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GULF ISLANDS

FORT PICKENS 1821-1895

NATIONAL SEASHORE / FLORIDA-MISSISSIPPI

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HISTORIC STRUCTURE REPORT

FORT PICKENS

HISTORICAL DATA SECTION

1821-1895

GULF ISLANDS NATIONAL SEASHORE

FLORIDA/MISSISSIPPI

by

Edwin C. Bearss

UNITED STATES DEPARTMENT OF THE INTERIOR
HISTORIC PRESERVATION DIVISION
DENVER SERVICE CENTER
NATIONAL PARK SERVICE

PREFACE

This monograph--Historic Structure Report, Historical Data Section, Fort Pickens, 1821-1895--has been prepared to satisfy the research needs as outlined in the memorandum of agreement reached with Area Manager Art Graham, dated February 1973, and subsequent discussions with the staff of the Florida Unit, Gulf Islands National Seashore, Regional Historical Architect John Garner, and then Chief Historical Architect Henry Judd. The report accordingly consists of a detailed structural history of Fort Pickens from 1829 to 1897, the year construction commenced on Battery Pensacola. As the story of man and the fort is impossible to divorce from the construction history, his activities have been integrated into this report. Copies of the Engineer drawings of Fort Pickens have been secured from National Archives and placed on file with the Florida Unit, Gulf Islands National Seashore.

To secure the documentary information used in compiling this report, hundreds of feet of manuscript materials on file in Record Groups 77, 92, 94, and 156 at the National Archives and the East Point, Georgia, Federal Records Center were examined. Other pertinent record groups at the former institution were selectively reviewed. The Pensacola newspapers, in the Library of Congress collection for the years 1821-1836, were studied. On field trips to Florida, the files of the Florida Unit, Gulf Islands National Seashore; the P.K. Yonge Library of Florida History of the University of Florida; the Pensacola News-Journal; the Pensacola Historical Society; and the University of West Florida were examined. From these sources came many nuggets valuable to an understanding of the structural and human history of Fort Pickens.

Many persons assisted in preparation of this report, and without their aid it might never have been completed. Particular thanks are due: former Park Area Manager Art Graham, former Park Historian George Berndt, former Chief Ranger Laurence R. Guth, present Chief of Interpretation Mary Jones, and Historian Suzanne Lewis; and their staffs of the Florida Unit, Gulf Islands National Seashore, for their assistance

on site and their prompt response to my many requests. Earle Bowden--editor of the Pensacola News-Leader, one of the fathers of the National Seashore and friend of many years--was his usual helpful and cooperative self. Director Jim Moody and Curator Norman Simons of the Pensacola Historical Society; the staff of the P.K. Yonge Library of Florida History; and the University of West Florida Library took interest in my project, and besides securing requested files and documents, made suggestions which opened new vistas.

My friends at National Archives--Elmer O. Parker, Dale Floyd, John Matias, Joe Ross, Bobby Edwards, Mike Musick, and Richard Cox--of Old Military Records Branch gave generously of their time and counsel and cheerfully searched the stacks in response to my numerous requests and arranged and copied thousands of documents. Personnel of National Archives' Cartographic Records Branch searched the files and copied hundreds of plans and drawings. At the East Point, Georgia, Records Center C. A. Rayden handled my requests.

Members of the Denver Service Center, National Park Service, to whom I am especially indebted are Merrill Mattes, F. Ross Holland, John F. Luzader, Russ Jones, and Linda Wedel Greene. Mr. Mattes who headed the Historic Preservation Team, until his April 1975 retirement, and John Luzader who succeeded him gave constant encouragement and administrative support during the months involved in the gestation and birth of this report. Messrs. Holland and Jones with their "Forts Study" charted a path through the wilderness; and Mrs. Greene had the challenging but unrewarding task of being the editor.

Architectural Historians Henry Judd, John Garner, and Fred Gjessing of the National Park Service shared their vast knowledge of the builders' arts, thus enabling me to understand and appreciate details of the structural history of the fort on which the documents were vague or silent. The four days I spent climbing over the Gulf Islands forts with Architects Judd and Garner were an invaluable and necessary supplement to the months devoted to examining the documents.

As always, my friend and fortification expert, Dr. Ray Lewis of Washington, D.C., and author of the definitive and readable Seacoast Fortifications of the United States was available with help, encouragement, and guidance.

My friends and colleagues--Dr. Harry Pfanz, Barry Mackintosh, and John Luzader--read the manuscript in draft and made a number of valuable suggestions, saving me from future embarrassment. Last, but not least, I wish to express my appreciation to Miss Anne McBride and the Denver Service Center composing group for the hours they spent at typewriters turning my scrawl into a readable manuscript.

Edwin C. Bearss

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I. ADMINISTRATIVE DATA

A. Name and Number of Structure

Fort Pickens, Structure No. P-O, Gulf Islands National Seashore, Florida Unit Santa Rosa Island, Escambia County, Florida. Fort Pickens is of First Order of Significance structure.

B. Proposed Use of Structure

Fort Pickens will be stabilized and partially restored to interpret the military design construction methods, practices, and materials of a Third System Masonry Fort. Secondary themes will be its role in the defense of Pensacola Bay from 1835 to 1947, the defense and occupation during the Civil War, and its use as a place of confinement for Geronimo and the Apaches in 1886-88.

C. Justification for Such Use as Found in the Master Plan

The proposed master plan for Gulf Islands calls for the stabilization or restoration of historical resources consistent with budgetary constraints.

D. Provision for Operating Structure

Fort Pickens will be employed as a historic structure and exhibit in place.

E. Cooperative Agreement, if any, Executed or Proposed for Operating Structure

No cooperative agreement will be required to operate the structure.

F. Brief Description of Proposed Construction Activity

From the time of Fort Pickens' construction up through World War II, the fort has been part of a military reservation. Fort Pickens is typical of the early 19th century fortifications that exhibit the construction modifications of each major military period. In the course of this evolution, parts of the fort have been demolished by design to accommodate new defenses and by accident and the neglect shown an antiquated defense.

It is proposed to stabilize the fort to retain its structural integrity and to retain the partially demolished areas of the fort as stabilized ruins to illustrate and interpret the total historic development of the site.

The collapsed south front will be retained in its present condition for future study and with the additional protection of supplementary earthfill to facilitate the preservation of the historic resources. The south end of the West Channel Front will be stabilized in such a way to effect a safe, stable, and maintainable condition. Similarly, the north end of the West Channel Front will be stabilized to insure retention of the existing remains. The North Front will be partially restored for the sake of the protection and safety of the visiting public.

G. Cost Estimate Forms

Cost estimate forms will constitute part of the architectural data section to be prepared by historical architects.

II. PENSACOLA BECOMES A UNITED STATES NAVAL BASE

A. Governor Jackson's Four Months in Florida

1. Congress Ratifies the Adams-Onís Treaty

If the people of the United States believed that when Secretary of State John Quincy Adams and the Spanish minister to Washington Louis de Onís signed a treaty of cession on February 22, 1819, that they had acquired Florida and their troubles with the dons in that area were over, they were disappointed. The eclat which accured to the administration of President James Monroe from conclusion of the Adams-Onís Treaty was of brief duration. It soon became apparent that the Spanish government was in no mood to ratify the treaty. Spain was aghast at the sympathy expressed by the people and newspapers of the United States for the forces led by Simón Bolívar and others who had risen against the mother country in Latin America. Spain, seeing her American empire falling to pieces, was in no mood to release her feeble grip on Florida.

For several months Spain gave no explanation of her failure to ratify. Then it was reported that a special envoy would be sent by Madrid to Washington to renegotiate the treaty, and broach new causes for complaint. The news caused extreme disgust in the United States.

Andrew Jackson, who on two previous occasions had invaded Florida and had captured Pensacola, protested. Writing Senator John H. Eaton of Tennessee on December 28, 1819, Jackson deprecated

> the idea of waiting longer for an explanation from unfaithful Spain. Can we receive a minister from that power, under present circumstances, without compromising in some degree our national character? Under the bad faith of Spain, as I believe, the only good explanation that can be given is from the mouth of American cannon.

Just as President Monroe's patience was about to be exhausted and General Jackson was bracing himself for another raid into Florida, a new ministry came to power in Madrid. The Cortes ratified the Adams-Onís Treaty in October 1820.

Another problem now arose. Because of the time element, the treaty again had to be ratified by the United States Senate and enabling legislation passed by the House. Henry Clay of Kentucky, a former Speaker of the House, assailed one of the articles in an effort to prevent ratification. The price to be paid for Florida, $5,000,000, was too much, and second he questioned the relinquishment on the part of the United States of its claim to Texas--a claim which, Monroe had once said, was as good as that by which the United States held the island of Orleans. Representative Clay reminded the President of that opinion, as expressed by him in a diplomatic note to a Spanish minister in Paris in 1805. Clay protested that Texas was worth a dozen Floridas. Finally, Florida must come to the United States sooner or later. "The ripened fruit will not more surely fall. Florida is inclosed between Georgia and Alabama, and cannot escape. Texas may."

At length on February 22, 1821, two years after its initial signing, the Adams-Onís Treaty was ratified a second time by the government of the United States. In the Senate there were four votes against it, but in the House 30 members voted for Mr. Clay's condemnatory resolutions.[1]

2. Florida Becomes Part of the United States

General Jackson, having resigned his commission in the army, was appointed by President Monroe to be governor of Florida and commissioner to receive the province from the Spanish officials. Colonel James G. Forbes, the marshal named by the President, was dispatched to LaHabana in the sloop-of-war Hornet, to receive from the Governor-General of Cuba and convey to Governor Jackson the requisite orders for surrender of the province and its forts to the American commissioner. By terms of the treaty, the province was to be given up

1. James Parton, Life of Andrew Jackson, 3 vols. (Boston, 1860), Vol. II, pp. 582-84.

by Spain six months after the final ratification of the agreement, "or sooner if possible." Spanish garrisons were to be transported to Cuba at the expense of the United States.[2]

Governor and Mrs. Jackson, accompanied by "the two Andrews," left the Hermitage in mid-April 1821 for Pensacola.[3] The journey was to be lengthy and exasperating. Traveling by steamboat, Jackson and his party reached New Orleans in eight days from Nashville. Although Rachel Jackson had been in New Orleans once before, she was scandalized at what she saw. "Great Babylon is come up before me," she wrote a friend. "Oh, the wickedness, the idolatry of this place! Unspeakable riches and splendor."

Taking passage on another steamer, they crossed Lake Pontchartrain, navigated Mississippi Sound, and landed at Blakely, Alabama, on Mobile Bay, from where they proceeded to Montpelier, where they remained for five weeks, awaiting the arrival of Colonel Forbes and Hornet. The delay exhausted Governor Jackson's patience. He considered it further evidence of Spanish duplicity. Writing Secretary of State Adams from Blakely on May 7, Jackson complained:

> I am at a loss to conjecture the causes of the delay of the Hornet. A few days will give us the reason, and I hope it may not be found to exist in any understanding between our merchants and the Governor General of Cuba. But, sir, it is rumored and believed here such an attempt will be made by merchants to prevail upon the Governor General to withhold the order for the delivery of the Floridas until the last moment, to give time for the arrival of large shipments of goods for Pensacola.[4]

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2. Ibid., p. 590.

3. The two Andrews were Jackson's adopted son Andrew and his nephew Andrew Jackson Donelson.

4. Ibid., pp. 598-99.

The volatile Jackson plunged into a dispute with Don José Callava, governor of West Florida, about who should make the first call on whom. This was considered important in the diplomacy of the era. Jackson waited outside Pensacola for weeks and wrote stiff letters asking Callava to call on him. The Spanish governor wrote smoother letters claiming that he was much too sick to call on Senor Jackson, but that he would be delighted to have the señor call on him. His patience soon gave way, and Jackson paid the first visit.

Jackson's attempts to reach a prompt understanding with Callava to effect provisional arrangements for transfer of the province were rebuffed. Callava's reply was that he could do nothing without orders from the Governor-General of Cuba. Hornet finally docked at Pensacola on June 9, and Colonel Forbes wrote Secretary of State Adams that he was "confident that the Spanish authorities are as anxious to quit this Territory as we are to become possessed of it."[5] There were more delays, because of the loss of a vessel designated to assist in evacuation of the Spanish garrison. By early July most of the difficulties had been resolved. By June 17 Jackson had advanced from Montpelier, crossed the Perdido into West Florida, and camped at Manuel Gonzales', within 15 miles of Pensacola. Here he waited with troops--the 4th U.S. Infantry and Company D, 4th U.S. Artillery. Mrs. Jackson and the two Andrews had proceeded on to Pensacola on June 28.

Governor Jackson, on July 11, had the commander of his troops, Lt. Col. George M. Brooke, advance his column to within two miles of Pensacola, halting at Galvez Spring. The next week was spent perfecting arrangements for the formal transfer of West Florida.

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5. Ibid., p. 599; Forbes to Adams, June 9, 1821, found in Territorial Papers of the United States, The Territory of Florida, 1821-1824, compiled and edited by Clarence E. Carter (Washington, 1956), vol. XXII, pp. 645; Ralph K. Andrist, Andrew Jackson: Soldier and Statesman (New York, 1963), p. 92.

Colonel Brooke detailed and organized the garrisons to occupy Pensacola and the Barrancas, the former to consist of not less than four companies of infantry. The officer detailed to command of the force sent to the Barrancas was to hold in readiness a score of picked men, led by a trusted subaltern, to relieve a Spanish force of equal size. At a specified hour, to be announced, the detachment was to enter the Barrancas, where it would find the Spanish honor guard "formed at support arms fronting the" flagstaff. The United States troops were to form in front of the Spaniards, the flagstaff between them. The Spanish flag flying, the United States colors would be fastened to the same halyards. The United States flag would then be hoisted while His Majesty's was lowered, until they met at halfmast. They would remain in this position until a Spanish salute of 21 guns had been fired. As soon as the last gun was discharged, the United States flag was to be hoisted to the top of the staff, and the Spanish flag was to be taken down by the Spanish officers. The United States and Spanish soldiers would then present arms, and continue to do so until the "Spanish officer delivers to the Officer of the U. States The order of Don José Callava the Spanish commandant for the delivery of the fortress of Barrancas, at which the Troops will be ordered to shoulder arms." The Spanish soldiers would then be withdrawn; the United States troops remaining in possession of the Barrancas, and prepared to salute their flag with 25 "rounds from the Guns in Battery" in the fort.

On hearing the last gun of the Spanish salute, Colonel Brooke would have the United States flag hoisted in Pensacola. After it had reached halfmast, it, as it was raised the rest of the way, was to be saluted by 25 guns.[6]

Tuesday, July 17, 1821, was the day Governor Jackson had been eagerly awaiting. Governor Callava's guard, a company of dismounted dragoons of the Tarragona Regiment, "elegantly clad and

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6. "Orders Regarding the Exchange of Flags," July 10, 1821, found in Territorial Papers--Florida, vol. XXII, pp. 108-09.

equipped," paraded at an early hour in front of the government house. About 8 a.m. Colonel Brooke, at the head of a battalion of the 4th U.S. Infantry and Company D, 4th U.S. Artillery, marched into Pensacola from their camp at Galvez Spring. Brooke formed his troops on the plaza opposite the Spanish honor guard. The soldiers exchanged salutes.[7]

Rachel Jackson reported that Colonel Brooke's column "hove in view under the American flag and a full band of music." The entire town was in motion. "Never did I ever see so many pale faces. I am living on Main street, which gave me an opportunity of seeing a great deal from the upper galleries."[8]

Maj. James E. Dinkins with a four-company battalion of the 4th Infantry had marched for the Barrancas earlier in the day. The ceremony at the Barrancas, which went as scheduled, triggered the program on the public square.

At 10 a.m. Governor Jackson--accompanied by his aides, secretary, and interpreter--crossed the plaza, passed between the double line formed by the troops of the two nations, who simultaneously presented arms, and entered the government house. There he met Governor Callava, and the two principals completed the formal transfer of sovereignty. The Spanish guard at the gate was relieved by a detachment from the 4th Infantry. After a few minutes Governor Jackson and Colonel Callava, accompanied by their staffs, left the government house and, passing through the double line of troops, walked to the house the Governor had rented as temporary accommodations for his family. His Catholic Majesty's colors were lowered, and the "stars and stripes" hoisted "high in the air, not less than one hundred feet." A grand salute was fired by Company D, 4th U.S. Artillery, from the

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7. Niles' Weekly Register, Aug. 25, 1821, p. 404.

8. Mrs. Jackson to Eliza Kingsley, July 23, 1821, found in Parton, Life of Andrew Jackson, vol. II, p. 604.

cannons they had unlimbered, and by Hornet, a gun being discharged for "each state and territory of the Federal Union, not forgetting Florida." The regimental band and that of Hornet now struck up the "Star Spangled Banner."[9]

Mrs. Jackson recalled, "Oh how they burst into tears to see the last ray of hope departed of their devoted city and country--delivering up the keys of the archives, the vessels lying at anchor in full view, to waft them to their distant port." The Spanish troops, having been marched from the plaza and the Barrancas to places of embarkation, sailed next morning for Cuba.[10]

A correspondent for the National Intelligencer informed his readers that "Pensacola is destined eventually, to become the great emporium of the Gulf of Mexico, and to enjoy a large share of the trade of the west." Much was expected of Governor Jackson. Under his "paternal government," West Florida hoped to soon "emerge from the weakness of infancy, and to escape from the restrictions of nonage." To "the hand that so ably wielded the weapons of war, against foreign enemies," had now been committed the sword and the scales of justice, to weigh the rights of his fellow citizens and to mete out punishment according to the measure of their wrongs."[11]

3. Jackson Has a Short Tenure as Governor

Rachel Jackson was enchanted with the area, and glad that she had helped influence her husband to accept the appointment as governor. She reported, on July 23, the town was a "perfect plain; the land nearly as white as flour, yet productive of fine peach trees, oranges

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9. Niles' Weekly Register, Aug. 25, 1821, p. 404.

10. Mrs. Jackson to Eliza Kingsley, July 12, 1821, found in Parton, Life of Andrew Jackson, vol. II, p. 604.

11. Niles' Weekly Register, Aug. 25, 1821, p. 404.

in abundance, grapes, figs, pomegranates, etc." Flowers grew spontaneously, because the Pensacolans in expectations of a change of government, had neglected their gardens. Pensacola was on a bay, "the most beautiful water prospect," she had seen. From 10 a.m. to 10 p.m. they had the finest sea breeze. All the houses appeared to be in "ruins, old as time." Many squares were grown over "with the thickest shrubs, weeping willows, and the Pride of China; all look neglected." The residents, she found, all spoke Spanish and French. There were some who spoke four or five languages. She found the area a melting pot. Whites were in the minority.

From their house on Main Street, they had a "handsome view of the bay." Vessels arrived daily with newcomers, many who had come for their health. She found Pensacola "very healthy--so pure and wholesome." The only corn- or wheatfields seen in her travels had been near Montpelier. The rest of the countryside was grown up in pines, with scattered live oaks, magnolias, and bays. Mrs. Jackson found the weather oppressively warm, and she disliked the daily rains. At times the streets were two feet deep in water. "But for the sand," she complained, "we could not live."[12]

Jackson's administration was brief and tempestuous. He found Don José Callava, who had remained to represent His Catholic Majesty as a commissioner, a difficult individual. Callava argued that the cannon in the forts were not to be turned over to the United States and were to be evacuated to Cuba. He wanted to know who was to pay for the rations of the Spanish soldiers on the short voyage to LaHabana. He wished to discuss other details, and began to grate on Jackson's nerves.

Jackson lost his patience, when he learned that Callava was preparing to remove from Florida certain public records to assist friends of his who were endeavoring to cheat a woman out of her

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12. Mrs. Jackson to Mrs. Kingsley, July 23, 1821, found in Parton, Andrew Jackson, vol. II, pp. 605-06.

inheritance. When Jackson sent his agents to impound the records, Callava refused to see them. He protested that Jackson had no right to the records, then that he did not understand English, and finally that he did not know what records everyone was talking about. Whereupon Jackson exploded. He had Callava thrown into the calabozo. Don José was released the next day, and booked passage on the next ship out of Pensacola.[13]

There was a scare at the end of August, when the schooner Porpoise (Capt. James Ramage) put in at the Barrancas from LaHabana, with some of her crew down with yellow fever. Learning of this, the Board of Health placed the officers and crew under a 14-day quarantine. The precaution worked. On September 8, 1821, the editor of the newly established The Floridian informed his readers, "We are happy to learn that the crew are restored to perfect health, with no new cases of fever in the days since anchoring off the Barrancas." This, the editor boasted, "is continued proof of the salubrity of our climate".[14]

In mid-September there was a hurricane. About 10 p.m. on Saturday night, the 15th, a strong wind began to blow. It increased in violence for the next several hours, until the eye passed. Strong winds and heavy rains continued until 3 a.m. on Monday.

By the time The Floridian went to press on the 22d, no reports of any loss of life had been received. Although property damage in Pensacola was slight, shipping in the harbor had "suffered severely." There had been 12 or 13 brigs, schooners, and sloops riding at anchor in the bay in front of the town. Of these, six, through either parting of cables or dragging of anchors, had been driven ashore by winds and

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13. Andrist, Andrew Jackson, p. 97.

14. The Floridian, Sept. 1 & 8, 1821.

surf. Five of these might, at a considerable cost, be refloated. The sixth, the brig Maryland, was a total loss.

To reassure the people, the editor noted that he did not agree with those who believed the damage done to shipping by the hurricane would "affect the fair fame of our harbor." To counter the prophets of doom, he referred to "the ease and safety with which the other vessels rode out" the hurricane. He contended that the ships, driven ashore, had come to grief "for insufficiency of their appointments in cables, anchors, etc."[15]

Soon after the Callava incident and the hurricane, Governor Jackson addressed a letter to President Monroe, stating that he had organized things in Florida and was resigning. He did not await the arrival of a successor.

On October 8 Rachel Jackson and the other members of the family started for Tennessee. Not having announced his plans to resign, Jackson told the Pensacolans that he would follow his family in a few days, being detained by some unexplained duties. His return to Pensacola, The Floridian informed its readers, "is not to be looked for unless circumstances render it necessary."[16]

B. Armed Forces Search for a Naval Base

1. Organization and Duties of the Board of Engineers

The United States, following the War of 1812, commenced construction of a Third System of fortifications to guard its seacoast. Unlike the fortifications of the First and Second Systems, which were hastily erected in response to dire threats from aboard arising out of the French Revolution and the Napoleonic Wars, the Third System was begun in 1817, when Europe was at peace. "Immediacy," as Dr. E. Raymond

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15. Ibid., Sept. 22, 1821.

16. Ibid., Oct. 8, 1821; Andrist, Andrew Jackson, p. 97.

Lewis has pointed out in his thought provoking monograph, Seacoast Fortifications, "was no longer an overriding consideration and attention could be directed at last to the creation of a permanent and truly integrated system of harbor defenses."

Until 1817, specific plans and designs had been prepared by engineers working independently of each other under general instructions issued by the Secretary of War and the Chief Engineer. There was no professional board in the War Department during this period "to coordinate planning, to determine project standards, or to supervise actual construction." The First System, as Dr. Lewis has written, was therefore not "a true system with regard to the nature of the components, which were neither uniform nor durable." The Second System, "though it included several substantial works, was marked by a dissimilarity among its elements." Neither of the first two Systems was "viewed as systematic (in the sense of constituting a cohesive and mutually supporting body of defences) by the special board of officers convened expressly to create a third, 'permanent,' and genuine system of defense under a long-term program of construction that was to continue until the Civil War."[17]

Organized in 1816, the Board of Engineers was delegated responsibility for identifying sites to be fortified, establishing priorities, determining design characteristics, and "reviewing the specific site selections and actual plans of the" project engineer. "For the first time," as Dr. Lewis observes, "a professionally competent authority had been established to direct virtually all aspects of seacoast fortification design and construction."

From 1816 until 1831, the Board was headed by a French military engineer, Simon Bernard, who had been a brigadier general in

17. E. Raymond Lewis, Seacoast Fortifications of the United States: An Introductory History (Washington, 1970), p. 37.

the armies of Napoleon Boneparte. Recommended by the Marquis de Lafayette, Bernard had arrived in the United States, following Waterloo, and had been commissioned a brevet brigadier general in the Corps of Engineers. This was done despite vigorous protests by Chief Engineer J. G. Swift, who complained against the employment of a foreign engineer to aid in arranging the nation's defense. But, as would be subsequently observed by a member of the Corps of Engineers, the general acquiescence of the officers of the Corps in Bernard's appointment, "if not amounting to approval, led Congress and the authorities to suppose that no serious disapproval of the measures adopted was entertained by them." Thus negatively endorsed, "it was considered that a good arrangement had been made by the government, by which a lack of skill in the native officers, unfitting them for the task of designing the grand scheme of defence, might be supplied by an importation from abroad."[18]

Another member of the original Board was Maj. Joseph G. Totten, who was to devote the next 48 years of his life to the development and construction of seacoast fortifications.

The Board, as constituted, had as its responsibilities the comprehensive task of coping with seacoast defense in "its broadest terms, as an activity involving the efforts of several interrelated elements--a navy, fortifications, avenues of communication in the interior, and a regular army and well-organized militia." The members were employed from the beginning with reconnaissances and studies of the coast, as well as overland communications and navigable waterways. Members traveled extensively, conferring with project engineers, and examining dozens of sites in detail. Projects were evolved for protection of the various coastal frontiers.[19]

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18. Ibid., p. 378; W. H. Chase, National Defences," May 7, 1851, a copy of which is found with Chase's letter to Totten, June 26, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

19. Lewis, Seacoast Fortifications, p. 378.

The Board's first detailed report was made to Congress in February 1821. Taking cognizance of the importance of the Navy in the defense of the nation, the Board identified locations to be utilized for naval bases, repair yards, and anchorages. Next, if focused on the fortifications used to protect those facilities and the commercial harbors, river mouths, and other important coastal locations. Specific recommendations were modest: "only 18 defensive works were listed in the first class, 'of the most urgent necessity,' but an additional 32 were projected for future consideration under two further categories of lesser priority."

As Florida had not been acquired in February 1821, no consideration was given to fortifications required for protection of its 3,500 miles of coast line, scarred by numerous bays and inlets.[20]

2. Pensacola Bay Beckons

a. Board Visits Pensacola

The War and Navy Departments' attention were quickly focused on Pensacola Bay. A study of the area's potential for a naval depot to service a fleet operating on the Gulf of Mexico and in the Caribbean would command high priority. This was especially true in the troubled years during which Spain's Central and South American colonies were struggling to establish their independence. With letters of marque and reprisal being issued, frequently indiscriminately, by the forces struggling to cast off the "mother country's yoke" there was a growth in piracy.

To protect a naval depot would require fortifications. In the autumn of 1821, Chief Engineer Alexender Macomb took action. The Board of Engineers for Fortifications at this time was making a survey of the Ohio and Mississippi Rivers. Rather than return to the Atlantic Coast on completion of this project, General Macomb directed the

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20. Ibid., p. 38.

Board to proceed to Pensacola, West Florida, to undertake a reconnaissance of Pensacola Bay, "with a view to defend the bay and ascertain the facilities it would afford, in competition with other bays on the coast, to the establishement of a naval depot."[21]

Members of the Board reached New Orleans from up river on December 12, 1821. Advising his readers of this on the last day of the year, the editor of The Floridian reported that the Board could be expected in Pensacola in a few days. The Board, he reported, included two senior officers of the Army's elite Corps of Engineers--Brig. Gen. Simon G. Bernard and Maj. Joseph G. Totten--and Capt. Jesse D. Elliott of the Navy. When discussions involved establishment or protection of a naval depot, a senior navy officer participated as a member of the Board. Accompanying the Board were Capts. Hugh Young, William T. Poussin, and Lt. Stephen Tuttle, several of the Corps' better known junior officers. The well-deserved reputation of these officers, the editor assured his readers, demonstrated the "United States government could not have made a better appointment."[22]

The Board reached Pensacola from Mobile on January 12, 1822, aboard the Revenue cutter Alabama.[23]

b. Pensacola Bay in 1822

Reconnoitering Pensacola Bay, the Board found that Santa Rosa Island paralleled the coast for about 50 miles, commencing opposite San Carlos de Barrancas and extending eastward to Pass L'Este. It was "very barren," averaging one-half mile in width, and was uninhabited. The first settlement in West Florida, they were told, had

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21. American State Papers, Class V, Military Affairs, vol. III (Washington, 1860), p. 158.

22. The Floridian, Dec. 31, 1821.

23. Ibid., Jan. 14, 1822. At Mobile, the Board had been joined by Capt. Rene E. De. Russy, project engineer of the fortifications under construction for defense of Mobile Bay.

been made on the north shore of Santa Rosa Island about two miles from its western point, "where the ruins of Fort Montagorda are still conspicuous." Fort Montagorda had been built of hard, dark sandstone, similar to that found in the interior, but not on the island.

The white sands of Santa Rosa Island were blown into "fanciful hills, and appear exactly like the snow drifts of the Northern states." Small hummocks of live oaks and pine, enveloped in vines, afforded shelter to "numerous deer," while fresh water ponds attracted "vast flocks of waterfowl." The breakers which beat against the island's south shore were hazardous in stormy weather, and a number of vessels had foundered on the shoals.

Pensacola Bay, opening between the west end of Santa Rosa Island and the Barrancas, was considered by many to be the most "beautiful harbor on the Gulf of Mexico." The entrance to the bay was "narrow and crooked," with 21 feet of water over the bar. Within a short distance the bay widened to seven miles. Eastward of Town Point, Pensacola Bay was separated from Santa Rosa Island by a 20-mile long peninsula, connected with the mainland near Choctawhatchee Bay.

Santa Rosa Sound, 20 miles in length, separated the island from the peninsula. The sound, from one-half to two and one-half miles wide, was navigable by vessels drawing up to six feet of water, and opened into Choctawhatchee Bay and then into the Gulf through Pass L'Este.

On the north shore of the peninsula were "several pleasant hummocks calculated for convenient country seats, on a most healthy coast."

Grass Point on the south side of the peninsula and Navy Cove on the north, opposite Pensacola, afforded good deepwater anchorages, where large frigates could lay close in shore. They also afforded good places at which ships could take aboard water.

Pensacola Bay extended for a distance of 30 miles into the hinterland, its general direction to the northeast. About two miles east of Pensacola, and 11 miles from the Barrancas, Escambia Bay extended to the north from the main sheet of water. Ten miles farther east, Yellow Water Bay broke off in a similar direction. Blackwater Bay opened into the latter at its northwest corner. East Bay was the name applied to the easternmost continuation of Pensacola Bay. Escambia Bay was from two to six miles in width and about 15 miles long; Yellow Bay was of similar length, but only one to two miles wide; Blackwater Bay was seven miles long and one to two miles wide; and East Bay was one and one-half miles long by three-fourths of a mile wide.[24]

Between Pensacola and the Barrancas on the bay side were several bayous of "considerable size." The soil was indifferent. Six miles southwest of Pensacola, Tartar Point hid the city from the Barrancas. On Tartar Point a signal staff had been erected, which was visible from the city. Two miles west of the signal tower was San Carlos de Barrancas. Behind the fort, the ground was grown up in slash and pine woods. Near the fort, however, there was some fertile ground, where the gardens of the garrison thrived. The huge live oaks behind Barrancas village and the fort formed a "striking contrast to the apparently wretched soil" in which they grew.

Fort San Carlos de Barrancas was commanded by two hills--one to the northwest and the other one-half mile from the bay. On the former Gen. Andrew Jackson in 1818 had emplaced "a 9-pounder, and with this formidable battery, attacked the fort." The United States Regulars, which were garrisoning the area, were currently erecting barracks on the latter. The new barracks (Hospital Hill) were within a "short distance of one of the best springs for which Florida is celebrated."

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24. Pensacola Gazette, Oct. 2 and 9, 1824.

The fort on the Barrancas was "small, by no means formidable," and when turned over to the United States in "very bad repair." The Water Battery (San Antonio) was a much more considerable work. With the exception of a few artillery pieces, the artillery was of no value, "the carriages so rotten, as to be unfit for use." Projectiles from Fort San Antonio could be fired across the bay to Santa Rosa Island, a distance of one and one-fourth miles, with ease.

There was also need for a lighthouse, because vessels unacquainted with the coast and making for Pensacola Bay were liable to pass without recognizing the passage across the bar.

From the heights of Barrancas, there was a commanding view of the entrance to Pensacola Bay and of the surf beating on the southern shore of Santa Rosa Island. West of the Barrancas was Grand Lagoon.[25]

The Board, in the several weeks spent in and around Pensacola, agreed that the entrance to the bay "might easily be defended" by construction of two forts: one at the Barrancas and the other on Santa Rosa Island. But, before any advance planning could take place, it would be necessary to secure an accurate survey of the bay, of the surrounding terrain, and a chart of the soundings.

Before making a decision on the desirability of Pensacola Bay as a naval depot, the Board had to investigate other possibilities. They soon learned that the only other site on the Gulf coast that could "contend with Pensacola as a road of rendezvous and naval depot" was Tampa Bay. Captain Young was accordingly directed to make of survey and soundings of that area. His untimely death put a stop to that project.[26]

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25. The Floridian, Oct. 22, 1821.

26. American State Papers, Military Affairs, Vol. II, pp. 158-59.

c. The Kearney Survey

The officer charged with executing the survey of Pensacola Bay and its approaches was Maj. James Kearney of the Topographical Engineers. Wrapping up a project on which he was currently employed, Major Kearney and his two assistants--Lts. Henry A. Thompson and William Turnbull--reached Pensacola from Massachusetts on Sunday, March 10, 1822. The next day they began operations at the Barrancas. Commenting on this, the editor of The Floridian reported, "Their promptness in entering on the discharge of their important trust--gives us additional assurance of our good fortune in having the survey of our seaboard assigned" to Major Kearney.[27]

After finishing the survey of Pensacola Bay, Major Kearney and his assistants reconnoitered Mobile Bay. Before Kearney was able to plot his soundings and prepare his charts, he was ordered to Maryland to survey the St. Marys River.[28]

3. Yellow Fever Grips the Area

In mid-August 1822 the hopes of Pensacolans that a naval depot would be located on their bay received a blow. In that month yellow fever appeared in town. The editor of The Floridian, on the 17th, reported six cases.[29] The newspaper, because of the plague, now suspended publication for six weeks. News of the disaster was carried by Niles' Register. On October 12 Niles' reported that the latest accounts from Pensacola show the city nearly deserted and give long lists of deaths. Many "estimable and distinguished persons have found a grave." It was said that the people who remained in Pensacola were "hardly sufficient to inter the dead." Fugitives from the plague had suffered great hardships, because of the sparse population in the hinterland.[30]

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27. The Floridian, March 16, 1822.

28. Totten to Macomb, Dec. 17, 1823, NA, RG 77, Ltrs. Recd., Chief Engineer.

29. The Floridian, Aug. 17, 1822.

30. Niles' Weekly Register, Oct. 12, 1822, p. 81.

Niles' Weekly Register reported, on October 19, that between August 15 and September 11, 120 persons had perished of yellow fever at Pensacola, "an amount of mortality without precedent . . . in the United States, when that of the population to be acted upon is taken into consideration."[31]

4. Navy Establishes a Depot at Key West

Meanwhile, Lt. Comdr. Matthew C. Perry had been sent with the schooner Shark by Secretary of Navy Smith Thompson to make a reconnaissance of Key West, "its harbor, its extent, and dangers of navigation." If the island possessed, as reported, prerequisites for a post of rendezvous, Perry was "to take possession of it in the name of the United States."[32]

After touching at LaHabana, Shark proceeded to Key West, where she dropped anchor on March 20, 1822. Commander Perry sent parties to explore the island, while he surveyed the harbor. The shore parties returned with reports that the island "abounded with wild animals, snakes, fowl, and fish." Turtles were found by the thousands, with large numbers taken annually by Cubans and sold in the LaHabana markets. While the island had not been subject to cultivation, the soil appeared fertile and was believed capable of growing tropical crops. Another economic asset observed were the extensive salt ponds.

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31. Ibid., Oct. 19, 1822, p. 99. Among the dead were: Dr. James C. Bronaugh, president of the Legislative Council; Major Underwood; Judge Shannon; J. Cornnor, Secretary to the Governor; Mr. Cox, a Comedian; Captain Crocker of the Sloop Intrepid; Sheriff Bradford; Deputy Kennedy; Tipton B. Harrison and his family of Washington; F. Johnson, Mrs. Johnson, and two daughters; J. Keys of New York City; Mr. Kennedy, a Merchant; Judge Foster; Mr. and Mrs. Stutson; J. H. Champlin; Dr. Rogers of Baton Rouge; Dr. Elliot of the U.S. Army; Captain Young of the U.S. Engineers; Mr. Waddington, Clerk to the Paymaster; Misses Benson, Kerr, and Dinkins; Mr. Saltonstall; Mr. Newton, wife, and child; Captain Garrish; Naval Agent William D. Simms; and W. H. Flournoy.

32. Thompson to Perry, found in House Report No. 189, 30th Congress, 1st Session, Serial 524, pp. 14-15.

Commander Perry was impressed with the harbor, which he was told had "long been the resort of vessels in foul weather." There was an inexhaustable supply of wood and water was abundant. On March 25, in accordance with Secretary Thompson's orders, Perry formally took possession of the island in the name of the United States. The stars and stripes were raised and a 13-gun salute fired.[33]

On the day previous to the flag raising, a number of artisans had arrived at Key West from Mobile. These people were turned to erecting a warehouse. Other storehouses and buildings followed. A town was platted; preparations for the manufacture of salt made; and a number of sheep and hogs introduced.[34]

On February 1, 1823, Secretary of Navy Thompson, following up on Perry's reconnaissance, ordered Commo. David Porter, commanding the West Indies Squadron, to establish at Key West "a depot, and to land ordnance and marines to protect the stores and provisions." On April 23 Porter notified the Navy Department that "he had built storehouses" on Key West, "landed stores, collected together all the schooners of the squadron and stationed them at different points off the island of Cuba."[35]

Key West proved an unfortunate choice as a naval depot for Commodore Porter's squadron. Yellow Fever was prevalent and there were a number of deaths among the naval personnel. Pensacolans, forgetful of the plague of 1822, were interested to learn from the National

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33. Perry to Thompson, March 28, 1822, found in ibid., pp. 15-17; Niles' Register, May 11, 1822, p. 176; Samuel E. Morison, "Old Bruin," Commodore Matthew C. Perry, 1794-1858 (Boston, 1967), p. 767. Perry named the island Thompson's Island in honor of the Secretary of the Navy and the harbor Port Rodgers to honor the President of the Navy Board.

34. Niles' Weekly Register, May 11, 1822, p. 176; House Report, No. 189, 30th Congress, 1st Session, Serial 524, p. 2.

35. House Report, No. 189, 30th Congress, 1st Session, Serial 524, pp. 2, 5.

Intelligencer in October 1823 that reports as to the unhealthiness of the station at Key West has induced the government to send a committee there to "determine the causes of the disease" reportedly prevailing there, and the "prospects of its continuation." The committee had authority to adopt any measures the situation of the squadron calls for. Commo. John Rodgers had volunteered to head the study team, relinguishing for the time being his position as "President of the Board of Navy Commissioners; and the comforts of domestic life, for a duty which can have no charm for him but that of rendering an important service to the Navy and his country."

Rodgers' commission was to investigate the condition of the squadron and the facilities at Key West, and to report thereon to the government. He was authorized to take such action as the "interest" of the service demanded, and, if it were expedient "to remove the squadron to Pensacola or some northern port." Rodgers would not supercede Commodore Porter, but during his stay at Key West because of his superior rank, he would be in command.[36]

Commenting on the article, which he reprinted from the National Intelligencer, the editor of The Floridian informed his readers that he was gratified to learn that there was a possibility the squadron might be removed from Key West to Pensacola. To avoid any misunderstanding of motives, he pointed out, it was because of "the increased safety of the lives of our gallant officers, which will be secured by this measure, than for the advantages it will bestow on our city." He was confident that when "the government shall have made the experiment, even on a small scale, it will confirm the belief entertained by many intelligent officers that Pensacola is the only proper position for a Naval Depot in the Gulf."

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36. National Intelligencer, Oct. 1, 1823.

In regard to the campaign for suppression of piracy, the principal mission of the squadron, Pensacola was "quite enough contiguous to the haunts of the sea robbers."[37]

Commodore Rodgers reached Key West from Washington aboard Shark on October 23. He found conditions in an "unpropitious state--yet far from being so bad as might have been expected." Out of about 140 naval personnel based on the island, 59 were on sick call, principally with intermittent fever. Although only one seemed about to die, they were all in low spirits. He engaged two vessels, which he found in the anchorage, to evacuate the sick to Norfolk at ten dollars each.[38]

All that he saw confirmed Rodgers' opinion that from a commercial view, Key West had immense importance. This despite the objections raised by the climate.[39]

C. Navy Establishes a Depot at Tartar Point

1. Congress Acts

The report of Rodgers' commission had important repercussions. The 18th Congress, in the winter of 1824-25, debated legislation to establish a navy yard and depot on the coast of Florida, within the Gulf of Mexico. On February 25, 1825, the Senate, meeting as a committee of the whole, took up the measure. Senator James Lloyd of Massachusetts and Chairman of the Committee on Naval Affairs spoke at length in support of the bill, explaining the advantages which would accrue from establishment of such a depot. The Senate passed the bill that day and the House gave an affirmative vote on March 2.

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37. The Floridian, Oct. 29, 1823.

38. Rodgers to Secretary of Navy, Oct. 25, 1823, found in Territorial Papers-Florida, Vol. XXII, pp. 775-76.

39. Rodgers to Secretary of Navy, Oct. 29, 1823, found in ibid., p. 780.

As soon as the bill was signed into law by President Monroe, on March 3, Florida Delegate Richard K. Call addressed a letter to his "Fellow Citizens," announcing that "an appropriation of 100,000 dollars has been made for the establishment of a navy yard and depot" on the Florida Gulf Coast. Because of the superior advantages possessed by Pensacola Bay, Delegate Call was confident that it would be the site selected. As his constituents knew, Pensacola Bay afforded "the best draft of water, is the most accessible and the best protected against the elements, of any harbor on that coast." In addition, it was "susceptible of [a] better military defence than any other position on the Gulf."

At the session just concluded, the Congress had called on the War Department for a report into the expediency of fortifying Pensacola Bay. Replying, Secretary of War John C. Calhoun had advised Congress that a "plan for its defense is now being prepared by the Engineer Department, and when completed would be submitted for the consideration of Congress" at its next session.[40]

Three days later, on March 8, Delegate Call wrote a Pensacola friend that he had learned some exciting news--The Secretary of the Navy would soon issue orders for the transfer from Key West to Pensacola of the naval depot. All stores and vessels were to be removed from Key West and New Orleans. The first vessel was to leave for Pensacola within a few days, to be followed by the remainder of the squadron.[41]

Call's information was correct. On March 4, 1825, John Quincy Adams had been inaugurated as sixth President. He selected as his Secretary of the Navy Samuel L. Southard. The new Secretary,

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40. Call to "Fellow Citizens," March 5, 1825, found in the Pensacola Gazette, April 9, 1825. A resident of Pensacola, Call served as territorial delegate in the 18th Congress.

41. Call to a friend, March 8, 1825, found in ibid.

having determined to "abandon the unhealthy depot" at Key West, approached the Army with a request for use of their facilities at the Barrancas. An order for the transfer was issued May 24 to be sent to the squadron by the storeship Decoy. She did not sail, however, until July 13.[42]

Secretary Southard also notified Commo. Lewis Warrington, who had replaced Commodore Porter as commander of the West Indies Squadron, that he was to remove for the time being "so much of the forces and stores, now at Thompson's Island [Key West], as can be affected without inconvenience and loss to the public." The new base would be Pensacola, and he was authorized to receive possession of the facilities there from the Army. It was believed in Washington that he would "find full accommodations both for men and stores, in the fort barracks, and houses which the War Department has been ordered to transfer."[43]

To facilitate establishment of a naval depot at Pensacola, the Adjutant General in May 1825 ordered Col. Duncan Clinch to remove to Cantonment Clinch all the wagons and stores belonging to the Army at the Barrancas. After the Quartermaster Department had completed this task, San Carlos de Barrancas was to be transferred to the Navy.[44]

2. Navy Occupies the Barrancas

John Adams, a 30-gun frigate from Commodore Warrington's squadron, entered Pensacola Bay on October 4, 1825, having departed

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42. Southard to Congress, Dec. 2, 1825, found in the American State Papers, Documents, Legislative and Executive, of the Congress of the United States, Naval Affairs (Washington, 1860), Vol. II, p. 99.

43. Southard to Warrington, May 24, 1825, found in American State Papers, Vol. II, pp. 109-10.

44. Pensacola Gazette, June 11, 1825; American State Papers, Naval Affairs, Vol. II, p. 110. Colonel Clinch commanded the 4th U.S. Infantry, with headquarters at Cantonment Clinch.

her station off LaHabana, four days before. She had left the brig Spark on that station, the brig Terrier off Matanzas, and Fox cruising the coast from Nuevitas to Matanzas. Capt. J. J. Nicholson on landing reported that the health of his crew was good, considering that the frigate had spent the previous 94 days at sea in the subtropics.

Nicholson's mission in bringing his ship into Pensacola Bay was to land Marines to take possession of the Barrancas and other public property to be transferred by the Army to the Navy, and to "refresh his crew." Despite orders to the contrary, the removal of the facilities from Key West to Pensacola was being carried out with much foot-dragging. Captain Nicholson told the editor of the Gazette that arrangements had been perfected for the "partial transportation of the stores" and all the sick.[45]

Because of the foot-dragging, it was mid-June 1826 before all the officers and men heretofore stationed at Key West, along with all the public property, was transferred to the Barrancas.[46]

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45. Pensacola Gazette, Oct. 8, 1825. A Spanish squadron of three frigates and several smaller vessels under Commodore Angel Laborde, Nicholson reported, had entered the Gulf en route to relieve the Castle of San Juan de Ulloa. Earlier in the year, Lieutenant Pearson, Midshipman Wingerd, and 15 seamen from John Adams had reached the Barrancas after their barge, Dioblita, had been wrecked on Santa Rosa Island. Dioblita and the barge Gallinipper had parted company with John Adams on February 6 off Cape San Antionio. In crossing the Gulf, en route to Key West, heavy seas had been encountered, and the barges separated. His vessel too badly battered to reach Key West, Lieutenant Pearson shaped a course for Pensacola. When within a few miles of the bar on Saturday, February 19, a wind began to blow out of the southwest. Dioblita's foreyard was carried away. Pearson, finding it impossible to haul off shore, ran his craft upon the beach. Ibid., Feb. 26, 1825.

46. Ibid., June 24, 1826. Following the departure of the last of the naval personnel, some of the rougher element of Key West got out of hand. They were brought into line by the collector of the port.

3. Naval Commissioners Make Selection

The day after the arrival of John Adams, October 5, the storeship Decoy, Lt. Comdr. William Pottenger, anchored in Pensacola Bay. She had left her station off LaHabana on September 28, and had been delayed in her passage across the Gulf by foul weather.[47]

U.S.S. Hornet reached Pensacola on October 25, 1825, 11 days out from the Virginia Capes. Aboard were the three distinguished naval officers (Capts. Lewis Warrington, William M. Bainbridge, and James Biddle) named as commissioners by Secretary of Navy Southard in mid-September to select a site for a "Naval Depot on the coast of Florida, within the Gulf of Mexico."

Announcing arrival of the commissioners, the editor of the Gazette, in a sly effort to influence them, reported a conversation he had had with Captain Nicholson of John Adams. Nicholson had reported that the fever, which had prevailed to some extent aboard his vessel, "has almost entirely subsided, and that the prospects of health being totally reestablished previous" to his frigate returning to sea were certain.[48]

At a public meeting, the citizens, on October 28, decided to give a banquet for the commissioners. It was held on November 2 at the Commercial Hotel. Honored guests, in addition to the commissioners, were Capts. Samuel Woodhouse of Hornet, J. J. Nicholson of John Adams, and William Pottenger of Decoy, and Col. Duncan Clinch and his officers from Cantonment Clinch.

The room was handsomely decorated with flags of the Western Hemisphere Republics and copies of the Declaration of Independence. The band from Hornet entertained with a number of

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47. Ibid., Oct. 15, 1825. Since her departure from Key West, there had been four deaths in her crew.

48. Ibid., Oct. 29, 1825; American State Papers, Naval Affairs, Vol. II, p. 110.

"National, Patriotic, and convival songs." After the feast 21 toasts were proposed and drank.[49]

The commissioners now commenced their survey. On doing so, they kept in mind Secretary of the Navy Southard's injuction to beware of the "disadvantages which have resulted from the injudicious location of other yards; and in making a selection" to "take into view the actual expense and conveniences, as well as the practicability of defence." After selecting a site, they were to enter into an agreement with the landowners for purchase of the property, "subject to the approbation" of the Secretary of the Navy. They would take care to secure "not only as much land as will be required for present purposes, but as much also as may be needed in the future."

To assist with their project, they were provided with all available maps and charts of the area, along with "an outline of the fortifications" projected by the War Department.[50]

Reconnoitering Pensacola Bay, they found it "extensive and capacious, easy of access from the sea, and affording secure anchorage for any number of vessels of the largest class." Depth of water over the bar was found to be 21 feet, even after "a long continuance of northerly winds," which affected the tides on the Gulf coast. Usually the tides did not rise more than three feet, but they ran "with considerable rapidity," thus affording facilities to vessels working in or out of the harbor against "an unfavorable wind."

The site selected for the navy yard, in the vicinity of the Barrancas and northwest of Tartar Point, possessed adequate depths of water near shore, an important consideration in calculating the expense of

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49. Pensacola Gazette, Nov. 9, 1825.

50. Southard to Bainbridge, Warrington, and Biddle, Sept. 15, 1825, found in American State Papers, Naval Affairs, Vol. II, pp. 110-11.

building wharves. Here fortifications erected for defense of the naval facilities "would give additional security to the harbor, while its vicinity to the Barrancas would admit assistance to it, in case of need, from the troops stationed there." In addition, the site was favorably situated for rendering prompt assistance to vessels approaching the harbor. "Its healthiness" was unsurpassed by any other part of the bay, "and here there was freshwater in abundance."

As the claim of a Mr. Roseblanc to the site had been rejected by the commissioners examining West Florida land claims and the property in question already belonging to the government, the commissioners ignored their instructions directing them to secure title to the site.[51]

Not knowing what the commissioners would recommend, the territorial legislative council in a memorial and Joseph M. White, who had replaced General Call as territorial delegate, in a letter pressed Secretary of the Navy Southard. White inquired as to the Secretary's views of the extent of the proposed depot. He felt that Congress would be governed in its appropriations for the depot, and the fortifications for its defense, by Southard's opinion of the importance and extent of the establishment. White would be pleased to know whether extensive facilities were planned for Pensacola Bay.

In White's opinion there was "no point on the whole southern coast where an extensive Naval establishment could be made so advantageously to the government as at Pensacola." As all commerce west of the Appalachians passed in that direction and with every port in the northern states fortified and protected by the government backed by "a dense population . . ., our southern commerce and coast is greatly

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51. Commissioners to Southard, Dec. 2, 1825, found in American State Papers, Naval Affairs, Vol. II, p. 111.

exposed and . . . we have powerful claims upon a munificent government disposed to protect with equal care every part" of its domain.[52]

Secretary Southard replied on December 1, announcing he would give "due weight to the consideration thus presented." But, he added, "it was not yet in his power to state the character and extent of the establishment which ought to be formed" on the Gulf Coast of Florida, because it had not yet been ascertained.[53]

The next day, December 2, 1825, Secretary Southard transmitted to President John Quincy Adams, a copy of the commissioners' report, along with a sketch they had prepared locating the sites. Should it meet the President's approval, steps would be taken "to erect the necessary buildings, and make the improvements."[54]

Delegate White on December 10 wrote Editor W. H. Hunt of the Pensacola Gazette, advising him of the Secretary's action. Secretary Southard had told White that he considered Pensacola Bay a "highly advantageous location," and that he was disposed to cooperate "with him in any measures calculated to accelerate its formation, and extend its establishment so far as to meet all the exingencies of our commerce in the Gulf."

The decision to locate the naval depot at Pensacola made mandatory the construction of fortifications. Delegate White promised to push for passage of legislation to effect that goal.[55]

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52. White to Southard, Nov. 28, 1825, found in Territorial Papers-Florida, Vol. XXIII, pp. 360-61.

53. Southard to White, Dec. 1, 1825, found in Ibid., p. 370.

54. Southard to Adams, Dec. 2, 1925, found in American State Papers, Naval Affairs, Vol. II, p. 111.

55. Pensacola Gazette, Jan. 7, 1826.

D. Three Eventful Years: 1825-1827

1. Pensacola Bar Plagues Uncle Sam's Frigates

Although the commissioners failed to mention it, John Adams, as she sailed for her station in early November 1825, grounded on Cavos Shoals, receiving considerable damage. A survey showed that in crossing the bar, she had knocked off her rudder and broke all the fastenings. In reporting the accident, Editor Hunt of the Gazette was unable to account for it, as there was "much water to spare on the bar and plenty of room to beat out." Commodore Warrington, after discussing the accident with Captain Nicholson, blamed it on "a heavy sea, light wind, and a bad working ship." It, he assured, had not "altered our good opinion of Pensacola."[56]

There was additional trouble in this respect in early February 1826 when U.S.S. Constellation, a big 38-gun frigate, arrived off Pensacola Bar. Soundings showed that there was only 20 feet 6 inches of water over the bar, and, as the frigate drew 21 feet 5 inches, she was compelled to lay to. Capt. Melancthon T. Woolsey hoped that a shift in the wind would increase the depth of the water over the bar, thus permitting him to take his ship into the bay. When this did not happen, the frigate on the 14th again put out to sea.

One of the ship's officers on the 13th had written a friend complaining, "I fear this can never be made a large vessel depot. We have been off the bar for the last four days endeavoring to get in, but it will be useless."[57]

To counter this unwelcomed publicity, the editor of the Gazette informed his readers that in November 1799 the Spanish frigate Syrene, 52 guns, and drawing 22 feet had crossed the bar; in October

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56. Ibid., Nov. 12, Dec. 3, 1825.

57. Ibid., Feb. 18 and April 29, 1826; Niles' Weekly Register, April 1 and June 3, 1826.

1805 the Spanish frigate Pomona of 36 guns and a draft of 21 feet had entered the bay; in October and November 1814 the British frigate Sea Horse, 44 guns, and drawing 21 feet had entered; and in February 1815 the British frigate Cadmus, 52 guns, and drawing 21 feet had called at Pensacola.

Editor Hunt was confident that the commissioners were "well aware of the correct depth of water over the bar."[58]

The situation brightened in late April 1826, when on Sunday, the 23d, Constellation returned from her cruise and, with a favorable wind, crossed the bar and anchored off the Barrancas. A number of newspapers had noted the earlier incident, and some having commented unfavorably on Pensacola's selection as a naval depot, Editor Hunt gloated, "The redoubtable captain who pledged his word to eat the Constellation the first time she should enter the harbor of Pensacola, may now be gratified with a breakfast, somewhat proportional to his own opinion of himself."[59]

Constellation was in the bay on July 4. To celebrate the nation's 50th birthday, salutes were fired at Cantonment Clinch by the Army and aboard the big frigate by the Navy. During the afternoon officers at Cantonment Clinch entertained the naval officers and a number of citizens.

The Declaration of Independence was read by Capt. William M. Read, while Doctor Alfred W. Elwer gave a rousing patriotic speech. Officers and guests then sat down to a banquet at which numerous toasts were proposed and downed.[60]

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58. Pensacola Gazette, Feb. 18, 1826; Niles' Weekly Register, June 10, 1826.

59. Pensacola Gazette, April 29, 1826.

60. Ibid., July 1 and 8, 1826.

News of the death of Thomas Jefferson, Third President of the United States, reached Pensacola on July 28. Aboard Constellation cannon roared and the colors were half-masted, out of respect for the author of the Declaration of Independence. Ashore minute guns were discharged at the naval station and Cantonment Clinch.[61]

On Wednesday, September 13, Commodore Warrington shifted his broad pennent from Constellation to the brig Hornet. Two days later Hornet, getting underway, sailed for Norfolk. With departure of Warrington, Captain Wollsey of Constellation assumed command of the squadron.[62]

Captain Woolsey, with the equinox at hand, prepared to take Constellation to sea. There was a fair wind blowing, as she hoisted sail and shaped a course for the bar. The wind suddenly dropped and changed direction. Soundings showing that there was insufficient water over the bar to float his ship, Captain Woolsey returned her to the anchorage off the Barrancas.

On September 24 Constellation again got underway, with her crew in excellent health, following their five months in Pensacola Bay. She had "smooth water and a gentle wind and went over the bar in handsome style and perfect safety." Editor Hunt boasted in the Gazette, "although it was ordinary tide and had fallen considerably she had plenty of water and never touched." On her first attempt to clear the harbor, he continued, Constellation had been frustrated by the equinox, and even so had the fair breeze continued another 15 minutes, she would have been across the bar and at sea. The weather had then taken a turn for the worse, and the winds until the 24th had been blustery. Indeed, the

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61. Ibid., Aug. 4, 1826. Jefferson had died at his beloved Monticello on July 4, 1826.

62. Ibid., Sept. 15, 1826.

editor ventured, of such "a character that a vessel would not have left any port in the United States, unless her orders had been urgent."

The detention of Constellation by the equinox, Editor Hunt trusted, "should not operate in the least to the detriment of our harbor, which is the best south of Chesapeake Bay." By employing steam tugs to provide assistance, deep-draft frigates, such as Constellation, could enter and leave the bay with "little or no detention." By deepening the bar three feet for a length of 400 yards, even huge 74-gun ships-of-the-line could enter Pensacola Bay, "where there is anchorage sufficient for the entire United States Naval and Civil Marine."[63]

John Adams returned to Pensacola Bay on Sunday, October 8, after a four-month cruise. The crew was in good health. Commenting on this, Editor Hunt wrote, "It is a circumstance worthy of note that during" the "cruise . . . there has been but one death on board the ship and only a few cases of sickness."[64]

Constellation, flying the broad pennent of Commodore Charles G. Ridgely, entered Pensacola Bay on April 29, 1827, crossing the bar without difficulty. During her latest four-month absence, she had been cruising the coasts of Cuba, and had been as far windward as the Virgin Islands. On her return from St. Thomas, she had passed to the south of Santo Domingo, where she had left John Adams and Hornet.[65]

The commander of the United States Army Maj. Gen. Jacob Brown and his aide-de-camp, Lt. David H. Vinton, arrived in Pensacola in mid-May 1827. On Monday, the 14th, they board Constellation to confer with Commodore Ridgely, being received with a correct salute.

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63. Ibid., Sept. 29, 1826.

64. Ibid., Oct. 13, 1826.

65. Ibid., May 4, 1827.

Next day found them at the navy yard. On the 21st, having completed his business in the area, General Brown and his aide boarded the schooner Elizabeth, which took them to New Orleans, from where they proceeded to Jefferson Barracks, Missouri.[66]

Three weeks later, on June 16, John Adams arrived in the bay and dropped anchor off Santa Rosa Island. She had on board several men suffering from yellow fever, from which Lt. John P. Tuttle had died. To curb the dreaded plague, the ship was "cleared out and ventilated." The sick were landed, tents pitched, and a quarantine established, with every precaution taken to prevent "the communication of the disease to persons either at the Barrancas, the navy yard, or Pensacola. Before the quarantine was lifted several seamen died.[67]

While John Adams was in quarantine, Constellation on Saturday, June 30, weighed anchor and beat her way out of the bay, en route to Norfolk. Her place in the West Indies Squadron would be taken by Natchez, a new sloop-of-war. Constellation found 25 feet of water over the bar, and she experienced no difficulty in getting to sea.[68]

2. Commodore Porter Embarrasses the United States

Commodore Porter, having been court-martialed, had resigned from the United States Navy and had offered his services to Mexico. They were accepted, and in 1826 he became commander of the Mexican navy. In early June 1827 Porter sailed from Veracruz with his squadron and put in at Key West on the 23d. His activities there, during the summer, involved himself and his adopted country in three disputes with the United States. First, he violated United States territorial rights by his presence at Key West; second, he threatened

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66. Ibid., May 18 and 25, 1827.

67. Ibid., June 22 and July 6, 1827.

68. Ibid., June 22 and July 6, 1827.

American commerce by announcing his intention to issue letters of marque for Mexican privateers; and finally, he recruited sailors for Mexico on United States soil.

The third of these brought Porter to Pensacola. In early July he left Key West for New Orleans to try and enlist men for his fleet and to purchase supplies, both of which he expected to finance with Mexican funds that were reportedly awaiting him there.[69]

Commodore Porter arrived in Pensacola Bay in a pilot boat on July 12, accompanied by his secretaries Edmond Law and Edward Gratten and his son Midshipman Thomas Porter. When they had left Key West, Admiral Angel Laborde's Spanish squadron was cruising the Florida Keys. Several days before their departure, the Mexican privateer Molestado had arrived with several prizes and a number of prisoners removed from the seven Spanish drogers she had sunk with cannon fire off Mariel. The prisoners had been sent aboard Porter's flagship Libertad.[70]

Before leaving Pensacola for New Orleans, Porter assured Commodore Ridgely of the West Indies Squadron that he would do nothing to embarrass the United States. On July 16, four days after Porter's arrival, Commodore Ridgely, flying his broad pennent from Hornet, sailed from Pensacola Bay. This surprised the citizens, because no rumors had preceded the sailing. Its unexpectedness caused much speculation. It was discovered, on checking with the post office, that an unusual number of dispatches had reached Commodore Ridgely from Washington within the past week. It was also reported that Natchez was to rendezvous with Hornet off LaHabana.[71]

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69. David F. Long, Nothing Too Daring: A Biography of Commodore David Porter, 1780-1843 (Annapolis, 1970), pp. 267-71.

70. Pensacola Gazette, July 13, 1827.

71. Ibid., July 20, 1827.

The departure of Commodore Ridgely, Editor Hunt believed, was associated with the situation at Key West, and a meeting held recently in LaHabana. At the Cabildo, the principal topic discussed had been the risks involved in an attack on Commodore Porter's Mexican flotilla then anchored within Key West harbor. Reports reaching Pensacola were that the majority in attendance favored such action, but it was opposed by Captain-General Dionisio Vives and Admiral Angel Laborde as a violation of United States neutrality and likely to involve Spain in a naval war with the United States.

It was also rumored that Admiral Laborde had protested to the United States Collector at Key West about Porter's conduct, and that the Spanish minister in Washington had seen Secretary of State Henry Clay about the violations of the nation's neutrality by Mexican naval forces. Editor Hunt theorized that Ridgely had been ordered to investigate the situation and to prevent abuses by either belligerent and to protect United States merchant shipping.[72]

Before the week was over John Adams, now captained by E.R. Shubrick, sailed to reinforce Ridgely's squadron. The crew, during the weeks their ship was anchored in the bay, had recovered its health.[73]

Commodore Porter remained in New Orleans more than a month, spending some of the funds forwarded from Mexico on recruitment. In early September, his work in Louisiana concluded, Porter traveled overland to Pensacola, where he reboarded Libertad. His flagship had arrived from Key West on September 8. Six days later, on the 14th, the flamboyant Porter hosted a celebration and open house aboard his warship in commemoration of the anniversary of the Mexican declaration of independence.[74]

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72. Ibid.

73. Ibid., Aug. 3, 1827.

74. Ibid., Sept. 14, 1827; Long, Nothing Too Daring, p. 271.

Reassembling his squadron, Porter sailed for Veracruz in late October, terminating his only cruise with the Mexican navy.

Commodore Ridgely returned to Pensacola Bay with his squadron in mid-October to find Porter gone. Ridgely now flew his broad pennant from Natchez. Hornet remained only briefly as she again put to sea on Monday, the 15th.[75]

Although Commodore Porter was no longer at sea, his Mexican privateers caused problems for the West Indies Squadron. Hornet, Capt. Alexander Claxton, returning from a cruise off the south coast of Cuba, crossed the bar and anchored off the navy yard on Wednesday, July 30, 1828. She had stopped at Key West, where she had communicated with Natchez. From Capt. George Budd of Natchez, it was learned that United States naval forces, at the request of the Collector at Key West, had seized the Mexican privateer Carabobo and her two prizes at Dry Tortugas.

Captain Hawkins of the Mexican brig Herman had also been taken into custody and charged with smuggling. He was hailed into court, and on posting a bond of $5,000 released, and permitted to sail for Veracruz.

Natchez reached Pensacola Bay from Key West on August 7. Captain Budd, visiting the office of the Gazette, told the editor that the officers and crew of Carabobo, after their day in court, had been released and returned to Mexico aboard Herman.[76]

3. Base "Assumes an Degree of Permanency"

For the second time in five years, yellow fever plagued the Pensacola area in August 1827. There was much sickness and a

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75. Pensacola Gazette, Oct. 19, 1827.

76. Ibid., Aug. 6 and 12, 1826.

number of deaths. Business was paralyzed, and many people fled the city. On October 9 the Gazette reported, the "sickness which our city has been visited with, during the last two months has almost subsided. There are but a few cases now existing, and most of them are convalescing." Subscribers who had removed from the city were advised not to be too hasty about returning.[77]

By October 19 the newspaper was happy to report that Pensacola was "now healthy and we trust that it will continue so." There had been 33 deaths, but no one had died of fever within the city during the last ten days. At the navy yard, seven miles to the southwest, there had been one death. To allay fears that could result in its removal from the area, the editor pointed out that the navy yard had been "extraordinarily healthy during the whole summer, the more so, when it is considered that the persons stationed there are most of them from a Northern climate," and the mechanics and laborers are of necessity "much exposed to the sun."[78]

In December 1827 the navy yard assumed a degree of permanency, when the wife and family of Commodore Ridgely arrived from New York City by way of Mobile. The commander of the navy yard, Captain Woolsey, on his return to Pensacola from the east, was accompanied by his wife and children, Lt. John H. Clack of the Navy, and Doctor Macomb.[79]

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77. Ibid., Sept. 7 and Oct. 9, 1827.

78. Ibid., Oct. 19, 1827.

79. Ibid., Dec. 7 and 14, 1827. Woolsey and his party arrived from New York City aboard the schooner Atlas.

III. CONGRESS ACTS AND TIME RUNS OUT FOR THE BOARD

A. Board of Engineers Plan a Fort for Santa Rosa Point

1. Delegate Call Embarrasses General Macomb

Almost two years had passed since the Board of Engineers had reconnoitered Pensacola Bay. Florida's aggressive territorial delegate to the 18th Congress, William K. Call, determined to press the subject. In December 1823 he called on the House Military Committee to inquire into the "expediency of fortifying Pensacola."

