, on Dry Tortugas in the Gulf of Mexico. With a perimeter of just over half a mile, this hexagonal fort is nowhere as expansive as Fort Monroe, but its two tiers of casemates towering to a height of over fifty feet and its intended armament of 450 guns make it the largest in terms of structure. It was to house a garrison of 1500 men.

Fort Jefferson, Dry Tortugas, FL

Most heavily armed Third System fort: Fort Adams, on Narragansett Bay, Rhode Island. It was intended for 468 guns and a garrison of 2440 men.

Tallest fort of the Third System (if completed): Fort Totten, at Willet's Point, East River, New York. Fort Totten was intended as a four-story fort, but only two stories were constructed before work stopped during the War Between the States.

Smallest Third System fort: Fort Massachusetts on Ship Island, Gulf of Mexico. This semicircular fort has a perimeter of about 650 feet and was intended to mount 37 cannons. The semicircular shape is unlike any other Third System fort.

Smallest armament for a Third System fort: Fort Redoubt, or "Advanced Redoubt" in the Pensacola Harbor defenses, Florida. It was intended for only 16 guns and a garrison of 100 men.

Third System fort that does not defend a waterway: Again, Fort Redoubt. This small fort actually guards the landward approaches of the Pensacola Navy Yard and is the only Third System fort that does not bear on a bay, river, harbor or inlet.

Most unusual Third System fort: Fort Alcatraz, San Francisco Bay. Yes, before it became the infamous federal penitentiary, Alcatraz was an island fort that was one of two Third System forts on the West Coast (the other was Fort Point under the present Golden Gate bridge across from Alcatraz). Fort Alcatraz was unlike any other Third System fort it that it was not an enclosed fort structure, but rather a series of cliff batteries mounting over 100 guns. At the top of "the Rock" was a three-story citadel intended for housing a garrison of 500 men. When the fort was deactivated as a military post in the early 1900s, most of the citadel was demolished to make way for the cellhouse of the new federal penitentiary, although some of the remaining lower portions of the citadel were incorporated into the new structure and still exist today.

From its beginning in 1816, the Third System lasted more than fifty years until after the end of the War Between the States. It was the War Between the States that brought the work on Third System forts to a grinding halt. The appearance of rifled artillery during that war proved to be the turning point that spelled the end of further fort construction. The war demonstrated that fort walls of brick and stone were no match for withstanding bombardment by new heavy rifled cannons. Forts McRee, Macon, Pulaski and Sumter all suffered severely under heavy bombardment during the war, the latter being pounded literally to rubble. Also the employment of large steam-powered warships during the war was another deciding factor against forts. In the age of sail, warships were at the mercy of wind and tides in battling with forts and bringing their guns to bear. However, with steam power, they could quickly steam past a fort before it could cause them serious

Fort Delaware

damage. These factors spelled the obsolescence of forts. Consequently, after the mid-1860s a war-weary nation halted construction on Third System forts, leaving many of them unfinished.

In the late 1890s and early 1900s, some Third System forts were modified to receive new, modern armament under a new defense program called the Endicott System and in some cases continued in use until after World War I. This modern armament consisted of new heavy caliber breech-loaded rifled guns firing from thick reinforced concrete emplacements. When these new emplacements were constructed, in many cases they were built on top of the existing Third System forts since the forts still occupied the best defense locations for the harbors they defended. In this way, these modified forts today offer a strange visual mixture of graceful brick and stone masonry of the old forts combined with ugly bunker-like concrete emplacements of the Endicott defenses that cover up parts of the old forts.

Today, as the bicentennial of the Third System approaches, the chain of forts still dot all three coasts of the United States. Surprisingly, of the 38 new-construction forts all but one still exist in some form. Fort McRee at Pensacola Harbor is the casualty, having been washed completely away by shore erosion. Two others, Fort Alcatraz and Fort Hancock on Sandy Hook at the entrance to New York Harbor, are mostly gone as well, although a few portions of them do still exist. Of the remaining forts, most are preserved as state or national parks, while a few are privately owned. Taken as a body, they are perhaps the most impressive reminders today of a bygone era of American military architecture. Their flowing lines, graceful arches and intricate brickwork attest to a level of sophisticated architectural craftsmanship just not found in our modern world today. They are a remarkable link to our country's early history when our maritime boundaries needed to be secured against the possibility of foreign aggression.

Paul Branch

Photos are from: Emanuel Lewis, Seacoast Fortifications of the United States; John Weaver, A Legacy in Brick and Stone; Google Earth; and Fort Delaware State Park.

Please visit our website:
www.friendsoffortmacon.org

and like us on Facebook: Friends of Fort Macon

WILD FORT MACON

Welcome to what I hope will become a regular part of Ramparts. This will just be a quick update on the nature news from Fort Macon and the park as a whole.