Advised of this, Chief Engineer Alexander Macomb contacted General Bernard and Major Totten, members of the Board, asking them to determine the status of the project for the defense of Pensacola Bay.[1]

General Macomb was embarrassed to learn from Major Totten that Major Kearney, having been assigned to survey the St. Mary's River, had not completed his chart of Pensacola Bay. Reporting to Secretary of War John Calhoun on January 26, 1824, Macomb informed him that the Board of Engineers had examined Pensacola harbor, and Major Kearney had made the "surveys requisite to enable" the Board to prepare plans. But, Macomb continued, Kearney had been prevented from preparing his chart, and the project had not been commenced. Orders had been given for Major Kearney to complete his map, and the Board would be instructed "to prepare the project as early as practicable."[2]

2. House Committee on Military Affairs Calls for Action

Nineteen months later, in mid-September 1825, the Board of Engineers received a letter from Secretary of the Navy Southard,

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1. Macomb to Bernard and Totten, Dec. 12, 1823, found in Territorial Papers of the United States--Florida, Vol. XXII, p. 808.

2. Macomb to Calhoun, Jan. 26, 1824, found in Ibid., p. 839.

stating that it had been determined to locate a naval depot on the Gulf Coast of Florida, and a commission had been named to select the site. The decision having been made, General Bernard reported that the navy yard would required "two sorts of defensive works": those to defend the entrance of the bay, and others to protect it and ships anchored in the bay from land attack. The scope and location of the latter could not be ascertained until the Board knew where the navy depot was to be located. Accordingly, General Bernard continued, it was desirable that the yard not only enjoy "the naval requisites, but also require for its protection, as few defensive works as possible."

Off hand it did not appear that Pensacola possessed the same "local advantages which led the naval commissioners and the board of engineers to recommend Charlestown, Massachusetts, and Burwell bay, on James river, as naval depots of the first class upon our Atlantic maritime frontiers." Geography had dictated that those naval yards needed no artificial defenses. But this was not the situation at Pensacola, where the naval depot would "find itself in the same predicament as most of the European navy yards"--near the sea and easy of access by land. In addition, the area, because of the sandy soil, would never support a population sufficient to defend the naval facilities against a sudden attack.

The navy yard would have to be protected by an expensive "chain of detached and advanced works, the object of which is to keep out of range the incendiary batteries of the invader, and prevent him from burning the establishment within the first days of his landing; and, besides that chain, a line of fortifications around the perimeter of the navy yard to resist a regular attack."[3]

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3. Macomb to Bernard, Sept. 14, 1825, NA, RG 77, Ltrs. Sent, Chief Engineer, Bernard to Macomb, Sept. 19, 1825, found in American State Papers, Military Affairs, Vol. III, pp. 158-59.

The House of Representatives on December 20, 1825--the Naval Commissioners having made their recommendation--called on Secretary of War James Barbour for information respecting "surveys and estimates not in relation to fortifications at the entrance of Pensacola bay."[4]

To provide the desired information, Chief Engineer Macomb forwarded the report on this subject he had recently received from General Bernard. In a covering letter, General Macomb pointed out that Major Kearney had now completed his maps and charts, but no "projects and estimates had been commenced, because the Naval Commissioners had not located the yard. If possible, the examination would be made in 1826, and "the attention of the board will be applied to the preparation of the projects and estimates as early as possible."[5]

The Committee on Military Affairs on January 23, 1826, reported to the House that it had concluded that the establishment of a naval depot at Pensacola would make that area one of "the most interesting points in our line of maritime defence." But, the Committee continued, as works for its protection were contingent on further surveys, they were unready to recommend passage of legislation on "this subject, which, by compelling the executive to proceed at once, with the contemplated works, may be premature . . . and lead to injurious results."

Satisfied that the early attention of the government ought to be focused on the area, the Committee recommended adoption of a resolution, urging the Secretary of War to have "completed, as early as compatible with the public interest, the plans, surveys, and estimate for

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4. American State Papers, Military Affairs, Vol. III, p. 158.

5. Macomb to Barbour, Dec. 22, 1825, found in American State Papers, Military Affairs, Vol. III, p. 158.

defence of the navy yard and bay at Pensacola, that the necessary information may be obtained to authorize an appropriation for this purpose."[6]

3. General Macomb Presses the Board

Chief Engineer Macomb responded to a House Resolution of February 8, calling on Secretary of War Barbour to inform it

> whether the surveys of Pensacola bay are not so far completed as to authorize the commencement of fortifications at the entrance thereof in the ensuing year without injury to the plan of defence to be projected for the defence of the navy yard, and how long it will take to complete the latter; the relative importance and necessity at this time of their defence, compared with other works of the same kind, and whether the public service would not be greatly benefitted and the contemplated works facilitated by an appropriation at this session of Congress for the purchase of materials, the construction of wharves and houses preparatory to the fortifications to be erected.

The Chief Engineer went on record that the surveys were not far enough along to permit commencement of the subject fortifications "in the ensuing year without injury to the plan of defence of the navy yard." As yet, nothing had been done by the Department on this project, so there was no data on how long they would take to complete. But, he added, although there is no necessity for an appropriation, the public service would be "benefitted and the contemplated works would be facilitated by an appropriation at this session of Congress" for purchase of materials, etc.[7]

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6. Committee on Military Affairs to House, Jan. 23, 1826, found in American State Papers, Military Affairs, Vol. III, p. 217.

7. Macomb to Barbour, Feb. 16, 1826, found in American State Papers, Military Affairs, Vol. III, pp. 242-43.

On March 22, 1826, General Macomb notified General Bernard and Major Totten of the Board that the Secretary of War was "desirous that the projects for the defence of Pensacola and Savannah should be prepared in time to be reported to Congress, at its next session," and they were to prepare and report them and submit them to the Department by November 1.

As much time would be needed to prepare all the details of these projects, and the members of the Board were scattered, it was obvious that it would be beyond their power to "arrange concurrently all the details of the projects." It would therefore be necessary for the Board to "arrange together the important points in relation to the projects, and leave the comparatively unimportant details to be arranged by the members separately."[8]

4. Board Finds Pensacola Bay Vital to Defense of the Gulf Frontier

As a stopgap measure, the Board of Engineers on March 24, 1826, submitted to Chief Engineer Macomb a comprehensive report on the defense of the nation's maritime frontiers. Included for the first time in this updated document was information regarding means of affording protection to the Florida coasts.

Pensacola Bay, the Board reported, receives the waters of several rivers (the Yellow, Middle, and Escambia), the tributaries of the latter "interlocking with branches of the Alabama and Chattahoochie." This could result eventually in construction of canals drawing products from the Alabama and Georgia hinterland to Pensacola.

Santa Rosa Sound extended eastward from the lower end of Pensacola Bay into Choctawhatchee Bay, from whence a waterway might be

8. Macomb to Bernard and Totten, March 22, 1826, NA, RG 77, Ltrs. Sent, Chief Engineer.

continued eastward to the Atlantic. This project, which involved a canal across the Florida peninsula, has continued to agitate the American people until the present. To the west the lagoons of Pensacola, Perdido, and Mobile bays interlocked in such a manner as to require but a few miles of canals to complete an intracoastal waterway from the first to the last named bay, and then through Mississippi Sound and Lakes Borgne and Pontchartrain to New Orleans.

The Board, showing remarkable foresight, suggested that at some future day the headwaters of the Tombigbee might be connected with the Tennessee to the benefit of Pensacola.

Situated as Pensacola Bay was, with respect to the country drained by these rivers, "its rare properties as a harbor become of inappreciable value." Among these attributes were: (a) its accessibility at low water to the largest sloops-of-war; (b) the bar being near the coast, the channel over it, was "straight and easily hit"; (c) it was landlocked and had a "very capacious roadstead; (d) it possessed "excellent positions for repairing, building and launching vessels, and for docks and dock yards in healthy situations"; (e) there was an abundance of fresh water; and (f) it was "perfectly defensible."

As the government had determined to locate a naval yard on the bay, the Board of Engineers would "consider it in that character, both in its relations to the commerce of the gulf and its own proper defence."

To answer critics who pointed out that a naval station nearer East Florida would enable warships to better guard vessels utilizing the Gulf Stream, the Board held that "no deep harbors exist to the south of Pensacola," in which separation from the hinterland with its supplies did not outweigh the advantages. Moreover, the Board questioned whether the Gulf Stream and Straits of Florida would always be the principal sea route between the Gulf and the Atlantic. It was foreseen that hazards to navigation represented by the Florida Keys and possession of Cuba by an unfriendly power would direct public attention

toward "opening a shorter and safer passage through the head of the Florida peninsula."

Besides watching transit of commerce to and from the Gulf, the naval force based in the area was responsible for protecting the coastal trade, the suppression of piracy which confined itself to no particular area, and most important "to keep an uninterrupted and watchful guard over the place of deposit."

Projecting as the delta of the Mississippi did into the Gulf, Pensacola was situated to enable it to direct naval operations against the rear of an amphibious force invading or advancing on New Orleans, while through a fortified intracoastal waterway it preserved its communications with the Crescent City.

An accurate survey by Major Kearney had been made of Pensacola Bay. This would suffice for perfecting plans for defense of the city and harbor. But, as the bay was to shelter a naval base, additional surveys were needed, extending some distance into the back country.

The western extremity of Santa Rosa Island was situated "to require, in part, the same works in either case." Consequently, the Board was prepared, whenever ordered, to project a fort for that position. Santa Rosa Point would be the first site fortified.[9]

5. Department's Hesitation Irks Delegate White

The 2d Session of the 19th Congress convened in early December 1826. One of the House's first actions was to call on Secretary of War Barbour for information on progress "made in the projection of the plans and estimates of fortifications for the defence of Pensacola bay and the navy yard and depot established there." The House wished to know

9. Board of Engineers to Barbour, March 24, 1826, found in American State Papers, Military Affairs, Vol. III, pp. 283, 294-95.

when they were expected to be completed, and what had prevented their completion by the date previously forecast.

Chief Engineer Macomb replied for the Department. A review of the reports of December 22, 1825, and February 10, 1826, failed to disclose a commitment by the Corps to have the plans and estimates prepared "at any early date," nor any suggestions when they would be completed. It appeared to him that the "disposition" of the House only involved plans and estimates for the fortification intended for defense of the entrance to the bay. He had accordingly directed the Board of Engineers to proceed with plans for the work to be erected on Santa Rosa Point.

Since then the Board had visited the site, had made considerable progress, and were expected to complete the project sometime in January 1827.

The fortifications requisite for defense of the bay, General Macomb continued, would consist of those on Santa Rosa Point, one at the Barrancas, and some which may be needed for defense of the navy yard. Before plans and estimates could be formulated for the latter two, it would be necessary to "examine and make minute surveys" of the site selected for the navy yard and of its "connexion" with the Barrancas. The Board, during the spring, would return to Pensacola. Should the views of the government remain unchanged, a reference to the difficulties experienced by several of the frigates in crossing the bar, it would make the necessary studies.[10]

Secretary of War Barbour on January 3, 1827, forwarded General Macomb's report to the House.

Delegate White of Florida was disturbed by General Macomb's reference that "Pensacola might not be the most suitable place

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10. Macomb to Barbour, Dec. 26, 1826, found in American State Papers, Military Affairs, Vol. III, p. 491.

for a Naval Depot on the Gulf Coast." A greater depth of water over the bar, Delegate White complained to the Military Affairs Committee, is the only superiority that St. Joseph Bay "is alleged to have." But, he continued, water is not the only circumstance to render a place eligible for a depot. A navy yard, he pointed out, must be a place of safety not only for vessels but for a large amount of public property. It must also have a healthful climate, be susceptible of defense, easy of access from the interior, and "conveniently located for other supplies."

The Naval Commissioners, Delegate White noted, had given no "hint of this new discovery," and they were not ignorant of St. Joseph Bay, because they had access to a survey of that harbor executed by a naval officer at the same time that Pensacola was selected. He felt certain the commissioners had weighed all the advantages and disadvantages of the two bays. He was confident that the "only effect of deferring the appropriation, will be to restart and embarrass an establishment absolutely called for by the western states and those on the Gulf."

At the Tartar Point facility considerable progress had been made. Buildings had been erected, extensive preparations undertaken, and some large contracts entered into. These were all now threatened by some "idle rumor."[11]

Delegate White believed the discovery of a good depth of water over the bar at the mouth of St. Joseph Bay would benefit the territorial economy. St. Joseph Bay might even serve as a port of refuge for the great ships-of-the-line, while insuring a speedy water communication with Pensacola Bay.[12]

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11. Pensacola Gazette, Feb. 16, 1827.

12. Ibid., March 23, 1827.

Naval officers rushed off to survey St. Joseph Bay returned to Pensacola in late March, with information that there was no more than 17 feet of water over the bar. Although the bay was extensive, it could not be entered by the navy's larger ships. The bay, itself, was formed by "a long narrow neck of sand, extending from Cape San Blas to St. Joseph's Point, the distance from which to the nearest point on the mainland is more than three miles."

Smoothbore cannon would have difficulty in defending the entrance to the bay. In addition, the hinterland in the vicinity of St. Joseph Bay was barren, with no vegetation, except the ubiquitious pines. Many years would pass before it could be expected to provide the "necessaries of life."

Editor Hunt of the Gazette seized on this news with a vengence. He informed his readers that "facts are stubborn things! What has become of the five-fathoms found on the bar by the Civil Engineer? Or whence did the important report arise? At any rate it would seem that the bar at St. Joseph's Bay is very changeable."[13]

6. Board of Engineers Recommends a Formidable Work

General Macomb meanwhile had notified Secretary of War Barbour that he had received from the Board of Engineers "plans, estimates, and memoir on the defence of Pensacola harbor," as they relate to Santa Rosa Point. The subject work would be of "great importance, and of considerable magnitude, being calculated for 200 guns, 20 mortars, and 28 carronades." The garrison, in time of peace, to be 50 men, in time of war 600, and to sustain a siege 1,200. Cost of construction, including materials, to be $650,000.

Although it was desirable that construction begin as soon as possible, the Department was "not at this time prepared to commence

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13. Ibid., March 30 and April 6, 1827. Capt. James Ramage, assisted by Messrs. Ferris and Richardson, made the Navy's survey of St. Joseph Bay.

the works, for the want of officers of engineers disposable for that service." But, if it were deemed advisable by Congress to begin construction in 1828, an appropriation of "$50,000 might be advantageously employed in making preparatory arrangements for commencing at that time, by the establishment of wharves and procuring materials."[14]

Delegate White was understandably enthused with General Macomb's report, which was forwarded to the House by Secretary of War Barbour on February 8.[15] Four days later, White mailed a copy of Macomb's communication to the editor of the Pensacola Gazette. White, in his covering letter, pointed out that in Macomb's report there was no information "unfavorable to the Navy Yard and Depot and Fortifications to defend them at Pensacola, on the contrary there is the strongest recommendation in favor of it." He did not believe Congress would make an appropriation at this session for beginning work on the fortifications at Santa Rosa Point in view of General Macomb's statement: that he had no officers available to superintend construction. Nevertheless, the government was now pledged to proceed with the fortifications in the near future. Delegate White assured his constituents that the fort to be erected on Santa Rosa Island will be a "magnificent one."[16]

B. Delegate White's Successful Campaign

1. General Bernard Makes Another Reconnaissance

General Bernard and Captain Poussin of the Board of Engineers had landed at Pensacola on June 7, 1827, from the Revenue cutter Alabama. Since leaving St. Augustine in early April, the officers

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14. Macomb to Barbour, Feb. 7, 1827, found in American State Papers, Military Affairs, Vol. III, p. 595.

15. Barbour to John W. Taylor, Feb. 8, 1827, found in American State Papers, Military Affairs, Vol. III, p. 595.

16. Pensacola Gazette, March 9, 1827.

had been reconnoitering the Florida Peninsula and the coast from Tampa Bay to Pensacola. They had sounded all the bars. At St. Joseph Bay, they had found "on the bar, at full tide and the wind blowing from the eastward and westward nineteen and one-half feet."

General Bernard told Editor Hunt that they planned to remain in the area several days examining the harbor, both for defense and inland navigation.[17]

Before leaving St. Augustine, General Bernard had been notified by Chief Engineer Macomb that the Commissioner of the General Land Office had informed Secretary of War Barbour that the surveyors in West Florida were "running out the private claims" on Pensacola Bay, and it was desirable that they be provided copies of the surveys of lands reserved for "military purposes on the Bay and the adjacent Islands."

With reference to this subject, the Department trusted the Board of Engineers, while in the area, would ascertain the "extent of the several sites which may be required . . . for military purposes, and the circumstances of title or ownership, value, and other particulars." Plats would be prepared showing what "portions may be required for fortifications, for general military purposes, and for the naval service." Where desired sites were in private ownership, necessary data must be provided to enable the Department to take steps for acquisition.[18]

On his return to Washington in the spring of 1828, General Bernard informed his superiors that the "grounds," west of the navy yard, "comprehended between the Barrancas and Bayou Grande, . . . present the best position to shelter, at a moderate expense, the naval

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17. Ibid., June 8, 1827.

18. Macomb to Bernard, May 4, 1827, NA, RG 77, Ltrs. Sent, Chief Engineer.

establishments from an attack by land." As to the width of the tract to be acquired by the War Department, it would be "determined by the projects which shall be made to occupy this position."[19]

2. 20th Congress Appropriates $50,000

Chief Engineer Macomb again notified the Secretary of War on November 20, 1827, that the Board of Engineers for Fortifications had "prepared plans and estimates" of the fort to be built on Santa Rosa Point.[20]

While Congress was debating the Fortifications Bill, Delegate White contacted Secretary of War Barbour about another sensitive subject. At the last two sessions, he complained, no money had been appropriated for Pensacola, because the Department had claimed it had no officers of engineers available for supervision of the project. Once again, he feared that funds for the Pensacola fortifications would be stricken from the bill for this reason.

While he was not "disposed to complain" of neglect of this "important point," he believed abundant cause could be found by reference to the War Department's reports and promises. If the Department were determined to provide no estimates, he would collect the reports, and when the Fortifications Bill was called up, he would present the arguments in support of the project.[21]

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19. Bernard to Macomb, April 2, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer. Attached to Bernard's letter was a drawing locating the tract recommended for acquisition, the Barrancas, the navy yard, and Santa Rosa Island.

20. Public Documents, Printed by Order of the Senate of the United States, 1st Session, 20th Congress (Washington, 1829), Serial 163, Vol. I, Doc. 1, p. 50.

21. White to Secretary of War, Jan. 20, 1828, found in Territorial Papers of the United States--Florida, Vol. XXIII, pp. 1007-08.

Chief Engineer Macomb answered for the Department. He wanted Delegate White to know that the Department's opinion of the "importance of fortifying the harbour of Pensacola" was unchanged. Recent studies by the Board of Engineers had reinforced this position and had demonstrated the superiority Pensacola Bay possessed over all others on the Gulf Coast as a site for a naval base.

St. Joseph Bay, which at one time had been believed to possess superior natural facilities to Pensacola Bay, had been found to have a shallower bar than Pensacola.

The War Department, Macomb assured White, was aware of the "urgent necessity" of providing for the defense of Pensacola Bay and the naval base.[22]

The Committee on Military Affairs, after studying the report, on February 1, 1828, recommended that $50,000 be appropriated and included in the Fortifications Bill for "commencing the fortifications in the vicinity of Pensacola."[23]

On March 1 Delegate White informed his constituents, through the Pensacola Gazette, that the Fortifications Bill had passed the House and was now before the Senate. Unexpected opposition had been encountered, when the Ways and Means Committee instructed its chairman to delete the $50,000 earmarked for beginning the fort on Santa Rosa Point. Whereupon Delegate White had requested and secured permission to appear before that committee. Making use of his letter from Chief Engineer Macomb, he satisfied a majority of the committee as to the propriety of the measure, and they agreed to let the figure of $50,000 stand.[24]

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22. Macomb to White, Feb. 16, 1828, found in Ibid., pp. 1029-30.

23. Military Affairs Committee to House, Feb. 1, 1828, found in American State Papers, Military Affairs, Vol. III, p. 686.

24. White to editor, March 1, 1828, found in Pensacola Gazette, March 21, 1828.

As passed by the Senate and signed into law by President John Quincy Adams on May 24, 1828, the Fortifications Bill included an item of $50,000 for commencement of the works to be erected at Pensacola. Of this sum, $20,000 was made available for the first quarter of 1829.[25]

C. Board of Engineers Agrees to Let Work Begin

1. Captain Chase is Designated Project Superintendent

On August 26, 1828, subscribers to the Gazette read a copy of an order signed by Chief Engineer Charles Gratiot, on August 1, announcing assignments of officers belonging to the Corps. In May General Macomb had been designated senior major general and commanding general of the United States Army, as a replacement for Maj. Gen. Jacob Brown who had died in February. The new chief engineer was Charles Gratiot, a distinguished officer, who had been for a number of years project engineer at Fort Monroe.

According to the August 1 order, Capt. William H. Chase, senior engineer on the Gulf Frontier, had been assigned to Pensacola, and charged with "construction of the fortifications for the defence" of Pensacola Bay. He would also oversee the removal of obstructions from the mouth of the Pascagoula River. Chase's assistants would be 2d Lts. Stephen Tuttle, Alexander H. Bowman, and Thomas S. Twiss. Twiss was currently on furlough and would report for duty December 1, while Bowman was to oversee the works at Bayou Bienvenue in Louisiana.[26]

Born in Massachusetts, William H. Chase was a cadet at the United States Military Academy from May 4, 1814, to March 4, 1815, when he was graduated as a bvt. 2d lieutenant in the Corps of Engineers. His first assignment was Assistant Engineer for construction of defenses for Brooklyn, New York. The next three years were spent

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25. White to Constituents, May 28, 1828, found in Ibid., July 15, 1828.

26. Pensacola Gazette, Aug. 26, 1828.

in up-state New York, making surveys in the Lake Champlain area and supervising repair of Fort Niagara. Promoted 2d lieutenant on April 15, 1818, Chase spent the next six years as Superintending Engineer for construction of the defenses of the Rigolets and Chef Menteur Passes to Lake Pontchartrain, Louisiana.

Chase in March 1819 was promoted 1st lieutenant. Five years later, in 1824, he was given an assignment in his native state, as superintendent of construction of the Plymouth breakwater. He soon returned to the Gulf Coast and resumed supervision of the construction of the forts on the Rigolets and Chef Menteur, along with those at Bayous Bienvenue and Dupré. He was promoted captain on January 1, 1825, and in that year inspected the Ohio River improvements.[27]

Pensacolans considered themselves fortunate in having an officer with the experience and credentials of Captain Chase assigned to the project. He soon identified himself with Pensacola Bay, and for the next 27 years he was intimately associated with construction of the Pensacola forts.

2. September 5, 1828, Meeting of the Board

As a necessary preliminary to construction of the fort on Santa Rosa Point, Chief Engineer Gratiot on August 6, 1828, notified members of the Board of Engineers that "reports and plans for the defences of Charleston, Savannah, and Pensacola which have been submitted to this Department as the results of the deliberations of the Board of Engineers . . . should be examined and sanctioned by the Board in their corporate capacity." Consequently, he was transmitting the reports and plans to Colonel Totten at Newport, Rhode Island. Other

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27. George W. Cullum, Biographical Register of the Officers and Graduates of the U.S. Military Academy, from 1802 to 1867. Revised Edition, with a Supplement Containing the Register of Graduates to January 1, 1879, 3 Vols. (New York, 1879), Vol. I, P. 155.

members of the Board were to meet there as soon as their duties permitted.

The order of November 16, 1816, required that the project engineer was to be a member of the Board. Thus Captain Chase would be present at Newport, along with General Simon Bernard, Colonel Joseph Totten, and Maj. Samuel Babcock.[28]

The letter calling the Board together found General Bernard at New York City. As chairman, he notified the participants that they would convene in Newport on September 3. Bernard's call found Captain Chase at Boston and Major Babcock at Newcastle, Deleware.[29]

On September 5 General Bernard, Colonel Totten, and Captain Chase sat down in Newport and reviewed the project for fortifying the western extremity of Santa Rosa Island. They reviewed the handsome set of drawings (18 sheets) painstakingly prepared by Col. Joseph Totten of the "Fort for Sta. Rosa Isd. Pensacola Harbour." They saw that the fort was to be a five-bastioned work, consisting of one tier of casemates and a barbette tier. Two of the five fronts bore upon the channel. Located in the East Front or gorge were the casemates designed for Officers' Quarters, magazines, and storehouses. Soldiers' barracks were in the casemates of the North Front, and the Tower and Northwest and Southwest Bastions. To guard against an investing force, landing east of the fort, an elaborate glacis and counterscarp was projected. The counterscarp had bonnets at its northeast and southeast angles and midway between these two. The northeast and southeast bonnets had reverse-fire casemates for sweeping the ditch encircling the five-bastioned fort.[30]

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28. Gratiot to Bernard and Gratiot to Chase, Aug. 6 and 7, 1828, NA, RG 77, Ltrs. Sent, Chief Engineer.

29. Bernard to Gratiot, Aug. 12, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer.

30. "Plan of Fort for Sta. Rosa Isd. Pensacola Harbour," 18 sheets, NA, RG 77, Cartographic Records, Drawer 78a. Copies of these sheets are found in files Florida Unit, Gulf Islands National Seashore.

An acrimonious discussion ensued. General Bernard, who besides being senior officer was more familiar with the area, argued that defense of the main channel was also contingent on construction of a fort on Foster's Bank. He proposed a change in plans, with a view to "lessen the expense without either changing materially the outline of the fort, or affecting . . . the strength of the work." The money saved, if not enough to cover the expense of a fort to be erected on Foster's Bank, would help.

Taking cognizance of Bernard's arguments and his refusal to endorse the project, Totten and Chase yielded. They agreed to allow Bernard time to "form a project according to his own particular views."

To enable Captain Chase to commence operations, it was agreed, as the two fronts bearing on the channel were satisfactory, to recommend that construction be commenced. This was conditioned by the reservation that Captain Chase, on staking the site, was "satisfied with its fitness." If any change occurred to him "as expedient in this respect," he was to immediately inform the Department.[31]

Captain Chase, dissatisfied with what had occurred, on September 26 complained to Chief Engineer Gratiot. He protested that the Newport "proceedings" had been irregular, because a majority of the Board, Colonel Totten and himself, favored the plan as presented. Moreover, the report of the proceedings should have recommended acceptance of the plans, provided they were approved by the Chief Engineer.[32]

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31. Board to Gratiot, Sept. 8, 1828; Bernard's Memoir on Defence of Pensacola Bay, Jan., 1830, NA, RG 77, Ltrs. Recd., Chief Engineer. The plans for the fort on Cockspur Island were adopted by a Board consisting of General Bernard, Colonel Totten, and Major Babcock. Although the project engineer was not present, General Bernard and Colonel Totten approved the plan for the fort in Charleston Harbor, opposite Fort Moultrie.

32. Chase to Gratiot, Sept. 26, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer.

General Gratiot decided not to buck General Bernard, and the proceedings were allowed to stand.

Many years later, a decade after General Bernard had resigned his commission and returned to France, Chase, now a major, had harsh words for some of the projects he had championed. In a report to the then Chief Engineer, Colonel Totten, Chase noted, he had "long been of the opinion that the works for defence of New Orleans and Mobile Bay were unnecessarily large and expensive, considering how difficult, nature has made the approaches" to those points. As project engineer, Chase had been derelict in failing to point out these flaws. In his defense, he pled that "the Regulations governing the board of Engineers . . . cut me off, as well as most of the officers in the Corps . . . from any participation in the counsels and decisions."

In this respect, he would add that the

> Counter Report and Project, made by Captain [James] Gadsden U.S.E. whilst serving temporarily with the Board of Engineers in 1817, when the defences of the Gulf frontier were projected, was totally disregarded and laid aside, whilst the Report and plans of a single member of the Board, and a foreigner, were accepted.

The same had occurred in reference to Col. William McRee's memoir and plans for the project for defense of Hampton Roads. They had been rejected and those of Bernard adopted, which led to McRee's resignation.

In view of what had happened to Gadsden and McRee, Chase believed he had established a "clear case of justification in not opposing such fearful odds."[33]

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33. Chase to Totten, Sept. 22, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

IV. THE FIRST 14 MONTHS ONSITE AND ASSEMBLY OF MATERIALS

A. Funding Arrangements are Perfected

1. Chase Outlines His Needs

Captain Chase, the Board having agreed to permit construction of the two Channel Fronts of the fort on Santa Rosa Point, returned to New Orleans by way of Washington. On October 3, 1828, four weeks after the Newport meeting, Chief Engineer Gratiot notified him that as plans for the project had not been finalized, and as the preliminary operations would require little of his time or energy, the Department wished him to undertake another project. This would involve use of the $25,000 appropriated by the last session of Congress for removal of the Red River rafts.[1]

Responding to a request from Captain Chase, the Department on October 4 made a requisition for $10,000 to be deposited to his credit in the Mobile Branch of the United States Bank. This sum would be charged against the appropriation for Construction of Fortifications at Pensacola, and enable him "to make such preparations" for erection of support facilities, as well insure "a vigorous prosecution" of the project.[2]

This money would help but it was not enough. Captain Chase from New Orleans on November 6 accordingly informed the Chief Engineer that $30,000 would be needed "to carry on the operation at Pensacola" in the first quarter of 1830. He believed the $50,000 appropriated for 1828 and the $20,000 for the 1st quarter of 1829 would be expended by December 31, 1829.

In support of his request for the additional funds, Chase pointed out that the 1st quarter of 1830 "embraces the most favorable

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1. Gratiot to Chase, Oct. 3, 1828, NA, RG 77, Ltrs. Sent, Chief Engineer.

2. Chase to Gratiot, Sept. 24, 1828, and Gratiot to Chase, Oct. 4, 1828, NA, RG 77, Ltrs. Recd. and Sent, Chief Engineer.

part of the working season on the Gulf Coast." A larger sum could be "applied to the prosecution of works during that quarter, than in any other period of the year." If Congress could be prevailed on to appropriate more than $30,000 for the fort, "the interest of the works will be proportionally advanced."[3]

To satisfy Congress that the Corps of Engineers was finally moving on the Santa Rosa Point fort, General Gratiot on November 19, 1828, informed the Secretary of War that an officer had been assigned to superintend the project, and work would begin upon receipt of the "plans, etc. which are now under progress of being copied for transmission."[4]

2. Congress Makes Another Appropriation

Delegate White in February 1829 notified Editor Hunt that the Fortifications Bill, as referred to the floor of the House, appropriated $55,000 for the works on Santa Rosa Island. Informing the readers of the Gazette of this, Editor Hunt observed that, while he was "glad to see our fortifications progressing," he was sorry to see that work at the navy yard was "not proceeding as rapidly as we expected or could wish."

He had recently been informed by a pilot that the channel over the bar at the entrance to the bay always has upwards of 23 feet of water, and the naval officers were satisfied of this fact. If true, this was an added "inducement to pursue with vigor" the construction program at the navy yard. If Congress were to withhold funds for continuing

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3. Chase to Gratiot, Nov. 6, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer. Chase had reached New Orleans from Washington, D.C., on November 1.

4. American State Papers, Class V, Military Affairs (Washington, 1860), Vol. IV, p. 13.

work on the naval facilities, Editor Hunt questioned use of appropriations for fortifications.[5]

In late March, Delegate White advised his constituents that the Fortifications Bill had passed the House, with $55,000 for the works at Pensacola. With the $20,000 previously appropriated for the 1st quarter of 1829, and the unexpended balance of the initial $50,000 appropriation, Captain Chase would have almost $100,000 with which to prosecute the project.[6]

3. Chase Changes Banks

Captain Chase on March 5, 1829, had transmitted a request to the Department for $20,000 to be deposited to his credit, on account of the Pensacola Fortifications, with the United States Bank in New Orleans. This sum was to be used to fund operations during the 2d Quarter of 1829, and would involve purchase and stockpiling of construction materials.[7] Nine weeks passed. Not having received an answer to his requisition, Captain Chase on May 12 addressed a second request to the Department. He asked that $20,000 be "transmitted" to him and deposited to his credit with the United States Bank in Mobile.

The reason for change in place of deposit was the inconvenience in paying off debits against the Santa Rosa Island project by drafts on the New Orleans bank. In the future, he planned to keep the funds in an iron chest in his office. He trusted the $20,000 would reach Mobile so he could withdraw it in person, "before the sickly season shall render it dangerous to visit that place."[8]

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5. Pensacola Gazette, Feb. 24, 1829.

6. Ibid., March 24, 1829.

7. Chase to Gratiot, March 5, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

8. Chase to Gratiot, May 12, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

Responding to Chase's request, Chief Engineer Gratiot on June 3 forwarded to Mobile a draft for $20,000 to be credited to the Pensacola Fortifications.[9]

B. Initial Onsite Activities

1. Lieutenant Bowman's Mission

Captain Chase in the autumn of 1828 found most of his time and energy engrossed by removal of the Red River rafts. With plans for the Santa Rosa Point fort, excepting the Channel Fronts, not approved, Chase on November 4, 1828, ordered one of his capable assistants, Lt. A. H. Bowman, from Louisiana to Pensacola. On his arrival Bowman was to visit the brick yards and "encourage" the managers to increase the "manufacture of bricks," provided he believed those kilned would be of a "quality suitable to the construction of the public works." He would also examine local stone quarries and determine the quality of the stone and ease of access.

Bowman would also have erected a two-room frame building for an office near the position where the wharf was projected. Work would also be commenced on the wharf, and in doing so due regard would be given to permanence and economy.

Bowman was to reconnoiter the Santa Rosa Island site, and notify Chase immediately "if the shore or the sea side is wearing away." Mr. Underhill of the construction firm, Underhill & Strong, would indicate the area with which Chase was concerned.[10]

On completion of his survey of the Pensacola brick yards and quarries, Lieutenant Bowman traveled to St. Marks. There he examined the condition of the masonry of which the fort was built. Chase

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9. Gratiot to Chase, June 3, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

10. Chase to Bowman, Nov. 4, 1828, NA, RG 77, Chase Letter Book.

at this time was contemplating the possibility of razing the St. Marks fort, salvaging the materials, and using them in construction of the Santa Rosa Island fort.[11]

Joining Lieutenant Bowman at Pensacola in mid-December, Captain Chase, on examining the site, found that the south shore of Santa Rosa Island was not eroding. On the contrary, it gave "every appearance of increasing."

It would therefore be possible to locate the project works "much nearer the south shore" than the Board had indicated on the plan currently in Chase's possession. To illustrate what this involved, Captain Chase forwarded a drawing to Chief Engineer Gratiot, exhibiting the polygon as delineated on the Board's plan, and the position it could occupy nearer the south shore.[12]

The Department on January 16, 1829, notified Chase that a copy of his letter and sketch had been forwarded to General Bernard.[13] Five days later, the Department mailed to Captain Chase plans Nos. 1 and 2 for the projected fort.[14] On February 6 drawings Nos. 4 and 5 of the Tower Bastion, along with sections and elevations, were transmitted.[15]

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11. Chase to Bowman, Dec. 16, 1828, and Chase to Gratiot, Dec. 1828, NA, RG 77, Chase Letter Book. Bowman found the St. Marks fort in a "state of dilapidation." The Department refused to give Chase authority to raze the fort and salvage materials for shipment to Santa Rosa Island.

12. Chase to Gratiot, Dec. 15, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer; "work on Santa Rosa Island, Received with Capt. Chase's letter, dated December 15, 1828," NA, RG 77, Drawer 78, sheet 2. A copy of the subject drawing is found in files Florida Unit, Gulf Islands NS.

13. Gratiot to Chase, Jan. 16, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

14. Gratiot to Chase, Jan. 21, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

15. Gratiot to Chase, Feb. 6, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

The drawings forwarded to Captain Chase were the sections, profiles, and elevations encompassing the Channel Fronts and Tower Bastion, the sections of the fort authorized for construction by the Board of Engineers at its Newport meeting.

2. Acquisition of the Site

Before returning to New Orleans, Captain Chase, in mid-December, addressed a letter to the Chief Engineer. He wished to know if the Department had acquired title to the western part of Santa Rosa Island.[16]

Chief Engineer Gratiot responded promptly to the request. On January 7, 1829, he mailed to Chase a copy of the deed of conveyance of the "Point of Santa Rosa Island," and submitted to fund the purchase a requisition for $10,000 to be deposited to Chase's credit in the Branch Bank of the United States at New Orleans.[17]

Delegate White, who had a vested interest in the site, came to Chase's assistance. It so happened that he was acquainted with Henry Michelet, owner of 1,181 acres on the western point of Santa Rosa Island. The subject tract had been granted Vicente S. Pintaldo by the Spanish government in December 1817, and had been purchased by Michelet at a public auction under execution against Pintado. White, as Michelet's attorney, was willing to sell the tract to the United States for $4,000.

Learning of this, General Macomb informed the Acting Secretary of War that it was the policy of the Department to obtain undisputed title to sites before beginning construction of fortifications. With regard to Santa Rosa Island there was one problem--no part of the

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16. Chase to Gratiot, Dec. 16, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer.

17. Gratiot to Chase, Jan. 7, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

appropriation had been earmarked by the legislation for land acquisition. General Macomb, however, believed the Department could proceed with purchase of the site, because records showed that there was precedence for such action in reference to the works on White Oak Island and Bogue Point, North Carolina. If Michelet's title were valid for the desired acreage, Macomb urged the Secretary of War to act.

Captain Chase was able to report that Michelet's title was unencumbered. Accordingly, on May 28, 1828, Delegate White, as attorney for Michelet, conveyed to United States for $4,000, 1,181 arpents at the western point of Santa Rosa Island.[18]

C. Chase Contracts with Underhill & Strong

1. Establishing a Price for the Masonry

Captain Chase proposed to construct the fort by contract rather than day labor. By doing so, he informed Chief Engineer Gratiot the gain would be threefold: (a) for the Department "to hire its own mechanics and laborers, overseers, master masons, etc.," and to absorb the many expenses incidental to a large operation "would . . . make the actual cost per cubic yard much more than the Estimate"; (b) the heavy expense incident to "the providing of quarters, Barracks for mechanics, laborers, overseers, etc.," would be avoided; and (c) annual estimates could be "closely and accurately made so that the results of the operations shall not exceed them, and consequently the most vigorous

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18. Macomb to Acting Secretary of War, May 28, 1829, found in Territorial Papers of the United States--Florida, Vol. XXIV, p. 15; Chase to Gratiot, Sept. 30, 1829, and Totten to Chase, Jan. 18, 1842, NA, RG 77, Ltrs. Sent and Recd., Chief Engineer. Mr. White had back-dated the deed of conveyance. The tract included that part of Santa Rosa Island "from the point called Signenza at the entrance of the Port of Pensacola, extending four English miles to the East, and terminating at a line drawn from sea to sea North and South, with all that is included in this arid and barren space, and bounded on the East, North and South by the Sea." The eastern boundary, according to the plat, crossed the island a short distance east of the Three Ponds. Chase to Totten, Sept. 27, 1847, NA, RG 77, Ltrs. Recd., Chief Engineer.

economy may be enforced."[19] Chase had discussed and drafted a contract with a Mr. Underhill and Jasper Strong. For the past several years they had been employed on the fortifications at Chef Menteur and Bayou Bienvenue. They "understood thoroughly the nature of the work" which they would be called upon to accomplish, and "thereby to assure themselves and the Department of success in its satisfactory completion." Another factor in their favor was the "large force of Black mechanics and laborers which they have at their disposal." Although Underhill & Strong would realize "by their exertions a fair renumeration for their trouble," Chase observed, "the Government may calculate on certain results in a given time."[20]

According to estimates formulated by Captain Chase, the cost of each cubic yard of masonry for the fort would be:

410 bricks of 76 inches in content at $10 per thousand	$4.10
Breakage in delivery and moving same sundry times 1%	.04
1/2 tierce of lime	1.00
Carrying mortar and receiving lime from vessels	.05
Carrying bricks to all parts of its works and receiving same from vessels	.30
Canal cement, different parts of foundation, covering arches of casemates, etc.	.08
Scaffolding, tools, centres for arches, mixing mortar, wheelings, planks, carpenters' work, models, etc.	.05
Quarters, Barracks, etc., for mechanics and laborers	.03
Extra work on embrasures	.05
Roofing the arches, gutters and conductors of the same, also of the casemate magazines, officers' and soldiers' quarters	.25
1/2-day's work of masons	1.25
1 1/2-day's work of laborers	1.50
Cord of cubic yard of masonry	$8.70[21]

19. Chase to Gratiot, May 11, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

20. Ibid.

21. Ibid.

Underhill & Strong had "agreed to execute each and every item" of the subject estimate for the brick masonry of the two Channel Fronts of the fort "conforming in every respect to the plans and details of the same . . . and completing the same to the entire satisfaction of the commanding Engineer." The contractors agreed their workmanship would be subject to "the strick inspections of the commanding Engineer and his assistants," to inspections by the Board of Engineers, and by other Engineer officers as prescribed by regulations. They would abide by such change orders as prescribed by these inspections in regard to materials and workmanship.

Underhill & Strong agreed to assume all risks "incident to the exposure of their operations to injury either by storms, overflows or other acts of Providence."

They were to be paid quarterly by the commanding Engineer or the Agent of Fortifications.

To facilitate operations, with a view to "a strict inspection of all materials to be used" in the masonry, it was agreed that Captain Chase would "purchase and cause to be delivered at the Site . . . all the materials necessary to the construction" of the fort. These materials were to be used by Underhill & Strong. "The value of the quantity used" was to be charged to them, "to be deducted at each quarterly resettlement of their account."[22]

2. Establishing a Price for Grillage

Underhill & Strong were agreeable to executing the "work necessary to the construction of the Grillage of the foundations of the Scarp at the rate of twenty dollars per thousand feet of 3 inch plank," in two tiers. To arrive at this figure, Captain Chase had calculated the

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22. Memorandum of a Verbal Agreement between Captain Chase and Messrs., Underhill and Strong, May 12, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

cost of 1,000 feet, broad measure, of birch plank, delivered at $12; and that of receiving and carrying the same an average of 300 yards and positioning it in the foundations, ready for masonry at $8.[23]

3. Establishing a Price for Excavation

In his covering letter to the Department, recommending approval of the contract, Captain Chase observed that the Santa Rosa Island soil made it difficult to form "an accurate estimate" of the cost of excavating for the foundations of the scarp and the ditch. When work was commenced, an "experiment" would be made to ascertain the "value of each cubic yard of sand excavations, and embankment." He would then make arrangements with Underhill & Strong for the accomplishment of this part of the project.

Under no circumstances did he believe the cost of excavation would exceed ten cents per cubic yard.[24]

The "experiment" showed that Captain Chase had placed the cost of excavation too low. The Board of Engineers had done no better, when it had estimated it at 12-1/2 cents per yard. Both estimates had been predicted on the supposition that by "removing the tufts of Grass from the sand hills, a very considerable portion of their removal would be affected by the winds." In practice this did not happen, and every cubic yard of sand would have to be removed by shovel and wheelbarrow.

The lowest price for which Underhill & Strong would undertake this work was 15 cents per cubic yard. In recommending its

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23. Ibid.

24. Ibid.; Chase to Gratiot, May 11, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

acceptance, Captain Chase noted that this price only applied to necessary excavation on the Channel Fronts, "it being proposed to make such alterations in the price as the future facilities or difficulties attendant upon other sections of the Fort may justify."

Earth excavated for the foundations and ditch was to be utilized in the foundations of the parade and casemates.[25]

4. Chief Engineer Gratiot Approves the Contract

To support his proposal that Underhill & Strong be awarded the contract, Captain Chase pointed out that their price per yard was below the cost of any of "the masonry which has been executed at the several works on the Gulf of Mexico." As Chief Engineer Gratiot knew, the contract price for masonry at the Rigolets and Chef Menteur was $11 per cubic foot, in addition to contingencies; at Battery Bienvenue $10; at Fort Jackson $10.50; and at Mobile Point $10.[26]

Chief Engineer Gratiot, satisfied with the conditions of the contract with Underhill & Strong, approved it on June 4, 1829.[27]

D. Purchase and Stockpiling of Building Material, 1829-1834

1. Bricks for the Santa Rosa Island Fort

a. Establishment of a "Market"

The mode of operations projected called for employing brick and mortar as basic construction materials. These items would be purchased by the government and stockpiled on Santa Rosa Island for use by the contractors. All construction materials would be charged against the contractors' account, with their cost to be deducted at the time the quarterly settlements were made.

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25. Chase to Gratiot, Aug. 17, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

26. Chase to Gratiot, May 11, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

27. Gratiot to Chase, June 3, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

It had been determined to construct the works of brick, because of the impossibility of obtaining stone of suitable quality either on Pensacola Bay or from any of the waters tributary to the Gulf. Lieutenant Bowman had found on inspecting bricks kilned in the yards on Pensacola Bay that they were of inferior quality. The clay, on being tested, was found to be excellent. Captain Chase believed this situation could be improved by introducing "competition amongst the proprietors a decided improvement in quality would result." With this in view it was determined not "to give a monopoly to any person or persons for furnishing" bricks needed in 1829. Instead, Chase would establish "an open market into which all might enter for the disposal of the materials on fair and reasonable terms." The dimensions of the bricks to be purchased were fixed at 8-1/2" x 4" x 2-1/2," with a price of $10 per thousand.[28]

Captain Chase, on returning to New Orleans from his mid-December 1828 visit to Pensacola, was able to notify Chief Engineer Gratiot that while there he had "organized everything for the advantageous commencement and vigorous prosecution of the public work."[29]

With tongue in cheek, Chase advised the Department that the quality of the brick was excellent, with "considerable competition amongst the manufacturers." This, he forecast, "would ensure us excellence in quality, certainty of delivery and fair market price."

Lieutenant Bowman had estimated that the annual output of the Pensacola kilns was about 800,000 merchantable bricks. Chase proposed to stockpile sufficient bricks to enable him to commence construction, as soon as the approved plans were received from the Board of Engineers.

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28. Chase to Gratiot, Sept. 30, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

29. Chase to Gratiot, Dec. 21, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer.

Lime and lumber were also available at Pensacola at "fair prices."[30]

b. Chase Overcomes Several Obstacles

The scheme matured by Captain Chase for purchasing the huge number of bricks needed for the project was threatened by orders of the General Land Office to evict squatters from the public domain in and around Pensacola. Should this policy be implemented, Chase feared his construction program would be seriously inconvenienced, because "the Brick Establishments which are necessary to supply the works . . . must be located principally on the public lands, where the best clay is found."

As he pointed out to the United States District Attorney, the Army's plan for securing needed brick could only succeed by "creating extensive competition." Without it, he could not "expect a good supply, excellence of quality, or a fair price."[31]

Captain Chase on February 9, 1829, advised the Department of this problem, and requested steps be taken to exempt from application of this order "those persons engaged in making brick . . . for the service of the fortifications."[32]

While awaiting reply to his plea to have the General Land Office modify its expulsion order, Captain Chase pushed his efforts to stockpile building materials. This was facilitated by completion of three wharves, one on the bay near the construction site.[33]

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30. Chase to Gratiot, Dec. 20, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer.

31. Chase to Wright, Dec. 15, 1828, NA, RG 77, Ltrs. Recd., Chief Engineer. B.D. Wright was the U.S. District Attorney at Pensacola.

32. Chase to Gratiot, Feb. 9, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

33. Chase to Gratiot, Jan. 26, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

The Pensacola brickmakers, when the price of $10 per thousand was announced, objected that the established price was too low. Proprietors of local yards made little effort to supply the government with bricks of desired dimensions. Such bricks as had been previously fired, and were of tolerable quality, although of smaller dimensions, were "received at a rate per thousand in proportion to their size."

This source being limited, along with a continued failure by brickmakers to embrace the terms for the 1829 supply, compelled Captain Chase to induce the "old established Brickmakers on Mobile Bay to enter the market." This proved easy, as the superintending engineer at Mobile Point had found it necessary to suspend receiving brick. A surplus of about 1,500,000 were consequently left in the hands of owners of several yards there. A portion of these were purchased by Captain Chase.

Entrance of the Mobile Bay brickmakers into the market, although confronted by the necessity of a voyage through hazardous waters, stimulated proprietors of the Pensacola yards "to exertions which . . . produced considerable improvement in the quality of the bricks and established certain sources of supply."[34]

c. Situation Brightens

By April 1, 1829, nearly 900,000 bricks were onsite. The unexpectedly rapid deliveries proved somewhat embarrassing because to pay for them required more money than had been allotted for the year's first quarter.[35] Before another six weeks had passed, Captain Chase announced that the number of bricks on hand had passed 1,800,000, while 1,000 casks of lime and 352 casks of Canal cement had been stockpiled. Notifying the Department of this, Chase reported that

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34. Chase to Gratiot, Sept. 30, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer. In December 1828 Chase had advertised that 4,000,000 bricks will be received at Santa Rosa Island in 1829.

35. Chase to Gratiot, April 1, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

the arrangements made for delivery of the bricks were more than satisfactory.[36]

On June 10 Chase wrote Chief Engineer Gratiot that the collection of materials progresses rapidly, and "the quality of bricks . . . manufactured this year on Pensacola Bay are very much improved."[37]

Captain Chase by late June was so impressed with the availability of "good quality" bricks coming out of the Pensacola yards that he notified several of the Mobile Bay manufacturers that he would be unable to receive any more from their kilns.[38]

d. Occasional Shipment is Rejected

Although there had been a marked improvement in the Pensacola Bay bricks, Captain Chase occasionally had to reject shipments. On September 1, 1829, he found the cargo sent by Carpenter & Adams aboard Phobe to be the "worst delivered" by that firm. The quality was so poor that he directed no more be landed, and that one-half those delivered not be received. Those condemned were to be removed at the convenience of Carpenter & Adams.

Writing Carpenter & Adams, Chase chided, as I have explained to you in person, the quality of bricks deemed "marketable" for the public works, I had expected no further cause of complaint. But there appears to be "a disposition to impose bricks of a very inferior quality upon the public works." This left no alternative but to assure

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36. Chase to Gratiot, May 11 and 12, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

37. Chase to Gratiot, June 19, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

38. Chase to E. Montgomery and Cyperts & Starke, June 26, 1826, NA, RG 77, Chase Letter book.

you that if the "imposition is repeated" he would not receive any more brick kilned in their yard.[39]

Eleven days later, Captain Chase had to call down Hall & Murrell for landing from Celestine bricks, many measuring as small as 6-1/2 inches. In a letter to the firm, Chase pointed out that he had consented to accept a small quantity from Celestine of a size less than the established size, in consideration of their having failed in the "proper dimensions" in their moulds, owing to a clay shrinkage.

As Hall & Murrell were seemingly dissatisfied, the only way to obviate it in the future was for Mr. Fry, the inspector, to refuse all bricks unless they were 8 1/2" x 4" x 2 1/4". They would not deliver any more brick unless they were of that size.

Inspecting several cargos claimed by Hall & Murrell to be of proper dimensions, Captain Chase spotted many bricks of smaller size intermixed with them. Although the larger bricks were near the required dimensions, yet, owing to the mixture, it was necessary to average the whole. This resulted in something less than 76 1/2". The result was much trouble to the government and dissatisfaction to Hall & Murrell. This would be avoided by rejecting the entire lot, when it included bricks of less than the established size.[40]

e. "Market" Supplies all Brick Needed

By the end of November 1829 competition to supply the government brick had become so keen that Captain Chase expected to

39. Chase to Carpenter & Adams, Sept. 1, 1829, NA, RG 77, Chase Letter Book.

40. Chase to Hall & Murrell, Sept. 11, 1829, NA, RG 77, Chase Letter Book.

cut the price. This would insure completion of the fortifications within "the original estimate of the Board."[41]

On March 25, 1830, Chase reported his forecast was correct, and with a decided improvement in the quality and quantity of the brick, produced by competition, he had reduced the price to $9 per thousand.

Captain Chase in mid-March 1830 accordingly employed the Gazette to inform all brickmakers that:

> A market will be opened at Santa Rosa Island, in which 7 or 8,000,000 of bricks may be disposed of for the use of the fortifications during the year 1830.
>
> The size of the Bricks must not be less than 76-5 inches, nor more than 80-5 inches. This variation in size is allowed, in consideration of the shrinkage of the clay in burning and drying. It is desirable, however, that the required thickness (2 1/4 inches) should be produced as nearly as possible.
>
> The Bricks when offered for sale will be inspected, and received, if found to be of a quality suitable to the construction of the Public Works. Whenever an inspection results in rejection of a cargo . . ., no part of the cargo will be received; [and] . . . the whole cargo will be sent back.
>
> The market will be closed on December 31, or as much sooner as the required supply may be furnished of which due notice will be given.

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41. Chase to Gratiot, Nov. 29, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer. On November 21, 1829, Chase employed the Gazette to inform the brickmakers that the 4,000,000 bricks called for in 1829 had been delivered. But, as the various yards had more bricks on hand, he would receive another 1,500,000 at the old price. Pensacola Gazette, Nov. 21, 1829.

Payments on the Bricks delivered will be made whenever demanded; but it will be more convenient that settlement be made at the end of each month; or of each quarter.

The sum of $9 will be paid for each thousand bricks delivered at Santa Rosa Island under the conditions stated.[42]

On August 14, 1830, Captain Chase employed the Gazette to notify brickmakers that the Santa Rosa Island market would be kept open three months longer, and not be closed until March 31, 1831.[43]

Four weeks later, most of his 1830 funds obligated, Chase informed the brickmakers that he would be unable to receive more than 1,500,000 brick after September 30. As it was expected that the appropriation for 1831 would be voted early in the year, the Santa Rosa Island market would not remain closed for many weeks.[44]

Enough bricks, more than 21,500,000 had been received at the Santa Rosa Island market by September 30, 1831, to complete the fort. Learning that the ten Pensacola yards, with the closing of the market, had been left with about 3,000,000 bricks on hand, Captain Chase asked for and received authority to purchase them for use in the projected Foster's Bank fort.[45]

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42. Pensacola Gazette, March 20, 1830.

43. Ibid., Aug. 19, 1830.

44. Circular, Sept. 15, 1830, NA, RG 77, Chase Letter Book.

45. Chase to Gratiot, Sept. 30, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

2. Purchase and Receipt of 1000s of Casks of Lime

a. Contracts are Made and the First Shipments Arrive

Huge quantities of lime, sand, and water would be used in mixing mortar for the project. Two of these elements were found locally. Water was no problem, while the white sand of Santa Rosa Island was very pure, with "the property of making very hard mortar."[46]

Lime would be shipped in from Thomastown, Maine. Numerous difficulties plagued this operation, and at times acute shortages caused slowdowns, with frantic searches for alternate sources of supply. In 1829 a Mr. Linger, Captain Chase's Mobile agent, contracted for delivery of 2,000 casks. Upon learning of this, Chase wrote Richard Spear, owner of one of the Thomastown quarries, and invited him to come down with the first shipment.[47]

b. Richard Spear as Prime Supplier

The 2,000 casks were received during the autumn, but with his funds exhausted, Chase was unable to place any order for the new year. On February 23, 1830, Chase wrote Spear that he had not learned whether a new appropriation had been made for the Santa Rosa works. If Spear sailed before Congress acted, Chase would write to him at New York City and Thomastown directing him to ship 2,000 casks immediately on the agreed conditions: that the lime be the best quality, and that the price, delivered, be between $1.80 and $1.90 per cask.[48]

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46. Chase to Gratiot, Sept. 30, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

47. Chase to Spear, Sept. 14, 1829, NA, RG 77, Chase Letter Book. The first cargo of Thomastown lime was landed at Santa Rosa Island from the brig Knott in the first week of May 1829. She was followed in September by the brig Elisha Miller, which put ashore 1,317 casks. Pensacola Gazette, May 6, and Sept. 19, 1829.

48. Chase to Spear, Feb. 23, 1829, NA, RG 77, Chase Letter Book.

News that Congress had acted resulted in an urgent letter to Spear, dated March 10, "to hurry out a cargo of lime" to arrive by May 10.[49] On May 7 Chase ordered 10,000 casks of Thomastown lime, with 1,300 casks to be landed at Santa Rosa Island by July 22, and another 700 by August 22. The price, delivered, to be $1.90 per cask.[50]

Captain Chase on June 1 complained to Spear that the lime shipped from New York City in March was of "inferior quality," and "an explanation was required."

With the Underhill & Strong workmen making rapid progress, it was desirable that the 2,000 casks ordered in February be shipped immediately as the shortage was critical and he would be out of lime before the 2,000-cask consignment arrived, Chase wrote H. & W. Delafield of New York City, shipping agents, to send 1,000 casks immediately.[51] The New York merchants were cautioned to see that the casks, when landed, were in good condition. Chase, because of the failure of Spear to make prompt deliveries, wished to determine if he could get lime in New York as cheap or cheaper, and of as good a quality as that from Thomastown. The Delafields were accordingly urged to be "careful in the selection of the lime and obtain it on the best terms."[52]

Chase, on September 5, acknowledged receipt of Spear's letter of August 8, reporting the departure of the brig Pensacola with 1,400 casks of lime. With that shipped on the brig Mechanic this would complete his order for the year.

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49. Chase to Spear, March 10, 1830, NA, RG 77, Chase Letter Book.

50. Chase to Spear, May 7, 1830, NA, RG 77, Chase Letter Book.

51. Chase to Spear, June 1, 1830, NA, RG 77, Chase Letter Book.

52. Chase to H. & W. Delafield, May 31, 1830, NA, RG 77, Chase Letter Book.

Since Spear's visit, Chase had been compelled by the need to keep abreast of the masons to purchase 1,000 casks of lime in New Orleans, 600 in Mobile, and to have his New York agents forward 1,000. The latter, Chase explained, had been purchased to enable him to determine at what rate he could obtain "first quality lime delivered . . . on short notice." The 1,000 casks of excellent quality lime had been landed at Santa Rosa Island at a cost of $1.71 each, a savings of 19 cents per cask on the price charged by Spear.

The supply now on hand, together with that en route, would be "sufficient for the year, or rather it is as much as the appropriation will allow."[53]

Pensacola reached Santa Rosa Island in mid-September and landed 1,399 casks of excellent quality lime. Nine hundred and fifty-five casks were invoiced at $1.80 per cask and 444 at $1.90.[54]

c. Chase Cancels His Contract with Richard Spear

Writing H. & W. Delafield, on September 7, in reference to the 1,000 casks recently landed from Eliza Jane, Captain Chase reported, it appears to be of "good quality." They were to inform him on the possibilities of obtaining lime in New York City, and making delivery within 90 days of receiving an order. If they could guarantee a price of from $1.70 to $1.75 per cask and delivery as specified, he would place his future orders through their agency.[55]

Assured of a new appropriation, but not knowing the sum, Captain Chase on Christmas Day 1830 notified Spear that he would

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53. Chase to Spear, Sept. 5, 1830, NA, RG 77, Chase Letter Book. Spear had accompanied one of his shipments to Pensacola.

54. Chase to Spear, Sept. 22, 1830, NA, RG 77, Chase Letter Book.

55. Chase to H. & W. Delafield, Sept. 7, 1830, NA, RG 77, Chase Letter Book.

be "permitted to deliver all the lime required in 1831," with the quantity regulated by the money Congress made available. The amount not to exceed 10,000 casks.

Lime would be needed by March 15, and Spear could ship 2,000 casks in anticipation of the appropriation. Upon reading in the newspapers of passage of the Fortifications Bill, he was to forward another 3,000. If possible, Spear should plan to come to Pensacola with the year's first shipment. Arrangements could then be perfected for the year's supply.[56]

Spear, however, did not choose to visit the Gulf Coast. By late May, Captain Chase wrote Spear that he wanted another 4,000 casks, in addition to the 5,000 previously ordered. These were to be delivered by September 30, with 1,000 casks to be landed on July 1, and another 1,000 in each of the succeeding months.[57]

Delivery of the first order for 5,000 casks lagged, and on June 15, 1831, Chase was faced by an emergency. Unless the Navy could provide lime, the Underhill & Strong masons would have to suspend work. He called on Comdr. A. J. Dallas at the navy yard for assistance, promising to replace the lime borrowed.[58]

Chase at the same time ordered 1,000 casks from H. & W. Delafield.

On July 3 Chase complained to Spear that, because of his failure to deliver the entire 5,000-cask Christmas order, Chase had been compelled to turn to other sources. He was 900 to 1,000 casks short on this order.

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56. Chase to Spear, Dec. 25, 1830, NA, RG 77, Chase Letter Book.

57. Chase to Spear, May 21, 1831, NA, RG 77, Chase Letter Book.

58. Chase to Dallas, June 19, 1831, NA, RG 77, Chase Letter Book.

If no answer were received to his May 21 letter ordering another 4,000 casks by July 15, Chase warned, he would be compelled to "look elsewhere for his lime." This he was reluctant to do, because of the superior quality of Thomastown lime.[59]

After waiting vainly until July 20 for a response to his May 21 letter, Chase wrote Spear, "Should a cargo arrive here on account of that requisition I shall not feel myself under obligation to receive it." The same condition applied to the residue of the Christmas order.[60]

d. Doing Business with H. & W. Delafield

Chase on July 1, 1831, as an emergency measure, had called on H. & W. Delafield to rush a shipment of 1,000 to 1,200 casks of Thomastown lime. If they could purchase a cargo afloat, they should do so. As an inducement, they were to tell the captain any vessel bound for Pensacola could load lumber for Jamaica.[61]

Two shipments of lime forwarded by H. & W. Delafield were received in November. That landed from York was in bad condition, owing to the "wretched casks in which it was packed." When slacked it did not powder, being reduced to a consistency of a "fine gravel."[62]

Captain Chase on return to Santa Rosa Island, after a six-month absence, was encouraged to see that lime and stone ordered through H. & W. Delafield, while he was in New York in October, had been received. The marble lime, Lt. George Chase told him, was of "high quality and formed excellent mortar when permitted to slack fully before use."

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59. Chase to Spear, July 3, 1831, NA, RG 77, Chase Letter Book.

60. Chase to Spear, July 20, 1831, NA, RG 77, Chase Letter Book.

61. Chase to H. & W. Delafield, July 1, 1831, NA, RG 77, Chase Letter Book.

62. George C. Chase to H. & W. Delafield, Nov. 21, 1831, NA, RG 77, Chase Letter Book.

As soon as the appropriation for 1832 became law, Chase wanted H. & W. Delafield to send 800 casks of marble lime and 300 to 400 bales of hay.[63]

On April 5, 1832, Chase remitted to H. & W. Delafield $2,272.50 in payment for 36 tons of granite and 1,029 casks of lime recently received from New York. In the future, as the lime and stone were charged to different accounts, Chase trusted his New York agents would submit separate invoices.[64]

Early in May the brigs Splendid and Vermont docked from New York and began discharging hundreds of casks of lime.[65] When he inspected lime put ashore by Vermont, Captain Chase saw that 501 casks were in "bad condition."[66]

On reviewing invoices received with letters of April 2 and 14 and May 4 and 11, Captain Chase found they totaled $3,494.96. The Delafields on the April 2 invoice had charged 60 days' interest, which would be exceeded. In the future, he directed, the Delafields were to charge any deficiencies accruing in the next invoice, merging it in the accompanying account. They were to credit any sum resulting in favor of the United States.[67]

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63. Chase to H. & W. Delafield, Jan. 16, 1832, NA, RG 77, Chase Letter Book. Captain Chase had gone abroad in the second half of 1831, leaving his assistant Lt. George Chase in charge.

64. Chase to H. & W. Delafield, April 8, 1832, NA, RG 77, Chase Letter Book.

65. G. E. Chase to H. & W. Delafield, May 3, 1832, NA, RG 77, Chase Letter Book.

66. Chase to H. & W. Delafield, May 31, 1832, NA, RG 77, Chase Letter Book.

67. Ibid.

On June 24 Chase acknowledged letters from H. & W. Delafield, dated May 12 and 26, notifying that shipments of stone, lime, and cement were en route aboard the brig Eliza Jane and the schooner Sterling. Chase was disappointed that the lime and stone were billed at a higher price than heretofore. Even so, he would probably make arrangements with them this summer for more lime, stone, etc.[68]

Chase accordingly on September 20 ordered from the Delafields 1,000 casks of Thomastown lime and 10 carts.[69] Before 1832 was over, Chase wrote his agents that no remittances could be made until the appropriation for 1833 had been enacted.[70]

e. Loss of "Ontario's" Cargo

H. & W. Delafield continued their lime shipments. The brig Many arrived in the first week of November and discharged her cargo, described by Captain Chase as excellent. Before another month had passed, Washington and Ontario docked at Santa Rosa Island with hundreds of casks of Thomastown lime.[71]

On March 12, 1833, Captain Chase forwarded $5,000 to H. & W. Delafield to pay for five invoices covering shipments landed from Washington and Ontario, and three for hay and carts put ashore by Emmeline, Williams, and Martha. As the invoices totaled $3,568.97, the payment left the United States a credit of $1,431.03.[72]

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68. Chase to H. & W. Delafield, June 24, 1832, NA, RG 77, Chase Letter Book.

69. Chase to H. & W. Delafield, Sept. 20, 1832, NA, RG 77, Chase Letter Book.

70. Chase to H. & W. Delafield, Dec. 6, 1832, NA, RG 77, Chase Letter Book.

71. Chase to H. & W. Delafield, Nov. 7 and Dec. 6, 1832, NA, RG 77, Chase Letter Book.

72. Chase to H. & W. Delafield, March 12, 1833, NA, RG 77, Chase Letter Book.

Disaster overtook the brig Ontario (Captain Whittlesy) on a second voyage out from New York City with 1,000 casks of lime and stone. On June 10 she caught fire 140 miles southeast of Pensacola. The fire, after a frantic struggle, was extinguished, and the brig, listing badly, made port.

A hurried inspection satisfied Captain Chase that, because of water damage, no part of the cargo could be salvaged. Notifying H. & W. Delafield, he asked them to send another 1,000 casks of lime and to replace the stone.[73]

f. Shipping Problems Plague Deliveries

In the first week of August 1833, Captain Chase called upon the cashier of the United States Bank at Mobile to transmit to H. & W. Delafield $2,000 to be deposited to his credit.

If the agents could deliver at Thomastown all the lime he could use at $2 per cask, he directed them to make a contract with the manufacturer.[74] This was done, and Chase was assured of enough lime to finish the Santa Rosa Island fort, as well as commence construction of the work on Foster's Bank.

Although guaranteed sufficient lime by the higher price, there were still problems with the manner in which it was shipped. When Dutchman landed her cargo, Captain Chase found there was scarcely "a whole cask." Writing H. & W. Delafield, he chided, in the future it will be necessary that all "casks are well attended and the lime be the best quality Thomastown."[75]

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73. Chase to H. & W. Delafield, June 16, 1833, NA, RG 77, Chase Letter Book; Pensacola Gazette, June 30, 1833.

74. Chase to H. & W. Delafield, Aug. 9, 1833, NA, RG 77, Chase Letter Book.

75. Chase to H. & W. Delafield, Sept. 10, 1833, NA, RG 77, Chase Letter Book.

Late in September 1834 a cargo of marble lime was received stored on deck. Captain Chase, calling his agents attention to this, directed them not to "send any more lime on deck."[76]

All told, more than 26,000 casks of lime, the majority of it Thomastown, were used in construction of the fort's masonry.

3. Chase Experiments with Cement

Cement had been first used in large quantities in the United States some ten years before in construction of the Erie Canal. It was currently being employed in building the Chesapeake and Ohio Canal, ground on which had been broken on July 4, 1828. Captain Chase, who kept himself posted on technological advances, in 1832 tried several types of cement. At the request of Samuel Cooper and Barrett & Micholson of New York City, he took a small shipment of "Chittenango Hydraulic Cement." He promised the sponsors to give it a "fair trial" and advise them of the results. If it were satisfactory, he would give the company large orders, "being under no engagements which would prevent" him.[77]

On July 30 Chase advised Barrett & Micholson that the ten casks shipped on Calhoun had not arrived. By letter from H. & W. Delafield he also learned that they had authorized Barrett & Micholson to forward another 150 casks of "Chittenango Hydraulic Cement." If, however, the agents had shipped the remainder of the original order, 291 casks, he would be unable to receive it, and he would offer it to the navy yard. If they could not use it, he would place it in storage, subject to orders from Barrett & Micholson.[78]

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76. Chase to H. & W. Delafield, Sept. 30, 1834, NA, RG 77, Chase Letter Book.

77. Chase to Cooper, June 2, 1832, NA, RG 77, Chase Letter Book.

78. Chase to Barrett & Micholson, July 30, 1832, NA, RG 77, Chase Letter Book.

Chase also wrote H. & W. Delafield, reviewing their transactions with Barrett & Micholson. They were informed that he was unwilling to accept the 150 additional casks, because he would be unable to use it or pay for it until next year's appropriation became available.[79]

On August 24 Captain Chase notified Barrett & Micholson that he had tested their cement, and found it inferior to Thomastown lime. It took too long to harden, he complained, and unless subsequent experiments proved more satisfactory, he would not accept the remaining casks, 147, which had not been delivered.[80]

Although disenchanted with "Chittenango Hydraulic Cement," Captain Chase continued to order small quantities of cement through his New York agents for specialized projects. In construction of the fort more than 1,000 casks of cement were used in the foundations, casemate roofs, and coping. About one cask of cement was utilized for every 26 casks of lime.[81]

4. Lumber

Lumber of superior quality at reasonable prices was easily obtainable from Pensacola Bay mills.[82] Before completion of the project,

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79. Chase to H. & W. Delafield, July 30, 1832, NA, RG 77, Chase Letter Book. Two casks had been shipped on Ann Eliza, 10 on Pearl, 20 on Lawson, and 259 on Many.

80. Chase to Barrett & Micholson, Aug. 24, 1832, NA, RG 77, Chase Letter Book. The freight on the 259 casks landed from the brig Many was 75 cents per cask, while on each of the 20 casks landed from the schooner Lawson he paid 50 cents.

81. Chase to H. & W. Delafield, July 24, 1834, NA, RG 77, Chase Letter Book. Chase in July 1834 advised the Delafields that the schooner Columbus had landed at Santa Rosa Island nine casks of cement above what was shown on the invoice. They would charge the nine casks to the next account forwarded.

82. Chase to Gratiot, Sept. 30, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

the contractors had employed more than 150,000 feet of lumber in the grillages, and erection of wharves, centres, scaffolding, and quarters.

5. Lead Sheeting

a. First 100,000 Pounds

Huge quantities of lead would be needed by the contractors to waterproof the casemate arches, and for gutters and drains. Stockpiling of lead sheeting at Santa Rosa Island, ready for use by Underhill & Strong, was a complicated and vexing operation.

Project Engineer Chase on May 11, 1830, called upon General Gratiot for authority to requisition 100,000 pounds of pig lead from the United States mines in Illinois. The lead was to be delivered at New Orleans, be transshipped to New York, and exchanged for sheet lead, to be forwarded to Santa Rosa Island.[83]

The Department in June replied, announcing that the desired quantity of lead had been requisitioned from the Ordnance Department.[84] On the last day of June, Chase wrote his agents in New York City H. & W. Delafield to ascertain what it would cost to "fabricate" pig lead into sheets. To be included in this figure was the cost of drayage from vessel to furnace and back to vessel, the expense of reshipping, commissions, etc. His object in securing this data was to ascertain the "exact cost of rolling the lead into sheets and in the second place the cost of all expenses attending to drayage."[85]

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83. Chase to Gratiot, May 11, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

84. Chase to Gratiot, June 30, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

85. Chase to H. & W. Delafield, June 30, 1830, NA, RG 77, Chase Letter Book.

The pig lead shipped down the Mississippi by the Ordnance Department from the Illinois mines and smelter reached New Orleans in the last week of July. Satisfied with information provided by H. & W. Delafield of the cost of converting the pigs into sheets, Captain Chase directed his New Orleans agent to "ship the lead by the first vessel to New York," in care of H. & W. Delafield.[86]

Chase, in the meantime, had learned from his New York agents that they were in contact with a manufacturer, who would roll the pigs into "sheets of 56 pounds to the square foot for one cent per pound," with no charge for drayage. The only additional cost to be H. & W. Delafields' commission of 2½ percent on the value of the sheet lead. Captain Chase accordingly directed his agents to arrange to have the pigs rolled into sheets of 5 pounds to the square foot, the sheets to be insured to Pensacola.[87]

On August 28, 1830, Captain Chase notified New Orleans agent William Flower that he did not wish to incur any more expense than necessary in storage of the lead before its transshipment to New York City.[88]

Chase on August 23 had to caution H. & W. Delafield that it would be impossible for the government to meet "the expences of the lead operation," because he was prohibited from making advance

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86. Chase to H. & W. Delafield, Chase to Lt. Washington Wheelright, and Chase to Flower, Aug. 10, 1830, NA, RG 77, Chase Letter Book. Lieutenant Wheelwright was the officer in charge of the Ordnance Department's storage facilities for lead at the St. Louis Arsenal. William Flower was the New Orleans agent to whom the lead was consigned.

87. Chase to H. & W. Delafield, Aug. 22, 1830, NA, RG 77, Chase Letter Book.

88. Chase to Flower, Aug. 23, 1830, NA, RG 77, Chase Letter Book.

payments. Whenever they were obliged to pay cash to secure services, they would have to charge interest in making up their invoice.[89]

The pigs had reached New York by the end of the year, when Captain Chase forwarded to H. & W. Delafield a draft on the United States Bank for $1,205.51, representing their commission and cost of freight from New Orleans to New York.[90]

By mid-May 1831 the pigs had been rolled into sheets, and the 100,000 pounds of lead had been landed at Santa Rosa Island from the brig Hesperus.[91]

b. Black Hawk War Causes Chase to Improvise

Captain Chase on January 16, 1832, requested the Department to requisition from the Ordnance people another 150,000 pounds of pig lead. It was to be shipped from the smelters to William Flower in New Orleans.[92]

Secretary of War Lewis Cass, on learning of Chase's request, directed the Ordnance Department to act.[93] The requisition for the lead was transmitted by the Ordnance Department to Capt. T. C. Legate at Galena, Illinois, on February 1. As Legate was on the Atlantic

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89. Chase to H. & W. Delafield, Aug. 23, 1830, NA, RG 77, Chase Letter Book.

90. Chase to H. & W. Delafield, Jan. 20, 1831, NA, RG 77, Chase Letter Book.

91. Chase to H. & W. Delafield, May 21, 1831, NA, RG 77, Chase Letter Book.

92. Chase to Gratiot, Jan. 16, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

93. Gratiot to Chase, Feb. 2, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

Seaboard when the letter arrived, a number of months passed before the request was implemented.[94]

On August 15, 1832, Chase requested that 50,000 pounds of pig lead, in addition to that previously requisitioned, be forwarded from the United States mines to New Orleans, for use in covering the casemate arches.[95] As heretofore, Chief Engineer Gratiot forwarded the requisition through channels to the Ordnance Department.[96]

Not hearing from Captain Legate and having read accounts of the Black Hawk War, which had raged in the lead mining region, Captain Chase on October 24 wrote General Gratiot. He wanted the Department to initiate an inquiry to ascertain the whereabouts of the 200,000 pounds of lead to be shipped to Mr. Flower. He trusted measures could be taken to expedite delivery, because "formation of the Rampart and terreplein of the Fort is necessarily delayed until the requisite complement of lead is received here; a large surface of masonry is consequently much exposed to the weather."[97]

By the end of December, the Black Hawk War was over, and 50,000 pounds of the 200,000 pounds of pig lead had reached New Orleans.[98]

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94. Gratiot to Chase, July 3, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

95. Chase to Gratiot, Aug. 15, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

96. Gratiot to Chase, Sept. 3, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

97. Chase to Gratiot, Oct. 25, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

98. Chase to Gratiot, Dec. 30, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

Captain Chase meanwhile had written H. & W. Delafield, asking them to get him 200,000 pounds of sheet lead in New York City. If they could, he would replace it with the 200,000 pounds of pig lead currently en route to New Orleans from St. Louis.[99]

The Delafields could. Advised of this, Chase in mid-November directed his agents to ship at the earliest possible date 250 rolls of high quality sheet lead, 3½ pounds to the square foot. They were to secure the lead on the best possible terms, on six-month credit.[100]

Captain Chase was disappointed to learn in mid-March 1833 that very little of the St. Louis pig lead had reached New Orleans. If it did not do so soon, he would be required to pay New York prices for the balance of his sheet lead.[101] Before another 60 days had passed, all the 200,000 pounds requisitioned in 1832 had reached New Orleans, from where it was shipped to New York City aboard the steamer George. After they were landed in New York the pigs were sold. The sum realized, added to $8,000 remitted to H. & W. Delafield, covered costs of the sheet lead purchased as an emergency measure, on the New York market and shipped to Santa Rosa Island.[102]

The final tally showed that more than 260,000 pounds of sheet lead, most of it for covering the casemate arches, had gone into building the fort.

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99. Chase to H. & W. Delafield, Sept. 20, 1832, NA, RG 77, Chase Letter Book.

100. Chase to H. & W. Delafield, Nov. 7 and 15, 1832, NA, RG 77, Chase Letter Book.

101. Chase to H. & W. Delafield, Mar. 12, 1833, NA, RG 77, Chase Letter Book.

102. Chase to H. & W. Delafield, May 16, 1833, NA, RG 77, Chase Letter Book.

6. Stone

a. Captain Chase Places a Trial Order

Cut stone for construction purposes was ordered through Captain Chase's New York City agents. To get a feel of what could be expected, Captain Chase on March 10, 1830, called on H. & W. Delafield to forward 15 embrasure and 2 carronade stones.[103] The stones left New York Harbor aboard the brig Enterprise. The vessel, not having arrived by June 30, Chase wrote his agents, asking them to check to see if she had been lost at sea. If she had, they were to promptly send replacements.[104]

Enterprise finally docked at Santa Rosa Island on August 1. On that day Captain Chase received two letters from H. & W. Delafield. The one, dated July 1, informed him that Eliza Jane had sailed from New York with the remainder of the stones. As soon as she arrived, Captain Chase would make payment, the drafts to be dated 60 days from the date of invoice.[105]

b. Stone for Cordon, Tablet, Coping, Sills, etc.

Satisified with the quality and price of the cut stone put ashore from Enterprise and Eliza Jane, Captain Chase on August 22, 1830, wrote H. & W. Delafield to provide data on the cost and availability of these types of cut stone:

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103. Chase to H. & W. Delafield, Mar. 10 and 28, 1830, NA, RG 77, Chase Letter Book.

104. Chase to H. & W. Delafield, June 30, 1830, NA, RG 77, Chase Letter Book.

105. Chase to H. & W. Delafield, Aug. 1, 1830, NA, RG 77, Chase Letter Book.

Steps from 6 feet to 10 feet long
Traverses for gun carriages
Cordon 6 inches thick
Tablet 4 inches thick by 2½ feet wide
Coping 4 inches thick by 6½ feet long
by 3 or 4 feet wide
Window and door sills and lintels

The agents, being familiar with his needs, could explain to the suppliers "how much of the surface of the stones require smooth dressing, rough dressing, etc." They were to ascertain the prices of these stones of granite, marble or free stone.[106]

There is no reference to the agents' reply in Chase's letter book. From collateral information, we can assume that Chase, satisfied with the price, ordered through his agents at this time cut stone of granite for the cordon, tablet, coping, sills, and lintels.

In June 1831 the schooner Francis put ashore a shipment of stone and carts, invoiced at $1,570.25. To pay for these items, Captain Chase had his assistant in New Orleans (Capt. Richard Delafield) procure a draft in favor of H. & W. Delafield on the United States Bank in New York.[107]

c. Granite for Tower Bastion Angles

Captain Chase on July 1, 1831, wrote H. & W. Delafield about some stonework he wished executed in granite. The

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106. Chase to H. & W. Delafield, Aug. 22, 1830, NA, RG 77, Chase Letter Book.

107. Chase to H. & W. Delafield, June 28, 1831, NA, RG 77, Chase Letter Book. The agents were Captain Delafield's relatives. The stone landed from Francis consisted of cordon, coping, etc. Also included were three (6' x 3' ½" x 8') rough dressed stones to make a good joint, and of the same quality as the embrasure stones, and six granite stones (3' x 2' x 1'). A side and end of each of the latter were to be hammer-dressed, with the other side "sufficiently dressed to fashion with brick work." Chase to H. & W. Delafield, Sept. 7 and 23, 1830, NA, RG 77, Chase Letter Book.

granite for the center angle of the Tower Bastion was to consist of four stones. For the angle of the shoulder four sets of the pieces were needed, and a similar number of sets and stones for the angle of the re-entering flank.[108]

The order was complied with, and the granite for the Tower Bastion was soon en route to Florida.

d. Granite Steps

On January 14, 1833, Captain Chase called upon the Delafields to procure for him the following stonework to be executed at the lowest price:

(a) 120 stone steps 8¼" high, 7' 11" long, and 14¼" wide. The ends of the stones were to be "cut sufficiently to make a good joint with brick masonry."

(b) 126 stone steps 8¼" high, 4' long, and 14" wide. Sixty-three of these were to have one end dressed on the right and 63 of them to have one end dressed on the left. The other "end was to be sufficiently even to make a joint with masonry."

(c) 30 stone steps 8¼" high, 4' long, and of an irregular width--the one end 14" wide and the other 15½". The right end to be dressed.

(d) 30 stone steps 8¼" high by 4' long, and of irregular width. The left end, which was to be dressed, to be 15½" wide and the right end 14".

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108. Chase to H. & W. Delafield, July 1, 1831, NA, RG 77, Chase Letter Book. Drawings of the three sets are found on page 167 of the Chase Letter Book. A photocopy of the subject page is found in the files of the Florida Unit, Gulf Islands NS.

To secure the lowest possible price for the granite steps, the Delafields could assure the stone cutters of an order for 1,600 running feet of stone for traverses, and 40 to 60 pieces of other work.

The steps were to be shipped from New York no later than August 12, 1833.[109]

Evidently, Chase had not been sufficiently explicit in his description of the steps. Responding to a letter from his agents, Chase, on March 13, noted that the beds must be smooth enough to fit well to masonry. The steps were to rest on each other to a distance of about 2 inches. The stones of irregular widths (14" at one end and 15½" at the other) were to have the 14-inch end "sufficiently smooth to make a good joint with brick masonry."[110]

The granite steps came south from New York on the brig Emmeline. When they were inspected, Captain Chase was disappointed to see that all the long steps had been imperfectly cut. Considerable work was required onsite to dress them to fit their places.[111]

e. Mantels for the Quarters

On September 10, 1833, Captain Chase asked his agents to ascertain the cost in New York of good common marble mantel pieces. If they could secure "quality pieces" at $30 to $35, they were to send him seven, and if they could find "high quality mantels" at $70 to $75 they were to forward six. These 13 mantels were to be "carefully put up and shipped to Pensacola on the first vessel."[112]

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109. Chase to H. & W. Delafield, Jan. 14, 1833, NA, RG 77, Chase Letter Book.

110. Chase to H. & W. Delafield, March 12, 1833, NA, RG 77, Chase Letter Book.

111. Chase to H. & W. Delafield, Sept. 14, 1833, NA, RG 77, Chase Letter Book.

112. Chase to H. & W. Delafield, Sept. 10, 1833, NA, RG 77, Chase Letter Book.

The mantels were received and positioned over the Officers' Quarters fireplaces in 1834.

f. Granite Traverse Stones

Ten days later Chase asked H. & W. Delafield to order from the Sing Sing stone cutters 66 sets of granite traverses. Each set was to be cut to a radii of 16' 2½" and 5' 2½", with the lengths of the former to be 18' and the latter 4'. The stones were to have a depth not to exceed 1 foot nor be less than 9 inches. Depths were to be uniform, however.

As time was critical, Chase insisted on his agents obligating the cutters to delivery of the stones at the Sing Sing dock by a specific date.[113]

On October 28, when he transmitted working drawings of the traverse stones, Captain Chase directed H. & W. Delafield to obtain the stone at 85 cents, unless they could do better.[114] They were again urged to have the stones completed as soon as possible. The upper and side surfaces were to be smooth, and the "under part sufficiently smooth to make a good bed on brick masonry."[115]

The 66 sets of granite traverse stones were received and positioned by Underhill & Strong masons on the barbette tier in the summer of 1834.

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113. Chase to H. & W. Delafield, Sept. 20, 1833, Chase Letter Book.

114. Chase to H. & W. Delafield, Oct. 28, 1833, NA, RG 77, Chase Letter Book.

115. Chase to H. & W. Delafield, Oct. 10, 1833, NA, RG 77, Chase Letter Book.

7. Copper Sheeting, Bars, and Fixtures

Captain Chase on May 31, 1832, asked H. & W. Delafield to provide him with the cost of sheet copper in New York.[116] They accordingly contacted Puech & Bien, and on August 14 Chase placed an order for 2,000 square feet of copper, 3 pounds to the square foot, 400 pounds of copper nails, and 200 pounds of solder.[117]

Lieutenant Bowman, Chase's assistant, on February 5, 1832, ordered from Puech & Bien 50 pounds of cut 20^{d} copper nails, 36 knob latches for door blinds, and one barrel of plaster of paris.[118]

On April 8 Lieutenant Bowman ordered through Captain Forsyth of the schooner Elizabeth from Puech & Bien these items of Swedish copper: 74 feet flat bars 2-1/2" x 3/8" thick or round bars 1-3/8" in diameter; 16 feet flat bars 2" x 3/8" or round bars 1-1/8" in diameter; 16 feet round bars of 1" diameter; 14 feet round bars of 1-1/8" diameter; 12 feet round bars of 3/4" diameter; 12 feet 4-1/2" x 1/8" flat bars or 1-inch diameter round bars; 200 2" screws; and 168 1" screws.[119]

Learning from Puech & Bien that they did not stock Swedish copper, Lieutenant Bowman asked them to send American, provided it could be wrought. There were several kinds of American copper, he cautioned, that became brittle when heated, and these he could not use.[120]

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116. Chase to H. & W. Delafield, May 31, 1832, NA, RG 77, Chase Letter Book.

117. Chase to Puech & Bien, Aug. 14, 1831, NA, RG 77, Chase Letter Book.

118. Bowman to Puech & Bien, Feb. 5, 1834, NA, RG 77, Chase Letter Book.

119. Bowman to Puech & Bien, April 8, 1834, NA, RG 77, Chase Letter Book.

120. Bowman to Puech & Bien, April 22, 1834, NA, RG 77, Chase Letter Book.

The copper, $3,300 worth, was used principally in the magazines and construction of the wharves.

8. Venetian Blinds for Quarters

H. & W. Delafield shipped the Venetian blinds for the Officers' Quarters, ordered by Captain Chase, in August 1833 to Mobile aboard Victress.[121] The ship reached Mobile on schedule, but it was difficult to get them transshipped to Santa Rosa Island. Exasperated by this development, Chase on October 28 notified H. & W. Delafield, "Do not send any more articles by the way of Mobile. The blinds are still at that place."[122]

9. Oyster Shells

On August 3, 1832, Captain Chase, after having advertised in the Pensacola Gazette, signed a contract with John Garnier of Pensacola, whereby the latter agreed to deliver at the Santa Rosa Island wharf 12,000 barrels of good quality oyster shells. For every barrel delivered, the United States would pay Garnier 25 cents. Delivery was to commence by September 15, or sooner, if practicable.[123]

The Department on September 17 approved the contract made for covering the parade with 12,000 barrels of oyster shells.[124]

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121. Chase to H. & W. Delafield, Sept. 10, 1833, NA, RG 77, Chase Letter Book.

122. Chase to H. & W. Delafield, Oct. 10 and 28, 1833, NA, RG 77, Chase Letter Book.

123. Memorandum of Agreement, Aug. 3, 1832, and Chase to Gratiot, Aug. 26, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer. The flour barrel was to be the standard of measurement.

124. Gratiot to Chase, Sept. 17, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

E. Personnel and Medical Problems

1. Lt. Washington Hood--Assistant Engineer

Lt. Alexander H. Bowman returned to Louisiana from Pensacola in the spring of 1829 to resume supervision of construction of the fortifications at Bayous Dupré and Bienvenue. To fill the position as his assistant for the Pensacola Bay works, Captain Chase on April 29, 1829, selected Lt. Washington Hood of the 4th U.S. Infantry, who had been detached to the Corps of Engineers and was on detail at Mobile Point.

Lieutenant Hood was a valued subordinate. So well did he handle his duties that Captain Chase determined to add to his responsibilities. As an economy measure, Chase in December 1829 determined to abolish the position of Superintendent and Inspector of Materials currently held by Mr. Fry. These duties were assumed by Assistant Engineer Hood on January 1, 1830. This arrangement would result in a savings to the government of $1,095 per year, but as it would increase Hood's duties, Captain Chase recommended that he be allowed an extra $1.50 per day as added compensation.[125]

At the end of the first quarter of 1830, Captain Chase submitted an affidavit that Lieutenant Hood had "executed all the writing necessary to the keeping of the records, account, etc., relating to the work; . . . and in fact . . . he has peformed fully the duty which was required of the late Clerk and Inspector of materials."[126]

The Department, however, did not view the detail of Lieutenant Hood in the same light. On July 31 the voucher was rejected,

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125. Chase to Gratiot, Feb. 7, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer. Washington Hood, a Pennsylvanian, had graduated from the U.S. Military Academy in July 1827, when he was commissioned a 2d lieutenant in the 4th U.S. Infantry and ordered to Jefferson Barracks, Mo. Cullum, Biographical Register, Vol. 1, p. 321.

126. Chase to Gratiot, March 31, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

as the duties for which the extra pay was requested were part of the functions of an Engineer Officer.[127]

Earlier, Chase had written General Macomb in Lieutenant Hood's behalf on another subject. Hood had discussed with him a desire to transfer to the Corps of Topographical Engineers. If there were an opening in the Corps, Chase strongly recommended Lieutenant Hood, as possessing the "zeal and ability to perform well the duties which might be required of him."[128]

Before receiving a reply to this communication, Lieutenant Hood on March 26 asked Captain Chase for a furlough of from four to six months, to begin in June, provided his services could be dispensed with. If they could not, he would forego his furlough.[129]

Captain Chase was agreeable. He endorsed Lieutenant Hood's application, with the recommendation that "the indulgence solicited . . . be complied with."[130]

The War Department approved Hood's application, but in limiting it to 60 days, pointed out that the application would also have to be approved by Col. Duncan Clinch, commander of the 4th U.S. Infantry. On relaying the application to Colonel Clinch, Captain Chase observed that he was desirous of having Lieutenant Hood continue "on Engineering

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127. Gratiot to Chase, July 31, 1830, Chase to Totten, June 1, 1846, NA, RG 77, Ltrs. Sent and Recd., Chief Engineer.

128. Chase to Macomb, Feb. 5, 1830, NA, RG 77, Chase Letter Book.

129. Hood to Gratiot, Mar. 26, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

130. Chase to Gratiot, Mar. 26, 1830, NA, RG 77. Ltrs. Recd., Chief Engineer.

duty," after his furlough had expired. He accordingly did not wish another officer detailed as a replacement.[131]

Lieutenant Hood, on returning from his furlough, was ordered to Cantonment Brooks, Florida, where he remained until November 1831, when he was assigned to topographical duty.

2. Sutler to the Works

Secretary of War Peter B. Porter appointed John Hunt sutler for the construction workers on Santa Rosa Island.[132] Either this was not a lucrative position, or Hunt had friends in the Jackson entourage, because he was not replaced when the new administration took office on March 4, 1829.

3. Caring for the Employees' Physical Well Being

a. Chase Gets an Army Surgeon on Detail

Captain Chase, being familiar with the sickly seasons associated with construction projects on the hot, humid Gulf Coast, brought this subject to Chief Engineer Gratiot's attention. To combat "diseases incident to this region," he would require "the services of a skillful physician, whose attendance will lessen in some degree the dangers to which the employees" must be exposed.

Because of the high salaries commanded, Chase hesitated to hire a surgeon to be charged against constructions funds. He suggested that a military surgeon be detailed to the project.

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131. Chase to Clinch, May 7, 1830, NA, RG 77, Chase Letter Book. Chase took this opportunity to commend Hood, as "a talented and most efficient officer." Cullum, Biographical Register, Vol. 1, p. 321.

132. Gratiot to Chase, Jan. 31, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer; Chase to Gratiot, Feb. 24, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

As a hedge against detail of the Cantonment Clinch surgeon to care for his men, as well as the garrison, Chase noted, because of the distance this is impractical.[133]

Chief Engineer Gratiot referred the subject to President Jackson's Secretary of War John H. Eaton. Ignoring the point raised by Chase, the Secretary urged that the Cantonment Clinch surgeon attend to both posts. If he were unable, Chase was authorized to employ a civilian physician, taking into account the need for "proper economy."[134]

On March 23, 1829, Chief Engineer Gratiot accordingly notified Chase that the Surgeon-General had found it impractical to assign a military surgeon to look after the health of the construction workers. If he were unable to employ a civilian doctor, Secretary of War Eaton was agreeable to contacting the commanding officer at Cantonment Clinch to see if the post surgeon was available for reassignment.[135]

On being approached by Captain Chase and shown the letter from General Gratiot, the commandant at Cantonment Clinch detailed Dr. J. Ponte McMahon to Santa Rosa Island. This arrangement was satisfactory, as it afforded those involved in the project "the best medical skill in event of disease during the summer," at no cost to appropriated funds.[136]

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133. Chase to Gratiot, Feb. 9, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

134. Gratiot to Eaton, Mar. 12, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

135. Gratiot to Chase, Mar. 23, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

136. Chase to Gratiot, July 6, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

b. Heavy Toll Taken by the "Sickly Season"

To justify completion of the project in four years, Captain Chase harped on the dangers to one's health from "exposure to an unfriendly climate." Experience demonstrated that there had never been an "instance" of an officer of Engineers having served for four years on the Gulf Frontier "without great injury to his constitution." Loss of life in one instance and of health to the survivors has been the result. "It is not desirable," Captain Chase inquired

> that all works . . . in unhealth positions . . . be completed in the shortest space of time, having due regard to their faithful execution, especially when it cannot be a matter of much importance to Congress whether its appropriation be applied to their construction in 7 years or in 4 years.

Having reviewed the rolls, Chase noted that during the construction of fortifications at the Rigolets and Chef Menteur, death had claimed one contractor, one clerk, one surgeon, one master carpenter, one officer of Engineers, one officer of the garrison, and at least one-half the mechanics and laborers. At Fort Jackson, Louisiana, there had died an officer of Engineers, the wife of an Engineer officer, a clerk, and three officers of the garrison of Fort St. Philip, on the opposite bank of the Mississippi, and many mechanics, laborers, and soldiers. At Mobile Point and Dauphin Island, the wife and two children of the Superintending Engineer had died of fever, while the project engineer's health had been shattered.[137]

c. Chase Turns to the Navy for Assistance

Superintending Engineer Chase was disappointed to learn in mid-April 1830 that Dr. McMahon was under orders to proceed to

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137. Chase to Gratiot, Sept. 30, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

Tampa Bay. Complaining to the Department, Chase expressed regret that this had been necessary, as it "evinces the determination that officers and Employés of the Engineer Department shall look elsewhere for medical assistance than to the Medical Staff of the Army." If this were true, he warned, the "great risques to life and health, incident to this climate can only be diminished . . . by the prompt assistance of skillful Physicians." It was common knowledge that good civilian doctors could not be procured at any price. If assistance could not be secured from the Army's medical staff, "we shall be left either to incur the exposures of an unfriendly climate without medical aid, or, which is worse, to entrust our lives to unskillful and inexperienced hands."

His ire aroused, Captain Chase protested, "the officers of the Corps are as much entitled to the assistance of the Medical Staff of the Army, as are the officers of the other arms of the service." If the limited number of medical officers did not allow detail of one to each "Engineer Station on the Gulf of Mexico, the senior officer in command on the Gulf . . ., may at least, require the Services of one" at Pensacola.

If the Department were in agreement with this reasoning, and requested detail of a medical officer to the works on Santa Rosa Island, he trusted the Surgeon-General would hold in abeyance the orders transferring Dr. McMahon.[138]

Chase's request was referred to the Surgeon-General. Although General Gratiot was sympathetic to Chase's situation, there was nothing that could be done, because there were not enough surgeons in the Army to supply all military posts.[139]

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138. Chase to Gratiot, April 19, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

139. Gratiot to Chase, May 10, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

The Department on June 14, 1830, advised Captain Chase that Dr. J. C. Eliason, for the past two years employed at Fort Macon, North Carolina, was interested in the position at Santa Rosa Island. His decision to leave the North Carolina project had resulted from the impending transfer of his brother, Capt. William Ellison who was project engineer there, to another station.[140]

Before receipt of this letter, Captain Chase had made arrangements with Dr. B. F. Hulse, a surgeon stationed at the navy yard, "to render service to the Employees of the Eng. Dept. whenever required." Dr. Hulse's rate of compensation would "be much below that which would be necessary to offer to a surgeon not in the Army or Navy service."

This agreement with Dr. Hulse prevented the employment of Dr. Eliason.[141]

Dr. Hulse was replaced as surgeon at the navy yard by Dr. Benjamin Bache in the spring of 1831. Like his predecessor, Dr. Bache was agreeable to rendering "medical assistance" to the officers and employees of the Engineer Department.[142]

Arrival of an Army surgeon at Cantonment Clinch in August 1834 enabled Captain Chase to dispense with the services of Dr. Bache as attending physician. Notifying Dr. Bache of this, Chase thanked him for the "promptness which you have responded to all calls

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140. Mordecal to Chase, June 14, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

141. Chase to Gratiot, June 15 and July 4, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

142. Chase to Bache, May 25, 1831, NA, RG 77, Chase Letter Book; Gratiot to Chase, June 30, 1831, NA, RG 77, Ltrs. Sent, Chief Engineer.

for your professional services during your engagement with the Engineer Department."[143]

F. Building the Fort, May 1829-January 1830

1. Siting the Fort

Captain Chase in early May 1829, having completed his work on Red River, established his quarters at Pensacola, "with a view to the vigorous prosecution of the works." Plans of the two Channel Fronts, having been received from the Engineer Department, Chase restaked the trace. A site nearer the south beach was staked than that indicated on the Board of Engineers' plan. It had been ascertained by Lieutenant Bowman in December that the south beach was building up, and that point A on Plan No. 1 was exposed to the "abrasions" of powerful currents which would endanger the works. Chase determined to relocate the site. A shift of the polygon of the original project, as near to the south beach as feasible would "materially add to the strength of a point of attack on the S.E. Capital."[144]

The site change, Captain Chase reported to Chief Engineer Gratiot, did not in any way "alter the proper relations of the several fronts to the channel." The plan of the two Channel Fronts, in all other details, seemed well adapted to defense of the entrance to Pensacola Bay.

Tests had shown that the ground was firm and would support the foundations.[145]

Reviewing Chase's communication, General Gratiot approved his actions. Chase would not, in constructing the Channel Fronts,

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143. Chase to Bache, Aug. 16, 1834, NA, RG 77, Chase Letter Book.

144. Chase to Gratiot, Sept. 30, 1829, NA, RG 77, Ltrs. Recd., Chief engineer.

145. Chase to Gratiot, May 11, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

"extend the curtains farther than to the distance of twenty yards from the respective flanks of the half bastions, until the Board of Engineers had made a decision on this detail."[146]

2. Channel Fronts Take Shape

a. Underhill & Strong Break Ground

Ground was broken by Underhill & Strong workmen in the third week of May 1829. By mid-June excavation of the two Channel Fronts was far enough advanced to enable the contractors to put their masons to work on the foundations.[147] By August 17 masonry of one front had been raised four feet above the first off-set on the high water mark, while by the 22d the other front had been carried to that height.

The 70-man black workforce found the weather doubly oppressive because of the "intense reflections" of the heat off the white sand. This sapped their effectiveness. Underhill & Strong told Chase that, to make up for lost time, they would bolster their labor force during the 4th Quarter.

Better progress was made in September. By the 30th the foundations of the Channel Fronts had been finished; the revetment walls raised to the level of the embrasure tongue-holes; the foundations of the casemate piers laid and raised to a height of four feet; and the ditch of the subject fronts nearly excavated.[148]

By reference to Chase's annual statement, Chief Engineer Gratiot saw that of the $125,000 appropriated for Pensacola,

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146. Gratiot to Chase, May 25, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer. Captain Chase acknowledged receipt of General Gratiot's instructions regarding the curtains on June 14, 1829. Chase to Gratiot, June 14, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

147. Chase to Gratiot, June 10, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

148. Chase to Gratiot, Aug. 17 and Sept. 30, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

$67,181.00 had been expended. If the autumn weather continued favorable, and the "entire plans of the Fort" were received by an early date, construction of the "whole grillage foundations" and a portion of its masonry would be accomplished in the 4th Quarter. If the anxiously expected plans did not arrive, Chase would proceed with construction of the revetment walls and casemates of the Channel Fronts.[149]

b. Lack of Plans Cause a Slowdown

Failure to receive the remainder of the plans became increasingly embarrassing, and by November 30 much of the construction had been shut down. Since completion of the ditch and foundations of the Channel Fronts, Captain Chase reported, we have removed a "few of the neighbouring sand hills to the parade, and have raised that part of the work 4 feet." Unless they proceeded by random, the labor force heretofore employed on excavation would be without work. Such action would be injurious to Underhill & Strong, because "the price paid them per cubic yard for excavation was at the lowest rate at which a force constantly employed could execute the work."

The masons were continuing to make rapid progress. They were laying brick for the embrasures. As this required considerable skill, only the most experienced masons were employed, leaving the greater part of them without work.

Reporting this to his superiors, Captain Chase observed, you can best understand this, when "I inform you that the walls of the two water fronts are raised to the soles of the embrasures; that every pier of the casemates of Curtains and of the Tower Bastion is

149. Chase to Gratiot, Sept. 30, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer. The money disbursed was charged against: brick masonry, bricks, lime, etc., $50,179.05; grillage $732.48; excavation and embankment $857.10; engineer quarters, superintendent's house, wharves, etc., $6,852.45; purchase of land on Santa Rosa Island $4,000; and contingencies $4,560.43. Charged against contingencies were salaries of the agent of fortifications, the superintendent, commissary of subsistence, and the barge crew, along with stationery and a few other items.

[sic] raised to its proper height, and ready for the arches." Consequently, little masonry was currently been laid. Underhill & Strong were compelled to "work to great disadvantage." This distressed Captain Chase, as they had undertaken the contract "in expectation of being enabled to proceed with operations without interruption."

Despite these discouraging circumstances, Mr. Strong, the surviving partner, was determined to prosecute the project to the satisfaction of the Department, and to "assert no claims for compensation of any losses he may sustain by the suspension of the excavation."[150]

Strong was willing to attribute the delay in receipt of the plans "to circumstances that could not be controlled," and was agreeable to awaiting a resolution of that issue, in "expectation that the plans for a more extended operation will be forwarded" in the near future.

Relaying this information to the Chief Engineer, Captain Chase urged that "a portion of the plans sufficient to enable us to make the trace, with sections for the foundations, be transmitted." This would enable Underhill & Strong to "proceed at once with the excavation for the foundations, and with the masonry of the same."[151]

c. Raising the Masonry to the Cordon

Captain Chase spent most of January 1830 in Louisiana inspecting projects (Fort Jackson, Tower Dupré, and Battery Bienvenue) for which, as senior engineer on the Gulf Frontier, he was responsible. While he was absent from Pensacola Bay, his assistant, Lieutenant Hood, oversaw the Santa Rosa Point project.

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150. It has been impossible to determine the date of Mr. Underhill's death.

151. Chase to Gratiot, Nov. 27, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

On his return from Louisiana, Captain Chase was delighted to see that Underhill & Strong construction gangs had raised the masonry of the northwest Channel Front to the height of the cordon, or 22 feet above the ditch, including the 14 embrasures. An equal number of embrasures had been finished on the southwest Channel Front, while the masonry of that scarp would be raised to the level of the cordon by mid-February.

Next, the masons would proceed to complete the masonry of the revetment of these two fronts, and commence the casemate arches. If, however, the plans were received from the Board, Chase would "extend our operations."[152]

G. Schooner "Magnolia" Founders

Captain Chase experienced some unexpected and unwanted excitement in the first week of November 1829.

The schooner Magnolia, Captain Ray, bound from St. Marks to New Orleans with passengers and crew, capsized in a squall off Santa Rosa Island, at 1 a.m. on November 5, while trying to beat her way into Pensacola Bay. Andrew Cunningham, escaping from the cabin, clung to the grounded hulk for 24 hours, with the sea constantly breaking over him. Cunningham on the 6th succeeded in reaching and righting the jolly boat. As he was pulling for shore, he heard a woman crying for help in the cabin. Landing on Santa Rosa Island, Cunningham made his way to Captain Chase's home, where he asked for help in rescuing the woman.

Chase ordered out all his small boats as soon as it was daylight. They returned without sighting the derelict. Next, Captain Chase started out in the sloop Huntsman. On Sunday, the 7th, the

152. Chase to Gratiot, Feb. 7, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

wreck was finally sighted drifting 20 miles to the seaward of the bar. Making fast to the hulk, the crew entered the cabin, where they found the bodies of Mrs. Ray and two passengers.

The bodies were returned to Santa Rosa Island, where they were buried by Captain Chase. Through the kindness of Mrs. Chase and her family, Cunningham quickly recovered from his ordeal.[153]

153. Pensacola Gazette, Nov. 14, 1829. Twelve lost their lives in the foundering of Magnolia. In addition to Captain Ray, his wife, and child, the known dead were: Jason Coleman of New Orleans, a New Orleans Prussian, T. W. Holt of Virginia, John Winstanley of New York, and William Pray of Boston.

V. THE FORT TAKES SHAPE: 1830-32

A. General Bernard's Project for Defense of Pensacola Bay

1. Revision of the Project

On March 9, 1829, six months after the Board of Engineers' Newport meeting, General Bernard, the senior and dissenting member, notified Chief Engineer Gratiot that he had some free time, and was ready to revise the Santa Rosa Island "project according to my own particular views." To enable him to proceed, he needed from the Department's files the Kearney survey, and all plans relating to the project.[1]

The Department, in compliance with Bernard's request, forwarded on April 10 a copy of Drawing Number 3 and original Drawings Numbers 4, 5, 7, 12, and 13 of the fort on Santa Rosa Island.[2]

Bernard on June 4 returned Drawings Numbers 4, 5, 12, and 13, as they were of no use, because "they belong either to parts of the work which are now constructing, or to parts which I design to plan entirely anew." He had retained Drawing Number 7, a profile of the demitower bastions, forming the extremities of the Channel Fronts now under construction. As it was by these demitower bastions that he proposed to connect the project on which he was engaged with the Channel Fronts, he needed a ground plan of one of them.[3]

On May 22 General Bernard urged that no work be done on the demitower bastions at the flanks of the Channel Fronts to enable him to "organize" them "with a view to effect conveniently the connexion

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1. Bernard to Gratiot, March 9, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

2. Gratiot to Bernard, April 10, 1829, NA, RG 77, Ltrs. Sent, Chief Engineer.

3. Bernard to Gratiot, June 4, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

between" them and the collateral fronts.[4] This information was relayed to Captain Chase by the Department. It was during this week that Underhill & Strong workmen broke ground for the foundations of the two Channel Fronts.

General Bernard by mid-December had completed the revised plans, profiles, details, and estimates for the fort. To be finished was the "descriptive memoir" to accompany the project, and to "comprehend, in a single view, the details and ensemble of the defence of Pensacola bay."[5]

Three weeks later, on January 8, 1830, General Bernard transmitted to Chief Engineer Gratiot his "memoir" on the defenses of Pensacola Bay, along with plans, profiles, details, and estimates for projected forts on Santa Rosa Island and Foster's Bank.[6]

2. Bernard's "Memoir"

a. Geographic Factors Considered

To understand General Bernard's "memoir," it was necessary to be familiar with Major Kearney's chart. The channel entering Pensacola Bay, Bernard observed, came in from the southeast, "turning round" a middleground, projecting to the southwest nearly one mile from the point of Santa Rosa Island. Vessels drawing more than 15 feet had to con a course west of the middleground. Having rounded the middleground, the channel bore into the bay on a bearing east of northeast.

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4. Bernard's "Memoir," Jan. 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

5. Bernard to Gratiot, Dec. 19, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

6. Bernard to Gratiot, Jan. 8, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer. Returned at this time by Bernard were Major Kearney's chart of the bay, and three sheets of drawings belonging to the original project.

Pensacola Bar, extending from Santa Rosa Island to Foster's Bank, was covered at low tide by not more than 21 feet of water. The width of the bar, measured in the direction of the channel, was one mile. General Bernard found that the entrance to the bay, between Santa Rosa Point and Foster's Bank, was 1-3/8 miles.

Within the bay there were good depths of water and a good bottom for anchoring. At a number of points, a favorable depth was found close inshore, viz: at the Careening Ground, 18 feet 60 yards offshore; at the Tartar Point Navy Yard 30 feet was found within a few yards of the point; and at the English Careening Ground, 18 feet was carried near the shore.

Grand Lagoon entered Pensacola Bay at Foster's Bank, and extended westward about 8 miles to within 1-1/2 miles of the Perdido River. If a channel were cut through this neck, Grande Lagoon would become an intracoastal waterway linking Pensacola and Mobile Bays.

Defense of Pensacola Bay dictated fortification of three points the western end of Santa Rosa Island, the northern end of Foster's Bank, and the Barrancas. A fort on Santa Rosa Point, besides cooperating with the other two works in defense of the main channel, would prevent ships drawing less than 15 feet from crossing the middleground. It would also occupy terrain from which an enemy might bombard the Tartar Point Navy Yard and cover the entrance of his warships into Pensacola Bay. Finally, it would constitute a stronghold from which raids could be made against an enemy force landing on Santa Rosa Island. Such action on the part of an enemy would be more likely, if the navy yard became "an arsenal for extensive construction." In that case a foe might "deem its destruction an object worth an expensive attempt."

If the navy yard were destined to be no more than a "storing" facility, an enemy would not make its destruction a matter of high priority. This would reduce the importance of the fort under construction, as a base from which to harass a foe landing on Santa Rosa Island.

Having observed that the southern extremity of the middleground, round which the main channel turned, was equal distance from Santa Rosa Point and Foster's Bank, General Bernard had formulated a project for defense of that point.[7] Ships passing over the bar and following the main channel to enter the bay would be within range of both the Santa Rosa Island and Foster's Bank forts. But as they shaped a course to avoid the middleground, they would bear toward Foster's Bank. This would bring them within 800 yards of Foster's Bank and 1,320 yards of Santa Rosa Point. If the attackers overcome the obstacles opposed to their advance by the fire of two forts and the tedious navigation of a narrow channel, they, before entering the bay, would close to within 600 yards of the Santa Rosa fort.

Continuing, General Bernard wrote:

> The raking fire of the fort on Foster's bank combined with the flank fire of Santa Rosa fort, warrants an effectual defence of the channel; but Santa Rosa fort being rather distant from the portion of channel winding round the middleground, its fire alone would not sufficiently insure the defence. Therefore, taking into consideration, the comparative narrowness of the channel round the middleground, the bend at this place, its distance from Santa Rosa fort, and the course which a vessel would be obliged to shape to turn round the middleground, I am led to the conclusion that though the two forts are equally indispensable for an effectual defence of the channel, yet that at Foster's bank is perhaps the most efficient of the two; for alone it would afford more security, as to the protection of the channel, then could . . . the fort at Santa Rosa Point.[8]

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7. The distance from Santa Rosa Point to the southern extremity of the middleground was 1,320 yards.

8. Bernard's "Memoir on the defence of the entrance of Pensacola Bay, with description and estimate of the two forts recommended to defend the main channel," NA, RG 77, Ltrs. Recd., Chief Engineer

The bluff at the Barrancas, General Bernard reported, was 1-1/4 miles northwest of Santa Rosa Point, 1-3/4 miles northeast of Foster's Bank, and had an elevation of 60 feet. Because of its commanding height, guns mounted there could cooperate with the aforementioned forts, but being in rear of them, and 1,200 yards from the main channel, it was but auxiliary to both in defense of the channel. But, in relation to the navy yard, the Barrancas was a key element. Fortifications there would constitute the southern anchor of a line sheltering the naval facilities from a land attack, directed to penetrate the countryside between the Barrancas and Bayou Grande. If Tartar Point received a navy yard of equal importance to Gosport, the Barrancas should be "fortified permanently, and an open sea battery located under its protection."[9]

b. The Perimeter and Defiles

The "project" as redefined was to have five fronts. Captain Chase, who had already laid out the two Channel Fronts, had confirmed that the level of the parade was 7 feet above flood tide and 9 feet above ebb tide. Connected with the two Channel Fronts were two lateral fronts--designated North Front and South Front. A fifth front (East Front) completed the perimeter.

The face of each Channel Front would be 160 yards, whereas in the original plan it had been 155 yards. To effect "a convenient connexion with the collateral fronts", it had been necessary to lengthen by 5 yards each face of the extreme half bastions. The casemates of these half bastions had been planned accordingly, and the scarp wall of the two Channel Fronts, the casemates of the curtains and under the Tower Bastion and the relief were unchanged. This was mandatory because Underhill & Strong had nearly completed the Channel Fronts and Tower Bastion.

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9. Ibid.

The relief of the other three fronts had been determined by a plane of defilement passing by a horizontal line HH (see sheet no I, "Plan of a Fort projected at Santa Rosa Point, Florida, 1829") 34 feet above flood tide, and by a second horizontal line H'H' 37 feet above the same level. VV was the line of greatest declivity and the scale of defilement. The crest of the breastworks for the North, East, and South Fronts had been established on this plane, the object being "to shelter more effectively, the Channel Fronts from land batteries, and also to defile the fort and to procure to the East Front a greater command over the counterscarp." The terreplein of the rampart to be 28-1/2 feet above mean flood tide and the top of the scarp of these fronts 24 feet above the same level.

The bottom of the ditch was to be on "the level of high tide."

A covered way and glacis were to be constructed in advance of the East Front, with wings on the North and South Fronts. They were to cover the scarp masonry of the East Front and the right face and left face of the two lateral fronts. They were to be supported by a counterscarp wall 14 feet high, provided with a re-entering place de arms.

The perimeter of the main work, measured along the foot of the scarp in yards, was:

Two Channel Fronts, together	360 2/3
North Front	154 2/3
East Front	231 1/3
South Front	154 2/3
	901 1/3 yards[10]

10. Bernard's "Memoir," Jan. 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

c. Profiles and Sections

On Sheet No. II, "Plan of a Fort projected at Santa Rosa Point, Florida, 1829" (a copy of which is on file at Park headquarters), General Bernard observed, he had entered figures relating to angles and lengths and graphic delineations of the fort, covered way, and glacis.

Sheet No. III of the subject plan (a copy of which is on file at Park headquarters) included the "general profiles relating to the relief." There were ten, each one corresponding to a section line marked on Sheet No. II. They were:

No. 1 a section on the left face of North Front
No. 2 a section on the left flank of North Front
No. 3 a section on the curtain of North Front
No. 4 a section on the right flank of North Front
No. 5 a section on the right face of North Front
No. 6 a section on the left face of East Front
No. 7 a section on the left flank of East Front
No. 8 a section on the curtain of East Front

The subject profiles would answer respectively for the South Front, and for the other one-half of the East Front.

No. 9 a longitudinal section of either termination of the branches of the covered way.

No. 10 a section on either of the capitals of the East Front.[11]

d. Details of Half North and Half East Front

Sheet No. IV was a handsome rendered drawing of the fort.

The North and South Fronts, General Bernard explained, were to be "alike in the arrangement of their casemates and

11. Ibid.

other parts of their construction," except that, in the former, one of the casemates is to be used for the sally port. The right half of the East Front would be similar to the left half front. Because of this Maj. William T. Poussin had limited large scale plans and profiles, necessary for construction, to those relating to the North Front and its collateral half East Front. These were exhibited with full details on Sheets No. V and VI.

Sheet No. V, "Plan and Details on large scale, of half North Front," showed that this half bastion was to have: (a) a casemate along the face bearing on the channel, with three embrasures on this face, one on the other face, and a fifth flanking the collateral Channel Front; (b) a powder magazine along the face of the bay side (on the South Front this casemate was to be pierced with three embrasures); (c) a casemate "facilitating the communication of the two preceding casemates with the flank of same bastion and the curtain of the collateral" Channel Front, with one embrasure on the flank of the latter front; and (d) three casemates on the flank, each having one embrasure.[12]

By reference to Sheets Nos. V and VI, "Plan and Details, on large scale, of half North Front and half East Front," Captain Chase could see that the curtain was provided with seven casemates, the middle one to be the sally port, and the others used for guns and quarters. In addition to these seven casemates, there was another which could be used either as a magazine or as a communications to the left flank and curtain.[13]

By reference to Sheet No. VI it could be seen that the three casemates of the right flank were similar to those of the left flank. A gallery (g,g,g) afforded communication from the right flank

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12. Ibid.

13. Ibid.

and curtain of the North Front to the casemated flank of the East Front. The gallery also gave access to the mines under the bastion's earthen mass. A powder magazine was at the intersection of the curtains of the North and East Fronts.

The faces of the bastions of the East Front were not casemated, but each flank was provided with four casemates. Three of these were to be armed, while the fourth, at the re-entering angle, was to receive a "sally door," which, during a siege, depending on circumstances, could be retained as a means of communication with the covered way or walled up and used for an embrasure. In time of peace, General Bernard recommended, it be masked by a wall one-foot thick.[14]

e. Mines

Sheet No. III contained an insert titled, "Plans, Profiles and Details relating to the mines under the bastions of the East Front of the projected Fort at Santa Rosa Point." Each mine was to consist of three chambers, "intended to play in succession after the opening of the breach, and at the time at which the besieger either makes his establishment on said breach, or storms the bastion." To insure the "successive and well timed effect" of the mines, the besieged would erect an entrenchment across the gorge of the bastion, leaving outside the gallery connecting the flank casemates of the bastion.

The mine chambers were to be on the same horizontal plane, 20 feet beneath the bastion's terreplein. Should the bastion be opened face on m, the mine n was to be fired first, and afterwards n' at the second attempt of the assailant. If the bastion were to be opened on face m', the reverse would take place--n' being fired first. If both faces were opened and stormed simultaneously, both mines would be sprung.

14. Ibid.

Mine n', protected by the entrenchment at the gorge, would be fired after the storming party had established itself on top of the breach, and when it advanced against the entrenchment. This mine would probably wreck the side wall of the gallery (g,g,g), causing the arch to fall. If not, a few kegs of powder would do so. But in either case the approaches to the entrenchment would be obstructed with fallen masonry.

For each mine, the line of least resistance was 20 feet. Assuming the specific weight of sand to be 122 pounds per cubic foot, General Bernard calculated the charge for each chamber of the mine to be 1,027 pounds of gun powder, which would occupy "a cubic capacity of 2-2/3 feet side in length."[15]

f. Sally Port, Posterns, and Counterscarp

Sheets Nos. II and IV showed that ingress and egress to the fort was provided by: (a) a "sally door and bridge on the North Front, and a postern at each re-entering angle of the East Front"; (b) by two wide stairs on each extreme point of the curtains of the Channel Fronts (a section of one of these was found on Sheet No. V); (c) a stairway at each end of the curtain of the East Front; (d) two slope ascents at the middle of the subject curtain; and (e) two stairs at the gorge of the re-entering place de arms in the covered way, one on each long branch of the same; and one at the respective ends of the north and south branches.[16]

At each end of the counterscarp would be a loopholed casemate, to shelter infantry charged with the mission of relieving the covered way and protecting the ditch of the Channel Fronts and those of

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15. Ibid.

16. Ibid.

the lateral fronts. A branch gallery, 73 feet in length, similar to one of those found on Sheet No. III, might lead to a mine chamber 12 feet beneath the crest of the glacis. Its object to retard establishment of the besieger on that portion of the counterscarp. The estimated cost of such a gallery was $1,446.19, which had not been included in the estimates.[17]

g. Armament and Garrison

The fort's armament was to consist of: on the Channel Fronts 98 cannon and 8 carronades; on the North Front 6 cannon in the curtain casemates, 1 in the Northwest Bastion casemate, 6 carronades in the flank casemates, 6 cannon en barbette on the Northwest Bastion, 4 on the Northeast Bastion, and 7 on the curtain; on the East Front 6 carronades in the flank casemates, 6 cannon en barbette on the Northeast Bastion, 6 on the Southeast Bastion and 10 on the curtain; on the counterscarp 2 mortars in the re-entering place de arms and 3 mortars on each extreme branch of the covered way; and on the South Front 7 cannon in the curtain casemates, 3 in the Southwest Bastion casemates, 6 carronades in the flank casemates, 6 cannon en barbette on the Southwest Bastion, 4 on the Southeast Bastion, and 7 on the curtain. Total armament to be 171 cannon, 26 carronades, and 8 mortars.[18]

In the revised project, the two Channel Fronts were retained, while the other three fronts were modified. The original project, as to extent and armament, would compare with the altered plan:

contour of the fort measured on the cordon, original plan 975 yds.			
contour of the fort measured on the cordon, new plan 899 yds.			
guns on Channel Fronts, original plan	104 guns	8 carr.	0 mortars
guns on Channel Fronts, new plan	104 guns	8 carr.	0 mortars
guns on North Front, original plan	36 guns	5 carr.	0 mortars
guns on North Front, new plan	20 guns	6 carr.	0 mortars
guns on East Front, original plan	25 guns	10 carr.	10 mortars
guns on East Front, new plan	20 guns	8 carr.	4 mortars
guns on South Front, original plan	35 guns	5 carr.	10 mortars
guns on South Front, new plan	20 guns	6 carr.	9 mortars[19]

17. Ibid.

18. Ibid.

19. Bernard to Gratiot, Dec. 19, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer.

In time of peace the fort was to be garrisoned by 60 men, in time of war 500, and if under siege 1,000.[20]

h. General Bernard Documents Advantages of the Revised Project

To emphasize significance of the revision advocated, General Bernard prepared a summary statement:

	Designation of the Fort		
	Santa Rosa Point	Foster's Bank	
Perimeter measured on foot of scarp	901 1/3 yds	360 1/3 yds =	1261 2/3 yds
Amount of Armament			
guns	171	91 =	262
carr.	26	6 =	32
m.	8	6 =	14
Total	205	103 =	308
Guns bearing on the channel			
guns	98	64 =	162
carr.	8	0 =	8
m.	0	6 =	6
Total	106	70 =	176
Garrison			
Peace	60	40 =	100
War	500	350 =	850
Siege	1,000	500 =	1,500
Cost	$465,000	$163,393 =	$628,396

Channel Front B-C of the Santa Rosa Island fort would mount 99 guns, their effective range calculated at 1,200 yards, which would command the middleground but could not be brought to bear on the channel. Channel Front A-B with 49 guns could batter the channel north of the middleground. A ship entering the bay, after turning the middleground, would receive the fire of 49 guns. But with construction of a fort on Foster's Bank, she would be battered by 32 guns, and this during the time she was turning the middleground, and out of reach of the cannon in the Santa Rosa Island fort.

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20. Bernard's "Memoir," Jan. 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

Respecting cost of construction, the table demonstrated that with an "expense of $628,643, 162 guns could be registered on the channel, while under the original plan, at a cost of $650,000, only 104 cannon could have been brought to bear on the channel."[21]

Prices employed in arriving at the estimate of the original project ($650,000) and the revised plan ($465,300) were similar, except those for the earthwork, which were higher in the revised estimate. As Captain Chase was on record as satisfied that the fort could be built within the original estimate, General Bernard believed that the project, as described in the revised plan, could be accomplished for $465,300, and would "possess a greater degree of strength on the land side." (For a breakdown of the estimates, see Appendix B.)

With the money saved, $184,700, the Department could fortify Foster's Bank, and thus for $650,000, the amount of the original estimate, the nation would be able to fortify both Santa Rosa Point and Foster's Bank.[22]

i. Revised Project Becomes the Approved Plan

In view of the decision made by the Board of Engineers at Newport in September 1828, the project as revised by General Bernard became the approved plan for defense of the entrance to Pensacola Bay. Except for change orders, approved by the Chief Engineer, the fort on Santa Rosa Point would be constructed in accordance with the plans and memoir prepared by General Bernard. Upon its completion, work would be commenced on the Foster's Bank fort.

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21. Ibid.

22. Ibid.; Bernard to Gratiot, Dec. 19, 1829, NA, RG 77, Ltrs. Recd., Chief Engineer. General Bernard was responsible for the revised project, while Major Poussin of the Corps of Engineers was given credit for his "industry and talent" in preparation of the drawings and profiles.

B. Need for the Fort and Navy Yard is Questioned

1. "H.N." and the "Pensacola Gazette" Attack General Bernard

Two studies--one made by General Simon Bernard in 1827 and the other by Commodore John Rodgers in 1829--for a brief period caused grave fears among area residents that the naval base would be relocated, resulting in a "curtailment," if not permanent abandonment of the fortifications under construction on Santa Rosa Point. It was known that General Bernard, in his 1827 reconnaissance of the Florida coast, had called attention to an inadequate depth of water over the Pensacola Bar and to the presumed advantages of St. Joseph Bay as a naval anchorage. It was also known that he was working on a major modification of the Santa Rosa Island fort. Captain Chase, no admirer of General Bernard, had complained that because of footdragging on the general's part construction had been delayed, and Underhill & Strong had had to lay-off a number of hands. Suspicions as to Bernard's motives were rekindled.

In the first week of December 1829, five weeks before Bernard submitted his "memoir" and plans to Chief Engineer Gratiot, an incendiary letter was received by the editor of the Pensacola Gazette. The writer began, "It is astonishing to what vile shifts men will sometimes resort for the gratification of their paltry malevolence and mistaken view of private interest." With such people, it was charged, every measure, however, salutary to the public welfare or beneficial to individuals, was viewed with abhorrence as long as it failed to contribute to their lust for power. Such a person or persons, "devoid of patriotism" had reportedly recommended to the government "the curtailment, if not the entire suppression of the fortifications" now under construction on Santa Rosa Island.

Congress, the correspondent (who signed his letter "H.N.") observed, had made "very liberal appropriations" for the accomplishment of this project. These funds were being applied with "that regard to economy and that degree of discriminating judgment which has ever marked the official conduct of the enlightened and intelligent

Engineer, Captain Chase." It was common knowledge that because of "the non-reception of the plans," which could have been forwarded at least six months ago, construction was likely to be arrested with consequence that a considerable portion of the appropriated funds would remain unexpended in Captain Chase's hands.

The writer was "unwilling to flatter the vanity of the thousand demagogues amongst us so far as to think that this is the result of their dastardly and understandable machinations." He believed he knew the source. If General Bernard were "closely questioned," he might unravel the slew of mystery in which it is involved.[23]

The editor published the letter, and informed his readers of the rumors that construction of the fortifications might be curtailed or stopped. He, however, had "too much confidence in the intelligence and discrimination of General Jackson to believe for a single moment that he" would sanction a policy so injurious to the Western and Southern portions of the Union.

It would be superfluous for him to discourse on the importance of these fortifications to the nation, and especially the Mississippi Valley. It was equally unnecessary to expatiate on "the future relative importance of this portion of the country." Perhaps ten years will not pass, he wrote, before "the Western States and Territories . . . on the Gulf will outnumber their earlier brethren--and even then the immense region, whose commerce with the rest of the world must find a highway to the Gulf of Mexico will only be in its infancy." Can it be possible, he thundered, that the Western and Southern Congressmen will look with indifference on this "sudden change of policy supposed to have been adopted after mature deliberation?" Wars would come, and it was only prudent to be prepared. The nation's best engineers had employed their skills to prepare plans of defense, which

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23. "H.N." to Editor, undated, found in Pensacola Gazette, Dec. 5, 1829.

had been adopted. Is it, the editor demanded, the policy to dump these plans? He did not believe the western and southern congressmen would consent to this without a struggle.[24]

The editor next zeroed in on the rumor that construction at the navy yard was to be suspended, with the facilities to be transferred to the Dry Tortugas. He admitted that situations may be found in the Gulf of Mexico to justify occupation by the Navy of the Tortugas and Key West. But it would only be as places of occasional refuge or rendezvous that they might have any value. The absurdity of selecting such places as permanent naval depots "must be obvious to every man of common sense from the simple fact that these places are destitute of wood and water," and in detached and solitary situations.

As everyone knew the depot at Pensacola was near the mouth of our "Great Western River," and drew its supplies from the western states, and could be protected from there.

> We will ask, what idea of security will the commerce descending the Mississippi derive from a defence eight hundred miles from its mouth on the Southern side of the Gulf, and this on a solitary spot of sand raised only a foot or two in low tides above the waves of the ocean.[25]

"H.N." on December 14 in a letter published by the Gazette observed that he was satisfied with the soundness of President Jackson's views on defense of the Gulf Frontier. But he feared the arguments of "shallow charlatons" might have some influence with him "in producing the retardation of the maturation and completion of the plans." He believed the President was sensible of "their weight, magnitude and

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24. Pensacola Gazette, Dec. 5, 1829.

25. Ibid.

importance to the general scheme of defence of the South and West," and that he was "cheerfully disposed to contribute the influences of his great renown and present station, to aid the fulfillment of so desirable an object."

The "fault or crime" was traceable, "H.N." charged, to a "infinitely lower source"--General Bernard, who had opposed the original plan recommended by the Board of Engineers, "through a mistaken spirit of complacence and deference to the factitious reputation which he enjoys." Bernard, it was known, was preparing a counter-project. Either his "malevolence and ignorance of the subject, or his culpable negligence" had resulted in the plans not being completed and forwarded. General Bernard, it was known, had in another instance (the Florida Canal) displayed an unaccountable spirit of hostility to the interests of the territory.

"H.N." knew of but one objection which could be made to occupation of Pensacola Bay or a naval base: the depth of water over the bar. This, however, could be corrected at an expense "infinitely trifling compared with its importance." Captain Chase, in whom the community had great confidence, had stated that the bar could be dredged to a depth of 30 feet for $150,000--a "paltry sum."[26]

"H.N.'s" identity is unknown. But his knowledge of what had occurred at the Board of Engineers September 1828 Newport meeting and since leads to the conclusion that he was a friend and confidant of Captain Chase.

2. Captain Chase's Proposal for Deepening Pensacola Bar

Nine weeks before publication of "H.N.'s" first letter, Captain Chase had written Chief Engineer Gratiot. He had pointed out that protection of the navy depot was not the exclusive object to be

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26. "H.N." to Editor, Dec. 14, 1829, found in the Pensacola Gazette, Dec. 14, 1829.

realized by the "extensive and costly" fortifications projected for Pensacola Bay. These goals were:

(a) The proximity of Pensacola Bay to Mobile Bay made the defenses of the two reciprocal; "the defence of the one not being perfect without the defence of the other."

(b) The Pensacola fortifications were necessary to prevent a hostile fleet from occupying the bay, and employing it as a base of operations for an attack on or to blockade Mobile Bay and the mouth of the Mississippi.

(c) To deny to a foe "access to use only harbour on the Gulf of Mexico frontier where their fleets could be refitted in safety."

To secure these objects would justify the occupation and defense of Pensacola Bay by "strong works of defence without reference to its advantages as a Naval depot."

Certain people, Captain Chase chided, had urged that the Tortugas and Key West be fortified for naval purposes in preference to Pensacola Bay. But this suggestion seemed to have been "prompted either by the consideration of personal interests, or from the want of information as to the real importance" of Pensacola Bay.

The Tortugas and Key West, because of their proximity to Cuba and their position on the Straits of Florida (the "direct tract of Commerce to Mobile and New Orleans"), Chase agreed were undoutedly of much value. Occupation of these by strong defenses would yield great advantages to the nation's military and commercial marine, and contribute to the general protection of the Gulf Frontier. These advantages, however, could not detract from those possessed by Pensacola Bay. On the contrary, they were enhanced, because Pensacola Bay was the only depot from which supplies for the Tortugas and Key West could be drawn.

The only objection "reasonably urged against Pensacola as a Naval Depot" was that the depth of water over the bar was insufficient to "admit of passage over it of the largest vessels in the Navy." This objection, Chase observed, could be easily corrected. For a sum, not exceeding $150,000, the bar could be deepened to 30 feet.

Captain Chase urged that if it were determined to deepen the bar that it be done while construction of the fortifications was underway. He planned to reconnoiter the bar at his leisure. Such information as obtained would be coordinated with that secured from similar projects, and an estimate and plan perfected and forwarded to the Department for deepening the Pensacola Bar.[27]

Although he had received no instructions from the Department on the subject, Captain Chase during the autumn of 1829 proceeded to survey the bar. On completion of his study, a copy of which he released for publication in the Gazette, Chase wrote the War Department that the bar was the only "impedement" to the "well being" of Pensacola Bay as a naval base. The bar, his reconnaissance had demonstrated, could be removed at a small cost in proportion to its importance.

Pensacola Bay, he reiterated, was the only harbor on the Gulf at which a

> great naval arsenal can be established; and it is satisfactory to know that such an arsenal has not only been commenced but that it is too intimately connected with the great Western and Southwestern Country, to bear the opposition which personal or sectional views may give rise to.[28]

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27. Chase to Gratiot, Sept. 30, 1829, NA, RG 77, Chase Letter Book.

28. Chase to Gratiot, Dec. 16, 1829, found in Pensacola Gazette, March 15, 1830.

His study of charts, dating to 1763, showed there had been no shift in the bar in more than 75 years. The British chart of 1763 revealed the same soundings shown on Major Kearney's 1822 survey. Depths of water over the bar had apparently neither increased or decreased. This gave "strong ground for our belief that an increased depth of water obtained by artificial means, would remain."[29]

The largest ships-of-the-line in the United States Navy did not draw more than 29 feet. He therefore proposed to "obtain 27-1/2 feet of water at low tide." Knowledge of what the latest dredges had accomplished at Nantucket and Ocracoke demonstrated that the dredging did not constitute a technical problem. In addition, buildings erected to support construction of the defenses at Santa Rosa Point afforded facilities for operations directed toward deepening the bar.