One of the coolest bits of news is the work being done on a future extension of the nature trail. While only in the planning stage now, we hope to get approval to have the trail start in the Fort parking lot, loop behind the fort, travel all the way through the maritime forest to the bathhouse gate, across to the picnic area, and back up to the Fort through the dunes. In total we hope to get the distance close to 5k (3.2 miles). It will be a great addition to the park, and the whole park staff is really excited to get started on construction.
Speaking of nature hikes, I want to thank Dianne Becker for volunteering to lead "The Natural Side of Fort Macon" weekly nature hikes. Please help us spread the word about the 10:00 Thursday hikes. Every week there is always something new to see!

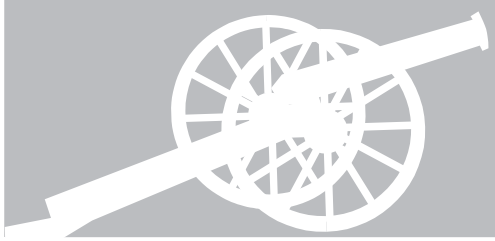
That brings me to the critter news. It's been a good year for our sea turtle nests, with 5 loggerhead nests. All nests had a good hatch rate, including one nest that had 16 babies we helped to the water.

The final bit of interesting news is the first sighting of a coyote in the park. They are a native species, and our hope is they can put a dent in the huge population of raccoon and nutria rat we currently have. Coyote are extremely skittish and scared of humans, so we don't see a problem, and we think it may even move on in search of better living conditions.

Ben Fleming

A current picture, December 2, 2013 of the NEW Exhibit Pavilion

TREASURER'S MESSAGE



MEMBERSHIP

The Friends of Fort Macon rely on new members and member renewals. The label on your newsletter has the date that your membership expired or when it is due.

DATA BASE

The Friends would like to develop a data base for future use. Some of the uses would be electronic newsletters and notice of future and special events.
Please respond by sending an email to friendsoffortmacon@gmail.com.

PRESIDENT'S UPDATE

Tom Kelly

Another Year of Progress with Great Volunteers

There are too many people to individually thank for the great year we are having at Fort Macon. Tours, info desk, speaker luncheons, fundraising, planning for events and shows—the list is a long one and the efforts of everyone involved with the Friends are greatly appreciated. One of the unique things that energizes us is that we have the best park staff in North Carolina—the Rangers are non-stop in driving the park forward and we Friends can't help but want to do all we can to help the effort!

We can always use more volunteers and members of the Friends. Pass the word—the coolest place in 100 miles (personal opinion—sorry for being too biased) also happens to be the place where more fun things happen for all the park supporters (that's us). We have an assortment of things to do to keep the organization thriving and a number of functional spots on the board where help is needed. If you have a skill, maybe some experience, and an interest in helping out—give us a shout!

A few of the things coming up in 2014:

- Many more shows and events to support
- We'll finally be dedicating the new Exhibit Pavilion
- The new artillery museum should be completed in the fort
- Work will be done to reconstruct the bath house and picnic shelter areas
- Planning will continue so we can get going on a 3.4 mile nature trail through the park

Thank you all—and have a Merry Christmas and Happy New Year!!
Tom

SUPERINTENDENTS UPDATE

Randy Newman

I would again like to thank the tour guides and volunteers at the front desk for the outstanding work they did this summer. With the crowds we have, the park could not offer as many programs and give the park visitors as much information as we did without their help. The summer concerts continue to increase in attended each year. We always receive calls about them, and people have begun to expect them when they are in the area. The U.S. Coast Guard again provided gun crews for our Evening Gun program. This partnership is very much appreciated by the Fort Macon Staff.

This fall, the park looks forward to working on the construction of the Education Pavilion. Construction for the Pavilion broke ground the first of September and we look for completion toward the end of December. I know it seems like progress has been slow on this project, but it takes time to put together plans and raise funds for construction. With this Pavilion we will be able to add new dimensions to the overall historical interpretation of the fort. We have received support from not only the Friends of Fort Macon, but also the Park and Recreation Trust Fund to make this project a reality.

The Arms and Artillery Museum project has been designed by park service staff and should go out for bid in October. I am very excited about this project which will add 600 square feet of exhibits space on the Arms and Artillery used during the War Between the States. I am currently thinking that this museum will open in March of 2014.

The park continues to receive high praise for all the additions to the park that the Friends of Fort Macon are responsible for. I again would like to thank everyone for their continued support of Fort Macon.

THANK YOU for your support in 2013!
We look forward to your participation in the new year.

Friends of Fort Macon
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