Its supervision would be "cheerfully undertaken" by the writer. By taking advantage of these economies, Chase estimated, Pensacola Bar could be deepened for $105,690.[30]

Urging support of Chase's proposal, the editor of the Gazette wrote, "should this undertaking receive the sanction of government and be carried out, then will every shadow of objection to this place as a Naval Depot be removed, and this harbor be without a rival in the South." Captain Chase, who had prepared the memoir on his own time, was eulogized as "among the great benefactors to Pensacola and its vicinity."[31]

3. The Rodgers Reports and Study

a. Rodgers' July 3, 1829, Report Causes an Uproar

The campaign to secure federal funds to deepen Pensacola Bar had been triggered by publication of the Rodgers Report.

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29. Ibid.

30. Ibid.

31. Pensacola Gazette, March 13, 1830.

Commo. John Rodgers of the Board of Naval Commissioners, accompanied by Commo. Daniel T. Patterson and George and Lomini Baldwin (civil engineers), had left Washington on April 12, 1829. They were to visit Pensacola to make a study of the navy yard; select a suitable site for erection of a naval hospital; and reconnoiter the lands sold by Delegate White to the Navy Department as a live oak reservation. While en route down the Ohio, Commodore Patterson was stricken with inflammatory rheumatism and had to remain in New Orleans, when Commodore Rodgers and the Baldwins took passage to Pensacola. After completing their mission in and around Pensacola, the trio boarded the sloop-of-war Erie for the return to Washington. Erie stopped at the Dry Tortugas for four days to allow Commodore Rodgers to examine "its singular harbor."

The veteran naval officer was delighted with what he saw. The Tortugas, he reported, consisted of 11 small keys and surrounding reefs and banks, over which the sea broke. Within were an outer and inner harbor--the former which, besides affording a safe anchorage at all seasons, was large enough to enable all the navies of Europe to ride at anchor. Of more importance, the inner harbor combined a sufficient depth of water for ships-of-the-line, with a narrow entrance of not more than 120 yards.

When he studied his charts, Rodgers found the geographic location ideal. If occupied and fortified, the Tortugas would constitute the "advance post" for defense of the Gulf Coast. They were "directly in the track of all vessels passing to and fro, not only between . . . [them] and the Mississippi, but between every part of West Florida and our Eastern States." No other site, he observed, presented the "same facilities in communicating" with ports in Cuba and on the Mexican coast. If the Tortugas were fortified, he informed Secretary of Navy John Branch, the commerce of LaHabana and "even the homeward bound trade of Jamaica, would be subject to its grasp."[32]

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32. Report of John Rodgers, July 3, 1829, found in Public Documents, Printed by Order of the Senate of the United States, at the First Session of the 21st Congress (Washington, 1829), Serial 192, Vol. I, pp. 231-37.

Rodgers, besides trumpeting the advantages of the Tortugas as a naval base in his report, called upon President Jackson and Secretary of Navy Branch to pause and reflect before additional improvements were made to the Pensacola Navy Yard. He suggested

> the propriety of entering, more fully than seems to have been hitherto done, into an investigation and analysis of the geographical position, in regard to the protection of our commerce and the suppression of piracy in the Gulf of Mexico and the West Indies, bearing in mind the small depth of water on Pensacola Bar, (22 feet 6 inches at high water) the difficulty of ingress and egress at all times; the sterility of the soil in the vicinity of the yard and for forty miles in every direction, the impossibility of preserving salted provisions and bread for any great length of time; and more particularly the high prices of labor and provisions, and the uncertainty and difficulty of obtaining mechanics and laborers from time to time, as the exigencies and nature of the service to be performed render expedient.

Upon mature deliberation, Commodore Rodgers believed, the President and Secretary would conclude that "Pensacola, as a naval station, neither possesses, by nature, nor can be made, by artificial means, to supply, in an essential degree, any of the requisites called for in an establishment, the object of which is to afford succor and give efficiency to the operations of a naval force."[33]

As to be expected, Pensacolans took vigorous exception to the Rodgers Report. The editor of the Gazette informed his readers that one of Rodgers' reasons for urging the abandonment of the Tartar Point Navy Yard was the difficulty deep-draft vessels had crossing Pensacola Bar. Although this was correct, he had been told by naval officers that there was no harbor on the coast easier of access. The subject of deepening the bar had been broached, and the government was in possession of Captain Chase's report on the subject.

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33. Ibid., p. 232.

Undoubtedly, the prophets of doom would respond that no permanency could be placed on this type of project, and "that sand bars are liable to shift." But this did not apply to Pensacola Bar. According to charts made in 1769, 1774, and 1824 there had not been a variation of an eighth of an inch.[34]

Again zeroing in on the Rodgers Report, the editor on January 23, 1830, noted that it was "marked throughout with a tissue of false reasoning and perversion of facts of which we thought him incapable." Does Rodgers mean to say, the editor inquired, that the administration under whose auspices the navy yard was commenced was ignorant of the geographic position of Pensacola Bay, or does he mean that being in possession of this information, they located the navy yard for the purpose of gratifying a sectional whim without due regard "to the service or the protection of our valuable and increasing commerce" in the Gulf of Mexico? Does he think his influence is such as to cause a sudden change in policy? Does he think President Jackson's administration will have so little regard to economy as to abandon an establishment, after an expenditure of nearly $200,000 upon his veto? If so, the editor suggested, he was grossly mistaken.[35]

Regarding the question of difficulty of ingress and egress, the editor pointed out, we are unable to judge, but we are informed by "Navy officers of high respectability that there is no coast easier of access than Pensacola, from the Mississippi to Maine, and that they have never experienced the difficulty spoken of by Commodore Rodgers." They had seen ships enter and depart the harbor, repeatedly, and if these objections existed, they would have been cognizant of them.

Rodgers' gratuitous comments about the high cost of provisions at Pensacola aroused the editor's ire. "Let him examine his

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34. Pensacola Gazette, Jan. 9, 1830.

35. Ibid., Jan. 23, 1830.

contracts and see if it is borne out," the newspaper thundered. So far as he knew, the squadron based on Pensacola was furnished with beef as good as any to be found in the South, at less than four cents per pound. The same applied to vegetables. Rodgers' statement about the impossibility of preserving salted provisions and bread in "this climate" was false. Salted provisions, Rodgers should know, can be preserved as well at Pensacola as at any other place in the United States.

The difficulty of preserving provisions was not attributable to the climate, but to Rodgers and his fellow Naval Commissioners, who should have "more regard to the correct discharge of their duties than the aggandizement of a few contractors who happen to be favorites." The three Commissioners, the editor continued, were in habit of requiring all provisions for this station, except bread, to be delivered at Boston. Provisions for the Pensacola Station were purchased by Northern contractors in Ohio, boated down the Mississippi to New Orleans, transshipped on ocean-going vessels to Boston, where they were stored for several years, before being forwarded to Pensacola. If the Commissioners were less interested in promoting the economic welfare of a few select contractors, the government could save a considerable sum on transportation.

As for bread, Editors Aitken and Blount's chided, the Pensacola station was supplied with as good, if not better, than any naval base in the nation. The bread was baked in New Orleans, and the reputation of that city for its bread was too well known to deserve comment.[36]

"Does Commodore Rodgers think that the removal of the Navy Yard to the Tortugas will remedy the evils complained of?" Will any man of common sense contend that "if salt provisions cannot be preserved in Pensacola they can be at Tortugas?" Will, the editors

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36. Ibid., Jan. 23, 1830.

inquired, mechanics go to the Tortugas for the wages they get at Pensacola? Have these men so little regard for their comfort and interest as to be "confined on a desolate spot, shut out from the rest of the world, for the same wages they can obtain in New Orleans, Mobile, and Pensacola?" The editors thought not.[37]

Focusing on Commodore Rodgers' statement that President Jackson was too well acquainted with the geography of the country to require any advise from him, Editors Aitken and Blount answered: This was fortunate, because the President "knew too well the relative importance of Pensacola to the South Western States to suffer himself to be biased by any" advise from Commadore Rodgers.

Concluding their article, the editors boasted, there is no navy yard in the United States "with such resources," ease of access, or more readily defended and supplied in time of war, than ours.[38]

b. The Rodgers Study of October 19, 1829

A second study made by Commodore Rodgers and submitted to Secretary of Navy Branch on October 19, 1829, also rankled Pensacolans. This report focused on whether the number of navy yards was "consistent either with economy, or the wants of the service."

Rodgers advised the Secretary that if the nation were to disregard calls for economy, plausible reasons might be given for an increase in the number of yards. It could be urged that by multiplying them, it would increase the chances for ships to reach one in event of an emergency. But, on looking at the locations of "our present yards," there were few of them that could claim a decided preference, even on "this the most favorable, but certainly fallacious view of the subject."

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37. Ibid.

38. Ibid.

Boston harbor could only be entered when the wind was fair. Its snow storms in winter, its fogs in spring and fall presented serious and frequently insuperable difficulties. Similar objections applied, with considerable effect, to Portsmouth, New York, Philadelphia, and Pensacola. All were objectionable, as they were difficult of access. Philadelphia and Pensacola could not be entered by deep-draft ships even at flood tide.[39]

The Commissioners were of the opinion that, with the exception of the yards at Boston, Washington, and Norfolk, and

> another near the Gulf of Mexico, (principally as a place for the deposite of stores) all of our other yards might, in the course of a few years, (allowing time to remove the ships, etc.) be dispensed without injury to the Naval service, provided an establishment be made near Newport, Rhode Island.

In time of peace and war the general rendezvous would be Chesapeake Bay and the waters near Newport.[40]

c. Delegate White Successfully Counterattacks

Delegate White, a vigorous champion of his constituents' interest, would not permit the Rodgers Reports to go unchallenged in Congress. On January 15, 1830, we wrote the Board of Navy Commissioners. He pointed out that doubts had been raised in Congress as to the possibility of "continuing the Fortifications at Pensacola," because of the Rodgers Reports. He wished to know if the Commissioners believed the fortifications "ought to be abandoned; and if

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39. Rodgers to Branch, Oct. 19, 1829, found in Public Documents of the 1st Session of the 21st Congress, Serial 192, Vol. I, pp. 225-31.

40. Ibid., p. 229.

the Tortugas were found, on examination, "suitable" for a naval depot, would the facilities on Pensacola Bay be abandoned.

If so, White wished the Commissioners to express their "opinion on the possibility and affect of a enemy getting possession of Pensacola on the commerce on the Mississippi by fitting out expeditions and the injury that might result to Mobile by landing troops and proceeding by land."[41]

Commodore Rodgers replied for the Board on January 16. A decision to continue or expand the Tartar Point Navy Yard, he wrote, was awaiting completion of the Tortugas surveys and a decision by President Jackson.[42]

Delegate White also introduced a resolution directing Secretary of War Eaton to forward to the House Captain Chase's report on "the probability and probable cost of deepening" the Pensacola Bar, to admit passage of public armed vessels of the "largest class."

Commenting on the White resolution, Editors Aitken and Blount observed, "there is no man who knows the importance of Pensacola Harbor to the South Western Country" better than Mr. White, and no one more capable of "refuting the vile and slanderous report of Commodore Rodgers." The Gazette would rely on Delegate White's exertions. He would advocate the interests of "this section of our Territory in the same able and efficient manner as heretofore."[43]

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41. White to Board of Navy Commissioners, Jan. 15, 1830, found in Territorial Papers-Florida, Vol. XXIV, p. 329.

42. Rodgers to White, Jan. 16, 1830, found in ibid.

43. Pensacola Gazette, Jan. 30, 1830.

C. Funding the Project in 1830

1. Fighting for an Appropriation

Secretary of War Eaton, drawing on data provided by Captain Chase, informed Congress that to fund construction of the Pensacola Bay fortifications in 1830 would require a larger sum than anticipated, because: (a) "construction of such works can be carried on with more economy, when circumstances will permit of its being done in a short period"; and (b) "in the case of works on our Southern frontier, such is the mildness of the climate, that, where the site is sufficiently healthy, the operations are uninterrupted during the year, and the facilities for applying a large sum are consequently very great." Moreover, experience dictated the wisdom of completing the Gulf Frontier forts as promptly as possible, to keep from exposing the superintending engineers and their men to long months in a hot, humid climate, where they might "contact disease which, if not fatal, produce an effect on their constitutions which may never be removed."[44]

Publication of the Rodgers Reports caused Congress to question the need to continue pouring public funds into the Pensacola fortifications, which would not be needed if the naval depot were removed to Dry Tortugas. Vigorous lobbying and hard work by Delegate White slowly sapped the strength of the opposition.

Readers of the Gazette learned in mid-March that the Fortifications Bill, with an amendment appropriating $130,000 for the works on Santa Rosa Island, had passed the House and had had a third reading in the Senate. There had been considerable opposition to the appropriation, and it had been only adopted because of Delegate White's efforts.[45]

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44. Public Documents, Printed by Order of the Senate of the United States, at the First Session of the 21st Congress (Washington, 1829), Serial 192, Vol. I, Doc. 1, p. 70.

45. Pensacola Gazette, March 13, 1830.

2. Congress Appropriates $130,000 for 1830

In January 1830 the Department had forwarded $21,000, the balance of the funds appropriated by Congress in 1828 and 1829 for the project. Acknowledging receipt of the money, Captain Chase on March 1, 1830, requested that if, despite the opposition, an appropriation were made by the 29th Congress for fortifications at Pensacola that $20,000 be remitted to him by April 20. As for the $21,000 just received, he had already obligated $5,000, and anticipated spending $12,000 during March, leaving a balance of only $4,000 to disburse in April.

If no appropriation were voted for the project in 1830, Chase proposed to apply the balance to "working up all the perishable materials, leaving on hand only about a million Bricks." These would be "transported to, and placed over the parade and other embankments of the works, thereby preventing the drifting of the sand which compose the embankment." The scarp of the Channel Fronts having been raised to the level of the cordon, he believed he could "make such application of additional masons' work as well as completely secure the whole masonry from injury or dilapidation, even if years should be permitted to elapse before work is resumed."

Although a suspension of construction would "be productive" of no injury to the United States, it would "result in severe injury to Underhill and Strong." They would not be reimbursed for their "expenditures incident to preparation for the vigorous prosecution of their work." Construction of quarters, storehouses, etc., added to their many other items were certain to be a "dead loss." Their contract existed only for the time "necessary to the application of the first year's appropriation, which, when exhausted, leaves them without claims for further employment, even if new appropriations are made." Its terms severed Underhill & Strong "from the slightest claim upon the Government for remuneration for any loss they might sustain by the suspension of their operation." Should this occur, Captain Chase suggested the Department "concede in equity, that which the sufferers could not claim as a right," and purchase the quarters, storehouses, etc. They could be used to house troops the government might post at Santa Rose Island for protection of the public property.

The Channel Fronts, as built, were capable of mounting a 36-gun battery, which could be employed in conjunction with those at the Barrancas for defense of the bay. By throwing up an earthen breastwork in rear of these fronts, and connecting it therewith, the position on Santa Rosa Point could be defended against an attack from the sea.[46]

Captain Chase and local residents were relieved and elated in the fourth week of March, when a letter arrived from Chief Engineer Gratiot. Reading the message, Chase learned that President Jackson, on February 27, had signed into law an "act making appropriations for certain fortifications" for 1830. Included were $130,000 for the works at Pensacola.[47]

On receipt of Chase's March 1 request for funds, the Department forwarded a draft for $20,000 on the United States Bank of New Orleans.[48]

D. 1830 Program

1. Captain Chase Submits a Construction Program

Supervisory Engineer Chase on March 25, 1830, submitted for approval by the Department his program for the year. As Underhill & Strong had discharged their 1829 contract in a "most satisfactory manner," Chase "proposed to engage their services in applying the Appropriations for 1830 in construction" of the fort. The advantages accruing to the Department by employing the contractors' "well organized and efficient force" had been established.

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46. Chase to Gratiot, March 1, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

47. Gratiot to Chase, March 3, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

48. Gratiot to Chase, March 22, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

Priority in the year's program had been assigned to "collection" of brick, construction of masonry, and excavation. One of the goals was to raise without delay the "principal walls of masonry," so time "may be afforded for them to dry, before the sand shall be filled in against them to any considerable height." Provided there was no outbreak of fever during the "sickly season" or other "untoward circumstances," Chase believed this could be accomplished.[49]

2. Chase Cuts Price of Masonry

A reduction in the price for brick from $10 to $9 per thousand enabled Captain Chase to cut the money to be paid Underhill & Strong per cubic yard of masonry from that established in 1829. This would take place after the brick currently on hand, which had been purchased at $10 per thousand, had been "absorbed in the masonry." The new price for masonry to be allowed Underhill & Strong would be $8.50 per cubic yard, a savings to the government of 20 cents per cubic yard.[50]

The price for excavation would vary in proportion "to the distance and expence of transporting the earth." The minimum price would be not less than 10¢ per cubic yard, and the maximum would not

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49. Chase to Gratiot, March 25, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

50. Ibid. To arrive at this figure, Chase had taken the cost of a cubic yard of masonry in 1829, $8.70 and had subtracted the "proportionate reduction upon a cubic yard of brick," 51¢, giving a new figure of $8.19. Underhill & Strong had objected to this figure, pointing out that experience had demonstrated that $8.70 per cubic yard (the brick costing $10 per thousand) was "insufficient to compensate them for loss of time; for execution of the difficult parts of the masonry; and for the risque of loss of materials, and injury to the works, which they encountered by reason of the exposed position of their operations."

After considering the protest, Chase concluded to set the price for 1830 of a cubic yard of masonry at $8.50.

exceed 25¢ per cubic yard. It was intended to pay for the excavation in sections, "and to regulate the price by the facilities or difficulties, which may present themselves in this Branch of Operations."[51]

The price paid the contractors per thousand feet of lumber, "laid and properly placed in forming the platforms for the foundations of the scarp and counterscarp," was placed at $18.[52]

3. Department Gives Its Approval

On April 17, 1830, the Department reviewed and approved the construction program as submitted. Also sanctioned was the verbal agreement Chase had made with Underhill & Strong.[53]

4. A Long, Hot Summer at Santa Rosa Point

a. Main Work Takes Shape

The long delay in receiving the plans and details of General Bernard's revised project for the land fronts had plagued Captain Chase throughout the latter part of 1829 and the first three months of the new year. On January 22, 1830, the Department finally mailed to Chase "a copy of the general plan and memoir" received from General Bernard two weeks before. The details, with additional instructions, would be posted as soon as possible. These documents would enable him "to proceed without further delay in tracing on the ground the plan of the fort . . . and so proceed with the excavations."[54]

Not knowing that Chief Engineer Gratiot had transmitted to him on March 29 the final three sheets of drawings of the

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51. Ibid.

52. Ibid.

53. Gratiot to Chase, April 17, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

54. Gratiot to Chase, Jan. 22, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

fort,[55] Chase on April 3 complained, "The details of the plan for the fort . . ., not having been recieved, I . . . beg leave to request that rough profiles exhibiting the several thicknesses of the faces, flanks and curtains of the North and East land fronts" be forwarded.[56] The arrival of the subject drawings on April 22 broke the roadblock. Chase now accelerated operations.[57]

Jasper Strong pushed his employees, whom Captain Chase described as very efficient, hard. By September 30 all the foundations of the "main work" had been laid; that portion of the revetment of the Channel Fronts raised to "their proper heights; that of the north and south revetment . . . raised on an average to the soles of the Embrasures"; that of East Front, and two faces of Southeast Bastion 24 feet to the level of the cordon. The foundations of the North Front casemates had been laid, and 15 arches of the Channel Fronts completed.[58]

With only $26,678 remaining of the year's $130,000 appropriation to disburse during the 4th Quarter, Chase was obliged to cut back on his operation by more than 50 percent. Notice was accordingly given to brickmakers and others furnishing construction materials.[59]

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55. Gratiot to Chase, March 29, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

56. Chase to Gratiot, April 3, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

57. Chase to Gratiot, April 22, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer.

58. Chase to Gratiot, Sept. 30, 1830, NA, RG 77, Ltrs Recd., Chief Engineer. Although Chase refers to an annual drawing, illustrating progress during the previous 12 months, it is not on file in RG 77, Drawer 78.

59. Ibid.

b. Yellow Fever Strikes

The schooner Peacock, which had left LaHabana on August 11, 1830, reached Pensacola Bay nine days later. While she was en route across the Gulf yellow fever broke out on the craft. Informing their readers of this, the editors of the Gazette reported:

> With regard to the health of the town, there has been a few cases of slight fever, produced by the extreme heat of the weather, which have, however, in every instance yielded to medicine. With one or two exceptions those persons who were attacked with the fever were never confined more than 12 or 15 hours.[60]

Before another week passed, yellow fever gripped the area, causing the Gazette to suspend publication for six weeks. Because of an absence of any correspondence from Captain Chase with the Department during this period, we do not know what effect the plague had on building of the fort and in the Santa Rosa Island construction camps.

c. General Gratiot Provides Guidance on Preparing the Earthen Slopes

Captain Chase on August 31 addressed an inquiry to Chief Engineer Gratiot. He wanted to know the means adopted at Fort Monroe to "preserve the forms and dimensions of the Parapet and Glacis . . ., which are composed of sand."

If they were covered with clay, he wished to know the thickness. As it would be difficult and expensive to acquire clay on Pensacola Bay, Chase desired the Department's thoughts on the subject.[61]

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60. Pensacola Gazette, Sept. 18, 1830. In 1830 the newspaper was edited by John Aitken and ____ Blount.

61. Chase to Gratiot, Aug. 31, 1830, NA, RG 77, Chase Letter Book.

General Gratiot (who had been superintending engineer at Fort Monroe) advised Chase that the slopes of that work were covered with a coat of clay and soil "about six inches thick, on which "wire grass" had been planted. Although the past season had been very dry at Old Point Comfort, the earthen slopes had a good growth of vegetation which promised "permanency."

The slopes of the Fort Monroe ramparts were 1-1/2 and 2 base to height; the first was believed too small and would have to be increased. The slopes of the parapets were of equal base to height and sodded with "marsh sods." The interstices were filled with vegetable earth and planted with wire grass, which as the salt particles are removed from the connecting sods by rain, etc., will take root and soon spread over the entire surface. Although the "experiment was new, and not fully tested," all indications were that it would be successful. The clay and soil had been ferried to Old Point Comfort in lighters, and the cost of the sod, when in place, had been about 45 cents per cubic yard.[62]

E. 1831 Program

1. Funding the Project in 1831

a. Chase Formulates His Estimates

Captain Chase on September 18, 1830, transmitted to the Chief Engineer his estimate of funds required for the Santa Rosa project in 1831. The maximum sum he could expend in the new year was $206,000, and this would provide for completion of the fort, except for about 46,000 cubic yards of earth embankment.[63] With the present force of mechanics and laborers, he could, with advantage, have disbursed $206,884 during the current year, rather than the $130,000 appropriated. By the end of the month, to emphasize his point, Chase advised the

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62. Gratiot to Chase, Sept. 26, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

63. The 46,000 cubic yards of embankment, to be added in 1832, would be applied principally to the "Rampart of the East Land Front and to the Filling in upon the tops" of casemate arches.

Department, that he, in the first three-quarters of the year, had expended $135,787, leaving only $30,000 to be spent in the fourth quarter. More important, the period October-January was the most favorable time of the year for construction on the Gulf.

To support a request for an appropriation of $200,000, Captain Chase argued:

> (a) The prompt completion of the project would save a considerable sum in contingent expense.
> (b) It was desirable to cap all the masonry walls as soon as possible to prevent weather damage.
> (c) The raising of the masonry walls to their proper height would afford them a longer period "to dry before the sand is thrown upon them."
> (d) Construction of the embankment of the glacis, etc., was "hand labor," and could be carried on "simultaneously with the other parts of the work." As such, it could be undertaken with greater facility and less expense in 1831, than if it were deferred for several years.
> (e) Necessary building materials were available in abundance.
> (f) The Engineer and his staff would be "sooner relieved from a severe duty on a Sand Bar and under a tropical sun."

His minimum estimate -- $173,971 -- contemplated completion of all "the masonry, and . . . all the carpentry, some Stone Work, and all of the Embankment except about 20,000 cubic yards which are necessary to the foundations of the casemates, mines, etc." This figure was based on the "least capacity of the existing force," and could not be reduced without laying off part of the force, especially the mechanics. A dispersion of the "white and Black mechanics and Black Laborers" was to be avoided, if feasible, as they had been "long enough employed to have learned the fashion and manner in which we require the work to be performed."[64]

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64. Chase to Gratiot, Sept. 18, 1830, NA, RG 77, Ltrs. Recd., Chief Engineer; Mordecai to Chase, Aug. 14, 1830, NA, RG 77, Ltrs. Sent, Chief Engineer.

b. Chase's Program is Submitted and Approved

Congress was unwilling to include in the Fortifications Bill for 1831 either the maximum or minimum sum requested by Captain Chase for the Santa Rosa Point defenses. The bill signed by President Jackson appropriated $100,000 for the project in 1831.

On being notified of this, Captain Chase in March proposed and submitted for approval his year's program. Jasper Strong, having faithfully executed his agreement in 1830, would be re-engaged, as contractor for "construction of the works at the Point" in 1831. With less money to spend, operations would be "greatly curtailed."[65]

Jasper Strong, as surviving partner of Underhill & Strong, agreed "to perform or cause to be performed all the Brick masonry" that may be required in construction of the Santa Rosa Island fortifications under the appropriation for 1831, "conforming in every respect to the plans and details."

He agreed to do the same with the excavation.

Strong would be governed by "strict inspection" by the "Commanding Engineer and his assistants but also to such inspections by the Board of Engineers, and other Engineer officers as are prescribed by the Regulations of the Engineer Department." He would "abide by such decisions as shall be made at each inspection, upon the quality of the workmanship and materials," changing the same for better, if called upon.

He would assume all risks "incident to the storms, overflows, or other acts of Providence."

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65. Chase to Gratiot, March 29, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer; Gratiot to Chase, March 4, 1831, NA, RG 77, Ltrs. Sent, Chief Engineer.

His compensation, as in 1830, would be $8.50 per cubic yard for brick masonry, and for such "a sum as shall be deemed . . . fair compensation for a cubic yard of earth, the minimum of which . . . shall not be less than ten cents per cubic yard." The maximum to be governed by the distance necessary to haul the earth.

To facilitate construction, it was agreed that Captain Chase would continue to purchase and cause to be delivered onsite "all the materials necessary to the construction" of the masonry. These materials were to be used by Underhill & Strong, and "the value of the quantity used charged . . . and deducted at each quarterly settlement."[66]

Collection of materials and erection of brick masonry would be advanced as far as the available funds will admit." Little or no excavation was to be done during the remaining three-quarters of the year.

Chase planned to continue to receive bricks at the Santa Rosa Island open market, while purchasing his lime direct from Thomastown.[67]

On April 26 the Department approved Chase's program as submitted, as well as his agreement with Jasper Strong.[68]

2. Fort Takes Shape

In the year since his last annual progress report, Captain Chase wrote on October 5, 1831, operations had been "advanced . . . in

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66. Agreement, Strong with United States, March 29, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

67. Chase to Gratiot, March 29, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

68. Gratiot to Chase, April 26, 1831, NA, RG 77, Ltrs. Sent, Chief Engineer.

all their branches." Jasper Strong had "continued to produce favorable results, by his promptness, zeal and fidelity in discharging his obligations."

By reference to the annual drawing, General Gratiot could see that "the scarp walls of the five fronts, of the casemates of all the fronts, except two Flank Casemates; and nearly two-thirds of the counterscarp" had been completed. All the masonry would be finished by December 31, except the breast-height wall of the main work and the counterscarp. Erection of these parts of necessity was being delayed until such time as the ramparts and glacis had been "raised sufficiently high."

The embankment of the fort's interior, i.e., the parade, foundations of the casemates, etc., had lagged. An insufficient appropriation did not allow more extended operations under this category.[69]

Several tropical storms had hammered the Gulf Coast in August and September. Surf pounding across Santa Rosa Point had damaged the "green masonry."[70]

Captain Chase on his return on January 16, 1832, after a six-month absence, approved the manner by which Lt. George E. Chase and Jasper Strong had closed down the project, upon exhaustion of the 1831 appropriation.[71]

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69. Chase to Gratiot Oct. 5, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer. The annual drawing for 1831 is missing from RG 77, Drawer 78.

70. Ibid.

71. Chase to Gratiot, Jan. 16, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

3. Supervising the Project

a. Captain Chase Gets a New Assistant

Early in April 1831 Captain Chase notified General Gratiot that his health "would probably" make it necessary for him to take a leave of absence during the summer. This was provided there was no improvement in his condition by June 1. Having detailed Lt. Alexander H. Bowman to Mobile Point as a replacement for Lt. Cornelius Ogden, Chase, because of lack of personnel, would be unable to take advantage of any "indulgence" granted by the Department, unless the Corps was agreeable to a temporary reassignment of Capt. Richard Delafield to Santa Rosa Island.[72]

General Gratiot vetoed Chase's request that Captain Delafield relieve him as project superintendent, because Delafield had been assigned to duty by President Jackson with the commission recently established for improvement of navigation on the Ohio and Mississippi Rivers. This need not prevent Chase from leaving his post to recoup his health. Chase was authorized to absent himself whenever, in his opinion, he believed his physical condition warranted. On doing so, he would make such arrangements for the "steady prosecution of the works" as deemed necessary.[73]

Acknowledging the Chief Engineer's letter, Captain Chase reported that the "improved state" of his and his family's health made his going on leave unnecessary, provided the Department had been unable to approve his application. Should his health, however, require him to absent himself from Santa Rosa Island during the summer, "arrangements would be made as to insure the faithful and steady prosecution of the work during my absence."[74]

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72. Chase to Gratiot, April 11, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

73. Gratiot to Chase, May 5, 1831, NA, RG 77, Ltrs. Sent, Chief Engineer.

74. Chase to Gratiot, May 23, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

Project Engineer Chase finally received an officer to fill the billet as his assistant in mid-May, when Lt. George E. Chase, his younger brother, reported for duty. The position had been vacant since Lieutenant Hood's reassignment 12 months before.[75]

George E. Chase, like his brother, a native of Massachusetts, had graduated from the U.S. Military Academy in 1828, in the same class with Jefferson Davis. Promoted 2d lieutenant, Chase had been assigned to the 3d Artillery. From April 1829 to May 1831, Chase had been on detached duty as a topographical engineer.[76]

b. Captain Chase's Six-Month Absence

By mid-July there were developments which decided Captain Chase to avail himself of the authority to absent himself from his post. These included the "delicate state" of his wife's health; the expectation that he would be "benefitted by a journey into the interior"; and knowledge that the current year's appropriation would be nearly exhausted by September 30. With construction closed down on Santa Rosa Island, there would be nothing to require his "attention" at Pensacola, but the "safe keeping of the public property until next year's appropriation."

Satisfied that his young assistant, Lieutenant Chase, could cope with the situation, he and his family would leave Pensacola on July 22 for White Sulphur Springs, Virginia.[77]

Before absenting himself, Captain Chase contacted Lieutenants Bowman and Chase. They were told of his travel plans, and that the latter would be in charge of the Santa Rosa Island project.

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75. G.E. Chase to Gratiot, May 15, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer; Gratiot to W.H. Chase, June 30, 1831, NA, RG 77, Ltrs. Sent, Chief Engineer.

76. Cullum, Biographical Register, Vol. I, p. 321.

77. Chase to Gratiot, July 19, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

Lieutenant Chase was informed that the appropriation would be nearly exhausted by September 1. But as Jasper Strong had expressed "a desire to continue the workmanship of the masonry and the labor of the embankment," Captain Chase had assumed responsibility for giving him the go ahead. This work would be at the risk of the contractor, in event Congress failed to fund the project in 1832.

Lieutenant Chase was to provide Strong with prerequisite plans and details and to supervise the operations.

If any technical problems developed, Lieutenant Chase was to consult with Lieutenant Bowman at Mobile Point. Should Lieutenant Ogden return to duty, Bowman was to proceed without delay to his former station at Chef Menteur and Battery Bienvenue.[78]

From Macon, Georgia, on August 1, Captain Chase wrote General Gratiot that, while on leave, he would continue to exercise his duties as superintendent of the fortifications at Pensacola, and as senior Engineer on the Gulf of Mexico. Although on furlough, he considered himself "responsible in every respect for the steady prosecution of the works at Pensacola and the well being of my command in general."[79]

The Chases reached White Sulphur Springs on August 12. From there, Captain Chase assured the Department that he would continue "to watch over the interest of my command on the Gulf of Mexico, and hold myself in readiness to return thither should the death of any of our officers, or other circumstances require."[80]

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78. Chase to Bowman and Chase, July 19, 1831, NA, RG 77, Chase Letter Book.

79. Chase to Gratiot, Aug. 1, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

80. Chase to Gratiot, Aug. 12, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

From White Sulphur Springs, the Chases, in late September, traveled to Philadelphia. In mid-November, Captain Chase was ordered to Zanesville, Ohio, to serve on a court of inquiry, investigating charges against Lt. Stephen Tuttle.[81] The court had adjourned by November 30, and Captain Chase notified the Department that he was now returning to his station.[82] Chase, at this season of the year with the Ohio at low stage, had difficulty obtaining accommodations. It was January 8, 1832, before he reached Mobile.[83] Another eight days passed before Captain Chase, after a most fatiguing journey, reached Santa Rosa Island, and resumed from his young assistant active superintendence of the project. He had been away almost six months.[84]

c. Chase Defends His Interests

Chase, upon his return, was shocked to learn that in his absence Captain Delafield, as senior Engineer on the Gulf, had been drawing the double rations to which he believed himself entitled. On January 24 Chase sought to have this conflict resolved.

The Department was informed that Chase, although he was absent, held himself to be "fully responsible for the faithful administration of the command." As his absence "did not impair" his responsibility, Chase deemed himself entitled to the "emoluments attached to it," among which were "double rations as commanding Engineer on the Gulf."

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81. Gratiot to Chase, Nov. 14, 1831, NA, RG 77, Ltrs. Sent, Chief Engineer.

82. Chase to Gratiot, Nov. 30, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

83. Chase to Gratiot, Jan. 8, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

84. Chase to Gratiot, Jan. 16, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

As he considered himself in command, he had not officially notified Captain Delafield, the next senior officer, of his absence. On his return, Delafield had written him that, as senior engineer, he had been in command since July 22.[85]

Captain Delafield, as expected, did not agree with Chase's position. Writing the Department, he raised the question, "Who was the commanding Engineer on the Gulf . . . from the date of Capt. Chase's departure from Pensacola . . . until his return?" He wished to call the Department's attention to the letter specifying the "duties of Senior Engineer on the Gulf of Mexico, giving full power of the Chief Engineer, in all cases of emergency not allowing time for reference to Washington." To compensate for these increased responsibilities, the Senior Engineer on the Gulf was allowed by order of the Secretary of War certain emoluments.

Delafield contended that the officer of the Corps "actually present on the Gulf, whatever may be his rank can alone discharge the duties and be entitled to the emoluments." Captain Chase, he pointed out, was during his absence at points more distant from the Gulf than Washington, and thus could not act as Senior Engineer according to the tenor of the Department's instructions.[86]

General Gratiot, on reviewing Army Regulations, found that Paragraph 1477 provided an answer to the dispute. As Chase had been absent from the Gulf for more than a month, he had forfeited his claims for emoluments as Senior Engineer on the Gulf for that period. Delafield was entitled to the double rations.[87]

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85. Chase to Gratiot, Jan. 24, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

86. Delafield to Gratiot, Jan. 26, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

87. Gratiot to Delafield, Feb. 15, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

Captain Chase, during this period, had demonstrated two facets of his character which were to adversely affect his career. His decision to allow Underhill & Strong to continue with the masonry and embankment at their own risk was fraught with danger. After Joseph Totten replaced General Gratiot as Chief Engineer in 1839, this practice, which Chase continued to follow, earned him several severe reprimands. Chase's claim to the privilege of exercising his command and receiving its emoluments, when on leave, was one calculated to gain for him the ill will of brother officers.

F. Project in 1832

1. Funding the Undertaking

a. Chase's Estimate

At White Sulphur Springs, Captain Chase, in September 1831, prepared his estimates for funding the project next year. To complete the fort, he needed $150,462. If it were determined to extend operations over several years, the cost would be greater.

The current year's appropriation, he pointed out, had been obligated by August 31. Although the appropriation had been liberal, such were "the advantages and facilities incident to our operation in Pensacola Harbour . . . that a much larger sum could have been applied." Concealing from the Department his decision to allow Underhill & Strong to proceed with construction at their own risk, in anticipation of a further appropriation, Chase informed General Gratiot, "Operations must be permitted to languish until appropriations or a partial appropriation can be obtained."

He urged the Department to apply for a "partial appropriation . . . to sustain the operation until the regular appropriations are available." Fifty thousand dollars was suggested.[88]

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88. Chase to Gratiot, Sept. 6, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer

The estimated total cost of the works was now $505,462--$40,162 in excess of the original figure. This difference Captain Chase attributed to disbursements under certain items not embraced in the original estimates, i.e., cisterns; canal cement; purchase of site; pay of agent for fortifications, superintendent, surgeon, and barge crew; erection of engineer's quarters and wharves; and the higher cost of embankment, paving the gun rooms, stonework for embrasures, covering the casemate arches with sheet lead, etc.[89]

Chief Engineer Gratiot decided against requesting a special appropriation, but approved Chase's estimate for inclusion in the Department's annual Fortifications Bill. On November 4, 1831, Gratiot informed Lewis Cass, who had replaced John Eaton as Secretary of War, "the judicious arrangement for supplies and for workmanship" by Captain Chase, "combined with the advantage of a mild climate and helpful position have effected so great a progress in the construction of the fort . . . that it might be completed" next year. Chase's estimate of $150,000 for continuation of the work was based on its completion, "as the funds may be much more economically and advantageously applied in one season than by being divided between" several appropriations.

To take advantage of the arrangements perfected by Captain Chase, it was proposed by the Department "to commence the other fortifications requisite for the defence of Pensacola harbor, and an estimate for necessary funds would soon be submitted to Congress."[90]

b. 1832 Appropriation

En route back to Pensacola from Zanesville, Captain Chase stopped off in Mobile in January 1832 and forwarded a request to

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89. Ibid.

90. American State Papers, Class V, Military Affairs, (Washington, 1860), Vol. IV, p. 729.

Chief Engineer Gratiot to remit to him $50,000 on account of the Pensacola fortifications, as soon as the appropriations for 1832 became available.[91]

Not having read of passage of the Fortifications Bill for 1832, Captain Chase on April 1 complained to the Chief Engineer, "the want of funds up to this time has necessarily compelled us to curtail our operations." He asked that the Department transmit another $10,000, in addition to the $50,000 previously requested.[92] Chase, in view of his unauthorized decision to allow the contractor to proceed at his own risk, was getting extremely anxious.

Meanwhile, General Gratiot had notified Chase that President Jackson had signed into law the Fortifications Bill, appropriating $100,000 for the Pensacola defenses in 1832.[93] Responding to Chase's January 8 requisition, the Department in early March forwarded a draft for $50,000 to be remitted to him from the appropriation.[94]

2. Chase's Program is Approved

As required by the Department, Captain Chase, on receipt of news that $100,000 had been appropriated for the works on Santa Rosa Island for 1832, prepared and submitted for approval the year's program. It would be limited, he admitted, because $80,097 of the appropriation had already been expended. The balance, less than $20,000, would be "applied in such a manner as will enable us to maintain operations until the appropriations for 1833 shall have been realized."

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91. Chase to Gratiot, Jan. 8, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

92. Chase to Gratiot, April 1, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

93. Gratiot to Chase, Feb. 29, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

94. Gratiot to Chase, March 8, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

The embankment of the "breastwork" and glacis would be pushed, while such portions of the "small amount of masonry remaining to be completed will be advanced, as the embankment necessary to receive them are raised to the proper level."

Underhill & Strong, having faithfully performed their contract for 1831, would be re-engaged on the same terms as before.[95]

On May 23 General Gratiot approved the construction program and the contract with Jasper Strong for "performing the excavations, masonry, etc."[96]

3. General Gratiot Vetoes Chase's Attempt to Circumscribe Regulations

Captain Chase had been reflecting on the small sum available for construction during the remainder of the year. This $20,000, he complained to General Gratiot, was "wholly inadequate to sustain the operations, and they must in consequence be greatly curtailed until the appropriation for 1833" can be applied.

"Great inconvenience, if not injury," he emphasized, "must result from the derangement of the system adopted for the prosecution of the works." To prevent this, the Department was urged to request a special appropriation of $50,000 for the project from Congress, before it adjourned.[97]

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95. Chase to Gratiot, April 7, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

96. Gratiot to Chase, May 23, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

97. Chase to Gratiot, April 18, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

General Gratiot vetoed Chase's suggestion, observing that it would be unwise for the reasons mentioned during Chase's September visit to Washington.[98]

Recalling that no one had objected when Underhill & Strong had continued to work after funds had been exhausted in 1831, Captain Chase, as a way out of the impasse, suggested to the Department that a similar procedure be adopted this year. If so, the embankment of the glacis would be allowed to be advanced until such time as next year's appropriation became available.[99]

General Gratiot was shocked. Responding on June 21, he warned his project engineer: the Department can not be pledged for payment of "any debt not contemplated by the appropriation for the current year, or that may be contracted in anticipation of a future appropriation." He would not allow Underhill & Strong to construct the glacis "in anticipation of the appropriation for 1833."[100]

In defense of his action, Captain Chase pointed out, Mr. Strong "does not rely upon a pledge of the Engineer Department for payment of any debt that may accrue therefrom, and he can therefore entertain no claim against the Department in event of the failure of the appropriations for 1833."

He, however, promised, in the future, to respect War Department's regulations regarding contracts.[101]

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98. Gratiot to Chase, May 23, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer. Unfortunately, there are no minutes of the September 1831 meeting.

99. Chase to Gratiot, June 7, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

100. Gratiot to Chase, June 21, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

101. Chase to Gratiot, July 20, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

4. Lack of Funds Limit Construction in 1832

Reviewing progress in 1832, Chase reported, construction had proceeded with as much "advantage as the limited . . . appropriations would admit." With funds all but exhausted by June, operations had been "greatly" curtailed.

By reference to the annual drawing, "exhibiting" condition of the fort on September 30, General Gratiot could see that the "whole of the Brick masonry has been completed with the exception of the Interior Revetment of the Parapets and Glacis, which can only be constructed when the Embankments of the Ramparts and Glacis have been raised sufficiently high."

The situation of the project was highly favorable, "all the materials having been delivered, and the most important parts of the work to be completed, being composed of fitting up of the officers and soldiers Quarters; and . . . the formation of the Ramparts and Glacis." By encouraging Underhill & Strong, the project, in event of emergency, could be finished within six months or less.[102]

Captain Chase in November 1832 advised Washington that the appropriations for the year being exhausted, there was nothing to add under the headings for purchases and expenditures to his annual report made on September 30. There would be no need to submit any monthly reports until the anticipated appropriation for 1833 became available.[103]

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102. Chase to Gratiot, Sept. 30, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of the annual drawing of the "Fort under construction at Santa Rosa Island, Pensacola, Exhibiting its condition on the 30th [of September] 1832," is found in the files of the Florida Unit, Gulf Islands National Seashore.

103. Chase to Gratiot, Nov. 1, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

5. Supervising the Project

Captain Chase's assistant, Lieutenant Chase, in the winter of 1831-32, asked to be relieved of duty at Pensacola Bay to enable him to rejoin his unit--the 3d U.S. Artillery. The Adjutant General approved the request on March 24.[104] The young officer, before he could be reassigned, was taken sick. Dr. Bache in May told him that at present his condition did not warrant him rejoining the 3d Artillery at Fort Independence, Massachusetts. Lieutenant Chase accordingly addressed a request to Chief Engineer Gratiot to be retained on duty with the Engineer Department.[105]

In late April 1832 Captain Chase was called to Washington. During his absence Lieutenant Chase was in charge of the project. On Chase's return to Pensacola, Lieutenant Chase, in July, took passage on a Boston-bound vessel.[106]

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104. Gratiot to Chase, March 24, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

105. G.C. Chase to Gratiot, May 27, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

106. G.E. Chase to H. & W. Delafield, May 3, 1832, NA, RG 77, Chase Letter Book.

VI. THE FORT NEARS COMPLETION

A. Project in 1833

1. Funding the Operation

a. Chase Prepares and Submits His Estimates

To complete the project in 1833, Captain Chase informed the Chief Engineer on September 20, 1832, he needed an appropriation of $131,830. He had calculated the price per cubic yard of clay and sod for covering the ramparts and glacis at 30¢, when positioned. This price was assumed as the maximum, but he had hopes that clay banks more convenient to the project might be discovered, allowing a reduction in this item. Cost of embankment, as General Gratiot could see, was higher than in previous estimates, because all sand within 100 yards of the foot of the glacis had been "exhausted," and there remained 165,000 cubic yards to throw up. The average distance for hauling was now at least 500 yards.

Because of this and other factors, Captain Chase forecast, the total cost of construction would exceed by $121,000 the estimated cost of the works, $465,000, made by General Bernard in January 1830.[1]

b. Congress Appropriates the Requested Sum

On December 30, 1832, Captain Chase requested that the Department remit to him $50,000 on account of the Santa Rosa Island project, "as soon as the appropriation for 1833 shall have been realized."[2] This would enable him to resume operations, after the long hiatus caused by early expenditure of the 1832 appropriation.

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1. Chase to Gratiot, Sept. 20, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer. Other factors contributing to the overrun, cited by Chase, were: cost of engineer's quarters and office, wharves, cement, lead, boat and crew, purchase of site, shells, stonework, and brickwork pavement, not included in the original estimate. General Gratiot acknowledged receipt of the estimate on Oct. 9, 1832. NA, RG 77, Ltrs. Sent, Chief Engineer.

2. Chase to Gratiot, Dec. 30, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

The 2d Session of the 22d Congress acted on the Fortifications Bill early. On January 19, 1833, Chief Engineer Gratiot notified Chase that the bill had been signed into law by President Jackson five days before. Included was an appropriation of $132,000 for "completion of the fortifications at Pensacola," and in compliance with Chase's request, a requisition for $50,000 had been made upon the Treasury.[3]

c. Chase's Program

In accordance with regulations, Captain Chase submitted for approval by the Department a program for spending this sum. The embankments of the glacis and ramparts, a "small portion of masonry," together with "finishing off . . . the officers' and soldiers' quarters" were projected. If no obstacles were encountered, the fort would be completed in the 1st quarter of 1834.

Although the distance embankment would be hauled was excessive, Chase estimated that it would not average more than 35 cents per cubic yard.

Jasper Strong had continued to "afford satisfaction by the prompt and faithful discharge of his obligations." Chase therefore proposed to renew his contract with Underhill & Strong in 1833.[4]

The Department on April 19 reviewed and approved the Santa Rosa Island construction program for 1833 and returned the

3. Gratiot to Chase, Jan. 19, 1833, NA, RG 77, Ltrs. Sent, Chief Engineer.

4. Chase to Gratiot, Mar. 12, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer.

Strong contract for corrections.[5] On June 4 Secretary of War Cass approved the amended contract.[6]

d. Captain Chase Fails to Get Lieutenant Chase Reassigned

With the project closed down, because of lack of funds, Captain Chase at the beginning of 1833 had absented himself from his command and had traveled to Columbus, Georgia, on personal business. When he returned to Pensacola, after an absence of about ten days, he notified the Chief Engineer of what he had done.[7]

On January 29 Captain Chase requested that Lieutenant Chase (his younger brother) be again detailed as his assistant. Lieutenant Bowman, he pointed out, would be required to spend the winter and spring in Louisiana, overseeing the repair of Fort Wood and Battery Bienvenue. This would leave him without an assistant at a critical period. Help was needed at Santa Rosa Island to attend to the details of forming the slopes of the embankment, capping the walls, and fitting out the quarters.

Lieutenant Chase, having served as his assistant for more than a year, was "well acquainted with the project," while at the same time ill health unfitted him for garrison duty at Fort Wood, Louisiana, to which his unit of the 3d Artillery had been recently transferred.

The Department on February 12 formally asked General-in-Chief Macomb to detail Lieutenant Chase as assistant engineer

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5. Gratiot to Chase, Apr. 19, 1833, NA, RG 77, Ltrs. Sent, Chief Engineer.

6. Gratiot to Chase, June 4, 1833, NA, RG 77, Ltrs. Sent, Chief Engineer.

7. Chase to Gratiot, Jan. 13, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer.

at Santa Rosa Island.[8] When weeks passed and nothing happened, Captain Chase notified Washington that neither he nor Bvt. Maj. Richard A. Zantzinger, the lieutenant's commanding officer, had heard anything regarding his reassignment.[9] Two days before this letter was posted, General Macomb had rejected the request to detail Lieutenant Chase to the project.[10] Soon after being advised of this, Lieutenant Chase resigned from the Army.

2. Chase Seeks Changes and Guidance

a. Chase's Proposal for a Demi-Counterscarp Fails

Captain Chase in early January 1833 transmitted to Washington for approval plans for a "demi-counterscarp" he proposed to add to the Channel Fronts and "the North and South Fronts." The plans approved by the Board, he observed, called for an earthen slope, not masonry. But the great difficulty of forming slopes on sand embankments and the danger inherent in their destruction by the garrison through carelessness, he explained, made it desirable to undertake the suggested change.

A masonry "demi-counterscarp," he argued, would also afford an additional barrier against encroachments by the sea. The security and permanency afforded by construction of a masonry "demi-counterscarp" would "yield a full equivilent for its cost."[11]

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8. Chase to Gratiot, Jan. 29, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer.

9. Gratiot to Chase, Feb. 12, 1833, NA, RG 77, Ltrs. Sent, Chief Engineer.

10. Gratiot to Chase, Apr. 18, 1833, NA, RG 77, Ltrs. Sent, Chief Engineer.

11. Chase to Gratiot, Jan. 14, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of the plan submitted by Chase with the proposal is found in the files of the Florida Unit, Gulf Islands NS.

General Gratiot, already concerned over the cost of the fort exceeding the estimates by more than $100,000, was understandably cautious. He replied that funds currently available for the project must be applied to its completion according "to the plan originally adopted, omitting the waterfront counterscarp slopes." If sufficient funds remained to construct the "demi-counterscarp," Chase was at liberty to proceed.[12] There were not, and the proposal was scratched.

b. Chase Seeks Information on Lining the Magazines

Captain Chase on October 24, 1832, requested information from the Department on "the best method of arranging the interior surface of magazines . . . to preserve powder in moist climates."[13] General Gratiot was out of the city when the request arrived, and Lt. William H. C. Bartlett, his assistant, wrote that this question would be answered as soon as the Chief Engineer returned to the capital city.[14]

Either Bartlett forgot to refer the subject to General Gratiot, or the Chief Engineer failed to reply. Such a situation would have been unthinkable under Gratiot's successor. Chase received no guidance in this matter and proceeded on his own.

3. Chase Fails to Complete the Project

By September 30, 1833, Captain Chase had spent $126,400 of the year's appropriation, leaving $5,451 to disburse in the 4th quarter. The money expended had been employed "to great advantage principally in the completion of the masonry; the construction of the

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12. Gratiot to Chase, Jan. 30, 1833, NA, RG 77, Ltrs. Sent, Chief Engineer.

13. Chase to Gratiot, Oct. 24, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer.

14. Bartlett to Chase, Nov. 9, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

Embankment of the Glacis, Ramparts and Parapets; . . . covering the Roofs of Casemates with Lead; the fitting up the officers and Soldiers Quarters, etc.; and . . . building of permanent wharf."

By reference to the annual drawing, General Gratiot saw that: (a) the masonry had been completed, with the exception of "small portions of the interior Revetment of the Parapets & Glacis": (b) one-half the glacis was completed and two-thirds of the remaining half filled up; and (c) the interior of the fort was finished, except for the carpenters' work of the quarters, and the parapets of the North, South, and East Fronts.

This work, Captain Chase estimated, should be completed by March 31, 1834.

On making a final measurement of the embankment, it was determined that the amount exceeded the 1832 estimate. This, together with the higher price the government was obliged to pay for sheet lead and an increased quantity of clay, sod, and shells, made it necessary to secure from Congress an additional $38,073 to complete the project.[15]

Gratiot did not record his thoughts on learning that he would have to ask Congress for another appropriation to complete the fort. But, unless the bureaucracy has changed in 140 years, one can well conceive his concern.

4. Work on Santa Rosa Island Becomes Fort Pickens

Captain Chase, in his role as Senior Engineer on the Gulf Coast, on March 27, 1833, suggested to Secretary of War Cass that the fort on Mobile Point be named Fort Cass in his honor; that the fort on Santa Rosa Island be designated Fort Van Buren to honor the Vice

15. Chase to Gratiot, Sept. 24, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer.

President; and the work to be erected on Grande Terre Island, Louisiana, be named Fort Livingston to honor the Secretary of State.[16]

Chase, in writing the Secretary of War, had bypassed the chain of command. Chief Engineer Gratiot allowed this slight to pass without comment.

The War Department acted but not as Captain Chase had desired. On April 18 General Order 32 was issued, announcing that Secretary Cass had named these forts:

> the work on Grande Terre, Louisiana--Fort Livingston
>
> the work on Mobile Point, Alabama--Fort Morgan
>
> the work on Santa Rosa Island, Florida--Fort Pickens
>
> the work on Cockspur Island, Georgia--Fort Pulaski
>
> the new work now constructing in the Harbor of Charleston, So. Carolina--Fort Sumter
>
> the work on Oak Island, No. Carolina--Fort Caswell
>
> the work on Pea-Patch Island, Delaware River--Fort Delaware
>
> the work on Throgs Neck, New York--Fort Schuyler
>
> the work on St. George Island, Boston Harbour--Fort Warren.[17]

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16. Chase to Cass, Mar. 27, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer.

17. General Order Book, Vol. 6, 1832-34, AGO, NA, RG 94.

Extant correspondence fails to reveal who suggested that the Santa Rosa Island fort be named for the South Carolina Revolutionary War hero, Maj. Gen. Andrew Pickens. We do know that it was not Captain Chase.

Chase was undaunted. On April 3, 1833, General Gratiot had notified him that Secretary of the Navy Levi Woodbury would be visiting Pensacola at an early date. On his arrival, Chase would report to him "and place at his disposal your . . . personal services, and the means of this Department within your control."[18]

Chase met the Secretary in New Orleans and accompanied him to Pensacola. There the Secretary inspected Fort Pickens, the other sites selected by the Board of Engineers for fortifications, and the navy yard.

Chase was so taken with Secretary Woodbury that on April 30 he suggested that the fort to be built on Foster's Bank be designated Fort Woodbury.[19] Once again, Chase, in writing the Secretary of War, had ignored General Gratiot, and again his suggestion was rejected. When the fort was named, it was for Col. William McRee of the Corps of Engineers, who had died in September 1832.

B. Project in 1834

1. Appropriation and Program

General Gratiot, in requesting construction funds for the coastal defenses for 1834, asked for $40,000 to complete Fort Pickens. It was late in the session before the 1st Session of the 23d Congress passed and President Jackson signed into law a Fortifications Bill, containing $40,000 for Fort Pickens.

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18. Gratiot to Chase, Apr. 3, 1833, NA, RG 77, Ltrs. Sent, Chief Engineer.

19. Chase to Cass, Apr. 30, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer.

On July 2, 1834, Chief Engineer Gratiot notified Captain Chase of the President's action.[20]

Chase, in accordance with regulations, on July 19, informed the Department that the appropriation would be employed to: (a) complete the embankment of the glacis and a small portion of the parapet; (b) construct the bridge and shot furnaces; (c) "some items of work about officers quarters"; (d) sodding and shelling several parts of the works; and (e) removal of the frame buildings erected near the fort to house construction hands and facilities.

The tardiness of the appropriation, Captain Chase explained, would compromise completion of the project in 1834.

Underhill & Strong, having continued to display their "usual zeal and promptness in executing" the contract in 1833, would be continued with the project until it was finished.[21]

The Department on August 4 approved Chase's construction program as submitted and Jasper Strong's contract.[22]

2. Chase Skates on Thin Ice

On his return to Pensacola from the Atlantic Seaboard, Captain Chase on April 7 had written Chief Engineer Gratiot, requesting that as soon as the President acted on the Fortifications Bill, then before Congress, that he forward $20,000 of the Fort Pickens

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20. Gratiot to Chase, July 2, 1834, NA, RG 77, Ltrs. Sent, Chief Engineer.

21. Chase to Gratiot, July 19, 1834, NA, RG 77, Ltrs. Recd., Chief Engineer.

22. Gratiot to Chase, Aug. 4, 1834, NA, RG 77, Ltrs. Sent, Chief Engineer.

appropriation. Receipt of the balance of the sum by June 25 would enable him to complete the project by June 30, and turn the fort over to Major Zantzinger.[23] This was not to be.

Captain Chase, on being advised that funds would be forthcoming, wrote H. & W. Delafield. As soon as they arrived, he promised to remit a draft on New York at sight for $4,500. This was to be credited to their account. He regretted that he had been in arrears for so many months, but as they knew appropriations had been delayed.[24]

The draft was purchased by a Mr. Ross. When Andrew Armstrong, the cashier of the United States Bank at Mobile, questioned this, Captain Chase explained that it was for "the purpose of remitting to Messrs. Delafield, Merchants of New York, the sum of $4,500 on account of the public works for stone, cement, etc."

Armstrong accepted the explanation, and Chase thanked him for crediting his public account with the premium charged. The facilities afforded by the Mobile bank "in making payments by this department at distant places," was appreciated by Chase.[25]

Once again, Chase had violated regulations, if not the law, by contracting for materials or services in anticipation of an appropriation. Either the Department did not learn of this transgression or decided to ignore it, because Chase received no reprimand.

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23. Chase to Gratiot, Apr. 17, 1834, NA, RG 77, Ltrs. Recd., Chief Engineer.

24. Chase to H. & W. Delafield, Jun. 29, 1834, NA, RG 77, Chase Letter Book.

25. Chase to Armstrong, Aug. 13, 1834, NA, RG 77, Chase Letter Book.

3. Construction and Demolition

a. Construction Lags

With the appropriated funds Chase was unable to complete the fort. On September 13, 1834, he complained to the Department that, as feared, the $40,000 had not been sufficient. Calling for more money, Chase complained, "It is very difficult in a large work to provide for all contingencies incident to a final completion, especially if the operations are retarded by unforeseen occurrences." Such an example was the failure of Congress to act on the 1834 Fortifications Bill until June 1834, leaving him without means for their support for nearly seven months.

To finish Fort Pickens, he needed another $26,000 for masonry; clay, sod and shells; carpentry of kitchens, storerooms, gates, and magazines; a road from wharf to bridge; bridge; pointing masonry; whitewashing; repair of walls; laying stone steps, traverses, angles, etc.; and hauling shells and distributing the same.[26] (See Appendix C for breakdown of funds needed for operations at Fort Pickens in 1835.)

Chase's vagueness in describing what had been accomplished in the summer of 1834, with a failure to submit an annual drawing, leads to the conclusion that much of the $40,000 had gone to pay for materials and services contracted for in anticipation of the 1834 appropriation.

b. Embanking and Surfacing the Glacis and Ramparts

Most of the available funds went to pay for embankment. The scheme for securing the slopes and terreplein of the sand embankment had been a success. On the gentler slopes, Underhill and Strong workmen had laid about 9 inches of clay and 1¼ inches of shells, upon which they seeded Bermuda. The shells prevented the clay eroding

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26. Chase to Gratiot, Sept. 13, 1834, NA, RG 77, Ltrs. Recd., Chief Engineer.

and were cheaper than sod. Steep slopes were covered with from 1 foot to 2½ feet of clay and sodded to a depth of 4 inches. Terrepleins were covered with shells to a depth of ½ inches, and the parade to a depth of 4 inches.

Captain Chase was delighted with the way this embankment held up, although "a considerable quantity" of clay had been washed off previous to spreading the shells.

If there were no hitches, he forecast, "a thick growth of grass will very soon be obtained on all the surfaces of the Embankment and yield a complete protection against further injury."

When the fort was turned over by the Engineer Department to its garrison, Chase urged that the troops be prohibited from planting gardens on the embankments, and that all earthen slopes be off limits to unnecessary traffic.[27]

c. Ridding the Area of Temporary Buildings

Captain Chase on June 28 advised General Gratiot that, as soon as the project was completed, he would have the temporary buildings, whether belonging to the United States or the contractor, razed and the materials salvaged.[28]

"Great care" had been taken to cover all casemates with lead, "in such a manner . . . to render them perfectly dry and free from leakage." This would afford the garrison quarters and storerooms, consequently there was no need for buildings near the fort to shelter these activities. Because such facilities would interefere with the

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27. Ibid.

28. Chase to Gratiot, June 28, 1834, NA, RG 77, Ltrs. Recd., Chief Engineer.

defenses, Captain Chase asked the Chief Engineer to issue an order prohibiting construction of any buildings within 1,000 yards of the glacis.[29]

Although General Gratiot did not issue the desired orders, Chase in the summer of 1835 had Jasper Strong's laborers remove or demolish all temporary frame structures erected to support and facilitate construction. Not included in this catagory were the wharf, boathouse, and assistant engineer's quarters.[30]

C. Fort is Briefly Garrisoned

1. Arrival of Company H, 2d U.S. Artillery

On February 1, 1834, Captain Chase left New Orleans en route to Newport, Rhode Island, to attend a meeting of the Board of Engineers, called to approve the project for the fort on Foster's Bank. Roads were frightful, and it was Washington's birthday when he passed through the nation's capital.[31] On his departure from Pensacola, Captain Chase left Lieutenant Bowman in charge at Fort Pickens.

The Department, while Chase was in travel status, contacted Lieutenant Bowman. He was asked to notify Bvt. Maj. Richard Zantzinger and Capt. Francis S. Belton of the 2d U.S. Artillery, whenever Forts Pickens and Morgan were ready to be garrisoned. If they were not, the officers would have to make other arrangements for quartering their troops. It was "not intended that they be garrisoned" till their entire completion."[32]

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29. Ibid.

30. Chase to Gratiot, Sept. 1, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

31. Chase to Gratiot, Feb. 22, 1833, NA, RG 77, Ltrs. Recd., Chief Engineer.

32. Gratiot to Chase, Feb. 17, 1834, NA, RG 77, Ltrs. Sent, Chief Engineer.

Contacting Major Zantzinger, Bowman informed him that Fort Pickens would not be "ready for occupancy" before June 30.[33]

Major Zantzinger's Company H, 2d U.S. Artillery, was currently garrisoning Fort Wood, Louisiana, but was under orders to proceed to Pensacola and occupy Fort Pickens. With another unit scheduled to garrison Fort Wood and Fort Pickens not yet completed, Major Zantzinger in the third week of April 1834 transferred his company from Fort Wood to Cantonment Clinch. Here he was near Santa Rosa Island and could make the move in hours, whenever the Engineer Department said he could.[34]

Major Zantzinger early in August 1834 told Captain Chase that, in his opinion, one company was inadequate to maintain Fort Pickens in its "newly finished state and that at least two companies should constitute the garrison for some years after its acceptance in order to preserve the ramparts and glacis."

Chase agreed. He believed two companies could be employed as fatigue parties in planting grass, trees, etc., on the glacis, which "unless it is often attended to may be injured by severe rains, washing the clay and shells from the surface."[35]

On October 4, 1834, Captain Chase notified Major Zantzinger that Fort Pickens is ready to be garrisoned. He was prepared to deliver the fort and its dependencies any day designated by Zantzinger.

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33. Bowman to Zantzinger, March 8, 1834, NA, RG 77, Chase Letter Book.

34. Returns from U.S. Military Posts, 1800-1916, NA, Microcopy M-617; Returns for Regular Army Artillery Regiments, June 1821-January 1901, NA, Microcopy M-727.

35. Chase to Gratiot, Aug. 7, 1834, NA, RG 77, Ltrs. Recd., Chief Engineer.

As Chase planned to employ several carpenters for the next few weeks, putting up fixtures for accommodation of the garrison, the Engineers would retain the house recently occupied by Celestine Gonzales until this task was completed.

With all construction people except the carpenters scheduled to be off the island by Monday, the 9th, Chase urged that an officer and a small detachment be sent from Cantonment Clinch to take charge.[36]

Major Zantzinger did as requested. A detachment arrived before the construction people left Santa Rosa Island. Another two weeks, however, slipped by before he transferred his entire company to Fort Pickens. Nightfall of October 21, 1834, found Company H, 2d U.S. Artillery, settled in their new quarters in the Fort Pickens casemates.[37]

The officers, on moving in, were confronted with housekeeping problems. On October 26 Lt. J. L. Locke found that according to regulations, at posts where the majority of officers messed together, they were entitled to a messroom and a fuel allowance. Currently, at the fort there were only two bachelor officers--Lt. Thomas B. Linnard and himself, and they found themselves without a messroom, because they were ranked by the two officers with families--Major Zantzinger and Asst. Surg. Henry L. Heiskell.

Complaining of this in a letter to the Quartermaster General, Lieutenant Locke noted that at the fort there were five casemate rooms, outfitted as officers' quarters, presently unoccupied. "On the left side" of the sally port was a suite of three rooms, one occupied by

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36. Chase to Zantzinger, Oct. 4, 1834, NA, RG 77, Chase Letter Book.

37. Returns from U.S. Military Posts, 1800-1916, NA, Microcopy M-617; Returns for Regular Army Artillery Regiments, June 1821-January 1901, NA, Microcopy M-727.

Lieutenant Linnard and one by himself. If possible, they wished to use the third as a messroom.[38]

Quartermaster General Thomas S. Jesup approved the request, provided the room was not needed as quarters by another officer entitled to it under regulations. An allowance for fuel, however, could not be allowed.[39]

2. Departure of Company H

The stay of Company H, 2d U.S. Artillery, at Fort Pickens was brief. In mid-December, three months after the unit's arrival on Santa Rosa Island, Major Zantzinger's men evacuated the post. Boarding a transport, the artillerists proceeded to Tampa Bay, where they occupied Fort Brooke on the last day of the year.[40]

D. Ordnance Fixtures, Guns, and Carriages

1. Captain Chase Seeks Information

a. On the Radii of Casemate Carronade Traverses

On August 3, 1832, Captain Chase had asked the Department to provide information on the radii of the circular traverses for casemate carronades.[41]

Replying, General Gratiot noted that nothing definite had been determined by the Ordnance Department on this subject. Until

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38. Locke to Jesup, Oct. 26, 1834, NA, RG 94, Consolidated Correspondence File.

39. Jesup to Locke, Nov. 12, 1834, NA, RG 92, Consolidated Correspondence File.

40. Locke to Jesup, Dec. 19, 1834, NA, RG 92, Consolidated Correspondence File; Returns for U.S. Military Posts, 1800-1916, NA, Microcopy M-617; Returns for Regular Army Artillery Regiments, June 1821-January 1901, NA, Microcopy M-727.

41. Chase to Gratiot, Aug. 2, 1832, NA, RG 77, Ltrs. Recd., Chief Engineers.

42. Gratiot to Chase, Aug. 18, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

such time as it was, he recommended deferring this work. For what it was worth, the radii of gun traverses were 5' 2½" and 16' 2½".[42] No further correspondence on this subject occurred.

b. On Mounting Guns and Mortars and Procuring Fixtures

Captain Chase early in October 1832 wrote General Gratiot for details on mounting guns en barbette. He was uninformed of the fixtures necessary to attach the platform to the gun carriage. Information was also requested for emplacing mortars. Specifically, he wished to know if the bed were masonry.

In addition, Chase wanted to know if the pintle bolts for the embrasures and the iron traverse plates were supplied by the Engineer or Ordnance Departments.[43]

Chase's letter was referred to Chief of Ordnance George Bomford. He notified General Gratiot that until tests scheduled for Fort Monroe, in the spring, had been completed and evaluated, no standards could be established for the traverse circles and other fixtures necessary for mounting guns en barbette.

Pintle bolts and traverse plates for the casemate batteries were the responsibility of his Department.

Mortar platform foundations, if on the plane of the barbette tier, were to be masonry, as the timber platforms to be established on them must be "perfectly solid and level, with a view to accuracy in pointing the gun." These foundations were to be placed as far to the "rear of the exterior slope of the epaulment on the wall over which the piece will be pointed, as to admit of its being fired under as small an angle of elevation as possible."[44]

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43. Chase to Gratiot, Oct. 8, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

44. Bomford to Gratiot, Oct. 23, 1832, NA, RG 156, Ltrs. Sent, Chief of Ordnance; Gratiot to Chase, Oct. 24, 1832, NA, RG 77, Ltrs. Sent, Chief Engineer.

2. Plans and Details of the Emplacements as Built

In November 1832, with masonry of the casemates and barbette tier completed, Captain Chase transmitted to the Department several drawings--Nos. 1 and 2 exhibited plans and details of embrasures for long guns and carronades; Nos. 3 and 4 details of the casemates; No. 5 sections of several barbette batteries; and No. 6 a plan of the fort at Santa Rosa Island with the proposed disposition of the guns en barbette and en casemate.[45] (Copies of these plans and details are found in the files of the Florida Unit, Gulf Islands NS.)

3. Ordnance Department Overcomes the Slows

a. Chase Makes a Proposal

Captain Chase, as Senior Engineer on the Gulf Coast, in the autumn of 1831 had called to General Gratiot's attention "the defenceless state of the several Forts on that Frontier, in consequence of their unarmed" condition. This was partially a result of a failure by Congress to adequately fund the Ordnance Department's program. Should this policy continue, it would be 20 years before the Gulf Coast forts received their armament. In event of war, a hostile naval force would exploit this situation to attack the new Third System Forts from Newport, Rhode Island, to the Gulf.

Without questioning a policy which "retards the army, whilst it urges the building of Strong and expensive works," Chase urged that the recently completed Third System Forts be "furnished each with a proportion of the cannon already purchased by the Ordnance Department under previous appropriations." While not knowing how many new cannon were available, he recommended that in allotting a share to the new works on the Gulf that these guidelines be followed: Fort Pike 10, Fort Wood 10, Battery Bienvenue 5, Tower Bayou Dupré 2, Fort Jackson 15, Fort at Mobile Point 15, and Fort on Santa Rosa Island 20.

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45. Chase to Gratiot, Nov. 7, 1832, NA, RG 77, Ltrs. Recd., Chief Engineer.

Such a distribution would guard these fortifications against capture by coup de main. An annual addition to each work's armament would be continued "to secure to them all the means of defence at the disposal of the Ordnance Dept. produced by the appropriations of Congress."[46]

Nothing came of Chase's proposal at this time, because the Ordnance Department lacked the wherewithal to implement it.

Two years later, on October 9, 1833, to goad the Ordnance Department into action, Chase wrote Colonel Bomford, offering his Department "any facilities that I may have at my command in the course of the gradual arming of the Gulf Coast fortifications." He was looking forward to receiving any instructions Colonel Bomford might have "relating to that important operation."[47]

b. Chase Attempts but Fails to Get an Increase in Armament

Chief of Ordnance Bomford, in late December 1834, called on the Engineers to provide information "in relation to the armament of the several forts on the sea coast." Specifically, he wished to know for each fort: (a) the number of guns designed to be mounted

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46. Chase to Gratiot, Oct. 9, 1831, NA, RG 77, Ltrs. Recd., Chief Engineer.

47. Chase to Bomford, Oct. 4, 1833, NA, RG 77, Chase Letter Book. Bomford had written Chase on September 18, directing him to forward the two brass 12-pounders currently at the Barrancas to Capt. Edward Harding at the Mount Vernon, Alabama, Arsenal. In his letter Bomford had pointed out that the United States had abandoned the use of brass tubes for heavy artillery, and as such construction of carriages would be an added expense, as they would be different from those adopted as the standard. At Mount Vernon, the tubes could be melted down and used for other purposes. This exchange of correspondence had given Chase the opportunity to write directly to Colonel Bomford. Bomford to Chase, Sept. 18, 1833, NA, RG 156, Ltrs. Sent, Chief of Ordnance.

in the casemates; (b) the number of guns designed to be mounted en barbette; (c) the number of mortars to be emplaced; and (d) the dimensions of the magazines.[48]

Captain Chase prepared two tables detailing the desired data for the Gulf Coast Forts. On the first was enumerated the number of guns recommended by the Board of Engineers, and the second detailed the maximum number of guns which could be emplaced in the several forts and their caliber.

On the first table, Chase indicated that on the Channel Fronts of Fort Pickens were positions for 50 cannon in casemates, 8 carronades in casemates, and 48 guns en barbette--a total of 106; on the South Front was space for 10 cannon in casemate, 6 carronades in casemates, and 17 cannon en barbette--a total of 33; on the North Face was space for 7 guns in casemates, 6 carronades in casemates, and 17 guns en barbette--a total of 30; on the East Front was room for 6 carronades in casemates and 22 guns en barbette; and in the re-entering place de arms was room for 2 mortars, while in the branches of the covered way were emplacements for 6 mortars. Of the 205 guns, 143 were to bear on the channel and 62 on the land approaches.

Chase's second table detailed the possibility of arming the fort as follows: the Southwest Channel Front--25 42-pounders in casemates, 4 42-pounder carronades in casemates, and 30 32-pounders en barbette, of which 55 would bear on the bar; Northwest Channel Front--25 32-pounders in casemates; 4 42-pounder carronades in casemates, and 30 32-pounders en barbette, of which 55 would bear on the channel; South Front--11 42-pounders in casemates, 6 42-pounder carronades in casemates, and 20 42-pounders en barbette, of which 31 would bear on the bar; North Front--7 24-pounders in casemates, 6

48. Bomford to Gratiot, Dec. 23, 1834, NA, RG 156, Ltrs. Sent, Chief of Ordnance.

32-pounder carronades in casemates; and 20 24-pounders en barbette, of which 27 would bear on the inner bar; East Front--8 32-pounder carronades in casemates, 4 42-pounders, 10 32-pounders, and 20 24-pounders en barbette; Re-entering Place de Arms--1 13-inch and 1 10-inch brass mortar; extreme branch of Covered Way (south)--13 42-pounders en barbette and 5 13-inch brass mortars, 12 of which were to bear on the bar; and extreme branch of Covered Way (north)--3 10-inch mortars.

Under this scheme the fort would mount 252 guns and mortars.

Captain Chase, in a covering letter, urged that Fort Pickens, as well as Fort Morgan and the work on Foster's Bank, be armed with the maximum number of guns, rather than the armament called for by the Board of Engineers.[49]

The fort, Chase reported, had three magazines. He, however, failed to provide data, as requested, on their dimensions.[50]

Nothing came of Chase's proposal to increase the number of cannon and mortars to be mounted in Fort Pickens. The fort, if and when it was armed, would be in accordance with the project as developed by General Bernard of the Board of Engineers and submitted to General Gratiot in January 1830. For the time being, however, this question was academic, because a number of months passed before the Ordnance Department was in position to supply the needs of the Gulf Frontier forts.

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49. Chase to Gratiot, Mar. 16, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

50. Ibid.

c. Fort Pickens Gets its First Guns

Some time before December 31, 1835, 16 24-pounders were emplaced in the Fort Pickens casemates bearing on the channel. These were the first guns mounted in the fort.[51]

51. Bomford to Gratiot, Jan. 4, 1836, NA, RG 156, Ltrs. Sent, Chief of Ordnance.

VII. LACK OF FUNDS LIMIT OPERATIONS: 1835-1839

A. 1835 Fortifications Bill Fails to Pass Congress

Captain Chase, as we have seen, had been unable to complete Fort Pickens with the $40,000 appropriated by the 1st Session of the 23d Congress. In September 1834 he had notified Chief Engineer Gratiot that another $26,000 was needed.[1]

On January 3, 1835, after the 2d Session of the 23d Congress had convened, Chase wrote the Department, asking that if the subject appropriation were made that the entire sum be remitted as soon as it became available.[2] Before receiving official notification from General Gratiot that Congress had adjourned without acting on the Fortifications Bill, Captain Chase had read about it in the newspapers. Writing the Department on March 24 from New Orleans, Chase took the position that he would employ his private credit to raise funds "sufficient to sustain him until the next session of Congress."

The heaviest claims would be by Jasper Strong. He, however, had "expressed a willingness to relieve the Engineer Department of its embarrassment as far as it is in his power, and to prosecute his engagement . . ., as vigorously as if supported by the annual appropriation."

Unless directed otherwise, Chase planned to proceed with the construction program, as he believed it essential to complete the defenses of the Gulf Frontier.[3]

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1. Chase to Gratiot, Sept. 13, 1834, NA, RG 77, Ltrs. Recd., Chief Engineer.

2. Chase to Gratiot, Jan. 3, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

3. Chase to Gratiot, Mar. 24, 1835, NA, RG 27, Ltrs. Recd., Chief Engineer.

On receiving Chief Engineer Gratiot's communication of March 10, notifying him of Congress' action, Chase learned that he was to limit his "operations to the extent of the unapplied balances of former appropriations."[4] This in effect scuttled Chase's March 24 proposal.

B. Failure of Northeast Bastion Masonry

1. Background

In 1833, while under construction, the masonry of the scarp of the Northeast Bastion exhibited signs of stress by yielding to pressure of the sand fill. As designed by General Bernard, the masonry was presumably thick enough to support this burden. To cope with this motion, Captain Chase had Underhill & Strong take down part of each face in the center. Next, he had these faces renewed with similar dimensions, employing hydraulic cement with mortar. The additional strength given the scarp averted any "apparent" motion for two years until late February 1835, which followed an unseasonably wet winter. There were torrential rains in January and February, and the masonry yielding to the tremendous pressure of the wet sand bulged outward.[5]

Captain Chase, on examining the bastion, determined to "take down nearly the whole of the masonry of the two faces, and a portion of the Embankment of the Bastion for the purpose of giving increased dimensions to the scarp and adding there to the support of counterforts." His proposal became academic, when in late February, the weakened scarp gave way and the two faces were thrown into the ditch.[6]

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4. Gratiot to Chase, Mar. 10, 1835, NA, RG 77, Ltrs. Sent, Chief Engineer.

5. Chase to Gratiot, Mar. 29 & Sept. 1, 1835; Chase to Totten, May 13, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

6. Chase to Gratiot, Mar. 29 & Sept. 1, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

2. Assessing Responsibility for the Failure

The part of the fort thrown down was the first built on the land fronts, and the masonry had been allowed to stand nearly three years before the rampart and parapet had been completed.

Captain Chase, on reviewing the situation, did not believe the government could hold the contractor responsible, because the Northeast Bastion was built agreeable "to the plans and sections of the works--the dimensions given were those adapted by General Bernard." The bastion had been "carefully constructed; the scarp walls raised to their height and the embankment and parapet completed." Mortar used in the project had been generally excellent, its quality having been "ascertained in the thinner walls in which it is exhibited in some instances quite as hard as the bricks which they join together."

In assessing responsibility for collapse of the bastion faces, the blame Captain Chase reported:

> must attach either to the planning engineer, General Bernard or myself, if it falls on me, I can only reiterate that it was from the want of experience of the wedge like and constant action of sand embankment against supporting walls, and not from any design on my part.[7]

3. Rebuilding the Scarp

Contacting Jasper Strong, Captain Chase made arrangements to have the scarp rebuilt. By giving "increased width to the wall," it could be restored "to a solid & permanent state" for $10,404.60.[8]

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7. Chase to Gratiot, Mar. 29, & Sept. 1, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer; Chase to Hagner, Feb. 11, 1837, NA, RG 77, Chase Letter Book. Peter Hagner in 1837 was 3d Auditor with the United States Treasury.

8. Ibid.

Underhill & Strong by the last week in June had completed the project. The parapet had been raised three feet above the cordon. Captain Chase, to guard against a repitition of the accident, had the workmen raise the earthen parapet gradually. Informing General Gratiot of what had been accomplished, he observed, "The work is now in excellent condition, and I trust the bastion is repaired in a way that will insure its permanence."[9]

4. Chase's 1842 Report

Seven years later, in 1842, Col. Joseph Totten, who had replaced General Gratiot as Chief Engineer, called on Chase for a report of the circumstances connected with "the overthrow" of the bastion's scarp. Among details desire were: (a) the length and positions of the sections thrown down; (b) the whereabouts of the joint ruptures; (c) if the positions varied in different parts of the wall; and (d) the manner in which the scarp was rebuilt and strengthened.[10]

Acknowledging the Department's request, Chase stated that he would prepare a section of the faces of the subject bastion, "exhibiting the appearance of that part of the work, when overturned by pressure of sand."[11]

The drawing was forwarded on May 13. In a covering letter, Chase reported that in rebuilding the faces, he had added to the dimensions as indicated in Profile A. (See "Plan of part of N.E. Bastion, showing the parts of the Scarp walls of the two faces, overthrown in 1835, with a section of the wall as first built, and a section of the same as rebuilt; also a View, exhibiting the general appearance of the ruins.")

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9. Chase to Gratiot, July 7, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

10. Totten to Chase, Mar. 26, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

11. Chase to Totten, Apr. 4, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

No counterforts were added, as it was believed hydraulic cement with mortar would afford the strength required.[12]

The faces, as rebuilt, had stood for seven years without any apparent motion. In filling the triangular space between the scarp and rampart, Chase had employed beechwood, mixing it with sand. The beechwood held the sand at the sharper angle.

Chase believed the Bernard dimensions given the scarp walls were sufficient for sand fill, provided hydraulic cement was a component of the mortar. If no cement were used in the mixture, the dimensions of the scarps must be increased.[13]

In removing some masonry recently, it was found that in the thick walls the hardening process was not complete, though they had been constructed 13 years before.[14]

C. Garrisoning the Fort in 1835

The fort again became home to a company of artillery in 1835. On May 13 Company C, 2d U.S. Artillery, Capt. G.W. Gardner commanding, disembarked at the Fort Pickens wharf. The company had left Fort Jackson two days before. At the time the artillerists moved

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12. Chase to Totten, May 13, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of the subject drawing is found in the files of the Florida Unit, Gulf Islands NS. No hydraulic cement had been used in the scarp as constructed.

13. Ibid. The "point of rupture," which had maintained a uniform level, was at the second offset, and extended downward almost uniformily to the level of the ditch. This demonstrated the importance of the "parapet acting directly against a portion of the scarp wall, whose profile exhibited 6' 6" at base 5' at the top and 11 feet high."

14. Ibid.

into the casemates, Underhill & Strong artisans and laborers were rebuilding the Northeast Bastion faces.[15]

As he had in 1834, Captain Chase once again approached the Chief Enginner as to the desirability of having two companies rather than one posted at Fort Pickens to provide fatigue parties for preservation of the glacis and ramparts.[16] General Gratiot was unable to provide any help. Outbreak of the Second Seminole War necessitated redeployment of the United States Regulars to another region of Florida. Fort Pickens would soon lose its garrison.

When Company C had taken post in the fort, it was expected that it would be returning to Fort Jackson. Lt. W.E. Basinger, the company quartermaster, had therefore left behind the stores, clothing, etc., for which he was responsible. Orders transferring the company to Fort Brooke, in mid-November, took him, as well as the company, by surprise. There was insufficient time to send for the quartermaster stores, and arrangements had to be made for their forwarding. Company C on November 24 evacuated Fort Pickens and boarded the steamship chartered to transport it to Tampa Bay.[17]

Fort Pickens was left in charge of a guard hired by the Quartermaster Development.

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15. Returns from U.S. Military Posts, 1800-1916, NA, Microcopy M-617; Returns from Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727; Chase to Belton, May 14, 1835, NA, RG 77, Chase Letter Book. Maj. Francis S. Belton was the commanding officer at Fort Morgan.

16. Chase to Gratiot, Aug. 28, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

17. Basinger to Quartermaster General, Nov. 15, 1835, NA, RG 92, Consolidated Correspondence File; Returns for U.S. Military Posts, 1800-1916, NA, Microcopy M-617; Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727.

D. Chase Disburses $50,000 in 1836

1. Chase's Estimates

The Department on August 6, 1835, advised the project engineers that their estimates for 1836 and their Annual Reports of progress for the year ending September 30 were to be in Washington by October 20. Statements accompanying the Annual Reports were to contain data of funding required from the current appropriation on account of projects as of September 30.[18]

On receipt of the circular, Captain Chase informed the Department that, after he had completed the papers called for, he wished permission to leave his station. He planned to travel north for benefit of his wife's health and to enable him to transact personal business in New York City. Horace Higley, the clerk, would oversee the Pensacola projects during his absence. Higley would keep in contact by mail, and through him Chase would continue to direct operations.[19]

Before starting for the Atlantic Seaboard, Captain Chase prepared and transmitted the requested documents and estimates. The Annual Report told of the near completion and occupation of the fort, in October 1834, by the garrison; the collapse of the Northeast Bastion faces; and their reconstruction by Underhill & Strong.

Two estimates of funds needed in 1836 were formulated. The first was for $35,000 to complete the fort. As General Gratiot could see, this figure was $9,000 more than the estimate for this work had been in 1834. The reason was inclusion of $1,833 for construction of six shot furnaces; $409 for paving with brick the "top of the Tower Bastion"; and

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18. Gratiot to Chase, Aug. 6, 1835, NA, RG 77, Ltrs. Sent, Chief Engineer.

19. Chase to Gratiot, Aug. 27, 1838, NA, RG 77, Ltrs. Recd., Chief Engineer. Other projects for which he was responsible would be overseen, during his absence, by George E. Chase at Choctaw Pass and Lt. Osborn Cross at Pascagoula.

an increase of $5,000 in masonry (for taking down and repair of the parapet wall of the Southeast Bastion) not embraced in the previous year's estimate. The second estimate was for $10,404.60 owed Jasper Strong for repair of the Northeast Bastion.

Captain Chase hoped that Congress would take early action on next year's Fortifications Bill "to meet the pressing demands which exist against it, consequent on the failure of the appropriations for 1835."[20]

2. Chase Continues to Live Dangerously

Captain Chase spent the next three months on the east coast. He was in New York City from October 12 to 25, when he returned to Washington. While in the capital, he answered a circular letter from the Chief Engineer, requesting project engineers to report losses suffered by the United States in construction, materials, machinery, and labor force, because of "non-passage" of the Fortifications Bill for 1835.

He reported that because of his action and Jasper Strong's willingness to continue work, in expectation of passage of a Fortifications Bill in 1836, had "prevented either loss or injury of any kind to the works" under his supervision. If Strong had been unwilling to carry on, the results could have been disasterous to both the United States and the contractor. For the government, it would have involved partial loss of materials collected at the site of the fort on Foster's Bank, and probable destruction of the foundation by storms. For Jasper Strong there would have been loss of time by his 100 black mechanics and laborers, who would have been on his hands for 11 months without employment. The

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20. Chase to Gratiot, Aug. 28, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

total loss to the government and the contractor, but for the extraordinary measures adopted, would have been at least $22,000.[21]

Once again, although General Gratiot made no comment, Chase had violated orders. The Chief Engineer on March 10, 1835, had directed him to limit his "operations to the extent of the unapplied balances of former appropriations."[22]

While in Washington in early February 1836, Captain Chase asked General Gratiot to remit to him at Pensacola, as soon as the Fortifications Bill passed, the entire sums requested for the work on Foster's Bank ($160,000) and for Fort Pickens ($50,000).[23] It soon became apparent that the legislation was bogged down in Congress. On February 24, Chase advised the Department that he was returning to the Gulf Coast in several days. He was needed there to perfect "arrangements for the support of our operations . . . for some months to come, as there appears to be but little prospect . . . that the appropriations will be realized before the end of the session."

This delay had "produced great additional embarrassment & inconvenience to myself and the creditors of the Engineer Department on the Gulf." Additional pledges of his credit would be necessary to support operations. These pledges he was prepared to give, unless the Department was ready to come to his relief by permitting him to draw from the Treasury the unexpended balance of the appropriation for Fort Livingston and apply it to the "partial relief of the works in Pensacola Harbour."[24]

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21. Chase to Gratiot, Nov. 13, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

22. Gratiot to Chase, Mar. 10, 1835, NA, RG 77, Ltrs. Sent, Chief Engineer.

23. Gratiot to Chase, Mar. 10, 1835, NA, RG 77, Ltrs. Sent, Chief Engineer.

24. Chase to Gratiot, Feb. 25, 1836, NA, RG 77, Ltrs. Recd., Chief Engineer.

General Gratiot, having winked at Chase's repeated violations of regulations and orders, vetoed this request as too risky.

3. Pensacolans Give Chase a Public Dinner

Captain Chase and Mrs. Chase now returned to the Gulf Frontier, arriving in Pensacola on March 14, a Monday. His despondence over failure of Congress to act on the Fortifications Bill was somewhat alleviated when 13 of the leading citizens, welcomed him with an invitation to a testimonial dinner, in his honor, to be held on the 19th.[25] In their invitation, the citizens called attention to Chase's "great exertions on the behalf of Pensacola and the whole southwest section" of the nation, "by projecting works of Internal Improvements and procuring the means for prosecution and completion of these works." To Captain Chase's "intelligence, perserverence, activity, enterprise, and weight of character," they were "indebted for their present and prospective prosperity."

During his six years in Florida, his intercourse with the citizens, as an officer and private citizen, had "ever been such, as to call forth their unqualified admiration."[26]

Chase, at the public dinner, made a few remarks. "It is with feeling of honest pride," he stated, that

> I have received from the citizens of Pensacola, assurance that my residence amongst them during the last six years has not been altogether unproductive of some good, although they probably have greatly magnified it.

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25. Pensacola Gazette, Mar. 19, 1836. The 13 were Robert Mitchell, Henry Michlet, Hanson Kelly, Joseph Sierra, Francisco Moreno, W.A. Bell, Henry Ahrens, Henry Hyer, F.L. Cummings, John Campbell, Joseph Gonzales, Juan Bronsnahann, and Pedro Yniestre.

26. Ibid.

I am free, however, to confess that I take a deep interest in the prosperity of Pensacola, and trust that the praiseworthy exertions which its citizens have made and are now making to add to its natural advantages by the assistance of art, may be crowned with complete success.[27]

4. Construction Projects Accomplished in 1836

June 30, 1836, arrived and with it no news of passage of the Fortifications Bill. Chase, on making his quarterly report, noted that he was in hopes that within a few days funds would be available to enable him "to pay off the heavy amount of arrearages now due on the works in the Harbour."[28]

Congress had acted before this letter reached Washington. On July 6 General Gratiot wrote Chase that the Fortifications Bill, recently signed into law by President Jackson, contained an appropriation of $50,000 for Fort Pickens. To enable him to expedite the project, the entire amount, agreeable to his estimates, was available for immediate expenditure.[29]

When he filed his Annual Report on September 30, 1836, Captain Chase informed the Department that the $50,000 had been used "to pay off the arrearages accumulated since October 1834." There remained in the account $3,218, which he proposed to apply to "sundry improvements and constructions by which the condition of the works may be benefitted" during 4th Quarter.[30]

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27. Ibid., Apr. 2, 1836.

28. Chase to Gratiot, July 1, 1836, NA, RG 77, Ltrs. Recd., Chief Engineer.

29. Gratiot to Chase, July 6, 1836, NA, RG 77, Ltrs. Sent, Chief Engineer.

30. Chase to Gratiot, Sept. 20, 1836, NA, RG 77, Chase Letter Book.

Among the projects completed were construction of six shot furnaces and providing increased dimensions to the scarp of the Southeast Bastion.[31]

E. Steps are Taken to Arm the Barbette Tier

1. Texas Revolution Causes Brief Turmoil

In October 1835 difficulties between the Mexican government and its American colonists in Texas led to fighting. Meeting at San Felipe on November 3, the Texans formed a provisional government but could not agree to declare their independence. In December, San Antonio was captured from the Mexicans, who agreed to withdraw south of the Rio Grande.

Events in Texas and fears that European powers might interfere, to exploit the situation to their advantage, caused the United States to belatedly look toward arming the Gulf Frontier forts. Chief of Ordnance Bomford on January 4, 1836, wrote General Gratiot that a large number of guns and barbette carriages would become available for emplacement in the seacoast defenses in the near future. By March 31, four 24-pounders and 30 32-pounder barbette carriages would be shipped to Fort Pickens. If all went according to schedule, the guns would become available by October 31. With the 16 24-pounders already emplaced, Fort Pickens would then be armed with 50 guns.[32]

Captain Chase was on the Atlantic coast in late December 1835. Passing through Washington on the 27th, he left for Philadelphia

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31. Chase to Huger, Sept. 3, 1836, NA, RG 77, Chase Letter Book; Public Documents, Printed by Order of the Senate of the United States, 2d Session of the 24th Congress (Washington, 1837), Serial 297, Vol. 1, p. 194.

32. Bomford to Gratiot, Jan. 4, 1836, NA, RG 156, Ltrs. Sent, Chief of Ordnance.

the next day.[33] While in Philadelphia in the second week of January, he was informed of the impending arrival of the armament. He would advise the Department as to the "state of preparation . . . for the reception and mounting of these cannon"; and the condition of the magazines for preservation of ammunition, and whether the shot furnaces had been completed.[34]

Replying on January 13, Captain Chase reported that as far as the Engineer Department was concerned "every preparation has been made for the reception & mounting Guns" at Forts Pickens, Morgan, Pike, Wood and Jackson, Battery Bienvenue, and Tower Dupré. These included: construction of "wharves and proper landing places, and in the arrangement of the Casemate Batteries." No fixtures for mounting guns en barbette existed at any of the works, because the Ordnance Department, although applied to, had never provided necessary plans.

Sixteen cannon had been mounted in the casemates of the Channel Fronts, and he presumed that "the ordnance preparations as regards the materiel are sufficient to mound an additional number." Company C, 2d U.S. Artillery, having been transferred, "the preparations as regards the personnel consist of one man, employed" by Capt. Samuel Shannon of the Quartermaster Department to guard the fort and ordnance.

With exception of Fort Pike, which was garrisoned, it would be necessary for the Ordnance Department to hire laborers to emplace the guns. Fixtures would have to be supplied by the Ordnance people for the guns to be mounted en barbette.

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33. Chase to Gratiot, Dec. 28, 1835, NA, RG 77, Ltrs. Recd., Chief Engineer.

34. Gratiot to Chase, Jan. 11, 1836, NA, RG 77, Ltrs. Sent, Chief Engineer.

The magazines of all these works were "in condition to receive powder and explosive shells." He, however, advised against stockpiling more than six months supply of powder, because it was believed the area's high humidity made it impossible to preserve it for longer periods, without some deterioration.[35]

Chief Engineer Gratiot, acknowledging Chase's letter on January 18, forwarded drawings depicting required dimensions for construction of traverses and pintle-beds for barbette carriages, as modified in accordance with the plan recommended by LaBlemand. Chase would take measures "for construction" of these at the Gulf Frontier forts.

If the traverses were of wood, it might be more economical to construct the requisite number at a central point, and, when completed, transport them to the site where they were to be emplaced. Once in position, they were to be coated with tallow and pitch for preservation.[36]

Captain Chase, back in Washington on January 22, wrote his new assistant Lt. John G. Barnard. He was to take station at New Orleans or Pensacola, whichever was most convenient, and "attend to the construction of traverses and pintle-beds for the Barbette carriages." The "several pieces" of wood necessary for the traverses, etc., could be purchased and fashioned at Pensacola, and then shipped to the forts and batteries. Jasper Strong could procure the wood. By the next mail, Chase promised to forward plans and details.[37]

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35. Chase to Gratiot, Jan. 13, 1836, NA, RG 77, Ltrs. Recd., Chief Engineer; Clark to Jesup, Oct. 22, 1839, NA, RG 92, Consolidated Correspondence File.

36. Gratiot to Chase, Jan. 18, 1836, NA, RG 77, Ltrs. Sent, Chief Engineer.

37. Chase to Barnard, Jan. 22, 1836, NA, RG 77, Chase Letter Book; Chase to Gratiot, Jan. 22, 1836, NA, RG 77, Ltrs. Recd., Chief Engineer. Barnard was graduated number 2 in the Class of 1833 from the U.S. Military Academy, and was commissioned a bvt. 2d lieutenant in the Corps of Engineers. His first assignment was to the Board of Engineers at Newport, Rhode Island. Two years, 1835 and 1836, were spent by

To fund the project, the Department on February 1 forwarded Chase a draft on the Mechanics Bank of New York for $5,000.[38]

2. Work of Preparing the Barbette Tier for its Guns Ceases

Captain Chase returned to Pensacola in mid-March. There he learned that Jasper Strong had encountered difficulty in obtaining live oak to fashion the traverses and pintle-beds. As the crisis caused by the Texas Revolution had eased, Chase deemed if proper not "to proceed in their construction until the appropriation will enable under the 'Head of Repairs & Contingencies' to procure such materials as will render them permanent."[39]

Chase, in this instance, had anticipated Washington. On the 18th, three days later, General Gratiot wrote him that the need to expedite mounting the guns had passed. Chase would modify his arrangements, where practicable, to prevent any additional expense to the armament on that account.[40]

Upon receipt of Gratiot's letter, Chase assured the Department that he had "suspended all operations in relation to the mounting of the guns," and had caused the materials collected to be placed under cover, where they will be preserved until wanted.[41]

No additional work was done on this project during the year. On September 30 Chase informed Washington that of the $5,000

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37. (Cont.) Barnard as assistant engineer at Fort Schuyler, N.Y., from where he was ordered to the Gulf Frontier. Cullum, Biographical Register, Vol. I, p. 419.

38. Gratiot to Chase, Feb. 1, 1836, NA, RG 77, Ltrs. Sent, Chief Engineer.

39. Chase to Gratiot, Mar. 15, 1836, NA, RG 77, Ltrs. Recd., Chief Engineer.

40. Gratiot to Chase, Mar. 18, 1836, NA, RG 77, Ltrs. Sent, Chief Engineer.

41. Chase to Gratiot, Apr. 2, 1836, NA, RG 77, Ltrs. Recd., Chief Engineer.

allotted only $375 had been expended for collection of timber. No further acquisition was planned, and the balance in the account would be "applied to the several works on the Gulf when circumstances" warranted.[42]

Several years would pass before measures would again be taken to prepare the barbette tier for its armament.

F. A Quiet Year at Fort Pickens: 1837

1. Congress Fails to Pass a Fortifications Bill

With the nation in the grip of an economic panic, no Fortifications Bill was passed by the 2d Session of the 24th Congress. Chief Engineer Gratiot accordingly advised his project engineers that "available means for this service consists of the balance of former appropriations."[43]

As if this did not constitute enough of a problem in view of Chase's habit of permitting contractors to proceed with projects in anticipation of future appropriations, his wife's delicate condition might make it necessary for them "to visit the northern part of the country this summer." He desired permission to do so, as it would not interfere with the few duties he must perform.

His assistant, Lieutenant Barnard, was capable of guarding the public interest in his absence.[44]

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42. Chase to Gratiot, Sept. 30, 1836, NA, RG 77, Ltrs. Recd., Chief Engineer.

43. Gratiot to Chase, Mar. 8, 1837, NA, RG 77, Ltrs. Sent, Chief Engineer.

44. Chase to Gratiot, Apr. 5, 1837, NA, RG 77, Ltrs. Recd., Chief Engineer.

The Department on April 18 approved Chase's request "to visit the North for the benefit of your health and that of your family."[45]

When he acknowledged the Chief Engineer's letter, Chase wrote that the improved status of his wife's health "will enable us to remain on the Gulf during the summer."[46]

2. Proposed Sale and Removal of the Engineer's Quarters

Although other projects and duties kept Captain Chase occupied, there was little business for the Engineer Department at Fort Pickens during the year. In July Chase sold the Engineer Quarters on Santa Rosa Island to a private citizen, on condition that they be removed from the public land.

The dwelling was beginning to deteriorate, and it was too distant from the fort to be of use to the garrison. It had therefore not been turned over to the post commander in 1834, but had been retained by the Engineer Department. Now that he had moved to the mainland, Chase feared that if it were left standing, it would become a rendezvous for squatters.[47]

General Gratiot's failure to acknowledge this request scotched this proposal.

3. New Regulations and the Annual Report

Captain Chase, in preparing his Annual Report, kept in mind two circulars he had received during the year. The Department had

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45. Gratiot to Chase, Apr. 18, 1837, NA, RG 77, Ltrs. Sent, Chief Engineer.

46. Chase to Gratiot, Apr. 30, 1837, NA, RG 77, Ltrs. Recd., Chief Engineer.

47. Chase to Gratiot, July 12, 1837, NA, RG 77, Ltrs. Recd., Chief Engineer.

adopted several new regulations. Henceforth, project engineers were to state, on the face of their estimates for funds, what portion, if any, they would prefer to draw from banks of deposit in specie.[48] On August 15 General Gratiot had announced that hereinafter the subject reports would contain in "tabular form and under separate headings a statement of": (a) original estimate of cost of project; (b) name of the officer making the same and date thereof; (c) amount appropriated and sum expended in each succeeding year; (d) project superintendent and his salary; (e) unexpended appropriation and whether the same was in the Treasury or hands of the agent; (f) estimated cost of completing project; (g) estimated cost of any proposed change orders; (h) estimated completion date; and (h) an estimate of funds needed in the next year.[49]

The only work done at the fort during the year, Chase reported was maintainence-oriented. The $1927 available from contingency funds had been used to paint and finish the casemate Officers' Quarters and barracks and make "some slight repairs."[50]

4. The 1837 Hurricane

The Pensacola area of the Gulf Coast was hammered by a hurricane on Monday, August 7. As many of the citizens were sitting down to breakfast, the wind began to blow out of the east. It increased in violence, and was accompanied by occasional showers until mid-afternoon. The wind, now a wild gale, veered to the south and the rain beat down.

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48. Gratiot to Chase, Jan. 24, 1837, NA, RG 77, Ltrs. Sent, Chief Engineer.

49. Gratiot to Chase, Aug. 15, 1837, NA, RG 77, Ltrs. Sent, Chief Engineer.

50. Chase to Gratiot, Sept. 30, 1837, NA, RG 77, Ltrs. Recd., Chief Engineer; Public Documents, Printed by Order of the Senate of the United States, 2d Session of the 25th Congress (Washington, 1838), Serial 314, Vol. I, p. 288.

Out in the bay only the warships were able to hold their anchorages. Many merchantmen parted their cables, and the others dragged anchor. All but one were driven aground. On Tuesday morning, the shore of the bay "presented a scene of wrecks and ruins, never before witnessed here." The brig Rondout, which had been anchored a little windward of the wharf, was driven against the wharf about 100 yards from its seaward end, and had "forged through it." In her way was the stern of an old steamboat hull moored at the wharf. She also gave way. All the balking houses were gone.

At the navy yard nothing withstood the hurricane but the schooner Grampus. The revenue cutter Jefferson and the receiving ship were driven ashore.

Rain pounded down with such force that roofs of houses with "southern exposure could scarcely be said to constitute any protection." Water poured under the shingles, as if the roofs had been "inverted."[51]

Although surf pounded across Santa Rosa Point, no damage was reported to Fort Pickens.

G. 1838: A Year of Marking Time

1. Colonel Totten's Inspection

On December 2, 1837, the Department notified Captain Chase that its second ranking officer, Col. Joseph G. Totten, was under orders to proceed to Florida to inspect Fort Pickens and fortification on Foster's Bank. Chase would afford Totten all possible assistance.[52]

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51. Pensacola Gazette, Aug. 12, 1837.

52. Gratiot to Chase, Dec. 2, 1837, NA, RG 77, Ltrs. Sent, Chief Engineer.

Colonel Totten spent the second week of January 1838 with Captain Chase. At Fort Pickens, the sharp-eyed Totten saw a number of items which needed attention. These included: (a) "a slight separation, not uncommon, of the scarp walls from the ends of the arches, probably due to a leaning forward of the top of the scarp"; (b) the tilting outward of the cordon "in several lines," seemed to indicate a similar problem; (c) there were cracks in some of the arches, leaks in a few, and in several instances the brick, constituting the arris of the groin, had crumbled; (d) the plastering in the quarters was scaling; (e) in one of the magazines a barrel of powder had burst, and Colonel Totten could not determine whether it had resulted from a leak or lack of ventilation; (f) portions of the "counterscarp answering to the weight of the traverses" were overhanging; and (g) portions of the scarp and arches needed repointing.

Estimates should be prepared for a banquette on the East front; to slope the terreplein of the covered way from its present height at the counterscarp to a height of seven feet at the foot of the banquette; to increase the width of the terreplein; and to reduce the width of the slope of the banquette.

These problems, along with "any other imperfections that a closer examination might bring to light, should be immediately corrected. No person, Totten noted in his report to the Department, was better qualified to devise "suitable remedies and applying them" than Captain Chase.[53]

Despite the structural failures observed, Totten found Fort Pickens "to have been faithfully built and of sound materials."[54]

Captain Chase, for some unexplained reason, failed to prepare and forward estimates for the improvements recommended by

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53. Totten to Gratiot, Jan. 12, 1838, NA, RG 77, Ltrs. Recd., Chief Engineer.

54. Ibid.

Colonel Totten. Perhaps it was concern about his wife's health, or he may have decided to forego doing so until September 30, the date for submission of the Annual Reports. But, if the latter were his excuse, he neglected it.

2. The Chases Go Abroad

With the nation in the throes of a depression, Congress held back on passage of a Fortifications Bill in 1838. Captain Chase, with limited funds available for Gulf Frontier projects, decided the time was appropriate to secure a lengthy leave of absence, as his wife's health required a "change of air during the summer." On April 19, 1838, he addressed a request to the Department for permission to absent himself from his post until October 1, "without any responsibility or duty incident" to his command.

To support his plea, he pointed out that the only projects, for which he was responsible, requiring close supervision were those at the mouth of the Mississippi and guarding the approaches to Mobile. Capt. Andrew Talcott had charge of the former and Lt. John G. Barnard of the latter. As members of the Corps of Engineers, they required minimal supervision.

Since it might become necessary for Mrs. Chase's condition for them to take a sea voyage of several months beyond the nation's boundary, he needed approval of the Secretary of War.[55]

Captain Chase's request was endorsed by Chief Engineer Gratiot and forwarded to the Secretary, with Gratiot's recommendation that it be approved, because of Chase's "long & valuable service in a tropical climate . . . during which time his name is associated as

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55. Chase to Gratiot, Apr. 19, 1838, NA, RG 77, Ltrs. Recd., Chief Engineer.

superintendent, with operations contracted under this Department on the Gulf of Mexico & Lower Mississippi."

Secretary of War Joel R. Poinsett approved the request, and the papers were returned to Chase.[56]

The Chases left Pensacola in May. Clerk Higley was left in charge of the Pensacola office. Landing in London, the Chases spent June and July in the London area and Yorkshire. August found them in Paris. Captain Chase, leaving Mrs. Chase in France, sailed from Le Havre for the United States in early September, landing in New York City on the 24th. From New York, Captain Chase traveled to Washington.[57]

3. Major Chase Files His Annual Report

Chase returned from Europe a major, having been promoted from captain, a rank he had held for 13 years. His promotion was dated July 7.

Major Chase, while in Washington, reviewed the monthly reports forwarded by his assistants and prepared his annual reports. At Fort Pickens, he found, that during the year ending September 30, $1,928 had been expended in painting and general repair of the officers' and soldiers' quarters, including door and window frames; repair of gutters leading from spouts and masonry; cleaning and policing fort; hauling shells and spreading same on parade; and repairs to foundations, casemates, and valleys of arches on top of the terreplein.[58]

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56. Gratiot to Chase, Apr. 27, 1838, NA, RG 77, Ltrs. Sent, Chief Engineer.

57. Chase to Gratiot, June 1, Aug. 1, and Sept. 25, 1838, NA, RG 77, Ltrs. Recd., Chief Engineer.

58. Chase's Statement in Relation to Fort Pickens, etc., Oct. 3, 1838, NA, RG 77, Ltrs. Recd., Chief Engineer.

4. Corps Gets a New Chief Engineer

Major Chase returned to Pensacola in November. There, in late December, he was notified of a change in personnel destined to tremendously effect the Corps of Engineers' mode of operations. More important, for him personally, it would adversely affect his career.

On December 6 General Gratiot was dismissed from the service by order of President Martin Van Buren communicated to the Secretary of War on November 28. Gratiot was charged with "having failed to pay into the Treasury the balance of the moneys placed in his hands, in 1835, for public purposes, after spending therefrom the amount" which he claimed the government owed on settlement of his accounts as disbursing agent and superintending engineer at Hampton Roads from 1819 to 1826.

Colonel Totten was named to replace General Gratiot as Chief Engineer by Secretary of War Poinsett.[59]

H. Chase's 1839 Report and Trip Abroad

1. Chase Makes a Detailed Inspection and Report

One of Colonel Totten's first acts as Chief Engineer was to ask Major Chase for a detailed inspection and report on the condition of Fort Pickens. This was undoubtedly caused by Chase's failure to follow up on recommendations made by Totten following his January 1838 report.[60]

Chase submitted his report in late March 1839. He found those parts of the counterscarp, carried up for support of the traverses of the covered way, had began to bulge outward soon after the earth had been placed against them. For the past four years, they had "maintained

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59. Cullum, Biographical Register, Vol. I, p. 99; Smith to Chase, Dec. 17, 1838, NA, RG 77, Ltrs. Sent, Chief Engineer.

60. Totten to Chase, Feb. 4, 1839, NA, RG 77, Ltrs. Sent, Chief Engineer.

their position without exhibiting any . . . tendency to give out." Chase deemed them sufficient for the purpose they had been built. His recommendation was that they be permitted to stand, until "the injury is ascertained to increase."

Revetment walls of the parapets, glacis, and coping of the Channel Fronts had been repaired, and were sound.

The casemates, except four, were free of leakage. Two of these, in the Officers' Quarters, would be attended to immediately. The others, not being deemed injurious to the fort and being difficult of repair, would not be stopped.[61]

Casemates of the Channel Fronts were "remarkably dry," and their "spaciousness and exposure to a free circulation of air" made them comfortable.

Twelve communication arches in the Channel Front casemates had been injured by crumbling of bricks under the great weight they supported. Most of the damage was visible at the "line of intersection of the arch with the large arches." No danger was apprehended at present, although it was unsightly. If it were decided to "remedy this defect," the only way it could be done was to fill the openings with solid masonry.

In the Officers' Quarters plastering was scaling off and needed to be "renewed with plastering on laths."

The two bastion magazines were dryer than any other on the Gulf, but they were too damp for lengthy preservation of powder. The large magazine, adjacent to the Northeast Bastion, was "almost

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61. Chase to Totten, Mar, 26, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer. The two leaking casemates, not scheduled for repair, were under the earthen parapet.

entirely cut off from the influence of fresh and dry air and is always saturated with moisture." All three were free of leakage, "the utmost care having been taken to cover the tops of their arches in such a manner as to improve it." A small leak had been found over the door of one of the small bastion magazines, and it would be easily repaired, as it was confined to the masonry above the door.

As yet, no fixtures had been built for mounting the carronades of the flanking casemates, because no plans had been forwarded.

The traverses and pintle-blocks for 104 barbette carriages needed to be positioned, along with beds for eight mortars. Once this was done, the fort, so far as the Engineer Department was involved, would be ready for defense.

There were "ample facilities" in the fort for a peacetime garrison, but in event of war the gun casemates must furnish the additional storerooms and quarters. A hospital was needed. This facility could be housed in the building formerly occupied by the assistant engineer, if it were enlarged and rehabilitated.

Repair of the wharf required replacement of the copper-sheathed piles and some planking.

If assisted by the Navy, Major Chase could construct gun carriages, traverses, and pintle-beds for the barbette carriages, and mount, within 20 days, the 140 dismounted guns landed at the fort by the Ordnance Department.[62]

Major Chase estimated the cost of placing Fort Pickens "in a state of complete efficiency" at:

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62. Ibid.

104	traverses for barbette carriages	$4,160
26	fixtures for carronades in flanking casemates	1,040
8	mortar beds	320
	Repair & improvement of building as hospital	1,000
10	coppered piles for wharf & other repairs	100
1,950	square yards of plastering and lathing for 13 rooms in Officers' Quarters	975
112	cubic yards brick masonry to fill up communication arches in casemates of two Channel Fronts	1,120
	Sundry repair of leaks, pipes, & pointing	285
		$9,000[63]

As a source of funds to finance one of these items, Chase reviewed for the Department the status of the $5,500 allotted three years before for construction the of wooden traverses for barbette gun platforms for Gulf Coast forts. The balance of this sum ($5,097), he recommended, could be applied to "construction of permanent stone traverses and pintle-beds" for the Fort Pickens barbette carriages."[64]

2. Major Chase Returns to Europe

On February 11, before Colonel Totten had an opportunity to reply, Major Chase applied for authority to return to Europe. In his application, he pointed out that Mrs. Chase had remained in France "for the benefit of her health." He had expected her to return to the United States this spring, accompanied by the friends with whom she was staying. Recent letters from his wife had reported that her friends would not be returning to the states until autumn. Consequently, it was necessary for him to cross the ocean and get her.

To demonstrate that he would not be missed, he reported that, during the year, operations for which he was responsible would be

63. Ibid.; Totten to Chase, Feb. 4, 1839, NA, RG 77, Ltrs. Sent, Chief Engineer.

64. Chase to Totten, Jan. 29, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

limited to Pensacola Bay. Before leaving for Europe, he planned to make such arrangements as to ensure prosecution of the "works at Fort Barrancas," without detriment during a 60- to 90-day absence. Although away from his command, he would hold himself "strictly accountable for their faithful performance."[65]

Forwarding the request to Secretary of War Poinsett, Colonel Totten pointed out that, on February 4, he had ordered Chase to undertake an inspection of the forts and batteries on the Gulf Frontier. He recommended that Chase be allowed to transfer this duty, if not begun, to Captain Barnard, and be absent until June 30. If Chase were unable to immediately contact Barnard, he was to complete the inspection, and then take leave, returning to duty by July 31.[66]

Secretary of War Poinsett, taking note of "the present political state of the country," determined on February 28 to defer action on Chase's request for permission to travel abroad. Colonel Totten accordingly directed Chase to continue his inspections.[67]

Chase returned to Pensacola on March 19, having visited all the masonry forts and batteries on the Gulf. After drafting reports on their conditions, he addressed on the 27th, a letter to Colonel Totten. The Department was informed that on advice of his physician, he would "seek the restoration" of his health "by a change of air," and would travel to Washington. He planned to arrive by April 10. If Captain Barnard were still in Washington, Chase trusted he would delay his return to the Gulf pending his visit.

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65. Chase to Totten, Feb. 11, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

66. Endorsement to ibid., Feb. 26, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

67. Totten to Chase, Feb. 28, 1839, NA, RG 77, Ltrs. Sent, Chief Engineer.

The projects would not suffer because of his absence, Major Chase again assured Washington, as his duties, until July 1, would be comparatively light.[68]

Arriving in Washington, Major Chase, in early April, learned that Chief Engineer Totten had approved his application for leave.[69] Next he called at the War Department, and, after reviewing his personal affairs with Secretary of War Poinsett, he received authority to leave the United States. Informing Colonel Totten of this, Chase reassured him that during his absence "no interest of the Department confided to my charge shall be compromised."

Horace L. Higley, the Engineer Clerk at Pensacola, once again had been directed to attend to the correspondence and render all reports as scheduled.

Before departing for New York to board a ship for Europe, Chase asked the Department to detail for duty on the Gulf, as assistant engineer, a young lieutenant. His service would be required by October 1.[70]

Major Chase visited France first, where he was joined by his wife. The couple arrived in England in early June, prepared to embark on the steamer Liverpool, on the 12th, for New York City. They, however, were unable to get passage, and their hopes of reaching Washington by the end of the month were dashed.

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68. Chase to Totten, March 27, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

69. Totten to Chase, Apr. 8, 1839, NA, RG 77, Ltrs. Sent, Chief Engineer.

70. Chase to Totten, Apr. 10, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

They then booked space on British Queen, slated to sail from London on June 29. Five days before she was to cast-off, the Chases were notified that her sailing had been postponed until July 10. Rushing out, Chase sought to purchase two tickets on Great Western, which was to sail on July 6. The agent refused his money, telling him that she was "entirely taken up by more passengers than she can accommodate with berths."

Writing Chief Engineer Totten to explain his lateness in returning, Chase observed, "I regret this delay since neither Mrs. Chase's health or my own require a longer absence from the United States." He did not believe the enforced delay would interfere with his duties, as with a favorable passage, they expected to arrive in New York City by July 25.[71]

British Queen made the crossing in 18 days. On July 28 Major Chase reported his arrival in New York City. Unless his presence were needed immediately, he planned to pass through Washington, in eight to ten days, on his way south.[72] The Chases' trip south was leisurely, and it was September 29 before they returned to Pensacola. The major then resumed his duties as Superintendent of the Public Works on the Gulf.[73]

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71. Chase to Totten, June 24, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

72. Chase to Totten, July 28, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

73. Chase to Totten, Oct. 1, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

VIII. TOTTEN TIGHTENS PROCEDURES: 1840-1842

A. Decision to Use Stone Traverses and Pintle-Blocks

1. Totten's Directions for Positioning

Following his return from Europe by way of New York and Washington, Major Chase on October 5, 1839, forwarded a request for $9,000 to the Department to fund laying of stone traverses and pintle-blocks and to effect necessary repairs at Fort Pickens. The fort, he reported, is generally in "excellent condition notwithstanding its total abandonment by its Garrison for several years."[1]

A decision to substitute stone for wooden traverses and pintle-blocks on the barbette tier had been made during Major Chase's absence. Chief Engineer Totten, demonstrating that he would give much closer attention to detail than his predecessor, recommended the following mode in securing the traverse circles of barbette guns. The lower stone to be placed on a bed of mortar and driven into the mortar with heavy rammers. Next, the upper stone, with the pintle and pintle-bolt fastened thereto, be positioned in a bed of mortar and rammed in the same manner--the bolt holes having been previously drilled 1-1/2 inch in diameter through the upper stone, and 9 or 10 inches into the lower. Into these holes to be inserted a red hot iron bar to dry them, after which the bolts would be inserted. Lead would be poured into the bolt holes, the upper surface of the stone having been previously grooved. The grooves were to allow a stream of hot lead, at least 1/2-inch in diameter, to pass into the holes. Finally, concrete to be rammed behind the lower stone, making the top of the concrete correspond with the surface of the terreplein.[2]

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1. Chase's Estimates for 1840, Oct. 5, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer. For a breakdown of Chase's estimate see Chapter VII, topic heading "Chase Makes a Detailed Inspection and Report."

2. Totten to Chase, Sept. 2, 1839, NA, RG 77, Ltrs. Sent, Chief Engineer.

2. Nation's Economic Plight Affects the Project

The economic depression gripping the nation of this time continued to affect defense spending. The Department on October 31 therefore notified Major Chase that the "available means of the Treasury are at the present moment very limited and expected to continue so" throughout the coming year. Secretary of War Poinsett had directed Chief Engineer Totten to caution his project engineers that it was "absolutely necessary that every branch of public expenditure be reduced as much as possible, so as not to exceed the means."

Chase, along with the other superintending engineers, would: (a) restrict the work under his charge "to as small a scale as is consistent with its essential interest--no expenditures will be made . . . that can be avoided or postponed without serious injury to the public service"; (b) as next season would "be considerably advanced before the new appropriations" were made, as large balances as possible should be carried over into 1840; and (c) no debts would be

> contracted on the faith of the new appropriations as the estimates for the Service of . . . 1840 will embrace no greater amounts than are judged necessary to prosecute operations, between the time those appropriations may be expected to be made, and the close of the season.[3]

This letter is evidence that Colonel Totten, unlike his predecessor, frowned on the practice heretofore followed by Major Chase of allowing contractors to continue with their projects when no funds were available, in anticipation that the next session of Congress would make appropriations to pay off the arrearages.

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3. Totten to Chase, Oct. 31, 1839, NA, RG 77, Ltrs. Sent, Chief Engineer.

In compliance with Totten's instructions, Chase suspended work on the pintle-beds for the barbette carriages at Fort Pickens and the fort on Foster's Bank. He would utilize available funds to continue laying the traverse circle stones at the former.[4]

3. Totten Tightens the Rules and Regulations

On December 13 Colonel Totten gave another demonstration that he required strict adherence to Departmental rules and regulations. He vetoed Chase's request that $3,300 of the Fort Barrancas appropriation be shifted to the Fort Pickens account to cover purchase of traverse stones and pintle-blocks. Such a transfer, Totten pointed out, could only be made by order of the President, and the Department did not consider the object of sufficient importance to go that route. Neither could Totten perceive from what funds the reimbursement could be made. A review of Chase's report for October showed "no balance in the Fort Pickens account and only $2,839 for contingencies." Payment would have to be made out of such funds as were on hand and applicable to it.[5]

4. Totten Gets More Specific

Unlike General Gratiot, Colonel Totten intended to closely supervise the activities of his project superintendents. By Circular Letter he informed them on April 20, 1840, that in laying pintle-blocks for barbette guns, two pieces of granite would be used. They were to have these dimensions: the upper to be "2-foot square and 1'-3 1/4" high; the lower to be 4' long, 1'-6" wide, and 1'-6" high."

First, the upper stone was to be drilled for the pintle, then holes were to be drilled for the four bolts, entirely through both

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4. Chase to Totten, Dec. 1, 1839, NA, RG 77, Ltrs. Recd., Chief Engineer.

5. Totten to Chase, Dec. 23, 1839, NA, RG 77, Ltrs. Sent, Chief Engineer.

stones, taking care to avoid spalling by drilling on the under side of the stone. After having drilled several inches, the stone was to be reversed and the drilling continued until the holes met. The bolts were one-inch in diameter, so the holes would be about 1-3/8 inches across. Bolt holes through the pintle were to be countersunk, to receive a "strong conical head to the bolt."

In positioning the plate on the upper stone, a thin layer of cement was to be used, with care taken to insure that the cement only interposed where there were irregularities in the surface. The pintle and bolts were then inserted, after which the stone was turned over. Molten sulphur would be poured around the pintle-hole, and the pintle fastened with a nut or key. The lower stone would next be placed on the upper in this reversed position, first spreading a thin bed of cement upon the latter; molten sulphur would be poured around all bolts, and the nuts screwed on each bolt before the sulphur cooled.

The two stones, now bolted together, would be turned over and lowered into their bed, which should first be covered with a good layer of mortar.

A mass of concrete would be rammed behind the lower stone.[6]

Responding to the Circular Letter, Major Chase assured Totten that the stones procured for the pintle-blocks at Forts Pickens and McRee were of the required dimensions. But to comply with the new instructions for positioning them, it would be "necessary to drill holes quite through the lower stone." This would be done, and the pintle-blocks laid the moment funds became available.

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6. Totten to Project Engineers, April 20, 1840, NA, RG 77, Ltrs. Sent, Chief Engineer.

The circular traverses, he reminded Colonel Totten, had been laid before receipt of orders holding in abeyance all work at Fort Pickens.[7]

5. Chase Reports on the Barbette Traverse Circles

Chief Engineer Totten responded on June 13. He noted that as the 110 sets of barbette gun traverse stones had been laid, Chase must provide him with "an accurate profile of each kind of terreplein & parapet." These drawings could be sketches, but all dimensions must be determined "by actual and minute measurement on the spot," and were to be entered on the drawings.

The armament of the nation's coastal fortifications had been reviewed and readjusted by a Board the previous summer, and to this the Corps must conform. Within a short time, Chase would be provided with a transcript of that part of the report referring to Pensacola. As soon as the Department was provided with the requested sketches, Totten would transmit plans locating every cannon.[8]

In compliance with Totten's orders, Major Chase on July 17 transmitted a sketch of the Fort Pickens barbette tier, depicting the "positions of the traverse circles for Barbette Carriages, which are all laid except 4 Set on South face of S.W. Bastion." (A copy of this drawing is found in the Park files.)

The radii of the traverse circles was 10 feet from centre of pintle to centre curve of the stones, and the length of most of the curves 24 feet. Those placed on the flanks, however, varied from 20 to 23 feet.

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7. Chase to Totten, May 31, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer.

8. Totten to Chase, June 13, 1840, NA, RG 77, Ltrs. Sent, Chief Engineer.

The distance of the pintle-centre from parapet wall was 2 feet 11 inches; the top level of stone below crest of parapet 5 feet; and height of parapet above terreplein 5 feet 6 inches.

The traverse circles, with exception of four in the Southwest Bastion, had been laid during the fall and winter of 1839-40.

Major Chase, on the drawing, exhibited the armament as assigned by the Board in 1839.[9]

6. 1839 Armament Schedule

The Armament Board in 1839, after reviewing the drawings, had arrived at new figures for armament of the coastal defenses. Fort Pickens was now assigned an armament of 253 cannon and mortars--88 42-pounders, 62 32-pounders, 44 24-pounders, 20 8-inch siege howitzers, 28 carronades, 4 10-inch mortars, 4 8-inch mortars, 2 stone mortars, and 5 coehorn mortars.[10]

7. Supplying the Pintles, Pintle-Plates, Bolts, etc.

Major Chase in August 1840 inquired of the Department, "Is the plate or washer on top of the pintle-block of cast or wrought iron?" He would also like to know the cost of the pintles and plates in the north, as prices for these items in the south seemed exorbitant.[11]

Chase was advised on September 10 that pintles, pintle-plates, and bolts were the responsibility of the Ordnance

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9. Chase to Totten, July 7, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer; "Sketch exhibiting the Covering Line of Fort Pickens and the positions of the Traverse Circles . . .," NA, RG 77, Drawer 78, Sheet 20.

10. Totten to Chase, June 7, 1844, NA, RG 77, Ltrs. Sent, Chief Engineer.

11. Chase to Totten, Aug. 26, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer.

Department. In making requisitions, Chase should state the length of the bolts needed,[12] and specify the number of guns, bolts, etc., dimensions of the pintle-blocks, and the blocks under them.[13]

Chase, in the meantime, had requisitioned through channels for Fort Pickens 114 iron pintles and plates, and 456 iron rods for the barbette gun emplacements.[14]

In mid-December Chief Engineer Totten notified Major Chase that the Ordnance Department had been requested to provide pintle irons for the Pensacola Forts. Watervliet Arsenal had been given responsibility for providing them.[15]

Until such time as the pintle irons were received and funds became available, the 110 sets of pintle-blocks would remain in storage in the casemates.[16]

B. Emergency Repairs Accomplished in the Winter of 1839-40

1. To the Counterscarp and Southwest Bastion

In the winter of 1839-40 emergency repairs were necessitated by: (a) the weakened condition of certain parts of the counterscarp wall, under the traverses, which were threatening to

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12. Totten to Chase, Sept. 10, 1840, NA, RG 77, Ltrs. Sent, Chief Engineer.

13. Totten to Chase, Sept. 29, 1840, NA, RG 77, Ltrs. Sent, Chief Engineer.

14. Chase to Totten, Sept. 21, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer. The bolts, because of the thickness of the pintle-blocks, were to be "2'-10" embracing the plate, but without the screw at the bottom." His pintle-blocks were 2' square by 1'3-1/4" thick, while the under blocks were 4'x1'6"x1'6".

15. Totten to Chase, Dec. 14, 1840, NA, RG 77, Ltrs. Sent, Chief Engineer.

16. Chase to Totten, Oct. 1, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer.

overthrow them; and (b) to the Southwest Bastion. If these collapsed, the subject masonry would be seriously injured, and the cost of restoration great. Major Chase accordingly determined to take corrective action, in anticipation of the 1840 appropriation.

A crew was turned to taking the effected scarps down, and rebuilding them. To resist the great pressure to which the masonry was subjected, the dimensions of the new brickwork were increased.[17]

2. To the Glacis and Casemate Quarters

Several laborers were employed to refill eroded portions of the glacis, banquettes, and traverses. The Officers' Quarters were replastered, and the walls throughout the fort washed with lime and cement.[18]

3. Costs

The cost of these repairs, including positioning the barbette traverse stones, was $9,613, which, when substracted from the $8,000 appropriated for 1840, would leave an arrearage of $1,693.[19]

A breakdown of Chase's labor costs revealed that he needed $3,052 to pay masons for: (a) laying foundations of 110 traverse circles and positioning on same 440 pieces of granite; (b) adding a supporting pier to arch in Southwest Bastion and paving the bastion; (c) taking down and repair of interior wall of casemates over Officers'

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17. Chase to Totten, Oct. 1, 1840, NA, RG 77, Ltrs., Recd., Chief Engineer.

18. Ibid.

19. Ibid.; Public Documents, Printed by Order of the Senate of the United States, During the 2d Session of the 26th Congress (Washington, 1840), Serial 375, Vol. I, pp. 105-06. Expenditures, during the year, for materials involved purchase of 11,900 bricks for $147.80; 30 barrels of cement for $138; 200 pairs of traverse stones for $6,705.16; 100 pounds of spikes for $9; and $8.76 for rope.

Quarters; (d) construction of 16 supporting piers to end walls of traverses in terreplein of covered way; (e) repair of brick coping; and (f) pointing and cement washing of walls.

Two thousand six hundred and forty dollars were required to pay his laborers for: (a) receiving and hauling materials (traverse stones, pintle-blocks, and lime) from wharf to fort, and raising same to terreplein; (b) attending masons; (c) leveling and cleaning ditches; (d) excavating for foundations; (e) wheeling bricks, mortar, etc.; (f) making stages; and (g) white and cement washing. Needed to pay a plasterer was $186.[20]

C. Nation's Bleak Economic Situation Stalls Needed Improvements

1. 1840 Fortifications Bill Causes Problems

Chief Engineer Totten on July 22, 1840, notified his superintending engineers that Congress had granted the appropriation for Fortifications requested by President Martin Van Buren. "But," he continued, "with restrictions as to disbursements." These were to be regulated by "the President, to conform with condition of the Treasury."

They would not "enter into any new engagements, make any purchases, or enlarge" their labor force until directed to do so by the Department.[21]

Three weeks later, Colonel Totten, having reviewed the situation, wrote Chase on this subject. After advising him that the Fortifications Bill allotted $8,000 for Fort Pickens, he warned that the

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20. Chase to Totten, July 6, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer.

21. Totten to Chase, July 22, 1840, NA, RG 77, Ltrs. Sent Chief Engineer.

situation of the Treasury made it necessary that: (a) there be no expectation of receiving before next March 4 any portion of this sum; (b) unless such "arrangements" as referred to under (d) could be made, he was to immediately reduce his force to "an absolute minimum--discharging every person but one or two" low wage men as Fort Keepers, and sell such property as could not be retained without expense; (c) if there were any outstanding obligations, payment of which by mutual agreement could be deferred, he was to make necessary arrangements; (d) if, however, he could make arrangements on "favorable terms, for the supply . . . of materials, workmanship, or labor, to an extent not exceeding one quarter of the late appropriation, & one quarter of the balance in the Treasury of the old appropriation--conditioned that payments are not to be demanded before" January 1, 1841, or April 1, 1841, whichever date the government may prefer, he might proceed.[22]

2. Captain Chase Gropes for a Loophole

After studying Totten's letter, Major Chase on August 25 reported that the "arrearages due at Fort Pickens amount to the sum appropriated, and it would be desirable that they be discharged at as early a day as the condition of the Treasury will admit." He recommended that the $8,000 appropriated for the fort be applied in payment of arrearages due on January 1 or April 1, 1841, or sooner.

By deferring the "whole" of the new appropriations for Barrancas, Morgan, Pike, Wood, Bienvenue, Jackson, and St. Phillip, Chase proposed "to command a sum less than 1/4 of the appropriation . . . if taken pro rata." Application of this sum by January 1 or April 1, 1841, would permit prosecution of the work at the Barrancas; the "performance of a small amount of necessary work at Fort McRee"; and payment of the arrears at Fort Pickens.[23]

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22. Totten to Chase, April 10, 1840, NA, RG 77, Ltrs. Sent, Chief Engineer.

23. Chase to Totten, Aug. 25, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer.

3. Totten Reminds Chase of the Regulations

Colonel Totten had to remind his senior engineer on the Gulf once again that an appropriation for one project could not be "made to bear upon the expenditure of another." For certain forts it would be permissable to expend by April 1, 1841, one-quarter of the available funds, but at points where expenditures were deemed less important, nothing was to be disbursed. Although it was probable that the appropriation granted for certain of the Gulf Frontier defenses would not be "touched within the period named," it would not justify "an increased expenditure at Pensacola beyond the one-fourth currently agreed to."

This principle must also be applied to the Pensacola forts. But as the three works had "the same object, and as one or two of these seem to require it, there may be a deviation so far as to regard the three appropriations as one." As the unexpended balances in the Treasury for the Pensacola forts was $45,000, one quarter ($11,250.25) could be obligated by April 1, 1841.

Major Chase was to correct his program to reflect this situation, and provide the Department with projects on which he proposed to spend the balance ($33,750.50) between April 1 and July 1, 1841.[24]

Responding, Chase reported that the $8,000 Fort Pickens appropriation would be obligated as follows: the $1,414 currently available would be employed to retire debits of $244.25 for sundries, plastering, and smithering, and the remainder the arrearages. To be expended in the 2d quarter of 1841 was $6,585.23. This would be required on April 1 to pay off the deficit in the subject account. The Department, Chase continued, should include in the Fortifications Bill for 1841, $5,000 to pay arrearages and to "complete the Repairs and Improvements of Fort Pickens."[25]

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24. Totten to Chase, Sept. 29, 1840, NA, RG 77, Ltrs. Sent, Chief Engineer.

25. Chase to Totten, Dec. 1, 1840, NA, RG 77, Ltrs., Recd., Chief Engineer.

4. Wreck of "North Carolina" Embarrasses Chase

To make his short-term financial situation bleaker, Major Chase learned in mid-August, from the Pensacola postmaster, that several Washington mails had been lost in the wreck of North Carolina. As he was expecting money to fund his day-to-day operations, he dashed off a letter to the Department to ascertain if there had been any official mail aboard the ship.[26]

An inquiry at the Treasury Department divulged that the "remittance" mailed on July 20 may have been aboard the ill-fated steamer which had foundered off the Carolina Coast, after leaving Wilmington.

Satisfied by information received from the Post Office people that the money had been lost in the shipwreck, the Treasury on September 4 issued a duplicate draft for $3,000.[27]

D. Major Chase Travels to New England

Major Chase, in the autumn of 1840 with his construction program frozen, wrote Chief Engineer Totten that he had private business, compelling him to travel to Boston. On completing his annual reports, with the Department's approval, he would leave Pensacola on October 6 for Massachusetts, with a lay over in Washington to see the Chief Engineer.

He trusted the Department would indulge his request. During his absence, which would terminate about November 1, his clerk, George E. Chase, would be in charge of the office.[28] Horace Higley having resigned, Major Chase had hired his brother as chief clerk.

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26. Chase to Totten, Aug. 21, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer.

27. Totten to Chase, Sept. 4, 1840, NA, RG 77, Ltrs. Sent, Chief Engineer.

28. Chase to Totten, Oct. 1, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer.

Major Chase was detained longer than anticipated in New England. From Philadelphia on November 2, he advised Colonel Totten of the delay. It was November 18 before the major returned to Pensacola.[29]

E. 1841: A Year of Progress and Change

1. Totten's Review of Chase's July 7, 1840, Sketch

Chief Engineer Totten by mid-March 1841 had completed a detailed review of Major Chase's drawing, "sketch exhibiting the covering line of Fort Pickens," forwarded nine months before. Meanwhile, Lt. Henry W. Halleck of the Department had prepared a drawing depicting "the position of every barbette gun" at the fort in conformity with the armament report of 1839.[30] Colonel Totten had observed, on comparing the two drawings, that Chase would have to relocate several of the pieces as indicated on his July 7 sketch.

a. Changes Required to Barbette Emplacements of Channel, North, and South Fronts

On the Channel Fronts there would be no changes, except that the gun next to the curtain on each flank should be moved forward "one foot beyond the prolongation of the magistral of the curtain so they might flank the curtains, as well as the face of the opposite bastion." If there then remained not less than 18 feet from this gun to the next shoulder, the latter need not be moved; otherwise, it should be relocated toward the shoulder till the distance is about 20 feet. The positions of the guns on the right face, right flank and curtains of the South Front, and on the left face, left flank and curtain of the North

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29. Chase to Totten, Nov. 2 & 18, 1840, NA, RG 77, Ltrs. Recd., Chief Engineer.

30. Lt. Henry W. Halleck's "Plan of Fort Pickens, Pensacola Harbor, showing the positions of the barbette guns, and the mode of facing the parapet above the breast-height wall with shingles."

Front, were correct, but the traverses of the guns on the two flanks were to be extended toward the shoulders.[31]

b. Changes Required to Barbette Emplacements of Northeast and Southeast Bastions

All the other guns (those on the two land front bastions) required new positions. No permanent traverse circles and centres were needed on the land curtains. As the guns on the faces of these bastions, as well as those on the land flanks, might be converted into embrasure pieces, it was mandatory to place "the centres of motion within 1'3" of the breast-height wall, and also make a recess in that wall to permit traverse of the guns." To make this conversion, without losing command over the glacis, they would have to raise the covering line of these sections of the fort one foot. The guns would then be mounted in their permanent positions to fire over the current covering line; and, between the several groups of cannon, the covering line of the parapet was to be raised one foot. But to afford full barbette range to the guns, this increased height would not be brought close up to them until the moment of conversion to embrasures arrived.[32]

c. Changes Needed to Correct Angle of Land Front Superior Slope

Chase's profiles, as drawn on the July 7 sketch, Colonel Totten observed, revealed that the superior slope of the land front bastions and East Front would have to be changed. As constructed, it did not look into the covered way. By giving it a declivity of 3 feet in 18 feet this defect would be corrected.[33]

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31. Totten to Chase, March 16, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

32. Ibid.

33. Ibid.

d. Adjustments Required to Breast-Height Wall

A review of the sketch indicated to Totten that the breast-height wall had "been carried quite up to the superior slope." If true, it was indispensible "to remove this top for a distance of one foot down from the present crest, substituting earth." The best lining for this earth was shingles attached to a slight frame, all the wood to be kyanized. This was cheap but attractive, and would "sustain" earth for a long time, and could be removed quickly in event of war. Everywhere a cannon was placed within 1'3" of the breast-height wall, a recess 9-foot long and not less than 1-foot deep must be made in the wall to allow for motion of the chassis.[34]

e. Corrections Needed to Banquettes

The drawings also differed as to whether there was a banquette on the East Front. If there were one, it must be adapted "to the form and dimensions now given, except that on the curtains it may have" a slope of two to one instead of the two steps of timber down. The banquette was to consist of one step, while the covering line remained unchanged; and of two steps when the covering line was raised 1-foot. The steps were to be kyanized wood. There would be a short banquette between every two adjoining guns. Ramps were indispensible.

The terreplein of the covered way was to be improved by making the height from the foot of the banquette to the plane of the crest of the "glacis 7'6" instead of 9'." The gain would be twofold: it would increase space in the covered way and make use of the banquette less laborious.[35]

f. Adjustments Needed to the Slope of Glacis

It was presumed in Washington that the glacis had been constructed with a width of 70 yards opposite the face of the

34. Ibid.

35. Ibid.

bastions--the foot being at the height of 6 feet above the level of "the bottom of the ditch." This was the steepest grade permitted, and if it were steeper, it must be brought to this slope, because otherwise it could not be seen from the present crest. Should a refinement be necessary, it need not include the glacis of the "re-entering place of arms." It would be necessary for Major Chase to examine the "high glacis" of the North and South Fronts to see if its surface was commanded by the opposite bastions, if not it must be adjusted thereto.[36]

g. Relining the Magazines

Totten also directed Major Chase's attention to the magazines, which should be relined with kyanized wood. In doing so, the linings would be placed some distance from the walls, piers, and arches, as at Fort Barrancas. The cellars would be cleaned out as deep as the bottoms of the foundations; one or more 2½-foot-square windows were to be opened into the neighboring casemates, and a grated inner door hung. The flooring should not extend over the space between the lining and the masonry, and there should be a ½-inch joint left open at the bottom of the lining, to permit water condensing upon the lining to drop into the cellar.[37]

h. Priorities in Accomplishing These Projects

In undertaking these projects, Major Chase was to be guided by the following priorities: (a) correcting the positions of certain guns on the four water fronts; (b) adjustment of the earthen parapets and lowering the breast-height walls; (c) relocating the centers and circles of the guns on the land front; (d) regulating the land front terrepleins, forming the ramps and banquettes; and (e) modifying the terreplein of the covered way and correcting the glacis.[38]

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36. Ibid.

37. Ibid.

38. Ibid.

2. Chase Corrects the Glacis

a. His Proposal

Major Chase, in acknowledging on April 23 Chief Engineer Totten's instructions, complained that he had not received Lieutenant Halleck's "Plan of Fort Pickens, Pensacola Harbor, showing the positions of the barbette guns, and the mode of facing the parapet above the top of the breast-height wall with shingles." Not knowing that the plan had been mailed 10 days after the letter of instructions, Chase complained, I fear that it has been "lost along that impracticable road which the Post Office Dept. has seen fit to select connecting Pensacola with the interior."[39]

To save time Chase determined to proceed with his estimates for the gross amount required for Fort Pickens in 1841. This would be possible without the plan, because of Totten's "plain and distinct" explanation. Chase's estimate embraced "everything, except the raising of the slope of Glacis, so it would intersect a plane elevated above high water mark. The balance of the available appropriation ($2,622), while insufficient for this purpose, should be "applied as far as it will go."

In constructing the glacis, Chase had presumed that a great amount of sand would be drifted toward its foot, and gradually up it, "so that we should have nothing to do but to make an even surface." There had been some accumulation of sand, an estimated 5,000 yards, but this was much less than anticipated. The embankment of the glacis had been hard and expensive work, because part of it overlay a marsh.

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39. Chase to Totten, April 23, 1841; Totten to Chase, March 26, 1841; "Plan of Fort Pickens, Pensacola Harbor; showing the positions of the barbette guns," NA, RG 77, Ltrs. Sent and Recd., Chief Engineer. A copy of the subject plan (78-22) is found in files Gulf Islands National Seashore.

Much of the sand constituting the glacis had been carted more than 200 yards, taking in the "embankment of the old Spanish Fort, and the sand hills surrounding it--besides cutting down the sand hills below the assumed level of the country in many places to the level of the high water mark."

Although accumulation of drift sand had been slower than anticipated, it was progressing. When "we cut the grass covering the sand hills along the shore and in front of the glacis," Chase believed that a great amount of sand would be blown on and around the glacis.

He recommended the application of the $2,622 currently available for carting embankment. As the sand would have to be transported a minimum of 100 yards, carts and mules were indispensible. When the work was completed, they could be transferred to Fort Barrancas.[40]

b. Colonel Totten Gets Specific

Chief Engineer Totten had departed Washington on April 10, 1841, on a tour of inspection. Traveling by way of the Ohio and Mississippi Rivers, he reached Pensacola in early May. From New Orleans, on the 5th, Totten forwarded a paper describing what needed to be corrected at Fort Pickens.

His inspection had satisfied Totten that it was "indispensible that the glacis fronting" the northeast and southeast bastions be swept by fire from the parapet of these bastions. Consequently, the glacis must be extended. The minimum glacis was one which showed "every point of its surface to the lowest point on the crest of the face." Those parts of "the glacis would be carried down to the level of the bottom of the main ditch." At that level, if he needed the earth, Chase could begin an "advanced ditch of any convenient depth,

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40. Chase to Totten, April 9, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

and of the width requisite to afford the necessary quantity of earth, giving to both sides of this advanced ditch a slope of 2 to 1. The width and depth would be uniform. "The gentle glacis" of the North and South Fronts, and the faces of the place de arms of the East Front would not be altered.

All sodded slopes should be easy to mow, as this prevented grass "collecting in tufts."[41]

Chase, after studying Totten's report, promised that the glacis correction would be "prosecuted with all diligence so far as the appropriations will allow."[42]

c. Although Rapid Progress is Made the Project Carries Over into 1842

From Lowell, Massachusetts, where he was vacationing, Major Chase in mid-August requested the Department to add $2,000 to his Fort Pickens estimate for purchase of 20 mules to be charged to reshaping the glacis.[43]

Major Chase, when he filed his Annual Report, boasted that scheduled repairs and improvements had been accomplished, except for extension of the glacis and stoppage of the casemate leakage.

The labor force, now that the purchase of the mules had been approved, had been directed to push work on the glacis with

41. Totten to Chase, May 5, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

42. Chase to Totten, June 3, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

43. Chase to Totten, Aug. 14, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

"all diligence." This project, as well as the work remaining to be done on the Southwest Bastion and on the wharf, would not interfere with mounting the cannon, filling the magazines, or occupation of the fort by the garrison.

Major Chase believed there was sufficient money for these projects, provided that the new wharf was not built of cast iron and hollow piles.[44]

Returning to Santa Rosa Island from his 3½-month furlough, in mid-November, Major Chase found the laborers and teamsters embanking the glacis in front of the left face of the land front. If there were no hitches, Chase foresaw completion of the project by December 31.[45]

But this was not to be. On December 22 Major Chase complained that storms and flood tides common to the Gulf Islands in the late autumn had "delayed somewhat the completion of the glacis." Because of the wetness of the ground, they had been compelled to cart sand four times as far as in dry weather.

He had kept 10 carts and 20 mules steadily on the move, and promised to push ahead, despite the hardships.[46]

3. Readying the Barbette Tier Platforms for Armament

a. Changes in Dimensions of Traverse Rails

Chief Engineer Totten, when he transmitted Halleck's "Plan of Fort Pickens," cautioned Major Chase that it had been ascertained that an iron traverse circle of 2½ inches in breadth did not

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44. Chase to Totten, Oct. 13, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

45. Chase to Totten, Nov. 12, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

46. Chase to Totten, Dec. 22, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

always allow "enough for the accidental deviations in the radii of curvature--and that all the curves will hereafter be made 3½ inches wide and from 1/4 to 3/8 of an inch thick."[47]

b. Totten Calls for Chase to Place the Gun Platforms in "Perfect Order"

Following his visit to the fort in May 1841, Colonel Totten urged Chase to place the platforms of the two tiers "in perfect order." Besides positioning the pintle-centers and irons of the barbette tier, the circle irons at some of the casemate tier emplacements needed alteration--the pintle-holes to be examined to insure that they would receive the pintles. Nothing at present should be done toward positioning the iron circles of the carronades. In arranging centers for the barbette guns, Chase was to omit, for the present, those on the right face and flank of the South Front.

Gun carriages in the curtain casemates, to enable them to be traversed their proper degree, required that a small portion be taken off the corners of the rear pier. This should be done alike and symmetrically for all curtain piers.[48]

c. Chase Pushes Work on the Barbette Tier

Because of a combination business and pleasure trip to Louisiana, it was June 3 before Major Chase acknowledged Chief Engineer Totten's May 5 report. On doing so, Chase announced that he was "pushing forward the fixtures of the Guns in all the Batteries."[49]

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47. Totten to Chase, March 26, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

48. Totten to Chase, May 5, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

49. Chase to Totten, June 3, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

Fourteen masons and 22 laborers worked from May through mid-August cutting and drilling holes in the pintle-stones and positioning them on the barbette tier. Traverse rails were adjusted and secured. By September 30 all the platforms were ready to receive their armament.[50]

d. Notching the Casemate Piers

Assistant Engineer George Chase in July had his masons and laborers cut notches in the casemate piers of the Channel and South Fronts to allow the cannon to be properly traversed. This project was completed by mid-September, enabling Major Chase to report the entire tier of casemates is ready for its long guns.[51]

In September the masons positioned traverse stones for 14 carronades.[52]

e. Totten Reconsiders the Situation of the North Front Barbette Guns

In September 1841 Chief Engineer Totten reconsidered the decision made regarding the barbette guns on the right face and flank of the North Front. On this point studies, still unresolved, were being made to "see if an earthen parapet may not be substituted for one of masonry in a position so exposed to land batteries."[53]

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50. Monthly Reports of Operations at Fort Pickens, May-Sept. 1841; Chase to Totten, Sept. 16, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

51. Monthly Reports of Operations at Fort Pickens, July-Sept. 1841; Chase to Totten, Sept. 16, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

52. Ibid.

53. Totten to Chase, Sept. 9, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

4. Measures for Stoppage of Leakage in Casemates and Other Repairs to Masonry

a. Colonel Totten's Observations and Directions

Chief Engineer Totten, following his May 1841 inspection, called Chase's attention to leakage in the ceilings of a number of casemates. Whether these could be stopped by digging down and repairing the lead had to be ascertained. But, in making excavations, it was important that, after repairing the lead, provision be made for "much more liberal issues of the water than now exists." To do so, the gutter was to be covered by a 4-inch dry brick arch of a 4-foot span and 9-inch rise. Immediately on top of the arch would be positioned a 1-foot layer of shells. The gutter outlet to be a zinc pipe, not less than 10 inches in diameter, with a vertical recess cut in the parade wall of sufficient depth to receive a vertical pipe, "leading the water from the horizontal pipe down to the underground issues."

Totten had observed what he believed to be "a slight yielding of the parade wall over the gutters, along the curtains" of the Channel Fronts. This, together with the leaks in most of these casemates, made it advisable to dig down to the lead on all these gutters, and, having repaired the lead, cover it with a dry arch and shells. Chase would then turn a brick relieving arch on a centre of sand, the subject arch to have a span of 12 feet, rise of 4 feet, and a length of 4 feet.

In the arches of the communication, bricks had been used which was incapable of sustaining the pressure and were crumbling. These brick must be replaced.[54]

b. Chase Voices Concern

Responding to Totten's communication, Chase observed that stoppage of the leaks was a serious problem and will take

54. Totten to Chase, May 5, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

"some time to effect." Totten's instructions would be strictly adhered to, and in due time he hoped to report the "sound condition of the casemates."[55]

c. Replacing Crushed Brick in the Groins

The masons in the summer of 1841 cut out and replaced the "crushed brick in the groins" of the Channel Fronts and the communications.[56]

d. Preliminary Efforts to Stop the Leakage

In September a plumber and his helper were employed to solder a break in the lead sheeting covering the sally port casemates.[57]

e. Work Remaining to be Done

When he filed his Annual Report for 1841, Major Chase noted that all repairs and improvements called for by Colonel Totten in his letter of May 5 had been attended to except: (a) filling up the glacis in front of the faces of the land front; and (b) the removal of the earth over the casemates of the Southwest Bastion to repair the "vents or decay in the lead sheeting covering the arches." The latter project was not to be commenced until the "proposed alteration" of the breast-height or the south face of the subject bastion had been determined. Chase thought that the small leaks along the Channel Fronts resulted from a difficulty in keeping the drains and gutters free of sand. If so, they might require a brick pavement. The only serious leak in the north curtain, extending to some distance on either side of the sally port, had been repaired. Its cause had been a tear in the lead sheeting.

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55. Chase to Totten, June 3, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

56. Monthly Reports of Operations at Fort Pickens for July-Sept. 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

57. Monthly Reports of Operations at Fort Pickens for Aug.-Sept. 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

The lead was sound enough, but the sheeting had been torn, when there had been an unequal settling of the arches and the revetment wall. Since repair of this leak, there had been several rain storms, but no seepage was reported.[58]

Major Chase, on returning from his lengthy furlough, saw that work on stopping the seepage and reconstruction of the parapet of the Southwest Bastion had lagged. These projects would be carried into 1842.[59]

5. Changes to Sally Port Fixtures

Colonel Totten in May 1841 directed Major Chase to hang a second gate in the sally port next to the parade. A door should also be positioned to "close the two passages from the gateway to the casemates of North Front."[60]

The latter project was undertaken and completed in the autumn of 1841. It was May 1842 before the carpenter fixed the tiebolts and hinges for the inner gates, and they were hung.[61]

6. Improvements to Breast-height Walls, Parapets, etc.

Major Chase, having reviewed Totten's communication on needed repairs, on June 3, promised to "make the alterations and improvements in the Breast-Height walls, parapet, ramp, etc."[62]

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58. Chase to Totten, Oct. 3, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

59. Chase to Totten, Nov. 12, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

60. Totten to Chase, May 5, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

61. Monthly Report of Operations at Fort Pickens for May 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

62. Chase to Totten, June 3, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

The masons and their helpers in the summer of 1841 formed 14 recesses in the breast-height wall of the Northeast and Southeast Bastions and took up and relaid the coping.

The laborers meanwhile had removed a number of cannon from the foot of the great ramp, which was regraded; finished the banquette on the "land curtain;" replaced the earthen parapet of the sally port; and cut down the parapets of the land front bastions and East Front to 1 to 6.[63]

7. Rehabilitating the Magazines

Carpenters in the summer of 1841 were employed in the magazines. First, they positioned trestles and centres for recesses and ventilators being opened by the masons. Several laborers meanwhile were excavating. By September 30 the carpenters had completed lining the three magazines, except for about three days' work on the "small one near the sally port."[64]

F. Funding Operations in 1841

1. 26th Congress Appropriates $10,000

The 2d Session of the 26th Congress, before adjourning, appropriated $10,000 for Fort Pickens. Notifying Major Chase of this, the Department on March 16, 1841, reported that an audit of the books revealed that $2,325 of the appropriation had already been disbursed, leaving a balance of $7,675.[65]

This sum would not fund the projects necessary to ready the fort for defense, and Chief Engineer Totten asked the 1st Session of

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63. Monthly Reports of Operations at Fort Pickens, July-Sept. 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

64. Monthly Reports of Operations at Fort Pickens for July-Sept. 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

65. Totten to Chase, March 16, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

the 27th Congress, which convened on March 4, 1841, for another $20,000. On July 19, ten days before Major Chase left the Gulf Frontier for an extended leave, the Department wrote, "it is still doubtfull whether . . . the additional sums of $45,000 for Fort Barrancas, and $20,000 for Fort Pickens . . . will be appropriated during" the current session. Should they be, it was desirable that they be "expended upon those works (in producing the greatest possible efficiency) by an early period of next spring." Chase would reserve enough money to "maintain the watch and guard over them necessary to their preservation until" July 1, 1842.

It was also desirable that the current appropriation for the Pensacola forts be expended by January 1, 1842.[66]

The Department's orders to spend the appropriated funds by January 1 did not pose a problem. Major Chase, while en route to New England, wrote his brother (the assistant engineer) to boost the labor force and make arrangements for collection of additional materials.

The draft for September funds was to be mailed to Major Chase in New York City, where he could endorse and mail it to the Commercial Bank of New Orleans to be deposited to his credit.[67]

2. 1st Session, 27th Congress, Appropriates $20,000

On September 9, 1841, Chief Engineer Totten wrote Assistant Engineer George E. Chase that the Fortifications Bill recently signed into law by President John Tyler appropriated $20,000 for Fort Pickens and $45,000 for Fort Barrancas. In expending these sums, Major

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66. Totten to Chase, July 22, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

67. Chase to Totten, Aug. 14, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

Chase was to adhere to the Department's letters of March 16 and July 19.[68]

This appropriation, Colonel Totten cautioned, must suffice to complete the current projects, as it must be the last. The Department was certain that with "the rigid economy that you will apply, Fort Pickens will be brought to the most perfect state without absorbing this fund, especially if you succeed in making the casemates tight without paving the terrepleins."[69]

G. Major Chase Takes a 3½-month Furlough

1. Chase Gets a 20-day Leave

Major Chase on July 5, 1841, learning that the Chief Engineer had returned to Washington, forwarded a request for several weeks leave for reasons of health. As his brother--George E. Chase--was a capable assistant, he was competent to superintend operations during the major's absence. Work would therefore be continued without loss to the government.

If the Department were agreeable, Chase planned to travel to New York City and Boston. While seeking temporary "relaxation from business," he would make arrangements for stores and other materials required from time to time at Pensacola.[70]

On July 17 the Department approved Chase's request to absent himself from his post for 20 days, the maximum permitted by the

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68. Totten to G.E. Chase, Sept. 9, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

69. Ibid.

70. Chase to Totten, July 5, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

new general regulations. If he desired a longer furlough, his request must be forwarded to the commanding general of the Army.[71]

2. Major Chase Suffers a Sunstroke

Major Chase meanwhile had suffered a sunstroke by which his brain and nervous system "were exposed to a severe shock." On July 25 Dr. Hulse attested to his condition, and addressed a letter to the War Department, urging that to insure restoration of Major Chase's health that he be permitted to absent himself from his duties for a month or two. This absence was to include a journey to the northern part of the United States.[72]

With Dr. Hulse's certificate in his pocket, Major Chase, accompanied by his wife, left Pensacola on July 29 for Mobile. There they boarded a ship for New York City. On disembarking there, he notified Chief Engineer Totten that, while in the city, his address would be at H. & W. Delafield's. From New York, the Chases planned to travel to Boston and Lowell.[73]

3. Chase Returns to Duty

Major Chase returned to Pensacola in mid-November by way of the Ohio and Mississippi Rivers. Low water on the Ohio slowed river traffic, dooming his hopes of reporting for duty on October 31.[74]

Checking with Assistant Engineer Chase, he found that during his 3-month absence "satisfactory progress" had been made on the

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71. Totten to Chase, July 17, 1841, NA, RG 77, Ltrs. Sent, Chief Engineer.

72. Chase to Totten, Aug. 7, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

73. Chase to Totten, Aug. 7 & 10, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

74. Chase to Totten, Nov. 12, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

Pensacola harbor defenses. At Fort Pickens the masons, since September 30, had finished fastening down the traversale rails and were now building joists to support the floor beams in the casemate quarters and banquettes to the breast-height walls. Laborers and teamsters were assisting the artisans, completing the cutting of the superior slope of the parapet to 1 to 6, receiving materials, and embanking the glacis.[75]

H. Major Chase Seeks Promotion and More Authority

Major Chase was a vain and ambitious person. In January 1841 he addressed a memoir to Secretary of War Poinsett, asking that he be advanced to the rank of brevet lieutenant colonel. Chase, in making this claim, observed that from

> my first orders to the Gulf of Mexico, I have maintained my station with uninterrupted duties and responsibilities for a longer period in a sickly country, than any other officer in Service. That I have striven . . . to advance the interests of the country; that my services have been rendered to a very important section of the country; and that I have faithfully, with my best judgment, applied the large sums of money entrusted to my care.

In Chase's opinion there were only two officers in the Corps of Engineers whose claims to promotion were superior to his--Colonel Totten and Major Delafield. He believed that Totten should have been breveted brigadier general on being named Chief Engineer, and Delafield a brevet lieutenant colonel on his assignment to be Superintendent, United States Military Academy.[76]

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75. Ibid.; Monthly Reports of Operations at Fort Pickens for Oct. and Nov. 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

76. Chase to Totten, Jan. 8, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

Undaunted by his failure to secure a brevet, Chase in mid-April 1842 suggested that steps be taken to enable him, as senior engineer on the Gulf, "to act with promptness and effect in case of emergency." To do this, his duties should be increased and defined in a manner considered appropriate by the Department.

He considered it important that he be directed to confer with the fort commanders and the general in charge of the 2d Military Department "in everything relating to the defence of the maritime frontier of the Gulf; and to give orders to the officers of engineers having charge of stations within the same."

This was made necessary, Chase argued, by the remoteness of the Gulf Frontier, and to enable him to act promptly in event of an emergency, when there would be unsufficient time to communicate with Washington.[77]

Neither Chase's plea for promotion nor his grab for power elicted a response. Colonel Totten merely notifying Chase that his memoir had been placed before Secretary of War Poinsett. After 30 months had passed, Chase wrote the Department on the subject in July 1844. If the Secretary did not plan to respond, Chase desired official notification.[78]

I. Troops Return

1. Rehabilitating the Quarters and Preparing Selected Casemates

Quartermaster General Jesup, satisfied that the end of the Seminole War would lead to a redeployment of the Army, contacted Major Chase. In anticipation of the fort again being garrisoned, he asked that the Officers' Quarters and barracks be readied.

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77. Chase to Totten, April 19, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

78. Chase to Totten, July 25, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

Chase informed the Quartermaster General that he planned to fit up the three flank casemates in the Northwest Bastion as a "comfortable" one-company barracks. The Tower Bastion could be divided into "two apartments" for two companies.

There were 13 rooms for Officers' Quarters in the casemates, which would afford ample accommodations. All of these were "very dry and afforded very healthy lodgings."

The flank casemates of the Northeast Bastion, on the East Front, were to be converted into a hospital and medical storerooms.

There were on hand bunks for 48 men, but as Maj. Charles W. Thomas of the Quartermaster Department was in Pensacola, Chase presumed he would attend to the fixtures.[79]

It was the autumn of 1841 before carpenters were put to work fixing up the casemate quarters and barracks. By mid-November they had: (a) completed repair of the quarters in the North Front; (b) finished sash of partitions and doors to casemates in the Northwest Bastion for barracks; (c) finished sash, partitions, and door to casemates of the left flank of the East Front; and (d) commenced the inner gate. Painters were painting and priming the new and repaired woodwork.[80]

Major Chase on December 14 informed the Department that the embrasures in the casemates being converted into barracks, hospital, and storeroom had become windows.

The barracks rooms in the Tower Bastion and the 13 rooms under the curtains had already been rehabilitated. When the garrison

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79. Chase to Jesup, March 13, 1841, NA, RG 92, Consolidated Correspondence File.

80. Monthly Reports of Operations at Fort Pickens for Oct.-Dec. 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

arrived, it would find "comfortable and ample quarters," if it numbered no more than three companies.

The main gate had been rehung, and repairs to the wharf would soon be finished.[81]

On December 13 Major Thomas of the Quartermaster Department assured General Jesup that he had made arrangements for the manufacture of bunks, tables, etc., for the troops to be posted at Fort Pickens.

He had found the accommodations "rather limited," but believed they would suffice, provided more casemates were made available for barracks by the Engineer Department. He would therefore purchase and stockpile lumber to await the arrival of the garrison.

The Quartermaster Department had allotted $3,000 for rehabilitating the Officers' Quarters and outfitting casemates as barracks and storerooms.[82]

2. Battalion of the 3d U.S. Artillery Occupies the Fort

On February 10, 1842, Company I, 3d U.S. Artillery (Capt. Martin Burke commanding), disembarked at the wharf and occupied the fort. Once again, after 6 years, Fort Pickens was garrisoned. Captain Burke, seeing that only 2 cannon were mounted, had his redlegs emplace 5 24-pounders on the casemate tier.

Two weeks later, on March 6, Lt. Col. William Gates and the regimental headquarters detachment landed at the fort, to be followed

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81. Chase to Totten, Dec. 14, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

82. Thomas to Jesup, Dec. 13, 1841, NA, RG 92, Consolidated Correspondence File.

on the 16th by Companies E and K, 3d U.S. Artillery. As senior officer, Colonel Gates had relieved Burke as post commander.[83]

3. Two Companies of the 7th Infantry Replace the Artillerists

The battalion's stay on Santa Rosa Island was brief. Orders reached Pensacola in mid-May alerting Colonel Gates to the impending transfer of his battalion and other units of the 3d Artillery to posts on the Atlantic coast. Regimental headquarters would be at Fort Moultrie, South Carolina.

Major Chase was disappointed to learn that the three-company battalion was to be replaced at Fort Pickens by two companies of the 7th U.S. Infantry. Writing Chief Engineer Totten, he protested that the War Department was neither cognizant of the extent nor the importance of this fort.

Because of lack of men for fatigue parties and hoisting machinery, he complained, 22 cannon were lying in the sand, while Fort McRee remains ungarrisoned.[84]

Major Chase's protest accomplished nothing. On May 2 Company I was sent to Foster's Bank to temporarily occupy Fort McRee; on June 7 Company E left for St. Augustine; and on July 11 Company K boarded the ship chartered to carry it to Savannah. The battalion's replacements began arriving on June 17, when Maj. J.L. Nelson and Company K, 7th U.S. Infantry, came ashore. Three days later Major Nelson assumed command at Fort Pickens. Company E of Nelson's

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83. Returns from U.S. Ports, 1800-1916, NA, Microcopy M-617; Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727. Company I had sailed from Tampa Bay on February 6; regimental headquarters from Fort Fanning on March 1; and Companies E and K from the east coast of Florida on February 23.

84. Chase to Totten, May 21, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

battalion reached the fort from Waccahoosa, Florida, on July 2, and two days later was ordered to Fort McRee. Five weeks later, Company E rejoined Company K on Santa Rosa Island.[85]

4. Bootlegging and Segregation Cause Problems

Major Chase, at the time of Colonel Gates' mid-March arrival on Santa Rosa Island, had a working party consisting of 1 white overseer, 1 white carpenter, and 4 black laborers employed at the fort. As this force's principal project was reshaping and raising the glacis, the 2 whites occupied rooms in the Officers' Quarters; the laborers were quartered in the casemates; and the mules were stabled in the small casemated gallery under the left branch of the counterscarp.

Colonel Gates, seeing that the engineer force was employed on the glacis, deemed it advisable to exclude the blacks from the fort. Furnishing them with tents, he allowed them to encamp along the terreplein of the right branch of the counterscarp. The whites continued to occupy quarters in the casemates, while the mules were removed from the gallery.

To these arrangements, Major Chase raised no objection, as at this season there was little or no exposure to heat and rain for men camping out. Besides, he "felt a great desire to give as little trouble as possible to the garrison, while carrying on our operations." He was moved to this consideration by knowledge of the "long and arduous" service rendered by the battalion during the Seminole War. To assure their "comfort and convenience," he would "gladly, have promoted, even at the expense of jostling my own." Moreover, he was desirous of preventing any improper intercourse between the Engineer laborers and the soldiers, "especially in that which led to the sale of ardent spirits."

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85. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727. Company I, 3d U.S. Artillery, remained at Fort McRee until June 12, when it left by ship for Fort Moultrie. Company K, 7th Infantry, had left Micanopy, Florida, for Santa Rosa Island on June 12.

His orders to his oversees were to prevent by all means such traffic, and to punish promptly any laborers engaged in it.

Only one case of bootlegging occurred while Colonel Gates was in command. The laborer guilty of vending whiskey to the soldiers was "severely punished and dismissed." His punishment had taken place in Chase's presence on the crest of the glacis; "that all concerned might see" his determination to prevent the sale of whiskey to soldiers.

After the departure of Colonel Gates, with whom he had maintained most cordial relations, the situation changed.[86] While Chase and Gates were absent from Pensacola, Lt. William Frazer on May 4, 1842, issued an order to P. Gonzales, the overseer. It read:

> The negros working at this Post for the Engineer Dept. will have their tents pitched at the foot of the Glacis outside the Fort, and any negro found inside of the ditch (except the servant attached to the Sutler's Store, the overseer's servant and the servants of officers) on any pretense whatever will be taken in charge of the Guard and receive, under the superintendence of the officer of the day, 15 lashes on his bare back. Any soldier found having any intercourse with any negros about the premises, will be punished at the direction of the Company commander.

On his return to Pensacola, Major Chase was shown a copy of Lieutenant Frazer's order. He was shocked both by its implication and at Frazer's failure to officially communicate with him, as it affected the force under his command.

Chase thereupon wrote an "unofficial but friendly" letter to Frazer, in which he objected to his "assuming the right to punish men

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86. Colonel Gates on May 4 had left Fort Pickens, having been detailed for court martial duty.

in the employ of the Engineer Dept." He acknowledged the necessity of "strict conformance" of the Engineer force to the police regulations of the garrison. He raised no objection to removal of the blacks from the terreplein of the counterscarp to the foot of the glacis, though he did not perceive the need of the change. He, however, protested against the post commander assuming the right to discipline men under his command.

Chase's letter was acknowledged by Lt. Braxton Bragg, who commanded during a brief absence from the post by Lieutenant Frazer. On his May 12 return, Frazer did not answer Chase's communication. Chase, to be on the safe side, told his overseer not to give the slightest offense, and to see that there was no bootlegging by his laborers.

In June, because of the hot, humid weather, the laborers and mules suffered severely. On arrival of Major Nelson of the 7th Infantry, Chase called to pay his respects. Nelson, having talked with Frazer, complained about the vending of whiskey to his men. He seemed aware of the difficulty in suppressing the traffic, and since taking command on June 20 had caused two black laborers to be punished for selling whiskey to his soldiers.

Chase accordingly made arrangements with Major Nelson to quarter the force scheduled to work on the Southwest Bastion in the casemates.[87]

Chief Engineer Totten's advise to Chase in this situation was "to bear and forbear doing everything in your power for the maintenance of harmony, and the furtherance of the public interest."[88]

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87. Chase to Totten, July 29, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

88. Totten to Chase, July 19, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

J. 1842 Construction Program

1. Chase's January Report Sparks an Inquiry

Major Chase advised the Department in early February 1842 that in January his masons had paved with brick the superior and interior slopes of the parapet and terreplein of the North Front; cemented the banquettes; and painted and whitewashed the brickwork. Carpenters had been repairing the carts and replacing woodwork of the breast-height wall. The laborers, in addition to assisting the artisans, had been hauling and tamping sand for the glacis, coating the paved slopes with asphalt and tar, and leveling the terreplein of Northeast Bastion.[89]

Colonel Totten was disturbed by several aspects of the report, because they referred to projects which had not been approved by the Department. On February 12 he asked Chase to explain what he meant by the "Masons have been paving (brick) superior and interior slopes of parapet, gateway front . . . and laborers coating slopes with asphalt and coat tar."[90]

2. Combating Seepage by Paving and Asphalting Superior and Exterior Slopes and Terrepleins

a. Background

Major Chase explained that the work referred to had been undertaken to curb casemate seepage. To demonstrate its advantage, he informed the Department that the casemates were now free of leakage. New linings had "rendered" the magazines "very dry." The casemate quarters in the South Front curtain had never leaked, while those in the Tower Bastion had been free of seepage since the brick pavement was put down 8 or 9 years ago.

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89. Monthly Report of Operations at Fort Pickens for Jan. 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

90. Totten to Chase, Feb. 11, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

b. Waterproofing the Slopes and Terreplein of North Curtain

The casemate quarters of the North Front having "shown" several new leaks in December, Major Chase had determined "to incur no further expence" by digging down and soldering the lead sheeting. He had the masons pave the terreplein above with brick. This stopped the seepage.

Next, leakage in the arches of the gunrooms along the North Front curtain resumed. It was more extensive than before the parapet had been removed to solder the tears in the lead sheeting. Removal of the earthen parapet had been troublesome and expensive. Under the circumstances, Major Chase had resolved to pave the superior and exterior slopes of the North Curtain with brick laid flat; cementing the joints with a mixture of asphalt, coal tar, pitch, and sand; and covering the entire pavement with boiled coal tar brushed on. Since the project had been completed in the final week of February, there had been several hard rains and no leakage. The water drained off the upper slopes, with the small quantity finding its way through the pavement carried off by the drains.

The brick paving involved only a slight expense, and it was not damaged by people walking on it. In event of war, the paving could be removed in one day, if this front were exposed to shot and shell. This, however, was unlikely, as it faced the harbor.[91]

c. Totten Qualifies His Approval

Chase's explanation of his mode of operations was satisfactory. Colonel Totten conceded that the method adopted for covering the slopes of the parapet as well as the terreplein with brick

91. Chase to Totten, Feb. 24, & 27, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer. Two barrels of asphaltum had been applied "to joints, of stone traverses and pintle stones, etc.," with the brick pavement.

pavement "may be very well adapted to such circumstances." But, he cautioned, before making any future changes or modifications of consequence that involved additional expense, Chase was to secure the Department's approval before carrying them into execution.[92]

Chase was delighted to learn that his action had met with approval, especially as heavy rains had "tested the excellence of the device."[93]

d. Paving the Slopes and Terreplein of the Southwest Bastion

On June 11, 1842, Major Chase, having learned, temporarily, that Chief Engineer Totten made all decisions, sought authority to pave with brick the exterior and superior slopes of the Southwest Bastion. By this action, the Department would be saved the expense of digging down and repairing leakage into the casemates of the bastion. The parapet would be covered with brick laid flat, with the joints cemented, at a cost of $255.[94]

When the Department approved the project, Chase was reminded to place the sand in horizontal layers of 6 inches, thoroughly rammed.[95]

3. East Front Banquettes Differ From the Plans

Major Chase on February 27, 1842, also explained for the Department's benefit that the cementing of the banquettes of the East

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92. Totten to Chase, March 9, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

93. Chase to Totten, April 3, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

94. Chase to Totten, June 11, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

95. Totten to Chase, June 20, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

Front consisted of pointing with cement the line where the banquette joined the breast-height wall, and cement washing the upper surface. At Fort Pickens all the banquettes were brick, Chase explained, because they were economical. In taking down the breast-height walls, he had obtained a large quantity of quality brick, and he had thought it advisable to use them in the banquettes, substituting them for wood.[96]

That brick banquettes were more economical than those of wood, Colonel Totten was not ready to admit. But, he wrote, it may depend on "the manner of form of the banquettes, the dimensions of which," he trusted, were in conformity with the drawings."[97]

Responding to this rebuff, Major Chase on April 3 wrote the Department that the brick banquettes were cheaper, as they were built of "old brick, otherwise useless, taken from the breast-height walls." They were not solid brick, only being "surrounded by a brick wall 9 inches thick, and the void space filled up with sand and covered with shells, well rammed in with old mortar cement, etc., making a nice concrete covering."

The platforms around the pintle-blocks, he continued, would be wood, in accordance with the plan, and kyanized with the corrosive sublimate daily expected from Philadelphia.

During his 3½-month absence from the Gulf Frontier, the banquettes built under Assistant Engineer Chase's supervision had had a width of 2 feet, rather than 3 feet called for. Plans to correct this error had been dropped, when tests demonstrated that a soldier had no

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96. Chase to Totten, Feb. 27, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

97. Totten to Chase, March 9, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

difficulty standing on them and firing his musket. If, however, Colonel Totten deemed a width of 3 feet essential, the change would be made.[98]

Chase in mid-May was notified by Colonel Totten that the banquettes could remain as they were, although 2 feet was too narrow.[99]

4. Extending and Reshaping the Counterscarp Glacis

a. Its Completion

The time-consuming work of extending the glacis, fronting the counterscarp, continued into 1842. Progress was slowed still more by the winter's rainy season.[100] By early April, Major Chase voiced hopes that the glacis, fronting the Southeast Bastion, would be completed by June 1.[101] Work dragged in April, when Colonel Gates excluded the workmen and mules from the fort. The black laborers now lived in tents. Before beginning alteration of the faces of the Northwest and Southwest Bastions, Major Chase hoped to make arrangements with Colonel Gates to shelter his men in the casemates of the counterscarp.[102]

Work continued, however. In May the teamsters and laborers completed the glacis fronting the right face of the land front.[103]

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98. Chase to Totten, April 3, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

99. Totten to Chase, May 20, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

100. Chase to Totten, Feb. 24, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

101. Chase to Totten, April 3, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

102. Chase to Totten, April 4, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

103. Monthly Report of Operations at Fort Pickens, May 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

By mid-July the glacis was finally finished, and all sections were now within the line of fire from the parapet.[104]

b. Its Maintenance

In July 1842 Major Chase was disturbed to see a 7th Infantry fatigue party burning grass on the glacis and ramparts. Writing Chief Engineer Totten, he suggested that a General Order be issued forbidding burning of grass on the "sharp slopes of parapets and glacis coupé," as it was very injurous--the sod being destroyed and the slopes disfigured.

At prescribed periods, he recommended, the grass be carefully mowed. On the Gulf Frontier, grass was so luxurious that burning had been resorted to by post commanders, as the "easiest mode of keeping down the growth."[105]

The Department did as suggested. On August 23 the Adjutant General issued a General Order directing that hereinafter: (a) "no person shall be permitted . . . to walk upon any slope of a fortification, excepting the ramps and glacis"; (b) no cattle, horses, sheep, or goats will be permitted upon the slopes, ramparts, or parapets, nor upon the glacis, except within fenced limits; (c) all grassed surfaces, except the glacis, will be "carefully and frequently mowed (except in dry weather)," the grass never being allowed to get more than a few inches high; (d) the burning of grass upon any portion of "a fortification is strictly forbidden"; and (e) particular attention is to be given to prevention of erosion on the parade, terreplein, and ramps.[106]

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104. Chase to Totten, July 12, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

105. Chase to Totten, July 20, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

106. General Order No. 55, Aug. 23, 1842, NA, RG 94.

5. Chase's Successful Efforts to Control Motion in the East Front Scarp

a. Positioning Three Counterforts

In mid-April 1842 Major Chase was disconcerted to discover a slight motion in the cordon of the curtain of the East Front. As a precautionary measure, he had his masons begin erecting three counterforts along the subject scarp.

Explaining his action to the Department, Chase pointed out that when the embankments are of sand, and any motion of the revetment occurs laterally, "it is necessary to avert it immediately until a greater solidity is obtained" by resort to masonry. Otherwise, "the sand falling constantly into the space, made by the giving out of the wall from the embankment must" in time overthrow the scarp.

Though most of the scarp had been erected upwards of 10 years, it had been slow to dry. In the thinner walls, the mortar had hardened, becoming an excellent cement, demonstrating that it required only time for the walls to become "firm and strong." Consequently, he believed it a wise measure to position three counterforts against the curtain, as it "arrested the evil of motion in its incipiency, and giving support temporarily enables the wall to acquire strength in a few years to support its embankment."

The counterforts were neither unsightly nor did they mask any portions of the curtain from flanking fire.

They had been placed equidistant along the curtain, were 3 feet wide, 6 feet at the base, and terminated at a point under the cordon. After several years, and the scarp had acquired additional "solidity and strength," the counterforts could be removed.[107]

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107. Chase to Totten, April 21, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer. It had taken 7 masons and 7 laborers 3 days to build the counterforts. The counterforts were never removed.

b. Totten Lectures Major Chase

Chief Engineer Totten on May 20 asked Chase to determine by measurement the degree to which the line of the East Front cordon had moved outward. The remedy applied was, under the circumstances, the best. Totten, however, did not agree that a "wall exposed to lateral thrust that is deficient in resistance in the first place can ever become adequate by the mere introduction of cement."

Its deficiency arises not from the weakness of the mortar, but from "want of inertia in the mass; the base being the same." Totten argued that scarps became "less and less adequate as they became older, because the loss of weight by the drying out of their water is not compensated by the hardening of the mortar." Two great mistakes likely to be made in constructing sustaining walls were: (a) not allowing for leverage, as when the earth above the arches presses against the wall at or near its top; and (b) not allowing for the great slope at which the dry sand lies, and the great weight of wet sand. Because of this peculiarity, sand was a costly element, and this was the reason behind introduction of relieving arches into Fort Barrancas.[108]

c. Chase's Solution Succeeds

It was early August 1842 before Major Chase had an opportunity to measure the "ordinales of the curve along the cordon." He found there had been no increase in length. He promised another measurement within a month.

He was confident that the support provided by the three counterforts had curbed the tendency of the gorge wall to bow.[109]

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108. Totten to Chase, May 20, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

109. Chase to Totten, July 31, 1841, NA, RG 77, Ltrs. Recd., Chief Engineer.

6. Reinforcing the South Face of the Southwest Bastion

a. Totten Forwards Instructions and Drawings

Chief Engineer Totten on January 24, 1841, transmitted a drawing of the Southwest Bastion, showing needed alterations to the parapet of the right face and south front. The masonry was to be removed, and an earthen parapet substituted, having the face of its breast-height wall along the line e-f. The correct position of all the guns were indicated. Those marked g were to be the same as heretofore. The gun in the shoulder angle, if already positioned, would be moved; the centre of motion to be 2'11" from the breast-height of the flank and 1'3" from the breast-height of the face. Placing the gun on the "short face," within 18 feet of the "short flank," would afford the room necessary. If two cannon had been positioned on the short flank as previously directed, this area need not be changed.

The parapet of the Northwest Bastion would be modified in a similar manner. On the long face of this bastion, there would be one less gun than on the corresponding face of the Southwest Bastion. There being three guns instead of four, the centre-pintles would be 24 feet from each other, and 1'3" from the face of the breast-height wall. On the long flanks and the short faces, the positions occupied by the centres in the subject bastions would be the same.

In constructing the breast-height walls of the long faces, a recess must be made opposite each gun of the dimensions given in the sketch.

When removing the brick parapet of the long faces, Chase's workmen were to go down to the roof of the casemates to permit construction of a drain arch to carry off water there accumulating. The subject arch was to have a span of several feet, be of brick without mortar, and be covered with a layer of clean shells or gravel. In replacing the sand, upon which the breast-height wall was to be founded, it was to be done in horizontal layers of not more than six inches.

In addition to a banquette, a small platform of kyanized wood should be provided in front of each gun, on which the gunners were to stand in serving the piece. Similar platforms would be prepared for Fort Barrancas.[110]

b. Chase Questions the Application of the Plan to the Southwest Bastion

After reviewing the sketch and Totten's letter, Major Chase reminded Washington that the south face of the Southwest Bastion, several years before, had "exhibited a little motion arising from the compound pressure of the arch of Casemate and Parapet on Top." This motion had ceased, and he believed the scarp now able to "sustain the present weight imposed; and that its ability is daily increasing as the masonry becomes drier."

The increased width of the parapet, proposed by Colonel Totten, along this face would impose an additional weight of about 300 tons upon the arch below, and in a direction most likely to "increase the thrust of the arch against, its outer supporting pier, which is the face of the bastion."

It was Chase's opinion that this additional pressure would be more than the face could bear in its present condition. He therefore recommended that the proposed alteration of the parapet be suspended, either with a "view of adopting some other plan, or of strengthening the face of the bastion . . . to insure its ability to receive the additional weight proposed."

As for other plans than that projected, Major Chase could conceive of none which would exhibit the "required thickness of

110. Totten to Chase, Jan. 24, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer; "Sketch of S.W. Bastion of Fort Pickens," Jan. 24, 1842, NA, RG 77, Drawer 78, Sheet 29.

Parapet of Earth." If this thickness were "deemed absolutely necessary for resistance against batteries established within breaching distance," all that was required was to strengthen the face of the bastion. This could be done be taking down the masonry of the scarp and reconstructing it with mortar mixed with hydraulic cement. Such an operation, Chase cautioned, would be expensive, as the adjacent arch would have to be partly taken down, and "strong support given to the rest in the series." Perhaps, he continued, it might be admissible to strengthen the face by

> piers incorporated with the wall on the ditch side, permitting them to remain until the masonry, after some more years, had become perfectly dry, and when the general subsidence of the work, both of the embankment and masonry, had ceased.

The face of the Northwest Bastion had not shown "the slightest motion" since construction, and Major Chase believed no risk would be incurred by increasing the width of its parapet. He would, however, await Colonel Totten's reply before he turned his masons to on this project.

To avoid squandering time, he would proceed to execute the instructions "relative to the wooden platforms around the pintle-blocks of the barbette batteries."[111]

Totten agreed on March 9 that it was judicious for Chase to delay beginning work on the Northwest and Southwest Bastions, until he received further instructions.[112]

In accordance with Totten's suggestion, Chase agreed not to commence alteration of the bastions until end of the rainy season,

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111. Chase to Totten, Feb. 24, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

112. Totten to Chase, March 9, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

which would be May. When he did, he would adhere to the Department's instructions.[113]

c. Totten Calls for Relieving Arches

On March 22 Colonel Totten notified Chase that, in view of his comments, he was forwarding a drawing exhibiting the method proposed for relieving the scarp of parts of the Southwest and Northwest Bastions from the pressure of the parapets. The only sections of the subject bastions to which this remedy was to be applied corresponded with "the long arch, or for a length of about 40 feet."

To accomplish this, the parapet was to be first removed, and then the mass of the roof on the scarp side would be taken down to expose 40 feet of the main arch. It would then be determined whether it would be economical to leave those portions on which the small piers would stand.

The drain along the scarp would be carefully laid, and provision made for leading off the water, and after the small arches were built, and the centres removed, the exposed top of the main arch would be covered with asphaltic mastic. The relieving arches were to be sustained by three piers, each two feet thick, and two abutments, each three feet thick. The piers and abutments were to extend, in length, from the crown of the arch to the scarp wall. Tops of the piers and abutments, next to the scarp, would be 6 inches below the top of the scarp; over the key of the arch the tops of the piers to be 3'2" above the top of the arch, there being a rise in the imposts of the small arches, as the piers extends backward. Upon the piers would rest small arches, 1-foot thick and having a rise of 2 feet. The length of the arch was to correspond with the length of the piers. Over these small arches there would be no masonry, except that forming a gutter. The arches

113. Chase to Totten, April 3, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

being turned, the wooden centres, upon which they were formed, were to be removed. To close the small open space in front, a small wall, 1-foot thick, would be built, resting on the scarp. To close the open space in the rear, a wall 2 feet thick would be erected, resting on the old roof, the space under the small arches being left void.

This project was designed to reduce the weight upon the arch by the amount of the void, and second to lessen the effect of the weight by bringing the pressure to act against the scarp at a lower point. Most of the parapet's weight was to be borne through the small arches upon the large area, and through the large arch upon the scarp at or near the impost of the large arch.

If the cordon were "at all curved," it must be reset "perfectly straight, in order that the slightest motion may be manifested in the curving outward of the line." If the cordon were properly set, a deviation of as little as 1/8 inch could be observed.

Workmanship on these relieving arches was to be "good and strong," but of the "roughest and cheapest kind as no part will be exposed to view."[114]

d. Chase's Proposal to Strengthen the Southwest Bastion

Major Chase studied Totten's letter and the enclosed drawing, "Fort Pickens--Plan and Sections showing the counterforts and relieving arches for strengthening a part of the scarp wall of the North West Bastion." He then prepared a counterproposal. The north face of the Northwest Bastion, he reminded Totten had shown "no perceptible motion . . . by reason of the pressure of parapets." The masonry was very firm, and after ten years drying, he was confident that its strength

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114. Totten to Chase, March 22, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

was sufficient to sustain the additional weight of the enlarged parapet, without resorting to "the plan of relief" cited in Totten's letter of March 22. He urged that the plan as proposed in Totten's January 24 letter be adhered to in altering its parapets.

The condition of the face of the Southwest Bastion was different. A motion caused by the thrust of the arch, supporting the scarp wall, had occurred eight or nine years before, and "though all perceptible motion has ceased . . . yet rather than increase the weight of the parapet," he would diminish that at present imposed.

He viewed General Bernard's plan as defective in having the scarp wall the supporting pier of the arch. Even if the wall were strong enough to sustain the thrust of an arch "loaded with its superincumbent parapet," its strength was likely to be diminished or destroyed by the guns of an investing force. A breach made in the south face would lead not only to destruction of the arch, but to the entire series extending along the curtain of the Channel Front, of which it is the support.

On an accompanying drawing titled, "Sketch of Casemates under S. face of S.W. Bastion, showing their proposed arrangement with the axis of arches perpendicular to Scarp wall," Chase noted that there was "no tendency outward of the Scarp wall perceived from b to a, but that the motion exhibited is from a to a', showing evidently the action of the arch, and the necessity of removing it."

Chase proposed to take down 39 feet of the arch, and substitute two arches, with their axes perpendicular to the scarp wall. The pressure currently acting against it would be relieved, and all danger of further motion removed. Two "good 17-foot gun casemates" would be afforded.

Chase estimated the cost of dismantling the arch and building two new ones at:

To take up and clean 25,600 brick at $10 per 1,000	$ 256.00
17,100 new brick at $12 per 1,000	205.20
61 days' work of masons at $2.50 per day	152.50
122 days' work of laborers at $1.25 per day	152.50
30 casks of lime at $2	60.00
15 casks of cement at $2.50	37.50
3 days' labor master mason at $4 per day	32.00
Scaffolding, centres	20.00
Replacing and soldering lead	84.30
	$1000.00[115]

Colonel Totten reviewed and approved Chase's proposal, although he believed the plan advocated by the Department would cost less. Chase would accordingly proceed. Care would be exercised in leading off the roof water by large conduits, and to lay back the sand in "thoroughly rammed horizontal layers of not more than 6 inches thickness." The scarp wall was not to be disturbed, and no new openings would be cut into it.

As this would increase the cost of the Southwest Bastion work, Totten had determined to make no alterations to the Northwest Bastion, and orders to substitute an earthen for the masonry parapet were cancelled.[116]

e. Chase Revises His Proposal

By mid-May Chase had broached a new idea, which he documented on a "sketch showing proposed addition of masonry to right face of South Front of Fort Pickens." By adding 2 feet at the angle of the shoulder, he explained, and about 3 feet at the flanked angle, the prolongation of the face would strike the opposite angle of the flank.

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115. Chase to Totten, April 16, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

116. Totten to Chase, May 20, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

He recommended this scheme, as easier to execute than the plan he had proposed on April 16.

The face of the Northwest Bastion was strong enough, he reiterated, to support "the enlarged parapet designed by Chief Engineer Totten." With the force at his command, Major Chase predicted, he could construct the new masonry in 12 days, and enlarge the two parapets in another two weeks.[117]

f. Totten Approves Increasing the Thickness of the South Front

Strange as it seems Colonel Totten maintained his cool, although the frequent changes advocated by Chase must have taxed his good humor. On May 25 he approved Chase's latest proposal. In executing the project, the superintending engineer would see that: (a) the increased thickness of the South Front was everywhere 3 feet, thus throwing the line of defense slightly in advance of the angle of the flank. (b) The additions to the foundations to be of concrete thoroughly rammed, in 9-inch layers, and the new sections to be 4 feet wide at the bottom and two feet at the top, the bottom of the concrete extending as low as the bottom of the old grillage. (c) The present cordon to be moved out to the new position and bottom of the exterior slope to be within 2 feet of the outer edge of the cordon, the intersection of the exterior and superior slopes being retained as heretofore directed. (d) The 3 embrasures to be filled up, leaving in each a loophole for ventilation, 6 inches wide on the outside. The interior recesses would not be filled up.

If Chase had commenced modifying the left face of the North Front, he would proceed. In doing so, he was to make the same exterior addition to the face of, but also make the same exterior addition to the face of the bastion, the only difference being that the present

117. Chase to Totten, May 15, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

ventilators on that side must be continued "out to the outside with their present dimensions."[118]

g. Work Takes a Fraction of Time

Chase by mid-July had stockpiled the necessary bricks and cement at the Southwest Bastion. Although he had been disappointed in his efforts to secure lime for the project, he planned to begin on Monday, July 18.[119] The force (one overseer, one master mason, 11 masons, 22 laborers, and three mules) was turned out as scheduled.[120]

In August the workmen added three feet to the masonry of the Southwest Bastion, to enable it to sustain the additional weight imposed by the increased width of the parapet. The masons before closing down the project, finished the bastion's breast-height wall and relaid the cordon. Carpenters had been employed making centers for arches and preparing and tarring wood facings for the breast-height walls.[121]

K. Financial Drain on the Treasury Necessitates Economy

Chief Engineer Totten on July 29, 1842, notified his project engineers that the "state of the Treasury" was such as to necessitate stringent economy measures. While existing contracts must be honored, "so far as the means on hand will permit," no new engagements would be made, except in circumstances of extreme urgency and must be approved

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118. Totten to Chase, May 25, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

119. Chase to Totten, July 12, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

120. Chase to Totten, July 29, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

121. Annual Report, Fort Pickens, 1842; Monthly Report of Operations at Fort Pickens for July-Sept., 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

by the Department. The number of employees must be pared and expenditures cut to the bone, without reference to unexpended balances of the appropriated funds.[122]

Acknowledging Totten's letter on August 9, Major Chase reported, "the repairs and improvements" at Fort Pickens were nearly accomplished and would absorb the remainder of the appropriation.[123]

On September 2 Totten notified his engineers that the 2d Session of the 27th Congress had adjourned without enacting a Fortifications Bill to fund next year's construction program.[124]

L. Chase's Recommendations for Strengthening the Faces of the Northeast and Southeast Bastions

Early in 1842 Chase observed a "slight cuneation" in the cordon of the faces of the Northeast Bastion and the east face of the Southeast Bastion. These observations had been watched with anxiety during the year, but despite heavy rains no increases were observed. The faces, themselves, exhibited no outward bulging; the curvature being confined to the cordon. This led to the belief that an expansion of the hydraulic cement between the joints of the cordon had caused the displacement.[125]

If all the parapets, like those of the North Front curtain, were paved with brick laid flatwise, Chase wrote the Department, the wet sand in them would soon dry, relieving the scarps of a great mass of weight. As had been demonstrated, the scarps, as designed by General Bernard,

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122. Totten to Chase, July 29, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

123. Chase to Totten, Aug. 9, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

124. Totten to Chase, Sept. 2, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

125. Chase to Totten, Oct. 1, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

would support a mass of dry sand. But Bernard had failed to take into his computations and make allowances for the increased dimensions needed for wet sand.

If additional support for the faces of the Northeast or Southeast Bastions became necessary, the mode employed in reinforcing the face of the Southwest Bastion should be adopted.[126]

M. Armament Situation Slowly Improves

1. Chase Seeks to Complete the Fort's Armament

On April 1, 1842, Major Chase complained to the War Department of the defenseless condition of the Gulf Coast forts, because of lack of armament. To make the situation more ludicrous, he had learned that a large number of cannon were stored in the Pittsburgh Ordnance Depot. He saw no reason "why a sufficient number with their carriages and ammunition should not at once be placed and mounted in the Gulf forts."

Fort Pickens, he continued, was only partially supplied with its "armament, with but seven guns mounted, and incomplete supplies of ammunition." Part of Fort McRee's armament was still lying at Fort Pickens.

The water battery at the Barrancas was ready for 13 guns, but neither tubes nor carriages had been delivered.[127]

In mid-April Chase reiterated his complaint that Fort Pickens is "wanting part of its armament."[128]

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126. Ibid.

127. Chase to Totten, April 1, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer. Five of the 7 guns at Pickens had been mounted by Captain Burke's company in February.

128. Chase to Totten, April 18, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

The Department accordingly notified the Ordnance Department that Fort Pickens was ready to receive its allotted 208 guns.[129]

2. 38 Pintle-Blocks are Reinforced with Concrete

By July 4 at least 13 guns had been mounted on the barbette tier. To commemorate the nation's birthday, Major Nelson had his men fire, as a national salute, 2 rounds from each of these pieces. When the cannon were inspected afterwards, four of the pintle-blocks were found to have moved. This motion was perceptible by "small cracks at the point of juncture of the upper block with the bed of masonry or concrete."

Although the odds were slim that a large number of discharges would seriously disturb the pintle-blocks, Major Chase believed it a prudent "precaution to afford additional support by constructing the platforms around them of masonry or concrete instead of wood." This would reduce the leverage to almost nothing, and "thus while serving as a platform, such additional strength will be given the pintle-blocks as will put to rest all doubt of their capacity to resist the shocks" to which they were subjected.

To accomplish this, the masonry platform would be raised on a bed of masonry or concrete, surrounding the lower block, to the top of the upper block, Where the pintle was 1'3" from the breast-height wall, 1'4" of masonry would be added to the rear of the block, the depth of the platform being 4 feet as per plan. Where the pintle was 2'11" from the breast-height wall, it would be necessary to make the depth of the

129. Totten to Chase, May 20, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

platform 5 feet, by which 1'1" of masonry would be added at rear of the pintle-blocks.[130]

Before the end of the month, Chase "carefully levelled the pintle-blocks exhibiting motion," and no further change was observed.

Relaying this data to the Department, he announced "I am in favor of additional support, and shall proceed to construct the platforms around the blocks with concrete as Chief Engineer Totten suggested.[131]

Totten on July 21 had written Chase that the only objection to substitution of masonry for wood in the platforms around the pintle-centres was expense. As there must be no doubt of the stability of the pintle-blocks, they must be tested before any platforms were positioned.[132]

On August 11 Totten ordered Chase to delay construction of his concrete platforms until results of experiments currently in progress on the resistance of pintle-blocks were evaluated.[133]

Because of the time lag, 38 platforms had been remodeled before Totten's message reached Pensacola. On notifying Washington of this, Major Chase forwarded a sketch of the "Platforms constructed about the Pintle-blocks."[134]

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130. Chase to Totten, July 12, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

131. Chase to Totten, July 31, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

132. Totten to Chase, July 21, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

133. Totten to Chase, Aug. 11, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

134. Chase to Totten, Sept. 3, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

N. Lieutenant Scarritt Becomes Assistant Engineer

A letter reached Major Chase in the early summer of 1842 from the Department that two young graduates of the U.S. Military Academy were being assigned to the Gulf Frontier as assistant engineers. They were Lts. Jeremiah M. Scarritt and Paul O. Hebert.

Acknowledging the correspondence, Major Chase agreed that the duties of assistant engineer and clerk, which had been exercised by his brother George, for several years, were "onerous." He was certain his brother would be glad to be relieved of the former. As for himself, he was delighted to learn that he would be receiving two army officers as assistant engineers. Knowing that Lieutenant Hebert was a native of Louisiana, Chase suggested he be stationed at Fort Livingston and Lieutenant Scarritt at Pensacola.[135]

Acting on Chase's recommendation, the Department on August 11 assigned Lieutenant Scarritt to be assistant engineer at Pensacola.[136]

George Chase, on learning that Lieutenant Scarritt would report for duty on September 1, wrote Chief Engineer Totten, expressing his appreciation for the confidence reposed in him during the years he had served as assistant engineer.

The progress of the three Pensacola forts, in various stages of construction and repair, had enabled Chase to add to his experience, and "should better times hereafter enable me again to exercise it, I shall know how to value the many factors which have come under my observations."[137]

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135. Chase to Totten, undated, NA, RG 77, Ltrs. Recd., Chief Engineer; Totten to Chase, July 25, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

136. Totten to Chase, Aug. 11, 1842, NA, RG 77, Ltrs. Sent, Chief Engineer.

137. G.E. Chase to Totten, Aug. 10, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

IX. THE FORT IS PLACED IN A DEFENSIBLE CONDITION: 1843-1847

A. 1843: A Year of No Construction and Minimum Maintenance

1. Chase Submits His Estimates

Congress having failed to pass a Fortifications Bill in the summer of 1842, there would be no construction funds available for Fort Pickens in 1843. Major Chase, in compliance with procedures, nevertheless prepared and submitted his estimates on September 30.

To fund the Fort Pickens program required $11,980, of which $3,105 were needed to cover the arrears for strengthening the Southwest Bastion. Projects which should be undertaken in the near future were: (a) construction of masonry platforms around the 38 remaining pintle stones; (b) paving with brick the superior and exterior slopes of the remainder of the parapet; (c) covering the terreplein of south curtain and West Channel Curtain, and Northeast and Southeast Bastions with pavement; (d) taking up coping opposite each gun along Channel Fronts, and replacing same with 10-inch thick coping, having zinc plates between joints and 18-inch intervals; (e) laying rails on four traverses in Southwest Bastion and 26 traverse rails in flank casemates, and taking up and replacing 64 old traverse rails in casemates; and (f) construction of a drain leading from the ditch to the bay.[1]

2. Two Laborers Maintain the Grounds

With no new funds available and an arrearage of $3,100 on the books, all construction and maintenance by the Corps of Engineers ceased at the fort on September 30, 1842.

On March 10, 1843, there was a slight improvement in the bleak outlook. Chief Engineer Totten, during the day, wrote Major Chase that the 2d Session of the 27th Congress had appropriated $7,000 for construction at Fort Pickens for the year ending June 30 and another

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1. Chase to Totten, Sept. 30 & Oct. 1, 1842, NA, RG 77, Ltrs. Recd., Chief Engineer.

$6,000 for fiscal year 1844. But until receipt of further instructions, Totten cautioned, no obligations were to be incurred for the project beyond payment of the arrearages.[2]

Chase in the summer of 1843 employed two laborers to cut the grass on the parapets and glacis, to police the grounds, and grub weeds.[3]

As required, Major Chase filed his annual report on September 30. On doing so, he observed that, except for the work done by the two hands, "no operations" had been undertaken at the fort.

B. 1844: Funds Again Become Available

1. Treasury Releases Construction Funds

It was the first week of January 1844 before the Secretary of the Treasury advised the War Department that there were sufficient appropriated funds available to permit a resumption of work on the coastal defenses. Chief Engineer Totten, after reviewing his books, wrote Major Chase that he was authorized to draw from the Treasury for Fort Pickens $500 each in January and February; $1,000 in March; and $2,000 each in April, May, and June. This rate of expenditure, he cautioned, could be reduced at the request of the Secretary of the Treasury, if the necessity arose. He would therefore keep his "expenditures, contracts & engagements so in hand as to be able to curtail at any moment to the extent required by the condition of the Treasury."[4]

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2. Totten to Chase, Mar. 10, 1843, NA, RG 77, Ltrs. Sent, Chief Engineer.

3. Monthly Reports of Operations for July-Sept. 1843 at Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer.

4. Totten to Chase, Jan. 4, 1844, NA, RG 77, Ltrs. Sent, Chief Engineer.

Chase assured the Department that he did not require any funds for Fort Pickens until April, when it would be "in good season to commence" its repair.[5] In March, Chase employed several hands to grub up the weeds that had sprouted on the glacis and parapets.[6]

Major Chase, having received no reply to his letter stating he would like to resume work in April, wrote the Department, on April 26, suggesting that operations be commenced at Fort Pickens as soon as possible, so they could avail themselves of the favorable weather. Since his sunstroke, Chase had become increasingly aware of the searing summer heat on Santa Rosa Island. To add to his personal woes, his brother, George, had died at Chasefield in March.[7]

Chief Engineer Totten was absent from Washington on a tour of inspection, which took him as far south as St. Augustine. On his return to his office in early June, he wrote Chase. He would have to visit West Point before he could prepare instructions for "further operations at Fort Pickens," so he suggested that Chase not make "arrangements for commencing labors on that work at present." He could continue as heretofore to keep "a man or two engaged in mowing, trimming, weeding, repairing, etc., the grassed surfaces."[8]

Chase did as directed. In July and August two laborers kept busy cutting grass and pulling weeds on the slopes of the embankment.[9]

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5. Chase to Totten, Feb. 19, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

6. Monthly Report of Operations at Fort Pickens, Mar. 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

7. Chase to Totten, Apr. 26, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

8. Totten to Chase, June 7, 1844, NA, RG 77, Ltrs. Sent, Chief Engineer.

9. Monthly Reports of Operations for Fort Pickens, July and Aug. 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

2. Totten Gives Chase Instructions

Totten, on his return to Washington, reviewed the notes he had made during his 1843 inspection of the Pensacola forts. These constituted the grist for the lengthy set of instructions he mailed to Chase on August 26 to guide him in the repair and modernization of Fort Pickens.

a. Pintle-Centres

The new method for securing pintle-centres adopted by the Department dispensed with plates and bolts. The pintles were to be secured with wedges. If he had secured pintle stones of the old pattern, he was to notify Colonel Totten. If not, Chase was to adopt, with necessary modifications, the method depicted on the enclosed sketch.

The depth of concrete shown was that required in northern latitudes, but on the Gulf Coast the concrete around the pintle stone need not extend more than 2' 9" below the top of the upright stone. The depth of the concrete foundation of the traverse stones was to be as heretofore. As Chase could see, the sketch called for a circular recess in front of the gun to increase the traverse. Where the breast-height wall was unfinished, this recess would be advantageous, but where it had been constructed in "a right line, or without the recess, the pintle-centre must be placed at its usual distances from the wall." The upright stone, 2' x 2' x 4' 6", its top 4' 2½" below the interior crest, would be cut quite smooth on top and on the sides to a depth of 3" from the top, and should be accurately cut on the front and sides, where it enters a notch, 4" deep in the horizontal stone. Beyond this there was no need for stone cutting. The block should be split out straight to the proper dimensions and all lumps broken off.

The horizontal stone, 6' 4" x 1' 6" x 1' 6", was to be split out straight, but would receive no cuttings except where it came in contact with the other stone. There it should be "left" to fit perfectly.

The earth or sand, under the upright stone and surrounding concrete, was to be compacted and all "cement well rammed in layers" of 6 inches.

If the breast-height wall were straight, and the pintle at a different distance from the wall, the earthen platforms, between the guns, would remain the same in reference to that wall, and the gunners' platforms in rear of the pintle, the same in relation to the pintle, and the concrete in front of the pintle would extend to the breast-height wall.[10]

b. Barbette Platforms

In remodeling barbette platforms, Chase was to remove all sand from within the border of the brickwork, replacing it with thoroughly rammed layers of concrete. Next, the upper surface of the brickwork and concrete would be covered with a pavement of "the best and hardest bricks laid in cement mortar." The top to have a slope toward the edge of about 1 inch, the highest part being one inch below the top of the pintle stone. Division of the brick border into separate blocks was a detail to which attention must be given. It would be worthwhile to lay all those on the border wall as headers and on their edge, as this upper angle of the platform was "much exposed to violence."[11]

c. Pointing with Asphaltic Mastic

The joint a-b on Chase's drawing was to be cleaned out to a depth of not more than 2 inches and sealed with asphaltic mastic that "will be quite soft under a hot sun." Wherever there were horizontal joints in the coping, tablet, cordon, etc., whether of stone or masses of brick, they were to be cleaned out "as deeply" as possible, without too much labor, and the vertical and overhanging part pointed in the best manner with cement mortar. When this had set, Chase was to clean the open joint of dust, and fill it with a "fluid composition of bitumen and calcareous stone." While still hot, he was to "drive into the top hot sand." Such a joint would always remain tight."

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10. Welcker to Chase, May 14, 1844, & Totten to Chase, Aug. 26, 1844, NA, RG 77, Ltrs. Sent, Chief Engineer.

11. Totten to Chase, Aug. 26, 1844, NA, RG 77, Ltrs. Sent, Chief Engineer.

In laying new coping, cordon, tablet, etc., Chase was to keep the masses about 1/3-inch apart. If laying brick masses, a sheet of iron of that thickness was to be used to keep them "asunder"; if stones, he was to employ an iron strip of that size in rear of each end, to be removed after the stone was laid. When all had been positioned, they were to be pointed as heretofore described, the vertical and overhanging joints, with cement mortar, and filled with asphaltic mastic.

Where the brick pavement of a terreplein joined the tablet of the parade wall, breast-height wall, or parapet wall, joints would also require pointing in a "peculiar manner."[12]

d. Widening the Banquettes

Totten recalled on the northeast, northwest, and southwest fronts a banquette of bricks "existing nearly from gun to gun." If any portion were provided with wooden banquettes, they could remain, but if any portion were brick, it should be provided with one of sand faced with a wall of bricks like the others, except its width would be 3 feet. The entire surface would be paved with hard bricks laid in cement mortar, the upper course laid on edge, and composed of separate masses not more than 4 or 5 feet in length. The joints between were to be filled with asphalt.

Existing brick banquettes, where only 2 feet thick, were to be widened by building up in front a wall of one brick thickness, the top course to be on edge. The top of the brick banquettes were to slope to the rear, and no part must be higher than the highest part of the pavement of the gun platform.[13]

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12. Ibid.

13. Ibid.

e. Repair of Cracks on Channel Fronts

Totten recalled that there were broad cracks on the Channel Fronts at the junction of the terreplein and parapet caused by a leaning outward of the scarp. To correct this, the cracks must be pointed "up with great care, leaving a very smooth surface in which the smallest break may appear." If the new pointing ruptured, "they would be driven to measures that I should be glad to avoid."[14]

f. Repair of Casemate Traverse Circles, etc.

Gun casemates were to be examined and any traverse circles that had been removed or fractured were to be replaced. To permit gun carriages to reach "their proper extent of traverse" corners of the rear piers must be trimmed. In the communication arches many substandard bricks had been used and unable to sustain the pressure were crumbling. These must be replaced.[15]

g. Coping

Chief Engineer Totten, calling Chase's attention to his letter of June 5, 1843, regarding Fort McRee, pointed out that a brick coping must be "laid for the whole length of the brick parapets of Fort Pickens, instead of the . . . existing thin coping." To implement this, "such courses must be removed as to give a crest 4' 2½" above the pintle-plate, the coping being not less than 12 inches thick." Instead of using a thin sheet of iron between the blocks, one of 1/4 or 1/3 of an inch should be employed. Instead of pointing this joint in the top surface, Chase was to point it with cement mortar, only on the two vertical surfaces, and instead of leaving this joint open and free, he was to fill it with a "soft composition of asphaltum." The superior slope was not to be steeper than 6 to 1. Brickwork was to be the best quality.[16]

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14. Ibid.

15. Ibid.

16. Ibid.

h. Casemate Repairs and Maintenance

Brick pavements in the casemates were to be repaired; all cracks in the scarp, piers, and arches were to be cleaned and repointed; and cisterns were to be examined and leaks repaired. On his 1843 inspection, Totten had observed that the garrison had made changes to the casemates calculated to make them more comfortable. Major Chase was to prepare a sketch showing these fixtures and indicating whether they were desirable for the comfort and health of the troops. The sketch would also depict the magazines, their doors, windows and ventilators, with dimensions. It would be Chase's responsibility to see that the magazines were properly ventilated by daily opening the solid doors and window shutters, except when raining.[17]

i. Draining the Terrepleins of the Northeast and Southeast Bastions

On the two land bastions, the terrepleins were to be regulated by "assuming lines parallel to the several crests" and behind the traverse stones, at reference 5' 8" below the old crest. It was designed that all ground between the line and the parapet be adjusted to shed water to the rear, therefore the height next to the parapet independent of the banquette, was established at 5' 6". At a distance of 30 feet from the subject crest, there was assumed to be other lines parallel with the several crests and 7 feet below. Between these two lines, there were to be formed planes shedding water still farther to the rear.

This had been done, but Colonel Totten had seen that it had not been carried far enough. There was currently a level surface at the lower reference from which there was no way for rain water to escape. On an attached sketch, Totten had shown several surfaces according to the presumed construction. To drain the area, it was assumed that the three points shown were 7' 3", 7' 6", and 7' 9" below the crest, and from a reference of 7 feet surfaces would be built to

17. Ibid.

descend to this line, so as to "throw all the surface water onto the rampart slope at 0.

If a paved terreplein were the remedy for the leaks in the arches supporting the bastions, casemates under the two flanks, communciation gallery, and magazines, Totten wanted all but the space just behind the faces paved. Major Chase would be the judge of whether this should be done.[18]

j. Reinforcing the Counterscarp Traverses

Chase's attention was called to the inferior bricks in the face of the scarp, the leaks into the "little counterscarp galleries," and the traverses of the covered way. The latter were important to a "good defense," and it "would not be pardonable to leave them in an imperfect state." To improve this situation, Chase was to remove as "much of the traverse lying next to the ditch as will give . . . a clear space about 10 feet broad behind the wall at the level of the top of the counterscarp." He would then sink against the back of the counterscarp wall two rectangular curbs 15 feet apart, 4 feet wide, and of such length that at the bottom they may be 7 feet long. These were to be carried to within 3 feet of the ditch. The curbs were to be sunk by placing on the ground, first those planks that were to remain the uppers, with a trench to permit this portion to be embedded to its own depth. Four more planks, constituting another course, would then be positioned, by excavating on the inside. On being carried to within 3 feet of the bottom of the ditch, a layer of concrete, not to exceed 8 inches, was to be poured and rammed, leaving that portion of the layer next to the back of the wall to last. Before that portion was added, the plank against the wall would be removed.

The rear of each concrete counterfort would be vertical, but that portion in contact with the wall was to receive its

18. Ibid.

shape. Having raised the counterforts to the height of the top of the counterscarp wall, an arch, two bricks thick, would be turned from one to the other rising 3 feet. The back of the arch was to have the same vertical plane as the rear of the counterforts, the front of the arch being in contact with the counterscarp wall. The arch to be turned on a centre of rammed sand.

Next, the masonry profile of the traverse would be altered, so that the exterior slope would be 1½ to 1, and the banquette "slope 2 base to latitude." Any other masonry of the traverses that might be cracked or askew would be repaired, "giving them the same slope above the breast-height wall as the rest of the covered way." The grass surfaces would be restored and the banquette given a width of 5 feet. After the traverses had been reinforced, the exterior sloping counterforts could be removed.[19]

k. Draining the Ditch

To provide drainage for the ditch, the slopes must be adjusted. In suggesting a remedy, Chief Engineer Totten assumed that the surface was "now at the level of high water or nearly so," and that it would be as convenient and economical to provide for discharge of water opposite the salient of the Tower Bastion as from any other point. He proposed they take a line for the drainage running along the middle of the ditch and ascending at the same rate in both directions, from point 2 on the enclosed sketch. The drainage line established, the surface of the ditch would be formed by causing the ground to raise 6 inches from this line to the scarp in one direction. Both plane and warped surfaces were to be induced to form these surfaces. Sand added to secure the new surfaces would be spread in thin layers and rammed, to avoid any settlement.

Also needed was a channel for escape of water at low tide, "and . . . a decided track for it to pursue along the drainage

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19. Ibid.

line." The former would be dependent on the tides and surf. Totten urged construction of a tight drain of bricks laid in mortar beyond the counterscarp. The drain along the middle of the ditch must be of different nature. It would be tight at the bottom but open along the sides to receive "infiltrating waters." Where it passed under the roadway, it would be covered.

The exterior drain might be extended to sections of the beach, "which the growth of vegetation shall show to be fixed," because beyond it would be impossible to keep it open except at exorbitant expense.[20]

1. Miscellaneous Projects

Minor maintenance projects to be undertaken included: (a) all evidence of leaks, lime, and dirt stains was to be removed from the casemates. (b) To meet the needs of an inner gate, 10 feet wide, large posts were to be positioned on either side of the 12-foot opening, to be connected at the top by a lintel. The gate was to be 7½ inches thick, with 3-inch rebates. A bar attached to one of the gate halves was the most convenient method of fastening. (c) Several men were to be employed to maintain the sodded surfaces by mowing, weeding, and fertilizing the soil. (d) Additional earth was to be added to the glacis near the crest. (e) Broken brickbats were to be raked out of the earth, not only on the glacis but on all parapets, terrepleins, etc. (f) Chase was to investigate to see if the garrison had raised the chimneys to a height such as not to interfere with the traverse of the barbette cannon.[21]

3. Chase Comments on Totten's Instructions

Major Chase, after studying Colonel Totten's August 26 and Lieutenant Welcker's May 14 letters and the enclosed drawings, drafted a lengthy reply. He reported:

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20. Ibid.

21. Ibid.

a-b. Pintle-Centers and Barbette Platforms

All but 36 of the barbette pintle stones had been reinforced as described and depicted in his letter to the Department of June 3, 1843. He promised to follow the Department's "instructions in modifying the present platforms and in constructing the remaining 36."[22]

c. Pointing with Asphaltic Mastic

He had noted Totten's remarks about "filling joints and cracks with mastic" and would adopt the process described.

The cracks in the parade wall, between the arches, had resulted when the arches settled. In the months since Totten's visit they had stabilized.[23]

d. Widening the Banquettes

There were no wooden banquettes. All were masonry with sand fill. He would modify the existing ones as called for. The banquette of the East Front curtain was curbed with masonry and filled with sand, with a good growth of grass on top. As it was 2 feet at the tread, Chase would increase its width 9 inches.[24]

e. Repair of Cracks on Channel Fronts

The Chief Engineer was mistaken. There was no indication that the scarps of the Northwest and Southwest Channel Fronts had bulged. It was impossible for the scarps to have yielded to the "small pressure" against them. Their perpendicularity was perfect. The opening at the junction of the terreplein and breast-height wall had arisen from settling of the casemate arches. Although Chase believed this

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22. Chase to Totten, Sept. 12, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

23. Ibid.

24. Ibid.

motion had ceased, he would make an investigation before he modified the banquettes.[25]

f. Repair of Casemate Traverse Circles, etc.

Chase would examine and adjust the casemate pintle-centres and traverse rails. The light traverse rails, he warned, were so rusted they must be replaced by stouter ones, to be better fastened to the stone traverses. He would give this project close attention.

A "small portion" had been cut off the corner of the casemate piers to admit an extended traverse of the chassis, crumbling bricks in the communication arches had been removed and replaced with harder brick. Any future "decay of brick" in the scarp would be promptly attended to.[26]

g. Coping

He would program replacement of the Channel Fronts and parade wall coping as described. The latter was to be given a slope of 1-inch outward.[27]

h. Casemate Repairs and Maintenance

A few leaks had reappeared in the North Front casemates, the terreplein and slopes of which had been covered with bricks laid flatwise. These leaks Chase attributed to the "cement mortar of the joints crumbling through expansion and construction, the results of great heat and extreme cold," having destroyed the cohesion. As proof of his contention, Chase pointed out that he had used a mixture of vegetable tar and pitch, with a little asphaltum, in some of the joints over the

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25. Ibid.

26. Ibid.

27. Ibid.

terreplein of the west curtain instead of cement mortar. There had been no seepage. This demonstrated that a pure mastic used in pavement joints will prevent leaks.

Until seepage had reappeared in the North and Southwest Bastion casemates, great expectations had been held for the brick paving.

Major Chase now proposed to clean out the joints of the old pavement to a depth of 1½-inch, and fill them with "a mastic rich of mineral tar," about 40 percent. Any new pavement of the exterior and superior slopes "should be laid in good common mortar, leaving open joints, in which mastic should be poured." A pavement thus laid, Chase forecast, will never leak.

If they had known, Chase lamented, of the method Lieutenant Scarett had perfected at Fort Barrancas for employing ribs and gutters for covering arches, $12,000 in sheet lead could have been saved, plus the expensive repairs needed to check leakage, where the lead had decayed.

There was a bad leak in one of the cisterns. As soon as it could be drained, he would make repairs.

The three magazines were in good condition, "holding powder and other stores in excellent preservation." He was forwarding drawings, "Showing the ventilation of the Magazines of Fort Pickens."[28]

Side bulkheads in the casemate openings had not been constructed. In adding these fixtures, Chase would follow the Department's orders.[29]

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28. Ibid. A copy of the subject drawing is found in the files of the Florida Unit, Gulf Islands NS.

29. Ibid.

i. Draining the Terrepleins of the Northeast and Southeast Bastions, etc.

Major Chase had adhered to Colonel Totten's instructions of March 16, 1841, in adjusting the terrepleins, except for those of the Southeast and Northeast Bastions. As for those bastions, the "poverty of the sand does away with drainage to the rear." He would utilize earth accumulated in this work for repair of the parapet.

The arches of the supporting galleries being covered with lead, its decay would probably be followed by seepage into the casemates. He would therefore pave the overlapping terreplein with brick.

He would also repair damage done by firing of the cannon to the brick pavements of the parapet. Wooden platforms were to be positioned adjacent to two of the cannon--the ones employed as a morning gun and for target practice--to alleviate this problem.

The brick pavement of the superior and exterior slopes of the parapet of the South Front and Southwest Bastion was still solid. Any leakage arose from a failure of the cement mortar to resist extremes of heat.[30]

j. Reinforcing the Counterscarp Traverses

It was pointed out that the part of the counterscarp carried up for support of the traverses of the covered way had exhibited no motion since construction of the counterforts. The wall opposite each of the four traverses was now perfectly supported. The counterforts, Chase explained, were built of excellent materials, and not being upright did not interfere with defense of the ditch. He begged that they "remain . . . until more urgent necessity exists for their removal."

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30. Ibid.

The cracks and fissures seen by Colonel Totten were in the breast-height wall, near its junction with the supporting wall of the traverses. They had resulted through settling of the mass of sand on which the traverses were built. Little or no settling of the counterscarp had been observed.

The breast-height walls should be taken down and rebuilt to a height of 18 inches below the crest of the traverse, and the top slope made of shingles. The masonry slope of the traverse could be altered, so that the exterior slope would be 1½ to 1, the interior slope 2 to 1, and "altitude and tread of the banquette 5 feet."

While reviewing structural problems of the land front, Chase reported that the motion in the East Front curtain had been arrested by the three counterforts erected in February 1842.[31]

k. Draining the Ditch

To improve drainage of the ditch, Major Chase proposed positioning the debouch of the drain at the wharf and the entrance near the bridge. The drain would have a stop shot about 8 feet, from which a wooden aqueduct (18 inches square) would project under the wharf. It would be attached to the wharf piling to insure that the mouth of the aqueduct was beyond the drifting sand, and midway between flood and ebb tide. A small sluice shutter would keep out the water at high tide. The shutter to be raised "at half tide ebb and shut at half tide flood," thus insuring the ditch's drainage.[32]

l. Miscellaneous Projects

(a) All leak stains were to be removed from casemate walls, and cracks and open joints pointed. (b) He had already built

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31. Ibid.; Chase to Totten, Sept. 24, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

32. Chase to Totten, Sept. 9, 1844, NA, RG 77, Ltrs Recd., Chief Engineer.

solid and strong main gates, with "side part stop grinders" of 18 inches. The width of the opening was 12 feet. (c) Several men had been employed to maintain the sodded surfaces. Until publication of General Order 55, garrisons had been in the habit of burning the grass off the slopes. Considerable injury had resulted, not so much in reality, as in the unsightly appearance of sections of the slopes. Having eaten into the sod, the fires exposed the underlying clay to erosion by rain.

(d) Major Chase would have the "small space of the glacis" near its crest filled with sand and secured by bushes from the wind's force. A substantial stand of grass was now growing on the sections of the glacis embanked two years ago. The "strong sea shore grass," he explained, sprang up in the "white sand binding, with its vigorous and deep sinking roots, the whole mass." Bermuda would be seeded in the near future.

He would "reform the slopes" needing it. Where doing so, he planned to employ the Fort Barrancas system of steep slopes with shingles and Bermuda. At Fort Barrancas, the exterior slopes were clad in a luxuriant growth of grass. This system was cheap but effective. At Fort Pickens during the summers, he had employed one or two men to mow grass and repair erosions. But this was at best patch work. Shingles were the remedy.

Had he known of the "shingle device" for steep slopes, when construction was started in 1829, $42,000 could have been saved in clay, sods, shells, etc., used in covering the glacis and ramparts.

e. Many of the casemates had been occupied by the garrison. Several chimneys had been carried up through the terreplein to improve ventilation. This interferred with the traverse of some of the barbette tier cannon. No fixtures, he informed the Department, should be allowed in the casemates unless designated, authorized, and constructed by the Corps of Engineers. The internal wooden structures (partitions) were temporary, being only crude bulkheads. He did not believe it necessary to send the Department a sketch of them, as they

were of no value and would not be used even if it were determined to convert some of the casemates into quarters.

If it were decided to garrison Fort Pickens permanently, it would be necessary to construct additional Officers' Quarters. The fort, as planned by General Bernard, did not contain "adequate" quarters for the enlisted men. The only suitable casemate accommodations for them, not interfering with service of the guns, were in the Tower Bastion.

Major Chase proposed that the 13 rooms now assigned as Officers' Quarters be turned into barracks for enlisted men; the Tower Bastion would be converted into a hospital and storeroom; and "a light and airy building" erected for the officers parallel to the curtain of the East Front. He, however, questioned the wisdom of dividing the troops assigned to defense of Pensacola Bay among the three forts. He urged their concentration at Barrancas, where they could be lodged in permanent barracks. From the barracks small details could be sent to each fort.[33]

4. Projects Immediately Undertaken

a. "Reforming" the Slopes of the Counterscarp Terreplein

Chase in September 1844 employed his teamsters and laborers to "reform" the slopes of the terreplein of the counterscarp. The great distance sand had to be carted made this a tedious project. Some deviation from Totten's instructions was made by Major Chase to save sand. At the same time the object of the "amelioration" would be accomplished by affording greater facilities for ascent of the banquette and exposing the front of the banquette to view of soldiers posted on the ramparts of the East Front.

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33. Chase to Totten, Sept. 12, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

Bushes employed to stabilize the glacis would be removed after the grass had had another growing season, giving the feature its desired smooth surface. The Bermuda would have "possession," and Spanish bayonet would be allowed to spring up on the glacis.[34]

b. Repair of North Front Terreplein, Parapets, etc.

Top priority was given to repair of the banquettes, and brick paving of the North Front parapets and terreplein. Joints were sealed with mastic and seepage into the casemates below stopped.[35]

c. Testing the Reinforced Pintle-Blocks

Major Chase, on checking with the post commander, learned that the 2 cannon used by the garrison for practice against land targets had each been fired at least 50 times without exhibiting any motion or cracks at the junction of the pintle stone with the surrounding masonry. This satisfied him that the reinforced pintle-blocks were immovable.[36]

On September 14, 1844, Major Chase began an intensive testing of the reinforced pintle-blocks. The first discharge of a 24-pounder--with service charge, two balls, and a wad--split the chassis hurters at the centre bolt. This prevented a second firing of the cannon. An examination showed there had been no motion in the pintle-block.

A second gun, mounted on a similar chassis and having front and rear transoms of iron with a large tongue or bolt

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34. Chase to Totten, Oct. 3, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer. At the bottom of the letter, Chase prepared a sketch of his modification to the counterscarp terreplein.

35. Ibid.

36. Chase to Totten, Sept. 7, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

supporting the hurter in the centre in place of a wooden transom, was fired. Its discharge fractured the hurter at the bolt, also bending the bolt. Although the gun was out of action, no motion in the pintle was observed.

The next gun tested had its chassis fitted with wooden transoms front, middle, and rear. It was fired twice without apparent injury to the chassis. At the third shot, the rear transom badly fractured, and, in giving way, nearly dismounted the cannon. The middle transom remained firm. The hurters of the first two chassis were oak; that of the third cypress. The third gun was useless for further trials, but again the pintle had not moved. Further tests were abandoned.

When he reported what had occurred to the Department, Major Chase called attention to these serious defects in the chassis of the barbette carriages, which exhibited either defects in the design or the injurious effects of exposing wooden carriages to the weather. A rigid inspection was required of the carriages and chassis to ascertain the cause and extent of the defects revealed by the test firing.[37] Needed repairs could be easily made on site, at a small cost.[38]

5. Seeking Guidance and Funds

a. To Waterproof the Casemates

Variations in the "decay of the lead sheeting" covering the casemate arches baffled Major Chase. Because of it, the casemates of the curtain and left flank and face of the North Front; the Channel Fronts; and the face of the Southwest Bastion had leaked for years. At the same time there had been no seepage into the casemates of the south curtain and its left flank; the flanks of the East Front; the

37. Chase to Totten, Sept. 15, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

38. Chase to Totten, Oct. 3, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

right flank of the North Front with the communicating arches; and the two small magazines.

On digging down to repair leakage in the North Front, they had found the lead decayed. Now, Chase asked, "Why should not the lead covering generally have decayed, when its exposure to the causes of destruction are the same?" He presumed that where there was no casemate seepage, the lead had not decayed.

From personal experience, he vouched that the greatest care had been taken in positioning the soldering and lead.

If the casemates into which there had been no leakage continued to remain dry, Chase recommended that the "overlaying parapets and terreplein . . . not be repaired," as suggested. Where casemate seepage required repairs to the "brick pavement of parapet and terreplein," Chase urged that: (a) they fill the joints with mastic; and (b) repair the pavement or parapet where it had been ruptured by the concussion of cannon fire. To avoid effects of concussion, Chase proposed placing over the parapet opposite each gun a platform of 3/4-inch boards.[39]

b. Steps Taken to Check for Movement in the SE and SW Bastions

Measurements made in September 1844 established that there was a slight bulging, mainly in the cordon, of the faces of the Southeast and Southwest Bastions. If the motion continued, a remedy must be applied.

Major Chase suggested that if this occurred, they take the same corrective actions as that used to stabilize the face of the

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39. Chase to Totten, Sept. 7, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

Southwest Bastion. An addition of two feet of masonry, in his opinion, would be sufficient.

Another measurement made in three months would determine the necessity of this work.[40]

c. Call for Funds to Replace or Repair the Wharf

Capt. Dixon Miles, in his role as assistant post quartermaster, notified General Jesup in October 1844 that the Fort Pickens wharf required extensive repairs. The flooring needed renewal, while half the piles (which had been supported) should be replaced. If it were not soon attended to, the wharf would be destroyed by the surf.

If the wharf were rebuilt with piles, the cost would be $1,000. A substantial masonry wharf could be built for $5,000.[41]

6. 2d Auditor Causes Problems

Major Chase fumed in December 1844, when the paymaster returned a voucher for $64 for his forage allowance for July and August, it having been rejected by the 2d Auditor. The reason cited for the refusal to honor the voucher was: Chase was not authorized to muster his own horse.

Chase protested that: (a) he was mustering officer at the Engineer Station at Pensacola; and (b) he considered himself authorized as commanding officer of Engineers to muster his horses.

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40. Chase to Totten, Oct. 3 & 4, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer. With his correspondence of Oct. 4, Chase forwarded sketches showing the "Quantity" of motion in the scarp walls of the subject bastions.

41. Miles to Jesup, Oct. 1, 1844, NA, RG 92, Consolidated Correspondence File.

He assured the Department that he had owned, kept, and fed the four horses charged for in the stables attached to the quarters, "as Major of Engineers near Pensacola; and that the horses were used by me in the discharge of my appropriate duties."[42]

Capt. Robert E. Lee, acting as Chief Engineer Totten's assistant, recommended that steps be taken to enable Major Chase to draw forage for his horses in the 3d and 4th Quarters of 1844.[43] This made Chase feel better as he was a man who valued his prerogative more than money.

C. 1845: A Year of Many Improvements

1. Funding the Program

Chief Engineer Totten, in November 1844, informed Secretary of War William Wilkins that for "preservation and efficiency" of Fort Pickens, it was deemed important to make some other modifications and additions to the covered way and glacis; to

> arrange the surfaces of the ditch and other slopes of the fort, so as to insure a more perfect drainage; make some repairs in the pavements of the casemates and on the terrepleins; strengthen the gun platforms; give additional strength to certain parts of the scarp, if on future examinations any further change shall be found to have taken place from the pressure of the earth.

To fund this work, an appropriation of $12,000 was requested.[44]

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42. Chase to Totten, Dec. 17, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

43. Ibid.

44. Public Documents, Printed by Order of the Senate of the United States, 2d Session of the 28th Congress (Washington, 1845), Serial 449, Vol. 1, p. 182.

On March 7, 1845, Colonel Totten notified Major Chase that President Tyler had signed into law the Fortifications Bill, appropriating $12,000 for Fort Pickens for fiscal year 1846. No part of this sum was to be drawn from the Treasury before the beginning of the new fiscal year. If he desired to expedite work during the second quarter of 1845 beyond the means available, Chase could do so, provided the contractors understood no payments could be made from the recent appropriation until July 1, 1845.[45]

2. Colonel Totten's May 1845 Inspection

Chief Engineer Totten in May 1845 spent several days at Pensacola. This was his first visit to the Gulf Coast in two years. On the 30th, having completed his inspection of the Pensacola forts, he wrote Major Chase a lengthy letter, containing "directions as to the remaining labors to be executed" on the works under his immediate supervision.

a. Traverse Circles

While at Fort Pickens, Totten had observed that a number of the barbette gun platforms needed traverse circles.[46]

b. Terreplein and Parapet Joints

A number of joints on the terreplein should be filled with asphalt. The recommended composition was 6 pounds of mineral tar to 16 pounds of calcareous stone. It should also be applied to the joints of the new parapet after removal of the wooden wedges.[47]

c. Chimney Tops

Chimney tops, fronting the guns on the North and South Fronts, must be lowered to a level with the parapet crest, "the

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45. Totten to Chase, Mar. 7, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer.

46. Totten to Chase, May 30, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer. The May 30 letter was sent from New Orleans.

47. Ibid.

tops being neatly and strongly finished off at that level." Copper pipes of the same size as the chimneys should be positioned thereon to prevent the fireplaces below from smoking.[48]

d. Combating Casemate Seepage

Major Chase was cautioned about leakage into the casemates, as seepages might reappear owning to open joints at the foot of the parapet, at the back of the coping of the parade wall, etc. All must be stopped by opening the joint for a couple of inches and pouring in the asphaltic mixture of tar and calcareous stone.

Totten had "no faith in any application of coal tar to bricks or masonry--except for a merely temporary purpose." He had seen many instances of its use, but never one where it did not rapidly decay, if exposed to vicissitudes of weather.[49]

e. Maintenance of the Sodded Slopes

He had seen evidence that the nut grasses on the surfaces of the rampart and ramp slopes were greatly improved by frequent mowings. But, Totten cautioned, the sandy soil constituting these slopes needed "mending or readjustment," and the leveling, filling up, and compacting should be a part of the maintenance program for as long as necessary. It appeared that "the terrepleins, banquettes, etc." of the counterscarp needed particular attention, both for retaining the necessary grades and cultivation of grass.[50]

f. Reinforcing the Counterscarp Traverses

Chase was authorized to forego the modifications proposed in Colonel Totten's August 26, 1844, letter, calling for reinforce-

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48. Ibid.

49. Ibid.

50. Ibid.

ment of the counterscarp traverses, as there appears to be "not the slightest motion" in their sustaining walls.[51]

g. Improvements to Reverse Fire Galleries

Leaks in the walls of the small reverse fire galleries at the extremities of the counterscarp must be corrected. Stout doors, with strong bars, were to be hung to close these galleries.[52]

h. Repointing the Scarp and Crack in Face of Southwest Bastion

Cracks in the brickwork of the scarp must be repointed, including the slight crack where the new facing joined the old, on the right face of the South Front.[53]

i. Conversion of Two Embrasures into Posterns

The two embrasures at the extremities of the East Front curtain were to be converted into "posterns of their present width and height," with 3-inch outside and inside doors, separated by the thickness of the scarp. Each door would be provided with a strong bar on the inside. The steps were to be light and of wood.[54]

j. Casemate Traverses and Pintle-Holes

Iron traverse circles were to be provided for all casemate tier gun platforms. Those for the carronade embrasures were to have a radii of 10 feet, the centre of motion being 1' 3" within the embrasure, measuring from the inside of the wall. The damaged embrasure on the right flank of the northwest front was to be repaired. Although the bottom of the pintle-holes of the casemate embrasures had

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51. Ibid.

52. Ibid.

53. Ibid.

54. Ibid.

been lowered so that the pintle entered therein four inches, this was insufficient. Experienced demonstrated that they must be drilled deeper, and the upper part cut lower so the pintle might have a 6-inch bite.[55]

k. Changes to Magazines

In all magazines wire gauze was to be positioned on the side of the wall next to the magazine. All inside shutters were to be removed.[56]

l. Improvements to Sally Port and South Front Officers' Quarters

The iron pipes leading water down the parade wall of the northeast front were overflowing and should be attended to. A piazza, similar to the one fronting the Officers' Quarters on the north side of the parade, should be erected on the opposite side. The space above the lintel timber of the inner gate should receive an "open palisading" to permit passage of light and air, and keep people from climbing over. There should be a strong, inside bar of wood to each set of gates. As the gates were usually open, solid rests must be positioned to relieve their hinges from strain. The sally port was to be paved with hard brick, laid on edge, in mortar on a 3-inch bed of concrete.[57]

m. Separate Casemate Quarters for Sergeants

Totten disapproved dividing the casemates next to the Tower Bastion to afford separate quarters for sergeants. Instead, guns should be mounted in those casemates, as well as the Tower Bastion.[58]

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55. Ibid.

56. Ibid.

57. Ibid.

58. Ibid.

n. Strengthening the Northeast and Southeast Bastion Scarps

We can never feel safe, Totten admitted, as to the stability of the scarps of the Northeast and Southeast Bastions, "with their present dimensions." It was a source of regret that when the thickness of the former was increased, following its overthrow in 1835, it had been inadequate. They must accordingly strengthen them by an addition on the outside, "on the same principle" as Major Chase applied to the "right face of the South Front."

Lessons learned suggested certain modifications to be incorporated in rebuilding the subject scarps. These related to the mode of securing the foundations, which would be of concrete, and would project four feet beyond the present foundations, at the bottom, and two at the top. There would be four steps in this concrete, each 9 inches high by 8 inches wide. While being formed each step would be faced with a 3-inch plank. Once the step was formed, the plank could be lifted out and sand rammed in its place. The breadth or thickness of the new facing would be 3½ feet for each of the four faces, and "it must be laid off at each end of each face, making the new face of the scarp a perfect plane between, and of the same talus as the original wall."

Chase was to see that the new work was bound in with the old, at the shoulder angle in a way not to show on the scarps of the flanks. The exterior slope of the parapet would be altered in the manner directed by Totten in his letter of May 25, 1842, in reference to strengthening the right face of the South Front. The additional masonry to be concrete, faced with brick.[59]

o. Carronade Embrasures

Except for the right flank of the North Front and the left flank of the South Front, all flank embrasures were to receive carronades. If the embrasures were not of this type, Major Chase "must

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59. Ibid.

proceed forthwith to make the transformation." There were to be 20 of these embrasures--3 on the North Front, left flank; 4 on the northwest front; 4 on the southwest front; 3 on the South Front, right flank; and 6 on the land fronts, both flanks.[60]

3. Major Chase's July 1845 Report

Major Chase, after reviewing the Chief Engineer's letter, reported on steps taken to correct unsatisfactory conditions noted:

a-b. Traverse Circles and Terreplein and Casemate Joints

The few platforms of the barbette tier lacking iron traverses on the South Front had been taken care of. Damage done to the terreplein in mounting the guns had been repaired.[61]

c. Chimney Tops

The new chimneys afforded a "great draft" and were not in the way. In time of war they could be taken down within a few hours and replaced with temporary chimneys. Chase was opposed to removal of the chimneys of the North and South Front curtains at this time.[62]

d. Combating Casemate Seepage

He believed that all leaks through the terreplein and parapets into the casemates had been stopped. He promised to recheck and any seepage found would be arrested.

Although Chase did not agree with the Chief Engineer respecting use of coal tar to combat leakage, he would discontinue its

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60. Ibid.

61. Chase to Totten, July 4, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

62. Ibid.

use. He, however, pointed out that coal tar afforded "a decided advantage in preventing the penetration of moisture into the porous" Fort Pickens brick.[63]

e. Maintenance of the Sodded Slopes

Chase pointed out that "grassed surfaces" were not so easily dealt with here as in "more genial climates." Since March there had been a drought. Vegetation had withered and died. The grass of the "woods" had turned brown, but the Bermuda "exhibited" a vigorous growth. By not mowing, he explained, the roots covered by its top are protected from the sun. The top withered by the sun's heat decayed and formed "manure," from which young grass sprouted. Even in pine barrens, a fine turf was produced at little cost, which admittedly was not as beautiful as the nicely mowed surfaces of the northern forts, but as useful for the purpose intended.

Careful men had been employed to keep down the weeds on the glacis and parapets, "which though they appear rough arising from their being covered with brush to protect the grass until it is well rooted are sufficiently true for all practical purposes."[64]

f. Reinforcing the Counterscarp Traverses

The last thing done would be to repair the "slight injury arising from the subsidence of the walls connected with the traverses" of the counterscarp. He did not find the counterforts positioned in support of the "carried up counterscarp wall at the end of the traverses unsightly. Nor were they discreditable to the contractor. They were "neatly executed" and did not interfere with defense of the ditch. Major Chase was satisfied that Fort Pickens was in as "good condition for defence . . . as any other work in the United States."[65]

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63. Ibid.

64. Ibid.

65. Ibid.

g. Improvements to Reverse Fire Galleries

There was only one way to stop the leaks over the south glacis reverse fire gallery, and that was to pave the terreplein. The other gallery did not leak. Posterns would be fitted to each gallery as directed.[66]

h. Repointing the Scarp and Crack in Face of Southwest Bastion

Since undertaking the project in 1842 there had been no subsidence of the reinforced face of the Southwest Bastion. The small fissure, observed by Totten, arose from the junction of new cement mortar with the old mortar of the original wall. The construction and expansion of the new mortar was of different value.[67]

i. Conversion of 2 Embrasures into Posterns

Plans were being prepared for converting the 2 embrasures at the extremities of the East Front curtain into posterns.[68]

j. Casemate Traverses, Carronade Embrasures, and Pintle-Holes

Iron traverses were needed for the flank carronades, and they had been ordered. Each carronade embrasure had been accurately constructed. There were 26 embracing the 6 embrasures of the right flank of the North Front and left flank of the South Front. These had been entered on the plan, but as 42-pounders were now desired for these positions, Chase wished to know whether these embrasures were to be converted. He also believed it would be wise to change the embrasures of the Channel Front flanks into those designed for long guns.

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66. Ibid.

67. Ibid.

68. Ibid.

Where required the pintle-holes would be lowered, so they would enter at least 6 inches into the lower stones.[69]

k. Changes to Magazines

He would change the wire gauze of magazine doors and windows as directed.[70]

l. Improvements to Sally Port and South Front Officers' Quarters

With the materials in hand, the piazza for the South Front Officers' Quarters would soon be positioned. It would be built with brick pilasters and floored with paved brick. The sally port had been paved.[71]

m. Separate Casemate Quarters for Sergeants

Temporary weather-boarding had already been put up in the casemates on either side of the Tower Bastion, and as there were no available guns to mount, it would be permitted to stay, as the accommodations afforded were necessary. As soon as the necessary guns and carriages were received, cannon would be mounted in the Tower Bastion and adjoining casemates.[72]

n. Strengthening the Northeast and Southeast Bastion Scarps

Careful measurements of the ordinates of the cordon of the Northeast and Southeast Bastions, although they revealed "no alarming motion," had confirmed that they should be strengthened. Major Chase promised to take the greatest care in faithfully executing this project agreeable to instructions.

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69. Ibid.

70. Ibid.

71. Ibid.

72. Ibid.

Use of concrete in the reinforced faces of the bastions would materially reduce the cost of masonry. Shells cost 25 cents per barrel, broken brickbats $3.50 per thousand, and whole brick $8.50 to $9.00 per thousand.[73]

o. Whitewashing the Casemates and Yellow Washing the Scarps, etc.

All casemates had been cleaned and whitewashed. The parade walls had been pointed and washed with a "slate color." The scarp, counterscarp, and breast-height walls had been yellow washed, "affording a pretty straw color and a neat appearance to the work."[74]

p. Mode of Operations

In making the various repairs and modifications called for by Chief Engineer Totten in his letter of May 30, Chase had taken great care to have them "well and economically executed." The expense of embankment for the ditch and terreplein of the counterscarp and glacis had been increased in excess of estimates by the cost of drainage.[75]

3. Colonel Totten Responds to Chase's Report

a. Strengthening the Northeast and Southeast Bastion Scarps

On September 10, 1845, Colonel Totten, returning to his office after an absence of 3 months, answered Major Chase's July 4 letter. The information concerning the faces of the Northeast and Southeast Bastions confirmed reports of their continued motion. By its continuance, the scarps were constantly being weakened and the stress increased. Its correction would be costly, but unless undertaken, the scarps would be overthrown.[76]

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73. Ibid.

74. Ibid.

75. Ibid.

76. Totten to Chase, Sept. 10, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer.

b. Chimney Tops

He did not agree with Chase's recommendation as to lowering the chimneys, because, in event of hostilities, time would be critical. If the chimneys smoked and required copper pipes, these pipes could be lifted off and placed on the back part of the terreplein in one minute. Before adding the copper pipes, trials should be made at each chimney to determine the length of pipe necessary.[77]

Major Chase on September 25 promised to do tests on the chimneys of the North and South Fronts. Although they did not smoke at present, he feared they would if altered.[78]

c. Maintenance of the Sodded Slopes

Totten rejected Chase's postion regarding the grassed slopes.[79]

The drought which had continued into September, Chase reported, had prevented "the growth and interrupted the cultivation" of grass on the parapets and glacis. Since April there had been only 7.42 inches of rain.[80]

The grassed slopes were now "sufficiently regulated to prevent" erosion. But it was out of the question "under the burning influence of our Summer's son to make the beautiful surfaces that are

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77. Ibid.

78. Chase to Totten, Sept. 29, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

79. Totten to Chase, Sept. 10, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer.

80. Chase to Totten, Sept. 6, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer. Because of the drought, the health of the garrison and workmen had been good. A number of laborers and several masons, however, had been felled by sunstroke on Santa Rosa Island.

exhibited in northern works." The Bermuda continued to grow, while all other grasses died during the drought. But even the hardy Bermuda had barely perservered, and all mowing was out of the question. With the late September rains, the Bermuda was "now springing up beautifully."

Fortunately, the sand embankment had "received kindly this grass, for it will grow thereon when no other . . . will."[81]

d. Reinforcing the Counterscarp Traverses

Totten's statement, in his report of May 30, that the "manner these walls were sustained was not a little discreditable" stood, though Chase had mistaken its meaning. These walls had been erected to hold up the traverses, and had they been calculated accurately, they would have accomplished the object. Their failure constituted the "discreditable" error. The want of strength had been corrected by external counterforts, but this remedy, though executed "with perfect neatness," pointed out the weakness. Had there still been some motion, Totten would have substituted a remedy which would have corrected the error and eliminated an eyesore.

But, he continued, the error could not be charged to the project engineer, as it was in the plan. "We all make mistakes," Totten wrote, and "I might have made this one . . ., for then, few understood the peculiar action of sand upon revetment walls. Very many of Gen. Bernard's profiles were too weak," and we have had "to reinforce almost everywhere."[82]

e. Number of Carronade Embrasures

Totten was unable to understand how there could be 26 carronade embrasures. There had to be a mistake somewhere.[83]

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81. Chase to Totten, Sept. 25, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

82. Ibid.

83. Ibid.

To enlighten his superior, Major Chase reported, all the flanks are provided with carronade embrasures. This included the flanks of the North, South, East, and Channel Fronts. They had been constructed in the manner prescribed by General Bernard in these words: on the Channel Fronts 8 carronades under the flanks, on the North Front 6 carronades in the flank casemates, on the East Front 6 carronades in the flank casemates, and on the South Front 6 carronades in the flank casemates, making a total of 26.

Of these, the flanks of the North and South Fronts had been armed with carronades. All these flanks, Chase continued, bore on the channel and could be converted into gun casemates with great expense and armed with 42-pounders.[84]

Chief Engineer Totten, becoming exasperated with the tone of Chase's correspondence, informed him that the Board of Armament, on learning that the flanks (except the Tower) were ready for armament, had assigned guns to the right flank North Front and left flank South Front, and carronades to the rest. Since then Totten had corresponded with Chase on the subject, and had learned that all the flank embrasures were constructed for carronades, which was not in accordance with his instructions, but with sound principles. The modification, substituting carronades for long guns on these two fronts had been entered on the armament list, and his embrasures were correct. It was now probably the 24-pounder howitzers would be substituted for the carronades. This would make no difference as the embrasures were identical.[85]

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84. Chase to Totten, Sept. 23, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

85. Totten to Chase, Mar. 24, 1846, NA, RG 77, Ltrs. Sent, Chief Engineer.

4. Closing Out the Year

a. Strengthening the Scarps of the Northeast and Southeast Bastions

In mid-September, Chase put his masons and laborers to work reinforcing the scarps of the Northeast and Southeast Bastions. By late November, they had completed the project, which added 3 feet to each of the faces. Earth needed to carry the exterior slope of the parapet to within 2 feet of the edge of the cordon had to be added. They would have to wait until spring before seeding the parapet. Meanwhile, Chase wanted to know, is it necessary to add the additional earth?[86]

The Chief Engineer thought it necessary to carry the foot of the exterior slope to within two feet of the cordon.[87]

b. Projects Undertaken and Completed by the Engineers

In the 15 months, beginning October 1, 1844, the following projects were undertaken and completed: (a) new gunners' platforms constructed; (b) terrepleins of northwest and south curtains paved, and joints filled with mastic; (c) new coping to the Channel Fronts added; (d) old pavement in the casemates renewed, and traverse circles adjusted; (e) slopes of the ramparts, parapets, and glacis filled and graded; (f) banquettes widened; (g) terreplein of the counterscarp raised; (h) bottom of the ditch adjusted and drained and drain and culvert built and positioned; (i) piazza for South Front Officers' Quarters completed; (j) iron traverses for the carronades in the flank embrasures laid; (k) double doors to the posterns in the flanks of east front positioned; and (l) doors to the galleries under the counterscarp constructed and hung. In addition, the wharf road had been repaired.

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86. Chase to Totten, Nov. 25, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

87. Totten to Chase, Dec. 9, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer.

Although the fort was in "very good condition, as regards strength and efficiency," improvements in the way of accommodations for the garrison and preservation measures were required. To underwrite these, Chief Engineer Totten called for an appropriation of $10,000.[88]

D. Ordnance and Ordnance Stores

1. Care of the Cannon

On September 5, 1843, Major Chase urged that the big guns landed at Forts Pickens and McRee be given proper care by a competent officer of the Ordnance Department. If, however, the services of such an individual were unavailable, he would direct his assistant, Lieutenant Scarett, to perform the duties of ordnance officer in addition to his other tasks.[89]

The Ordnance Department responded to this request by sending an officer from the Mount Vernon, Alabama, Arsenal to look after the cannon. This caused an improvement in the situation. One year later, Chase was able to report that all ordnance, not damaged, was in excellent condition, for which he wished to commend post commander Captain Miles and Ordnance-Sergeant Gardner. He urged the Department to remove for repair or survey the defective carriages and chassis. It also would be a good move for the Ordnance Department to position penthouses over the barbette tier guns and carriages.[90]

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88. Public Documents, Printed by Order of the Senate of the United States, 1st Session of the 29th Congress (Washington, 1846), Serial 470, Vol. 1, p. 260; Public Documents, Printed by Order of the Senate of the United States, During the 2d Session of the 29th Congress (Washington, 1847) Serial 493, Vol. 1, p. 128. In February 1846 the last of the employees working on Fort Pickens were laid off.

89. Chase to Totten, Sept. 5, 1843, NA, RG 77, Ltrs. Recd., Chief Engineer.

90. Chase to Totten, Sept. 7, 1844, NA, RG 77, Ltrs. Recd., Chief Engineer.

2. Chase Suggests Substitution of Siege Carriages for Barbette and Casemate Carriages

Major Chase was not satisfied with the armament as established in 1839 by the Armament Board. Writing Chief Engineer Totten on March 9, 1845, he proposed to the Department "certain modifications" in the armament of the nation's coastal fortifications for channel and land fronts, whether en barbette or casemate.

Batteries bearing on channels and anchorages were to receive the heaviest guns of the greatest range, and the heaviest mortars. On the land fronts "every available point" was to be armed with at least 32-pounders. The fire of these pieces would be opened on the foe at a distance of 1,000 yards. As Colonel Totten knew ricochet shot and "rolling balls and bombs" were very effective at that range. "Concentrated salvos" were to be fired on the 1st and 2d parallels of an investing force. Enemy approaches would be hammered round-the-clock by guns of superior weight to any mounted in the breaching batteries.

To effect this concentration of heavy guns, it would be necessary to substitute field or siege carriages for all pieces, whether mounted en barbette or casemates.

Reserve carriages were to be stockpiled so that a dismounted piece may be remounted, while the damaged carriage is repaired.

Light artillery would be employed against the foe's beachhead, and by mobile columns sent to harass the investing force.

Major Chase knew of no reason why guns should be fixed in position, either en barbette or in casemates, on the channel or land defense. He argued that the siege carriage could "bear its burden and perform "its role better than a carriage mounted high on a chassis. No gun is as accurately fired at all angles, none is easier handled, none is easier mounted if overturned. New carriages were easily supplied. But above all, Chase wrote, "the siege or ambulatory carriage admits concentration at given points, where most needed, of guns drawn from all

parts of the work." Moreover, a dismounted gun could be immediately supplied with a new carriage.

Recoil of siege carriages, he pointed out, could be controled by "a break applied stringently in proportion to the heat of the gun." Platforms for the carriages could be made movable, while the ramp, leading to them, could be built of wood.

The "ambulatory carriages" had no limber wheels, but a "small wheel which turned on a pintle" could be supplied, when it became necessary to move them.

He proposed that the wheels of the subject carriages have a diameter of six inches less than the height of the parapets. The embrasures in the casemates could be arranged accordingly.

Though not a new idea, the carriages of the barbette tier might have eccentric wheels by which the guns may be brought into battery, and on their recoil be placed below the crest, to be loaded by cannoneers safe from the shot of the foe. In bringing the gun into battery, the carriage could be put in motion by a fall and tackle attached to the breast-height wall.

As Chief Engineer Totten knew, the land defenses of most of the coastal fortifications looked to "a narrow strip of land to which a regular attack must be confined." This was an advantage not possessed by inland defenses. In the first place, the faces and curtains could be arranged to prevent enfilade; a heavy bombardment could be directed against a limited space; and almost every gun on the point of attack could be massed on particular breaching batteries. Chase believed that the fire of a fort from numerous heavy guns and mortars could arrest "further approach from the 2d parallel," even if the foe were obstinate and took no account of the slaughter of his people.[91]

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91. Chase to Totten, Mar. 9, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

Chase's proposal failed to impress Chief Engineer Totten. Replying on May 30, following his 1845 visit to Pensacola, he reviewed for Chase's benefit the 1839 report of the Armament Board. The fort's heavy ordnance was to include:

> The curtains of Northwest, Southwest, and East Fronts; faces of Northwest and Southwest Fronts; right flank of North Front; and left flank of South Front 63 42-pounder casemate guns.
>
> Curtain of North Front 6 32-pounder guns.
>
> Flanks of East Front of Northwest and Southwest Fronts; left flank of North Front; and right flank of South Front 20 carronades.
>
> Two faces of East Front 6 18-pounders; and on two flanks of same front 6 12-pounders, all en barbette.
>
> Curtain and left flank and face of East Front 11 32-pounders en barbette.
>
> On the right flank of South Front 4 12-pounders en barbette.
>
> On the left flank of North Front 4 12-pounders en barbette
>
> On the right flank of East Front 3 24-pounders en barbette.
>
> On the left face of the North Front 1 24-pounder and 1 8-inch siege howitzer en barbette.
>
> On the curtain and right flank and face of the North Front 15 24-pounders en barbette.
>
> On the Tower Bastion and postern of the two adjoining curtains 12 8-inch siege howitzers.

On the remainder of Northwest and Southwest Fronts 28 24-pounders en barbette.

The mortars and field pieces would not be positioned, but would be parked under cover.

Totten demonstrated his opinion of Chase's proposal for substituting siege carriages for barbette and casemate carriages by pointedly ignoring it.[92]

3. Chase Complains of Shortages

In the spring of 1845 Lt. George H. Talcott of the Ordnance Department was ordered to Pensacola Harbor. On his arrival, he was to take measures "to place the armament of the several forts . . . in complete order of service." Any assistance Major Chase could provide would be sincerely appreciated.[93]

After a visit to the fort, Lieutenant Talcott found there was a difficiency of certain ordnance stores. To correct this situation, the Department shipped to the post commander 20 handspikes, 54 truck handspikes, 88 gunners' gimlets, 3 rear transom irons for 24-pounder barbette carriages, and 1 set of wrenches for casemate and barbette carriages.[94]

Although the Armament Board had made its decision 6 years before, the Ordnance Department lacked the wherewithal to arm the nation's coastal defenses as prescribed. Not until the Ordnance

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92. Totten to Chase, May 30, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

93. G. Talcott to G. H. Talcott, May 16, 1845, NA, RG 156, Ltrs. Sent, Chief of Ordnance. Lt. Col. G. Talcott was acting Chief of Ordnance.

94. G. Talcott to C.O. Fort Pickens, July 8, 1845, NA, RG 156, Ltrs. Sent, Chief of Ordnance.

Department had provided what was necessary, and much was missing, would the Pensacola Forts be in condition for "a strong defense." The Ordnance people's attention was also called to the extensive repairs needed to many of the chassis and carriages.

If it were any satisfaction, the Department could take pride in the fact that the Corps of Engineers had performed its duty. "The harbor of Pensacola," Chase boasted, was the only one in the United States, "where the system of forts designed for its channel defence is complete."[95]

Unknown to Chase, the Ordnance Department had budgeted funds for repair of the carriages. The work would be accomplished under the supervision of Lieutenant Talcott, which would relieve Chase of the responsibility for making returns.[96]

4. Large Shipment of Ordnance & Ordnance Stores Arrives

a. Unloading the Guns and Carriages

Lt. Henry D. Grafton was named quartermaster for the Pensacola Harbor defenses in May 1846. He quickly found that this was an inappropriate time. In the last days of May, a large shipment of ordnance and ordnance stores arrived in the bay. As it was impossible for ocean-going ships to anchor off Fort McRee, guns and carriages for all the defenses were put ashore at Fort Pickens. To further complicate matters, there was only one company of troops posted in the area, and Capt. John H. Winder could detail no more than 18 men for working parties. Lieutenant Grafton to distribute the ordnance was compelled to hire a team of mules and 25 laborers.[97]

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95. Chase to Totten, Nov. 6, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

96. G. Talcott to Chase, Oct. 23, 1845, NA, RG 156, Ltrs. Sent, Chief of Ordnance.

97. Grafton to Jesup, May 31 and Grafton to Pierce, June 11, 1846, NA, RG 92, Consolidated Correspondence File.

June was therefore a busy month at the Pensacola forts. Supervised by Lieutenant Talcott, men hired by Lieutenant Grafton and soldiers detailed by Captain Winder from Company G, 1st Artillery, worked long hours under a blazing Florida sun unloading ordnance supplies and dismounting and mounting guns. In moving the heavy guns into position on the barbette tiers of Forts Pickens and McRee, damage was done to the brick pavements of the terrepleins. Some cracks had also resulted from a slight subsidence of the surface. This caused leaks into the casemates of both works.

Major Chase planned to refrain from making repairs until the armament was completed. When he did, he could do so in a few days.

The amount of ordnance and stores being landed was large. In receiving and removing it to the forts and placing it in position, arduous work was involved. Major Chase, on observing the sweating artillerists and laborers, regretted that "no larger force than . . . an incomplete company of artillery" was available.[98]

Lieutenant Talcott shocked Chase when he told him that 6 8-inch columbiads, with casemate carriages, were to be mounted in the right flank of the North Front and the left flank of the South Front of Fort Pickens. The carronade embrasures of these flanks would not accommodate these huge pieces.[99]

Major Chase promptly relayed this information to Washington. Returning to his office after a short trip, Chief Engineer Totten wrote Chase that "errors in plans in this office may account for the six 8-inch columbiads being sent to Fort Pickens." But he believed

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98. Chase to Totten, June 13, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

99. Ibid.

Chase was mistaken in reporting that the embrasures were not adapted to "the lengths of those pieces and their carriages." According to the Department's drawing of the Tower Bastion, showing dimensions of the casemates and embrasures, the only necessary change, if this section of the fort were constructed as planned, was to make a "slight cut into the scarp on each side of the tongue-hole to receive, at the utmost traverse, the end of the front transome of the chassis."

To avoid future problems of this character, Chase was to prepare a drawing of the casemates. It should be a horizontal section, taken at such a height as to exhibit embrasures, windows, loopholes, and every detail in the gunrooms, magazines, quarters, cisterns, galleries, etc.[100]

Responding, Major Chase reiterated that there were 26 flank embrasures, all for carronades. This corresponded with the total listed in General Bernard's "Memoir" of January 1830. Drawings sent by the Department "originally exhibited Gun Embrasures for flanks as well as curtain spaces." The Bernard "Memoir," however, had been adhered to, and carronade embrasures constructed on all the flanks. Some of the drawings transmitted to the Department had documented the error by placing gun casemates in the flanks.

He could, if necessary, mount 2 of the 8-inch columbiads in each face of the Tower Bastion, where there were gun casemates, and the remainder in the curtains in place of 42-pounders not yet received. Still required were 6 carronades for the right flank of the North Front and the left flank of the South Front.

As soon as possible, Chase would provide the Department with plans of the casemates.

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100. Totten to Chase, June 26, 1846, NA, RG 77, Ltrs. Sent, Chief Engineer.

"I committed an error in placing Gun Embrasures" in the flanks, Chase admitted, in copying from the original drawings. Consequently, the 1839 Armament Board, relying on that information, had placed 42-pounders in the right and left flanks of the North and South Fronts. These 42-pounders had not been received, and the Ordnance Department had delivered the columbiads instead. No inconvenience had arisen, however, because the columbiads could be mounted on the Channel Fronts instead of the 42-pounders. All the Ordnance people had to do was to ship out the flank carronades, and all "perplexity ceases," for which Chase thought "there has been but little cause."[101]

Colonel Totten replied on July 16 that the information provided had resolved the problem. The Ordnance Department now understood what was needed to complete the fort's armament, and the subject would "no longer be one of misunderstanding or perplexity."[102]

b. Altering the Carronade Embrasures

On August 10, 1846, Chief Engineer Totten asked Major Chase to explain an entry in his Monthly Report for June, reading, "the masons are altering carronade embrasures for reception of guns."[103]

Chase answered promptly. This entry referred to cutting away part of the embrasure sole into which the end of the chassis would first come into contact. Although these embrasures had been constructed according to plan, there was insufficient room for the chassis

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101. Chase to Totten, July 6, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

102. Totten to Chase, July 16, 1846, NA, RG 77, Ltrs. Sent, Chief Engineer.

103. Totten to Chase, Aug. 10, 1846; Monthly Report of Operations at Fort Pickens for June 1846, NA, RG 77, Ltrs. Recd. and Sent, Chief Engineer.

to be traversed. He had decided it would be more economical to chisel away ¼-inch of masonry than to alter the chassis.[104]

c. Chase Has Forebodings

Major Chase in the summer of 1847 made a grim forecast. He believed the forthcoming ordnance tests would result in condemnation of a number of cannon.[105]

E. Troops Come and Go

1. Whistler's Battalion of the 7th Infantry Vacates the Casemates

Companies E and K, 7th U.S. Infantry, were posted at Fort Pickens from the summer of 1842 until May 27, 1843. Major Nelson commanded the post until the November arrival of Lt. Col. William Whistler. The colonel, in January 1843, complained that the dampness of the casemates made them unsatisfactory as quarters for his battalion. To avoid spending another summer in the fort, he suggested that his troops be billeted on the mainland near the Barrancas.

Secretary of War John C. Spencer approved the proposal, and on February 22 Colonel Whistler was authorized "to take the necessary measures for executing the proposed plan, taking care that the expense does not exceed the amount of the estimate."[106]

On March 3 Capt. Dixon Miles reached Fort Pickens, after a "boistrious" 20-day passage from Baltimore. On his arrival, Colonel Whistler showed him a copy of the correspondence granting authority for

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104. Chase to Totten, Aug. 19, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

105. Chase to Totten, June 30, 1847, NA, RG 77, Ltrs. Recd., Chief Engineer.

106. Adjutant General to Whistler, Feb. 22, 1843, NA, RG 92, Consolidated Correspondence File.

the transfer to the Barrancas. As battalion quartermaster, Miles was disappointed to learn that the two companies had only a few serviceable tents. He accordingly called on the depot quartermaster at New Orleans to send 9 wall tents with flies, 19 common tents, and 1 hospital tent.[107] He soon learned that the tents were not needed, as the battalion, on its transfer, would be quartered in sheds.[108]

Captain Miles, after spending 10 days in the fort, agreed with Colonel Whistler on the necessity to get the troops out of the casemates. Since his arrival on Santa Rosa Island, it had rained daily. Writing Quartermaster General Jesup, Miles noted that the officers were quartered in the North and South Fronts of the fort. They had plank floors. The enlisted men were housed in the Northwest and Southwest Bastions, with the guardhouse and hospital between. Their quarters had brick flooring.

Captain Miles found that, although the quarters occupied by the officers were smaller than those in the bastions (even with constant fires), it was difficult to keep them dry. The bastion casemates, adjoining the cisterns, were never dry. Those assigned to Miles' Company E were so damp and wet that the soldiers found it difficult to find dry places to stack their small-arms. All property kept in the casemates suffered--the clothing was mouldy and the iron and steel rusty.

To complicate matters, the parade was lower than the surrounding walls, and when it rained it was flooded. The ditch, encircling the fort, had no outlet, and was usually filled with stagnant water in which myriads of mosquitoes bred. These were as troublesome by day as by night.

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107. Miles to Jesup, March 4, 1843, NA, RG 92, Consolidated Correspondence File.

108. Jesup to Miles, March 18, 1843, NA, RG 92, Consolidated Correspondence File.

The money budgeted to erect temporary quarters for the battalion on the mainland, Miles informed General Jesup was being wasted. "None but permanent quarters" should be built, which "sooner or later will have to be done, if it is contemplated to continue a garrison at this very important point."[109]

The battalion had packed its gear and was shuttled across the bay on May 27, 1843, and occupied Camp Barrancas, which was to be its home for the next 23 months.

2. Totten Promises Measures to Alleviate the Situation

Colonel Totten, on a visit to the area in the spring of 1843, talked with Colonel Whistler and his officers. What he saw and heard satisfied him that "several small improvements and modifications" were necessary "in reference to accommodation, and possibly the health of the garrison."[110]

3. 7th Infantry's Second Tour of Duty at the Fort

a. Return of the 7th Infantry

Captain Miles, having visited Fort Pickens in September 1844, again complained to Quartermaster General Jesup that, although provision has been made at Fort Pickens for officers, there were no barracks for enlisted men. "The unhealthy, miserable apology for quarters for soldiers" in the casemates--with arches boarded up, with small chimneys running through the ventilators--were occupied by Major Chase's workmen. This was being done, he had been told, in compliance with Chief Engineer Totten's orders, as the partitions and chimneys interfered with the fort's defense.

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109. Miles to Jesup, March 14, 1843, NA, RG 92, Consolidated Correspondence File.

110. Public Documents, Printed by Order of the Senate of the United States, 1st Session, 28th Congress (Washington, 1844), Serial 431, Vol. 1, p. 109.

Echoing Major Chase, Captain Miles urged that consideration be given to securing funds for construction of comfortable barracks for accommodation of the troops. This could be justified by the importance of the forts, covering as they did the Gulf Coast approaches to Alabama, Mississippi, Louisiana, and Southwest Georgia. "As an act of justice and humanity to the soldiers," General Jesup should seek an ample appropriation to accomplish this object.[111]

In the winter of 1844-45, the military reservation on the mainland was divided, and part of the site of Camp Barrancas was included in the naval reservation. Whereupon, Maj. Jacob Brown, who had replaced Colonel Whistler as commander of the Pensacola Bay Defenses, applied to the War Department to be placed in possession of Fort Barrancas. Major Chase recommended against this, because its dependent work (the Redoubt) was under construction. Occupation of Fort Barrancas by a garrison, in Chase's opinion, would materially interfere with operations of the Engineer Department, the fixtures, railway, wharf, etc.

The troops at Camp Barrancas, he informed Colonel Totten, were the garrisons assigned to Forts Pickens and McRee. They had established themselves there with a view to their comfort and convenience. Major Chase could see no reason why the entire camp could not be relocated on the Army reserve without transferring Fort Barrancas to the troops.[112]

Chief Engineer Totten supported Chase. He had no objection to occupation of Forts Pickens and McRee by troops of Major Brown's battalion of the 7th Regiment. The absence of a garrison had enabled the Department to improve the works as "regards efficiency and

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111. Miles to Jesup, Oct. 1, 1844, NA, RG 92, Consolidated Correspondence File.

112. Chase to Totten, March 2, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

accommodations," and although more work remained to be executed at Fort Pickens, "it need not prevent the return of the garrisons." Care would be taken "to cause any remaining labors to interfere the least possible with the convenience" of the soldiers. Major Chase had been instructed to do everything in his power to place and keep the forts in "a state of constant readiness."

As for Fort Barrancas, Colonel Totten believed it should remain in the hands of Major Chase, "as its possession is of importance to his operations . . . and it can afford no accommodation for troops." It would, however, be readied for defense, its guns mounted and taken care of.[113]

The Secretary of War sustained the Corps of Engineers. Consequently, when Brown's battalion vacated Camp Barrancas, it was transferred to the forts. On April 19, 1845, Company K was sent across the bay to Fort Pickens and Company E to Fort McRee. Next day, the 20th, Company K was joined by Company D, 7th Infantry, formerly stationed at Baton Rouge Barracks. Fort Pickens, after 23 months, was again garrisoned.[114]

b. Major Brown Calls for a Piazza

Within the month, Major Brown was complaining to Major Chase that the "health and comfort of the officers occupying the quarters" in the South Front required that a piazza be erected to ward off the sun, as it beat down on this section of the fort the greater part of the day. In addition, his officers had called attention to problems

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113. Chase to Totten, March 2, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

114. Returns for Regular Army Infantry Regiments, June 1821-Dec. 1916, NA, Microcopy M-665.

caused by heavy rains deluging the floors of their quarters, destroying "furniture and literally driving the inmates into the gun rooms, in the rear for shelter and protection."

Brown asked to have this situation corrected without delay. The expense could not be great, and the protection afforded to the occupants "from intolerable heat" would be worthwhile.[115]

The Department sanctioned construction of the piazza.[116]

c. Brown's Battalion of the 7th Infantry Goes to Texas

Texas having been annexed by joint-resolution of the Congress, the 7th Infantry, in August, was ordered to Corpus Christi, where it would report to Brig. Gen. Zachary Taylor. On relaying this information to Captain Miles, Major Brown stated that he expected "the removal to be made in 20 hours." As there were no suitable ships available, Miles was to proceed to New Orleans and charter one.

At Mobile, while en route to New Orleans, Miles learned that Lt. Col. Thomas F. Hunt, the depot quartermaster in the "Crescent City," had "taken over every procurable transport in that port." Miles then made a conditional agreement with the master of the steamer Creole, and returned to Pensacola.[117]

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115. Brown to Chase, May 12, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

116. Totten to Chase, May 22, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer.

117. Miles to Stanton, Nov. 1, 1845, NA, RG 92, Consolidated Correspondence File.

On August 24 Creole tied-up at the Fort Pickens wharf and took aboard Company K. Company D left for Texas on another ship in mid-September.[118]

Major Chase was sorry to see Major Brown's battalion depart. Writing Chief Engineer Totten, he reported that Brown's command had striven to maintain good relations with other branches of the service, which promoted the public good.

He also commented on the excellent police in which they left the works. Great care had been taken to "arrange the ordnance so as to preserve it in the best manner that the means at hand would admit."

Chase would like to call attention to the "excellent bearing of the officers and the general good conduct of the man . . . as regards discipline and the intercourse with the inhabitants; thus securing for the army a good name and for the gallant Seventh credit for possessing high toned officers and faithful soldiers."[119]

4. 1st U.S. Artillery at Fort Pickens

a. The Companies Arrive

Four days before Company D, 7th Infantry, moved out of the fort, Company F, 1st Artillery, Capt. George Newman commanding, landed on Santa Rosa Island. The date was September 13, 1845, and the artillerists had sailed from Fort Adams, Rhode Island, their former station, on August 22. They were joined at Fort Pickens on October 4 by Company H, formerly stationed at Fort Sullivan, New Hampshire, and Company I, 1st Artillery, which had come south from Fort

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118. Returns for Regular Army Infantry Regiments, June 1821-Dec. 1916, NA, Microcopy M-665.

119. Chase to Totten, Aug. 25, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

Adams. Company H on the 7th was transferred to Fort McRee, and on October 24 returned to Fort Pickens.

Two more companies of the 1st Artillery--C and K--and the regimental band had reached Pensacola Bay from Boston Harbor on the same ship with Companies F and H. Company C was posted to Fort McRee and Company K and the band joined regimental headquarters at the Barrancas.[120]

b. November 1845 Redeployment of the 1st Artillery

Major Chase was notified on October 21, 1845, that two companies of the 1st Artillery, stationed in Pensacola, were being withdrawn to occupy Forts Pike and Wood, leaving at Forts Pickens and McRee regimental headquarters and two companies of the regiment.[121] He regretted this redeployment, as the artilleriests had "settled down" into more comfortable quarters than the "first look at them had seemed to promise." They had now become reconciled to leaving the "magnificent quarters at Fort Adams for the rougher and narrower ones of Pensacola."[122]

November 17 was a day of confusion at Fort Pickens. Companies F and H boarded the ship that had been chartered to carry them to their new posts in Louisiana, and Company C moved from Fort McRee into the Fort Pickens casemates. Company I having sailed for Fort Brooke, Florida, 2 weeks before, this redeployment left only two

120. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727.

121. Welcher to Chase, Oct. 21, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer.

122. Chase to Totten, Nov. 6, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

companies, C and K, and regimental headquarters in the Pensacola area.[123]

The battalion of the 7th Infantry, on their departure for Texas, had taken with it all the mules and wagons belonging to the post quartermaster. Col. J. B. Crane of the 1st Artillery was incensed to learn of this. On October 7, two days after reaching Pensacola Bay, he notified the Quartermaster General that he had directed the post quartermaster to requisition 1 4-horse wagon, 1 cart, 5 mules, and 5 sets of harness. Mules, he explained, worked better in the hot, humid Gulf Coast summers.[124]

c. Construction of a Storehouse and Guardhouse

Two dependency structures were constructed at the post in the autumn of 1845. Captain Miles in August contracted with local builder Q. M. Avery to erect a frame storehouse. It would be sited between the fort and wharf, and relieve the post quartermaster of the necessity of having to store gear and supplies in damp casemates.

To justify construction by contract, Miles informed the Quartermaster General that there were no mechanics in the garrison capable of erecting a building of this type. The price bid by Avery, $650, was cheaper than the soldiers could do the work, which at the lowest rate was $2.50 per day.

On completion the frame storehouse was 50 feet by 26 feet by 12 feet in height. It had battened folding doors with a window in

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123. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727.

124. Crane to Stanton, Oct. 7, 1845, NA, RG 92, Consolidated Correspondence File.

each end. There were two windows in each side and one in each gable end. The shutters were battened.[125]

In October 1845 plans were approved for construction of a 30- x 25-foot, three-room frame guardhouse. In justification of the project, it was pointed out that Fort Pickens was the principal defense in the harbor, and it was currently garrisoned by two companies of the 1st U.S. Artillery, with another expected to arrive within a few days. There was no guardhouse nor shelter for the guard at the post, except that afforded by the casemates. With approach of winter, these were becoming too cold at night for the guard and prisoners.

Cost of materials for the guardhouse would be $250, with the work to be done by the artificers, supervised by Major Chase.[126]

The November redeployment of the 1st Artillery, leaving only Company C at Fort Pickens, complicated the situation for the post quartermaster. The $250 estimate for cost of construction had been based on supposition of the artificers accomplishing the project. With a reduced garrison, it was learned that neither of the Company C artificers could frame a building. To do this work it was necessary to hire a carpenter.[127]

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125. Miles to Stanton, Aug. 15, 1845, NA, RG 92, Consolidated Correspondence File.

126. French to Stanton, Oct. 15, 1845, NA, RG 92, Consolidated Correspondence File. Lt. W. H. French of the 1st Artillery had replaced Captain Miles as post quartermaster on the departure of the 7th U.S. Infantry.

127. Donaldson to Jesup, Nov. 20, 1845, NA, RG 92, Consolidated Correspondence File. Lt. J.L. Donaldson had replaced Lieutenant French as post quartermaster.

d. Call for Construction of a Boathouse

Colonel Crane in January 1846 had notified the Quartermaster General that he needed a barge. On arrival in the harbor, the 1st Artillery had discovered that all boats belonging to the Pensacola forts were "very old, only 2 of them being repairable."[128]

A new barge was received from New York in April.[129] To protect it, the post quartermaster called for an allotment to fund construction of a boathouse. To justify the expense, he pointed out that the "daily wear and tear of hauling the Barge up on rollers," destroyed the best boats. The craft was more racked by one hauling up than a month's use.[130]

e. Company G Replaces Company C

Company C, 1st Artillery, spent the winter of 1845-46 at the fort. General Taylor's advance to the Rio Grande having led to war with Mexico, the War Department determined to reinforce his army. Companies C and K in May 1846 left Pensacola Bay for Brazos de Santiago. Company G, 1st U.S. Artillery, Capt. John H. Winder commanding, was recalled from Fort Brooke to garrison Fort Pickens. Upon transfer of regimental headquarters to Boston on August 17, 1846, Company G became the only Army unit assigned to the harbor defenses.[131]

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128. Crane to Stanton, Jan. 2, 1846, NA, RG 92, Consolidated Correspondence File.

129. Whiting to Jesup, Mar. 7, 1846, NA, RG 92, Consoldidated Correspondence File.

130. Donaldson to Jesup, Apr. 6, 1846, NA, RG 92, Consolidated Correspondence File.

131. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727.

f. Captain Winder Feuds with Colonel Pierce and Lieutenant Grafton

By mid-June the post had lost its boats. On the 19th Captain Winder complained to Quartermaster General Jesup that he had no boats to "communicate with the mainland." Lt. Col. Benjamin K. Pierce, the department commander, had removed all vessels belonging to the fort to the Barrancas, where there were "legitimately but 2 officers," both of whom were allowed horses.

Since transfer of Company G to Fort Pickens, he had been unable to communicate with the mainland, either for mail or market. Lacking a surgeon, his company had no means of sending for medical aid.

On his arrival at Fort Pickens, Lt. Henry D. Grafton, who had replaced Lieutenant J. C. Donaldson as quartermaster, told Winder that Colonel Pierce had given him permission to take up quarters at the Barrancas. Such an arrangement, Winder protested, took Grafton away from his company and this post, the only place there are troops, and requiring a quartermaster. Consequently, since May, there had not been a single hour's duty done at Fort Pickens by the Quartermaster Department.

Captain Winder trusted General Jesup would see that boats were made available and a suitable quartermaster assigned to Fort Pickens. If Jesup would provide the means and authority, Winder would cheerfully accept the responsibility. He hoped General Jesup would relieve his company of the embarrassing situation in which it found itself.[132]

Colonel Pierce, on learning of the difficulties between Winder and Grafton, sided with his staff officer. He advised Grafton to contact General Jesup, "who will no doubt correct the error into which

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132. Winder to Jesup, June 19, 1846, NA, RG 92, Consolidated Correspondence File.

Capt. Winder has fallen by assuming the duties which appertain to you and which you have been satisfactorily performing."[133]

Lieutenant Grafton did as directed. He wrote General Jesup that his principal business had been providing transportation for ordnance stores and the cannon being mounted in the Pensacola forts. He had told Captain Winder on frequent occasions, that Winder's wants as far as the Quartermaster Department was concerned would be attended to on his making them known.[134]

Captain Winder meanwhile had attacked the lieutenant on another front. On July 24 the captain complained to Commissary General George Gibson about the administrative situation of the subsistence department at the post. Lieutenant Grafton, who was also commissary of subsistence, was attached to department headquarters and spent most of his time at the Barrancas. He seldom visited Santa Rosa Island, and never at a convenient time. For example, the beef this morning had been tainted, and there had been no commissary officer to attend to it.

Winder requested that Colonel Gibson authorize him to assume duty as commissary officer at Fort Pickens. He would prefer this to a continuation of the present situation, with its vexations.[135]

Colonel Gibson was sympathetic to Winder's problem. On August 6 he issued orders for Winder to "assume the duties A.C.S.," in absence of a subaltern.

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133. Pierce to Grafton, July 27, 1846, NA, RG 92, Consolidated Correspondence File.

134. Grafton to Jesup, July 27, 1846, NA, RG 92, Consolidated Correspondence File.

135. Winder to Gibson, July 24, 1846, NA, RG 92, Consolidated Correspondence File.

Colonel Pierce, learning of this, wrote Gibson explaining that Lieutenant Grafton had been on duty as assistant commissary since May, and was still available. Pierce wished to know what representations Winder may have made to induce Colonel Gibson to take such action.[136]

Lieutenant Grafton, despite the feud, retained his position as post quartermaster. On September 3 he requested authority from General Jesup to retain Private Murphy as his clerk.[137]

General Jesup vetoed the request. Where there was only one company, unless the "post be one of more business than Fort Pickens," a clerk could not be authorized.[138]

g. Winder Calls for a New Cook Stove

On September 10, 1846, Captain Winder notified Lieutenant Grafton that the cooking stove used by his company was worn out and a new one was indispensible. It was impossible to use the fireplaces, as they were too small for cooking even for one comapny.[139]

Lieutenant Grafton, referring the subject to the Quartermaster General, reported there were 2 similar stoves at the post--one in the Officers' Quarters and the other being used by the laundresses.[140]

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136. Pierce to Gibson, Aug. 16, 1846, NA, RG 92, Consolidated Correspondence File.

137. Grafton to Jesup, Sept. 3, 1846, NA, RG 92, Consolidated Correspondence File.

138. Ibid.

139. Winder to Grafton, Sept. 10, 1846, NA, RG 92, Consolidated Correspondence File.

140. Grafton to Jesup, Sept. 18, 1846, and Jan. 4, 1847, NA, RG 92, Consolidated Correspondence File. To heat the casemates, the troops burned black jack and hummock oak in the fireplaces.

h. Company G Leaves for Mexico

Company G, 1st U.S. Artillery, evacuated Fort Pickens in the first week of February 1847, and boarded the steamer McKim. The vessel sailed immediately for Tampico, where Maj. Gen. Winfield Scott was concentrating the army with which he was to attack Veracruz. Lieutenant Grafton accordingly entrusted to Major Chase all his unpaid vouchers. Chase was willing to attend to their payment on receipt of necessary funds from the Quartermaster Department.

Grafton, in relaying this information to General Jesup, placed the value of outstanding vouchers at $1,100.

The public sloop was also turned over to Major Chase, as the Corps of Engineers had several men on its payroll who could care for it. The quartermaster property at Fort Pickens would become the responsibility of Ordnance-Sergeant Gardner and that at the Barrancas of Ordnance-Sergeant Armstrong. The horses and mules were to be sold.[141]

Colonel Pierce had different ideas. He named Assistant Surgeon E. H. Abadie as Lieutenant Grafton's replacement as post quartermaster. Writing General Jesup on March 24, Abadie reported that Grafton had left at Barrancas one cart and a team consisting of a mule and horse, and at Pickens a horse and cart.

Believing that this transportation was indispensible, Abadie asked the Quartermaster General to cancel his instructions for its sale. At Barrancas, Abadie pointed out, a man employed by Grafton had been retained to drive the cart. He was busy hauling wood and water from a spring as the well at the fort had caved in. In addition, provisions had to be forwarded to Forts Pickens, McRee, and Barrancas. Within a few days, a company of Florida Volunteers would occupy Fort Pickens, adding to the strain on the public transportation, "already fully

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141. Grafton to Jesup, Feb. 5, 1847, NA, RG 92, Consolidated Correspondence File.

employed in supplying officers stationed here, the hospital, the ordnance sergeants, one man & 8 laundresses and matrons with their allowance of wood and water."[142]

i. Captain Kelly's Company of Florida Volunteers Occupies the Post

Captain Winder's company was understandably well disciplined. They left the fort in such excellent condition that, in Major Chase's opinion, Ordnance-Sergeant Gardner and four men would be able to keep it and the public property in "a good state of preservation."

Major Chase urged Chief Engineer Totten to see that no volunteers were ordered into the Pensacola forts as replacements for the regulars. The reason was "to avoid the loss and damage to the public property which always occurs under the loose system of responsibility necessarily" found in volunteer units.[143]

Colonel Totten had accompanied General Scott to Mexico, and Captain Welcker, in charge of the office during his absence, referred Chase's correspondence to Secretary of War William L. Marcy.[144]

Chase's suggestion was vetoed by the War Department. In late March 1847 Captain W. W. Kelly's company of Florida Volunteers occupied Fort Pickens. About the same time, Major Chase, having received a leave of absence to attend to personal affairs in Massachusetts, departed Mobile by ship. Lt. William H. T. Whiting during his absence would be in charge of the Pensacola Bay projects.[145]

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142. Abadie to Stanton, March 24, 1846, NA, RG 92, Consolidated Correspondence File.

143. Chase to Welcker, Feb. 3, 1847, NA, RG 77, Ltrs. Recd., Chief Engineer.

144. Welcker to Chase, February 13, 1847, NA, RG 77, Ltrs. Sent, Chief Engineer.

145. Chase to Welcher, Apr. 13, 1847, NA, RG 77, Ltrs. Recd., Chief Engineer. Chase sailed from Mobile on April 4. While in Boston, Major Chase would be staying at the Tremont House.

Major Chase had been gone less than 3 weeks before problems arose. Lieutenant Whiting was disturbed to learn on April 22 that Surgeon Abadie, in his role as post quartermaster, in compliance with orders from Captain Kelly had commenced altering the fort's "interior arrangements." Bulkheads closing off the two casemates adjoining the Tower Bastion had been erected, along with ones separating the gunrooms in rear of the Officers' Quarters.

When Whiting protested, Colonel Pierce stated that, without the bulkheads, there were insufficient accommodations for Kelly's company.[146]

Major Chase returned to his station on May 21. He had hoped to return earlier, but the steamboat on which he descended the Ohio River had been delayed by low water.[147]

The harbor defenses in early June got a new quartermaster. Surgeon Abadie was ordered to Mexico, and Colonel Pierce named 1st Lt. H. Dorsey of the Florida Volunteers as his replacement.[148]

F. Construction Activities During the Mexican War

1. The Appropriation

On May 21, 1846, the Department informed Major Chase that the Fortifications Bill, recently signed into law by President James K. Polk, appropriated for the fiscal year ending June 30, 1847, $10,000

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146. Whiting to Totten, Apr. 22, 1847, NA, RG 77, Ltrs. Recd., Chief Engineer.

147. Chase to Totten, May 21, 1847, NA, RG 77, Ltrs. Recd., Chief Engineer.

148. Whiting to Jesup, June 6, 1847, NA, RG 92, Consolidated Correspondence File.

for Fort Pickens. This sum was now available for expenditure, and Chase was to forward for approval an operating program.[149]

His time and attention engrossed by events on the Rio Grande, Major Chase failed to submit a program. This did not create any problems, because with the nation at war with Mexico expenditures on the coastal defenses would be curtailed.

2. Maintenance and Repairs: 1847

In fiscal year 1847 repairs undertaken at Fort Pickens included: (a) application of mastic to the pavement of the terreplein to seal surfaces damaged during the recent dismounting and remounting of the guns of the barbette tier; (b) repointing masonry of the arches and scarp; and (c) resurfacing sections of the glacis eroded by the heavy rains which drenched the area in the winter of 1846-47.

Seepages had been observed in some of the casemate arches, which though slight, would injure the masonry unless corrected. To combat this leakage, Chase proposed to cover the pavements of the terreplein above these arches with mastic. But, as no money was available, this work would have to be funded from the contingency appropriation.[150]

3. Needed Repairs

Major Chase, on reflecting on the situation, decided it would be best not to make a requisition on the contingency fund to effect these improvements, but to await passage of the next Fortifications Bill.

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149. Totten to Chase, May 21, 1846, NA, RG 77, Ltrs. Sent, Chief Engineer.

150. Chase to Totten, June 30, 1847, NA, RG 77, Ltrs. Recd., Chief Engineer; Public Documents, Printed by Order of the Senate of the United States, During the 1st Session of the 30th Congress (Washington, 1848), Serial 503, Vol. 1, p. 616. A small arrearage had been accrued in making these repairs, which could be met from the contingency funds of the next appropriation.

Although this seepage was of "no great importance nor injurious" to the casemates, the fact that they had "failed to avert them" caused second thoughts. Chase urged that "a thorough remedy be applied." These leaks were confined to "some of the arches lying under the SW demi-bastion; and to those arches . . . under the curtain and left flank of the North Front." The seepage, which was confined to the gun casemates, came through the superior and exterior slopes and the terreplein of the Southwest Bastion. Chase proposed to cover the pavements of these surfaces with a thin coat of mastic (1,150 square yards) at a cost of $1,150.

The piazza, erected by the Quartermaster Department, in front of the North Curtain Officers' Quarters had rotted, and would have to be removed. To duplicate the substantial piazza, with brick pillars and kyanized timbers, fronting the Officers' Quarters of the South Front would cost $800.

An inspection revealed that the magazines and quarters were in good condition. The Florida Volunteers, Chase observed, had broken some of the venetian blinds. The earthen surfaces of the glacis, counterscarp, and ramparts were "well covered with grass, nothwithstanding the opposition to its growth by the extreme heat of the sun and nature of the sub-soil."

Ordnance-Sergeant Gardner and his men were attentive to their duties, and the cannon and carriages were in good condition.[151]

G. Major Chase and the Mexican War

1. Chase Gets a New Assistant

Major Chase in August 1845 was informed that he would be losing his capable young assistant, Lieutenant Scarritt, who had been

151. Chase to Totten, Sept. 30, 1847, NA, RG 77, Ltrs. Recd., Chief Engineer.

ordered to Aransas Bay, Texas. There he would report to Brig. Gen. Zachary Taylor.[152]

Scarett left Pensacola on August 16 for Texas. The assistant engineer position at Pensacola remained vacant until October 10, when Scarett's replacement, Lt. William H. T. Whiting, reported. Whiting, a Mississippi-born son of a career army officer, had graduated in June from the U.S. Military Academy with the highest scholastic average attained up to that time. Within three weeks of Whiting's arrival, Major Chase forwarded to the Department a request for 20 days' leave to visit Memphis. To support his application, he pointed out that he would leave the work in charge of Lieutenant Whiting, "who gives evidence of becoming a good practitioneer."

Operations at Fort Pickens, Major Chase observed, would be soon shut down, but those at the Barrancas Redoubt would be "prosecuted as vigorously as our limited means in money will admit."[153]

Secretary of War William L. Marcy, in accordance with Totten's recommendation, approved Chase's leave.[154]

Chase did not avail himself of his full leave, taking only 7 days. Although he was away from his post 14 days, regulations allowed him to absent himself for 7 days.

2. Major Chase Plans Grand Strategy

Relations between the United States and Mexico had been poisoned by the annexation of Texas, and war threatened. Major Chase, as senior engineer on the Gulf Frontier, in December 1845 had been

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152. Welcker to Chase, Aug. 8, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer.

153. Chase to Totten, Nov. 6, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

154. Totten to Adjutant General, Nov. 17, 1845, NA, RG 77, Ltrs. Sent, Chief Engineer.

ordered to Texas. Before sailing from New Orleans on December 8, Chase requested the Department to mail to him at Galveston any large scale maps of Texas and charts of the coast in its files. Lieutenant Whiting would be in charge of the Pensacola projects during his absence.[155]

Major Chase spent almost three months in Texas. Returning to Pensacola on March 5, 1846, he commended Lieutenant Whiting for the "zeal and good management" displayed "in the discharge of his duties during his absence." Whiting's excellent care of public property and economical application of the means employed in the operations, "left nothing to require on that score."[156]

An ambitious man, Chase, while on detail in Texas, had on his own initiative prepared and submitted to Maj. Gen. Winfield Scott, the Army's commander-in-chief, a plan for a campaign into Mexico. To capitalize on the topography of northeastern Mexico, he proposed "a combined movement by two columns." The first was to march from Laredo to Saltillo, and the second via Camargo or Mier for Monterrey. After converging, the columns were to thrust down the road to San Luis Potisí. Meanwhile, an amphibious force, upon occupying Tampico, was to push inland in support of the advance on San Luis. This would result in a line of advance extending westward from Tampico and paralleling the Río Panuco to San Luis Potisí. As the river road was reportedly excellent, Tampico would become a supply depot, and San Luis "the centre of operations." A strong force would then be sent to occupy Zacatecas and sever communications between Chihuahua and the northwestern states and Mexico City.

Santa Fe would be occupied, and "strong positions established on the Rio Grande." This would leave the northern Mexican

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155. Chase to Totten, Nov. 26, 1845, NA, RG 77, Ltrs. Recd., Chief Engineer.

156. Chase to Totten, March 5, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

states "either in a State of neutrality, or in condition to declare their permanent independence."

Confronted by this situation, Major Chase forecast, Mexico would probably sue for peace, especially if a United States naval squadron off Veracruz "were known to be ready to take possession of that city, and to attack the Castle of San Juan d'Ulloa."[157]

General Scott, more ambitious and vain than Chase, failed to acknowledge receipt of the plan.

3. Major Chase's Plans to Join Taylor's Army Are Dashed

Chase remained at Pensacola only 16 days. On March 21 he left to join the Board of Engineers appointed to reconnoiter the Mississippi coast and report on defenses needed for protection of Mississippi Sound. The Board included Major Chase, Capt. John G. Barnard, and Lt. P.G.T. Beauregard.[158]

On May 3 news reached the Gulf Coast that Mexican forces had crossed the Rio Grande and had attacked General Taylor's army, which had advanced and occupied the disputed region between the Rio Grande and Nueces. When Maj. Gen. Edmund P. Gaines called on the governors of the southwestern states for volunteers to augment Taylor's army, Major Chase, Captain Barnard, and Lieutenant Beauregard offered their services. They would assist in expediting the flow of reinforcements to General Taylor.

Chase traveled to Mobile and Pensacola for this purpose, and returned to New Orleans on May 8. Notifying Chief Engineer Totten of his actions, Chase reported that operations of the Engineer Depart-

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157. Chase to Totten, Oct. 5, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

158. Chase to Totten, March 21, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

ment, during his absence, could be intrusted to Lieutenant Whiting, his capable assistant.[159]

The War Department squelched General Gaines' plans. Major Chase had to postpone, for the moment, his plans to find glory in a short but successful campaign against Mexico. His heart, however, remained with Taylor's army.

On May 21, having returned to Pensacola, Major Chase recommended to the War Department construction of three iron steamers of about 120 tons each and drawing not more than two feet. These vessels were to be rushed to the Rio Grande to be employed in supplying the depots General Taylor would establish on that river, when he advanced into Mexico. Steamers of this light draft would, during the low water season, be able to ascend the Rio Grande to Camargo and in high water to above Presidio del Norte. Such vessels would be useful in time of peace, after the Rio Grande had been established as the international boundary.[160]

Looking toward the establishment of the Rio Grande as the boundary between Mexico and the United States, Chase advised Chief Engineer Totten that permanent defenses should be erected at points opposite Laredo, Meir, Matamoros, and the Brazos. Building materials could be produced from the banks and the bed of the Rio Grande. One million dollars ought to be budgeted for this project.[161]

4. Second-Guessing General Taylor

Major Chase did not agree with General Taylor, when Taylor complained that if he had been supplied with a ponton train for

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159. Chase to Totten, May 9, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer. Colonel Totten was "gratified" to learn that the trio were giving "valuable aid toward mustering into service, organizing, and dispatching" forces to reinforce General Taylor's army. Totten to Chase, May 21, 1846, NA, RG 77, Ltrs. Sent, Chief Engineer.

160. Chase to Totten, May 21, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

161. Ibid.

crossing rivers, he would have destroyed Maj. Gen. Mariano Arista's army following its defeat at Resaca de la Palma. Nor did he, he informed Chief Engineer Totten, have any confidence in Taylor's "ability as a military man."

It is not strange, he mused, that the Mexican army succeeded in crossing the Rio Grande "in face of our victorious army?" If the Mexicans were provided with the means of crossing, "they should have been seized by Gen. Taylor," but "if they had not the means, they, the Mexicans, were worse off than their pursuers, and ought to have been captured or destroyed on this side of the Rio Grande." It would be easier, Chase argued, to destroy "discomfitted and flying masses, striving to cross a river," than to force a crossing and attack them in their fortified camps after they had rallied.

Major Chase was astounded to learn that, instead of ordering a pursuit of the routed foe, General Taylor had rested on the field "contented and perhaps astonished at his success." Lieutenant Scarett, his former assistant, had been the only staff officer, who had accompanied the portion of Taylor's army that had pursued. Detaching himself therefrom, Scarett had galloped to Fort Brown and informed the garrison of the victory.

If General Taylor required a ponton train, Chase continued, he should have requisitioned, through Quartermaster General Jesup, some light bateaux and scantling before he marched to the Rio Grande. But, Chase chided, General Taylor had neglected this as well as many other precautions. Taylor's greatest blunder had been crossing the Nueces with an inadequate force. If Taylor had exercised his authority to call for 5,000 additional men in January, he could have advanced to the Rio Grande with an army of 8,000. With a force of that size, Chase doubted the Mexicans would have crossed the river, and the annexation of "Texas would not have been contaminated in blood."

Chase was glad to learn that the Ponton Company was en route to the Rio Grande. If its services were required, he was confident

the officers and men would respond, showing the Corps of Engineers was true to its motto, and was ready "to zealously, daringly, and skillfully to peril life for their country either in the miasmatic swamps of Mexico, or on the frozen fields of Canada."[162]

On October 5 Major Chase blasted Taylor's campaign into northeastern Mexico as "entirely without coordination." There had been no landing at Tampico; General Taylor had advanced on Monterrey with flanks exposed, and his communications likely to be momentarily severed. General Taylor, Chase harped to Colonel Totten, was "in as false a position as he was when he took position" before Matamoras, and was out-flanked by General Arista. Brig. Gen. John Wool, in advancing from San Antonio, was marching at right angles to Taylor's invasion route.

By thrusting toward Monterrey, Taylor had presented the Mexicans with an opportunity. By massing their army there, they could resist Taylor's army either by "a pitched battle" or by "maneuvering on our flanks in a country well adapted to such movements." If General Wool, with 4,000 or 5,000 men, had marched from Laredo to Saltillo, and the U.S. Navy had occupied Tampico, then "the Generalissimo of the U.S. Army might . . . hope to conquer a peace."

If it were not too late, Major Chase urged that General Wool be directed to march in support of Taylor's column and that 1,000 soldiers be rushed to Tampico and put ashore, covered by guns of the Navy.[163]

Chase's critical letter was forwarded by the Chief Engineer's office to Secretary of War Marcy. The Secretary returned it without comment in February 1847, two weeks before General Taylor's greatest victory at Buena Vista.

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162. Chase to Totten, Sept. 14, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

163. Chase to Totten, Oct. 5, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

Although his pleas to be assigned to duty in the field were ignored, the Department increased, despite his criticisms of General Taylor and campaign strategy, Major Chase's responsibilities. On August 17, 1846, his general supervision over the masonry fortifications on the Gulf Frontier was increased by inclusion of the works under construction at Key West and Dry Tortugas.[164]

5. Chase Attends to Urgent Business in Boston

Major Chase, having learned by mail on October 14 that urgent personal business required his attention in Boston, availed himself of a 7-day leave. He left Pensacola the next day. His hopes of reaching Washington on the 22d were doomed by an accident on the Georgia Railroad. When he passed through Washington late on the 23d, Chase, because of his haste, was unable to report in person at the War Department.

Writing a hurried note to Chief Engineer Totten, posted at the depot, Chase requested approval of his actions, and a 30-day leave to commence on October 15. If all went according to schedule, he hoped to be back on the Gulf by November 10.[165]

On returning to his Boston address on the evening of November 8, Chase found a letter from the Department, dated October 26, notifying him that a leave to end November 15 had been approved. Since passing through Washington, however, Chase had discovered it would be mid-November before he completed his business. He therefore requested an extension until December 1.[166]

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164. Totten to Chase, Aug. 17, 1846, NA, RG 77, Ltrs. Sent, Chief Engineer.

165. Chase to Totten, Oct. 23, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

166. Chase to Totten, Nov. 9, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

Secretary of War Marcy approved Chase's request on November 11.

When he returned to Pensacola, Chase traveled by way of New Orleans at the direction of the Secretary of War. He carried with him important dispatches to be forwarded to General Taylor.[167]

6. Major Chase Seeks to Influence Foreign Policy

Miffed that his suggestions were neither adopted nor acknowledged by Secretary of War Marcy or General Scott, Major Chase ceased providing his superiors with gratuitous advice on how to defeat Mexico. There were no letters to Washington following General Taylor's victories at Monterrey and at Buena Vista nor suggestions regarding General Scott's campaign from Veracruz to Mexico City.

In January 1848 Chase, with negotiations preliminary to the Treaty of Guadalupe Hidelgo in progress, wrote Chief Engineer Totten. He urged steps be taken to secure to the nation permanent possession of the Castle of San Juan d'Ulloa and its dependent islands. While still occupying the Veracruz area, the United States must lose "no time in increasing the defences of the castle, and in constructing strong works at Sacrificos to command that anchorage."

San Juan d'Ulloa should be armed with 12-inch columbiads, and the batteries of the main work bombproofed. Its magazines and storerooms should be enlarged, so its garrison could withstand a three-year siege. At Sacrificios a depot for three years' supply for 15 or 20 steamers would be established.

To support the United States position at San Juan d'Ulloa, it was vital that no more time be lost in completing the defenses at Key West and Dry Tortugas. A prudent policy had led Congress to make

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167. Chase to Totten, Dec. 4, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer. Chase learned, on his arrival in New Orleans on the 4th, that Lieutenant Beauregard had left for Tampico the previous evening under orders to relieve Captain Barnard.

"ample appropriations for the commencement and vigorous prosecution of the fortifications in the Florida Straits"; and the same policy would, he hoped, insure to the nation possession of San Juan d'Ulloa and its dependencies.

Possession of Dry Tortugas, Key West, and San Juan d'Ulloa would leave only one fortified harbor in the Gulf, La Habana, not controled by the United States. An ardent advocate of manifest destiny, Chase foresaw the Gulf as an "American Sea," with its control affording to the nation power to settle "the Cuban question" where necessary.

As for Cuba, Chase believed it best "to leave her in her present condition, or in the event of a political change, that she should become an independent government." Mutual interests would then bring Cuba into "strong alliance with the United States." Heavily fortified positions at Dry Tortugas and Key West would enable the United States "to act effectively" to prevent any "political change in Cuba adverse to our policy."[168]

Chase also wrote Senators John C. Calhoun of South Carolina and David L. Yulee of Florida on the subject. He was certain, he informed Colonel Totten, they would employ their influence to "meet any demand of the Engineer Dept. for the means necessary to extend operations in the Florida Strait, and to increase defences at Vera Cruz." He believed $1,000,000 per year ought to be budgeted for the Tortugas and Key West.[169]

Once again, Chase's efforts to effect policy failed. Secretary Marcy did not even acknowledge Chase's communication when it was referred to him by the Chief Engineer.

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168. Chase to Totten, Jan. 26, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

169. Ibid.

H. Establishment of the New York Engineer Depot

In the interest of economy, the Department in 1845 established an office in New York City. The function of this office was to consolidate and centralize purchases by the superintending engineers. The officer, in charge was to expedite and coordinate purchasing activities, and Chief Engineer Totten urged his project superintendents to make requisitions through this facility rather than agents such as Delafield & Delafield as they had done heretofore. A circular announcing establishment of the office, and assignment of Lt. Danville Leadbetter as its head had been issued on September 10, 1845.[170]

Chase either failed to receive or ignored the circular. The Department, when he continued to order through Delafield & Delafield, on September 18, 1846, reminded him that Lieutenant Leadbetter was stationed in New York City for the purpose of making purchases for project superintendents at a distance, and the Department desired that purchases be made through him.[171]

Chase, belatedly acknowledging receipt of the circular announcing establishment of the New York Depot, promised to hereinafter make his purchases through that office.[172]

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170. Welcker to Chase, Sept. 16, 1846, NA, RG 77, Ltrs. Sent, Chief Engineer.

171. Ibid.

172. Chase to Totten, Sept. 27, 1846, NA, RG 77, Ltrs. Recd., Chief Engineer.

X. MAJOR CHASE'S FINAL YEARS: 1848-1854

A. Regulars Return

1. Battalion of the 4th U.S. Artillery Arrives

In the months following ratification of the Treaty of Guadalupe-Hidalgo ending the war with Mexico, the United States withdrew its army from Mexico. The volunteers and regular units raised for the war were mustered out and the regular units to be retained redeployed. A battalion of the 4th U.S. Artillery was ordered to take post in Pensacola Harbor. Companies I and M sailed from Fort Monroe on October 21, 1848, and arrived in Pensacola Bay on November 14. Next day, the ship with regimental headquarters and Companies A, G, and H aboard dropped anchor in the bay. She had taken these units aboard at Fort Monroe 9 days before. Regimental headquarters and Companies G, H, and I occupied Fort Pickens, and Companies A and M took position at Fort McRee.[1]

2. 4th Artillery Finds the Quarters Unsatisfactory

Lt. Col. John L. Gardner and his officers were shocked by the sight of the casemate quarters. On November 16 Colonel Gardner convened a board consisting of his company commanders "to examine and report upon the state and condition of Forts Pickens and McRee, with reference to their being occupied by troops."[2]

The officers found the works unfit, in their present state, for occupation by the troops (five companies and regimental headquarters). At neither post were there any "conveniences for sick, for cooking, washing, or for store houses." The casemates, which served as barracks, were occupied by mounted guns. "They possess

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1. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727.

2. Order No. 131, 4th U.S. Artillery, Nov. 16, 1848, NA, RG 92, Consolidated Correspondence File.

none of the qualities that are usually supposed to belong to the residences of men in a respectable community. The mere materiel of defence alone seems to have been considered in the construction of these forts." As for personnel, there had been scarcely any regard, other than "leaving an interior space to serve as an Infantry drill ground."

The Board was of the opinion that Forts Pickens and McRee might be occupied by one company each, "but not with a due regard to their health, discipline, or respectability."[3]

The battalion surgeons had also inspected the quarters. They agreed with the company commanders that they were inadequate for more than one company at each post. Both officers and enlisted men, they reported, would suffer for "want of proper room and exposure to cold and dampness," which would prove "deleterious" to the health of the battalion. They urged that immediate provisions be taken toward "bettering the condition of the troops."[4]

Colonel Gardner endorsed the reports and forwarded them to Quartermaster General Jesup. In a covering letter, Gardner wrote that he had directed the regimental quartermaster "to make certain extraordinary expenditures to meet the urgent necessities of the posts." Forts Pickens and McRee, he complained, have been "so long vacant of regular troops that a knowledge of their destitute condition could hardly be possessed" by General Jesup. There were "literally" no quarters for officers or men. The casemates were filled with heavy ordnance. He and the regimental staff were living in "poor quarters hitherto occupied by the Engineer workmen, which have been kindly loaned for our temporary shelter" by Lieutenant Whiting.

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3. D.N. Couch, J.B. Scott, C.B. Willcox, J.W. Phelps, and F.J. Porter to Gardner, Nov. 17, 1848, NA, RG 92, Consolidated Correspondence File.

4. Charles Crane & H.H. Roberts to Gardner, Nov. 21, 1848, NA, RG 92, Consolidated Correspondence File.

By order of the War Department, Colonel Gardner explained, three companies and regimental headquarters had been ordered to garrison the Pensacola forts. Fort Morgan, Alabama, had been designated to receive Companies I and M, but when the Engineer Department had reported that fort "unfit to be occupied by troops," these two companies had been diverted to Pensacola Bay.[5]

To convert some of the casemates into barracks, cannon had been dismounted. When he relayed this information to Chief Engineer Totten, Lieutenant Whiting suggested that a garrison of three companies at Fort Pickens and two at Fort McRee was too large for these facilities as currently arranged.

Upon completion of the permanent barracks at the Barrancas, Lieutenant Whiting urged that all troops assigned to the Pensacola defenses be quartered there. Details, sufficient for their police and preservation, could be sent daily to the forts from the barracks.[6]

Colonel Gardner in the last week of December was embarrassed when the U.S. Minister to Mexico, Mr. Clifford, passed through Pensacola. Through the politeness of the commandant of the navy yard, Gardner had learned of Clifford's arrival. Colonel Gardner was "mortified," because the "utter destitution" of his quarters made it impossible to show Clifford "the courtesies due his station and person." Little more could be done than to invite the Minister into "a small rough cottage borrowed for the Col's quarters, or into casemates, occupied as Quarters by his subordinate officers, at the rate of two & three to a room, and lumbered up with trunks, boxes, bed, etc."

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5. Gardner to Jesup, Nov. 22, 1848, NA, RG 92, Consolidated Correspondence File. Gardner also called on the Quartermaster Department to provide his battalion with three or four more boats, one a large lumber boat, and three more horses for courier service.

6. Whiting to Totten, Nov. 23, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

What specially irked Gardner was the difference in facilities provided by the government "between the two great Branches of its martial services, as every where seen, and here most painfully felt."[7]

On January 16, 1849, Colonel Gardner submitted a claim for commutation for quarters that could not be rented at Pensacola by the regimental quartermaster. There were at the Barrancas, he pointed out, only five small houses within the area allowed for his quarters. They were all clustered on the public grounds. The owners, having been promised compensation when and if their houses were removed to facilitate construction of the barracks, refused to rent to the government. If they did, they feared the government would accuse them of abandoning their property, and take possession.

Quartermaster Jesup had cautioned Colonel Gardner that he would jeopardize his claim for commutation by pressing the claims of his officers. He would be ashamed not to do so, Gardner countered. In urging their claims, he wanted General Jesup to know that some of his staff had no quarters. Adjutant Albion P. Howe lived in a borrowed room; Dr. Burton Randall and his family were taking room and board, while storing their household goods; others were "living in a crowded state (two or three each in a vile, damp casemate, in close companionship to a large mounted cannon)." As such, they were "neither wholesomely, comfortably, nor decently quartered."[8]

Quartermaster General Jesup, taking cognizance of the situation, allotted $3,000 for maintenance and repair of the Fort Pickens quarters in the 2d Quarter of 1849.

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7. Gardner to Jesup, Jan. 6, 1849, NA, RG 92, Consolidated Correspondence File.

8. Gardner to Jesup, Jan. 16, 1849, NA, RG 92, Consolidated Correspondence File.

3. War Department Redeploys Gardner's Battalion

Before any of this sum could be expended, the War Department determined to redeploy the battalion. First to go was Company I. Leaving Fort Pickens on April 25, 1849, the company reached its new station at Baton Rouge Barracks 3 days later. Company H departed from the fort for Key West on May 19, and Company G for Baton Rouge the next day. Regimental headquarters on the 23d were transferred to Pensacola.

Company G would be converted into a light artillery company. Before starting for its new station, Capt. Mansfield Lovell notified the Quartermaster General that the necessary mounts and equipment to effect this change should be forwarded to Baton Rouge Barracks. General Jesup replied that the clothing would be ordered from the Philadelphia Quartermaster Depot and the horses through Colonel Hunt at New Orleans.[9]

Companies A and M moved from Fort McRee into the Fort Pickens casemates vacated by Companies G, H, and I in the fourth week of May. General Jesup, advised of these moves, impounded the $3,000 programmed for improvements to the Fort Pickens quarters. Post Quartermaster G.A. De Russy protested. Fort Pickens, he complained, is without barracks. The only buildings for which the quartermaster was responsible were a storehouse, a shed for a bakery, a nondescript building used as a carpenter's shop, and a "topping" stable. Available casemate quarters would shelter "one company and that indifferently [it] being too imperfectly ventilated for that burning climate." The other company was quartered in one of "the galleries, damp, dark, and unfitted

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9. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727; Lovell to Jesup, May 1, 1849, and Jesup to Lovell. May 11, 1849, NA, RG 92, Consolidated Correspondence File. Needed to outfit the battery as light artillery were 44 horses, 52 horsehair plumes (red), 2 horsehair plumes (white), 4 sergeants' wool jackets (dark blue), 50 privates' wool jackets, 54 bands and tassels, 30 pair wool overalls (large size), and 4 sergeants' wool overalls (large size).

with any of the conveniences." Ordnance-Sergeant Gardner and other employees were "stowed away in corners of the work, totally devoid of any of the accessories of quarters for men. Their only entrance through embrasures, from the ditch, with kitchens, badly lighted and damp to a most unhealthy extent." Common laborers in the city slums had better accommodations.

The hospital, a log structure, was on the Barrancas side. With "epidemics ranging in the country round about," this "disgracefully incompleted building" was used for the sick.

Lieutenant De Russy, echoing Colonel Gardner, informed Quartermaster General Jesup that these "miserable resources at our command are in too striking contrast with complete arrangements of the Navy. Could you compare the Army and the Navy facilities your humiliation would be complete."[10]

The two companies had to spend three months in their uncomfortable quarters. On August 15, 1849, Companies A and M boarded the ship chartered to carry them to Fort Brooke, Florida.[11]

On departure of the battalion, Major Chase was placed in command of the Pensacola forts, the ordnance-sergeants, and their employees. Chase, uncertain of what should be done with the 3 horses and 1 mule left at the post by Lieutenant De Russy, contacted Quartermaster General Jesup. On doing so, he recommended that the animals be retained, as they could be employed by the ordnance-sergeants at the forts in "preserving the police of the work."[12]

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10. De Russy to Jesup, May 26, 1849, NA, RG 92, Consolidated Correspondence File.

11. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727.

12. Chase to Jesup, Aug. 24, 1849, NA, RG 92, Consolidated Correspondence File.

General Jesup was agreeable.[13]

4. 1st Artillery Returns to Pensacola Bay

a. Company D at Fort Pickens

On November 3, 1850, Fort Pickens was again occupied by troops. Company D, 1st U.S. Artillery, which had left Fort Brooke 72 hours before, was the new garrison. The post commander was Bvt. Capt. Henry D. Grafton, no stranger to Santa Rosa Island, having served on Colonel Pierce's staff three years before.[14]

b. Troops Move into Barrancas Barracks

The frequent and loud complaints about the casemate quarters had resulted in an appropriation for construction of permanent barracks at the Barrancas. By November 1850 one block of the barracks had been completed and was ready for occupancy. Major Chase was prepared to turn the barracks over to Company D.

Informing the Department of this, Chase asked for guidance. If the barracks were occupied, would it be necessary "to define the extent and nature of the command to be reserved by the commander of the troops?" He suggested that "custody of the Military reserved land; of the Railway, Fort, Redoubt, unfinished portion of Barracks, wharf, etc.," remain with the project engineer.

The occupation of the barracks by Company D would lead to the Barrancas being established as a permanent base. Some regulations should accordingly be established by which the "commanding officers of Engineers and of the Troops may be governed."[15]

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13. Jesup to Chase, Sept. 4. 1849, NA, RG 92, Ltrs. Sent, Quartermaster General.

14. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, Microcopy M-727.

15. Chase to Totten, Nov. 4, 1850, NA, RG 77, Ltrs. Recd., Chief Engineer.

General Totten reviewed the problem. He found that according to regulations the fort at the Barrancas, its water battery, and the Redoubt, until regularly turned over to occupation and care of the troops, remained in charge of the superintending engineer. A similar situation existed in regard to the section of the barracks still under construction, the railway, and engineer wharf.

Moreover, buildings of any kind erected on the reservation might interfere with the plan of defense. None should, therefore, be built without approval by the project engineer and the Secretary of War.[16]

Major Chase was satisfied with the Department's decision. It, he believed, would enable him "to avoid misunderstandings with the commanding officer of the troops as regards to the respective authorities to be exercised by him and myself."[17]

Although the Corps of Engineers was agreeable to the transfer, it was September 1851 before Company D moved across Pensacola Bay and into the barracks. The redlegs were not permitted to enjoy their new quarters for many days. On October 4 the company boarded a New Orleans-bound ship.

Company D, 1st U.S. Artillery, returned to Pensacola Bay on May 26, 1852, having sailed from Fort Brown, Texas, 6 days before. The troops again moved into Barrancas Barracks. From May 1852 until January 1861, no troops garrisoned Fort Pickens. Units assigned to the defense of Pensacola Harbor were quartered at Barrancas

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16. Totten to Chase, Dec. 4, 1850, NA, RG 77, Ltrs. Sent, Chief Engineer.

17. Chase to Totten, Jan. 4. 1851, NA, RG 77, Ltrs. Recd., Chief Engineer.

Barracks, from where fatigue parties and guard details were sent to look after the police and security of the forts.[18]

B. Years of Minimal Repair and Maintenance

1. Maintenance and Construction in 1848

There would be little work done on the Pensacola forts in fiscal year 1848. Because of the Mexican War and the need to effect economies in non-essential spending, the 2d session of the 29th Congress failed to pass a Fortifications Bill.[19]

No maintenance projects were accordingly undertaken at Fort Pickens in 1848. When he made his annual report, Major Chase warned that "some work will be required in repairing the decayed portion of the slope of breast-height wall, and a portion of the surface, under which several leaks had been identified, and in reconstructing the piazza for the North Front Officers' Quarters." These projects could be accomplished by an allotment from the contingency fund.[20]

2. Maintenance and Construction in 1849

a. Rebuilding the North Piazza

Ten months passed before the Department took action. On August 7, 1849, General Totten authorized Major Chase to proceed with reconstruction of the north piazza, charging the work to contingencies.[21] Acknowledging the notice, Major Chase announced that,

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18. Returns for Regular Army Artillery Regiments, June 1821-Jan. 1901, NA, mcirocopy M-727.

19. Welcker to Chase, March 8, 1847, NA, RG 77, Ltrs. Sent, Chief Engineer.

20. Chase to Totten, Oct. 5, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States for the 30th Congress, 2d Session (Washington, 1849), Serial 537, Vol 1, p. 267.

21. Totten to Chase. Aug. 7, 1849, NA, RG 77, Ltrs. Sent, Chief Engineer.

while undertaking this project, he would have the masons do some pointing and remove a few loose bricks. This would be the first maintenance accomplished at the fort in 18 months.[22]

Work on the piazza began in October 1849. By mid-November, Major Chase informed the Department that the pavement and pillars had been completed. He proposed to roof the piazza with slate. If so, he inquired, was he authorized to replace with slate the shingles on the south piazza?[23]

Chief Engineer Totten approved covering the north piazza with slate, but vetoed replacing with slate the shingles on the south piazza until the shingles had rotted.[24]

b. Repairing the Breast-height Wall Revetment

Major Chase in mid-August had inquired of the Chief Engineer, "In what manner shall I repair the breast-height wall?" The woodwork of this wall had decayed.[25]

General Totten, as usual, had explicit directions. When he replaced the revetment of the parapet above the breast-height wall, Chase was to substitute a brick wall, one brick thick. The upper course of bricks being laid on edge, the entire wall would be independent blocks not more than three feet in length. The vertical joints, between the blocks, to be without mortar, being pointed up on the face, back,

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22. Chase to Totten, Aug. 17, 1849, NA, RG 77, Ltrs. Recd., Chief Engineer.

23. Chase to Totten, Nov. 20, 1849, NA, RG 77, Ltrs. Recd., Chief Engineer.

24. Totten to Chase , Dec. 6, 1849, NA, RG 77, Ltrs. Sent, Chief Engineer.

25. Chase to Totten, Aug. 17, 1849, NA, RG 77, Ltrs. Recd., Chief Engineer.

and top. Such blocks could be easily taken down and replaced by sod or fascines. He would not, however, make this change as long as the present wooden revetment could, with slight repairs, be maintained.[26]

On September 30 Major Chase reported that during the previous 18 months no expenditures had been made for maintenance of the fort. In accordance with instructions from the Department, measures had been taken for collection of materials for rebuilding the North Front piazza and repair of the breast-height wall.[27]

By mid-November the workmen had constructed a "summit wall to the breast-height wall . . . as a replacement for the wooden slope."[28]

c. Totten Approves the Drainage Ditch's Mode of Construction

Replying to a questionnaire from the Department for construction details of the drainage ditch, Major Chase reported that it was partially masonry. It was connected with the culvert leading from the ditch to the wharf. He had deemed it advisable on the other half to avoid the expense of a brick drain by digging a simple ditch and paving the bottom. This small ditch also connected with a culvert. The ditch answered all purposes for drainage and required no "more attention of the garrison to keep it clear than the brick one." The sides of the ditch

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26. Totten to Chase, Aug. 29, 1849, NA, RG 77, Ltrs. Sent, Chief Engineer.

27. Chase to Totten, Sept. 30, 1849, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, During the 1st Session of the 31st Congress (Washington, 1850), Serial 549, Vol. 1, p. 321.

28. Chase to Totten, Nov. 20, 1849, NA, RG 77, Ltrs. Recd., Chief Engineer.

were covered with grass, the bottom paved with brickbats, and the water carried off "with sufficient rapidity to free the ditch of water after heavy rains."

He believed the expense of completing the drainage ditch with brick sides was unnecessary.[29]

If the arrangements made for drainage of the ditch answered for a free and ready discharge of rainwater, General Totten had no desire to extend the "more expensive permanent drain."[30]

3. Maintenance and Construction in 1850

a. Work Accomplished

On July 1, 1850, Major Chase laid off his masons and laborers. During the previous nine months, employing contingency funds, the men had: (a) taken down the woodwork of "the top slope" of the breast-height wall, replacing it with a single brick wall; (b) replaced the north piazza; (c) effected some repairs to the earthen slopes caused by erosion; and (d) had painted with mastic nearly "the whole of the terreplein . . . and the superior and exterior slopes of the parapets where they are covered with a brick pavement."

The fort, Major Chase reported, was in good condition. Some repairs were needed to the wharf and in the North Front Officers' Quarters, but these were deemed the responsibility of the Quartermaster Department.[31]

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29. Chase to Totten, Aug. 17, 1849, NA, RG 77, Ltrs. Recd., Chief Engineer.

30. Totten to Chase, Aug. 29, 1849, NA, RG 77, Ltrs. Sent, Chief Engineer.

31. Chase to Totten July 1, 1850, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, During the 2d Session of the 31st Congress (Washington, 1851), Serial 587, Vol. 1, p. 359.

b. To Be Undertaken

Major Chase, in his annual report submitted September 30, 1850, noted that sand hills had been slowly building up and "confined by beach grass" were threatening to mask the fire of guns mounted in the casemates of the Channel Fronts. He did not recommend their removal at the time, because it would take the garrison, in time of war, only 24 hours to level the dunes and unmask the cannon.[32]

4. Maintenance and Construction in 1851

a. Summer Drought Sears the Slopes

No maintenance requiring repairs was undertaken during the 15 months ending September 30, 1851. A summer drought had seared and browned the grass on the earthen slopes. But, Chase noted in his annual report, the slopes were "in good order and the grass considerably extended over them." He planned in the near future to send over from Barrancas a fatigue party to weed the slopes and transplant Spanish bayonet onto the glacis.

As soon as the applicateur had finished his Fort McRee project, Chase would bring him over to stop a leak in the Northwest Bastion.[33]

b. Department Employs an Applicateur

Chief Engineer Totten had notified Major Chase in December 1850 that an experienced applicateur had been hired by the Department "to be employed at each of our public works as might need his skill."

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32. Chase to Totten, Sept. 30, 1850, NA, RG 77, Ltrs. Recd., Chief Engineer.

33. Chase to Totten, Sept. 30, 1851, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, During the 1st Session of the 32d Congress (Washington, 1852), Serial 611, Vol. 1, p. 355.

After he had finished his work at Fort McRee, the applicateur was to inspect the mastic used in the other works, report its condition, and such repairs as were deemed indispensible. These reports would be forwarded to the Department, along with Chase's views as to desired repairs and modifications, and detailed estimates.

It was necessary that operations of the applicateur be conducted with dispatch, as his services would be much in demand.

The ingredients constituting a good mastic--pulverized calcarious stone and pure bitumen--were to be ordered from the New York Depot.[34]

As the terreplein of Fort McRee needed repair, Major Chase would "willingly" avail himself of the services of the applicateur. December, January, and February were rainy months on the Gulf Frontier, and accordingly unseasonable for application of mastic. Arrangements would be perfected with Maj. William D. Fraser of the New York Depot to send the applicateur south to begin work about March 1.

Chase would submit to the applicateur "specimens" of mastic heretofore laid down, and "especially those . . . invented" by himself.

Care would be taken to reserve sufficient funds to cover expense of the mastic work out of the appropriation for preservation of the site of Fort McRee.[35]

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34. Totten to Chase, Dec. 5, 1850, NA, RG 77, Ltrs. Sent, Chief Engineer.

35. Chase to Totten, Dec. 24, 1850, NA, RG 77, Ltrs. Recd., Chief Engineer. Major Fraser had relieved Lieutenant Leadbetter as officer in charge of the New York Engineer Depot in October 1848.

Major Fraser was unable to send the applicateur to Pensacola because of other commitments. To cope with this situation, Major Chase, on Major Beauregard's recommendation, determined to hire a man experienced in applying asphaltic mastic in New Orleans. In addition, Lt. Gustavus W. Smith had on hand at West Point "a considerable quantity of asphaltic mastic already prepared which he had obtained from New York." A portion of this he was willing to supply to Major Chase.[36]

General Totten had no objection to hiring an applicateur out of New Orleans, provided "you can be sure that the person shall be a faithful man." The serious consequences "of ignorance and imposition in these respects, have been fully shown in the first attempt to lay down asphalt at Fort McRee." If an applicateur could be obtained from New Orleans for "a reasonable price, whose work, after a full trial and long exposure, testify, to his skill and fidelity," Totten would be glad to have him "substituted for the one we intended to send from New York."

There was no objection to securing mastic from Lieutenant Smith, but General Totten was opposed to experimenting. All mastic must be of the same consistency as supplied by the New York Depot, "tempered to suit the situation and climate, and without any admixture of other matters than the bitumen and 'calcaire' imported from France."[37]

Chase accordingly decided to utilize the services of the Department's applicateur rather than hire one in New Orleans. He

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36. Chase to Totten, May 2, 1851, NA, RG 77, Ltrs. Recd., Chief Engineer.

37. Totten to Chase, May 23, 1851, NA, RG 77, Ltrs. Sent, Chief Engineer.

was glad he did. On January 3, 1852, after the Corps' Applicateur (Mr. Levavasseur) had completed applying mastic at Fort McRee, Chase commended him as "a master in his art."

Writing Chief Engineer Totten, Chase reported, "the employment of Mr. Levavasseur will save a great deal of money . . . in the future application of asphaltic mastic in the public works." He was such a capable artisan that Chase suggested that his pay be raised.[38]

5. Maintenance and Construction in 1852

Once again, with no appropriation for fortifications, no construction nor major maintenance projects were undertaken in the year ending September 30, 1852. Chase, in reporting this, wrote that no "important operations" were "anticipated to be necessary to place the works in a better condition of defence than they are at present."

The slight repairs needed to the "terreplein, slopes, etc," could be made in the spring of 1853, employing funds allotted from the contingency of fortifications appropriation.[39]

6. Maintenance and Construction in 1853

For the third consecutive year, no construction funds were expended on Fort Pickens. During 1853 some damage to the asphaltic covering of the terreplein had occurred in the dismounting of guns and carriages. The wharf had continued to deteriorate and the Officers' Quarters needed to be rehabilitated. This work, however, was the responsibility of the Quartermaster Department.[40]

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38. Chase to Totten, Jan. 3, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

39. Chase to Totten, June 30 and Sept. 30, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, 2d Session, 32d Congress (Washington, 1853), Serial 659, Vol. 1, p. 155.

40. Chase to Totten, June 1 and Sept. 30, 1853, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, 1st Session, 33d Congress (Washington, 1854), Serial 690, Vol. 11, p. 170.

7. Maintenance and Construction in 1854

a. Chief Engineer Totten Lists Needed Repairs

No funds were expended for construction or maintenance by the Army on the fort during the year ending September 30, 1854. Chief Engineer Totten, in his Annual Report, observed that "slight repairs" were needed. These embraced cleaning water pipes, pointing cracks, repair of pavements, and closing breaks in the asphalt of the terreplein. The wharf and casemate quarters also needed work.[41]

b. March and April Prove to be the Best Months for Repointing

Experience had taught Major Chase that the best time for repointing masonry was when the weather was cool and moist. On the Gulf Frontier, the "heat of the sun is too powerful . . . to permit any kind of masonry, especially that composed of brick of porous quality, to be exposed to its influence until the mortar is set." Moisture, so essential to forming good cement, rapidly dried in the torrid summers, even when the brick had been saturated.

If walls had to be pointed in summer, Chase covered them with cloth, which was kept moist.

He had found March and April better adapted for pointing than any other months, because of the March fogs and the light April showers. These produced a humid atmosphere in which the mortar set well, while May was not too hot to "injure mortar."[42]

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41. Chase to Totten, June 30, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, 2d Session, 33d Congress (Washington, 1855), Serial 747, Vol. 2, p. 106.

42. Chase to Totten, March 31, 1850, NA, RG 77, Ltrs. Recd., Chief Engineer.

C. Departments Argue Repair of the Wharf

Lieutenant De Russy, as post quartermaster, in July 1849 asked Quartermaster General Jesup for an allotment of $750 for repair of the wharf. The present one was in such bad condition that captains were unwilling to bring their vessels alongside. Piles had rotted, and the planking was sagging.[43]

General Jesup, having decided to program a new wharf in 1850, directed Lieutenant De Russy to make emergency repairs.[44] Major Chase in mid-November complained that the wharf and a portion of the Officers' Quarters were in need of repair. But as these structures had been "put in complete order by the Engineer Department, and the work has long since been occupied by a garrison," he believed these projects were the responsibility of the Quartermaster Department.[45]

General Totten agreed that repair of the wharf and quarters was the responsibility of the Quartermaster Department. Structures of this nature requiring renewal or alteration, because they had been improperly built or were of poor workmanship, were in a different category, however, and would have to be repaired by the Corps. Whenever necessary funds became available, Totten proposed to authorize construction of a permanent wharf at Fort Pickens. Meanwhile, the Quartermaster Department should keep the wharf in repair.[46]

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43. De Russy to Jesup, July 31, 1849, NA, RG 92, Consolidated Correspondence File. Needed to repair the wharf were: 15 piles, 900 pounds of copper sheathing for piles, 75 pounds of carpenter's nails, 200 pounds of iron spikes, 200 pounds of 1½-inch iron, 5,000 feet of 10x12-inch timber, and 4,500 feet of 3-inch planks.

44. Jesup to De Russy, Aug. 11, 1849, NA, RG 92, Consolidated Correspondence File.

45. Chase to Totten, Nov. 20, 1849, NA, RG 77, Ltrs. Recd., Chief Engineer.

46. Totten to Chase, Dec. 6, 1849, NA, RG 77, Ltrs. Sent, Chief Engineer.

Major Chase on February 28, 1850, therefore complained to Quartermaster General Jesup that the wharf had needed repairs before the departure of the troops. Since then it had suffered additional injury, when a vessel, in docking, had rammed it. He believed it could be repaired for $500. If Jesup would allot this sum, Chase would oversee the work.[47]

At the same time, Chase informed Chief Engineer Totten that he would not make any recommendation as to repair of the wharf until the Department had determined whether to construct a new structure with stone piers. Such a wharf would, in his opinion, be as likely to be injured as the present one by "heedless captains and pilots neglecting precautions in approaching it with their vessels."[48]

The Chief Engineer then transmitted to the Quartermaster Department a formal request for repair of the Fort Pickens wharf.[49]

D. Hurricane of August 1850

A hurricane struck the Pensacola area on the morning of August 23, 1850. High winds and surf continued until the 25th. Tides were higher than anyone could recall, rising to within one foot of the Fort McRee parade. At the height of the storm, surf swept across every part of Foster's Bank, except the highest sand hills. A shed used by employees working on preservation of the site of Fort McRee was carried away, along with the wharf. Major Chase estimated the loss of materials, etc., at Fort McRee at $800.

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47. Chase to Jesup, Feb. 28, 1850, NA, RG 92, Consolidated Correspondence File.

48. Chase to Totten, March 1, 1850, NA, RG 77, Ltrs. Recd., Chief Engineer.

49. Ibid.

A schooner engaged to deliver bricks was wrecked about 400 yards south of Fort McRee, and for several hours fears were entertained for safety of the crew, and the men sent by the commandant of the navy yard to their rescue. Fortunately, no lives were lost.

Reporting what had occurred to General Totten, Major Chase commended Commo. John T. Newton for the prompt assistance of the Navy's men and boats.[50]

General Totten, after forwarding the letter of commendation to Secretary of the Navy William A. Graham, directed Chase to mark the "level of the recent storm tide at Forts Pickens and McRee in a permanent manner for future reference."[51]

E. Major Chase Battles the Establishment

1. Chase is Confronted by a Transfer

a. He Tentatively Accepts an Assignment

Major Chase in mid-March 1848 received orders from the Department to report for duty with the Board of Engineer. He would arrange his affairs to depart for New England on call from Col. Sylvanus Thayer, President of the Board. This would not constitute any problem, because Chase had "perfect confidence" in his young assistant, Lieutenant Whiting.[52]

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50. Chase to Totten, Aug. 25, 1850, NA, RG 77, Ltrs. Recd., Chief Engineer.

51. Totten to Chase, Sept. 5, 1850, NA, RG 77, Ltrs. Sent, Chief Engineer.

52. Chase to Totten, March 22, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer. Chase at this time recommended to the Department Lieutenant Whiting for "his zealous discharge of duties" and his skill.

Chase accordingly spent April and part of May in the northeast. When the Board adjourned, he returned to Pensacola, arriving on May 24.[53] He remained long enough to accompany Chief Engineer Totten on an inspection of the Gulf Frontier forts, before returning to Boston to join the Board, when it reconvened.[54] On Chase's arrival in Boston, Colonel Thayer asked if he were agreeable to assignment to a Board of Engineers and Naval Officers being constituted to make an examination of the Pacific Coast. This Board was to make recommendations for locating a naval base and coastal defenses in the vast territory acquired by the United States by the settlement of the Oregon Question and the Mexican War. On learning that he would be gone about a year, Chase told Colonel Thayer that he would accept.

He offered no explanation "to show how it would be agreeable," reserving to himself that explanation, when and if he were approached by General Totten.

b. Chase Employs Political Influence to Remain at Pensacola

Three weeks after he had returned to Pensacola on August 29, 1848, Chase was shocked to receive a copy of Engineer Order No. 22, dated September 13, assigning him to duty with the Board of Engineers for Fortifications on the Pacific Coast. Responding, Chase announced that, unless ordered, he had no desire to serve on the newly constituted Board. His principal reason for finding the new assignment

53. Chase to Totten, May 24, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

54. Chase to Totten, June 25, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer. Chase, while en route to Boston, stopped briefly in Baltimore on June 25.

repugnant was because it separated him "from works on which I have been long engaged, and with the completion of which . . . I hoped to be identified." He might cite other reasons, but trusted the one given would suffice. Chase hoped he might be relieved from the duty enjoined in Order No. 22.

In making this request, Chase placed himself for the "first time on record, either in soliciting or declining service."[55]

General Totten, after reviewing Chase's plea not to be reassigned, rejected it. Chase would report for duty with the Board ordered to the Pacific.[56]

Chase, as directed, on October 31 turned over to Bvt. Maj. P.G.T. Beauregard, his designated successor, responsibility for the Pensacola forts. In compliance with Engineer Order No. 22, he started for Washington on November 1, where he would join other members of the Board. As he was not feeling well, he did not plan to exert himself by traveling long hours.[57]

Meanwhile, Major Chase had succeeded in enlisting political support. Senator Yulee of Florida had written General Totten, pointing out that Chase had been "so long connected with the Gulph

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55. Chase to Totten, Sept. 22, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

56. Totten to Chase, Oct. 23, 1848, NA, RG 77, Ltrs. Sent, Chief Engineer. Totten had been promoted brevet brigadier general to rank from March 29, 1847.

57. Chase to Totten, Nov. 2, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

defences, and has exhibited so much interest in their progress" that he would be pleased "if it be compatible with your views of the public interest to relieve him from the order and restore him to the superintendence of the works on the Gulph."[58]

Dixon H. Lewis, the junior Alabama senator, urged that Chase, if consistent with needs of the service, be excused. "From long habit, & acquaintance with our Southern country, & its fortifications & the labour employed to construct the same," Lewis would regret to see Chase removed from his current duty station.[59]

Yielding to political pressure, Chief Engineer Totten hesitated. On November 27 he issued Engineer Order No. 25, reassigning Chase to duty as project engineer at Pensacola. Acknowledging receipt of the order, Chase reported that he was leaving Washington today, the 28th, and would promptly relieve Major Beauregard.[60]

Chase arrived in Pensacola on December 7 to find Major Beauregard hospitalized in New Orleans. It was the 13th before Beauregard was able to travel to Pensacola to turn over to Chase the "books, funds, etc., belonging to the works on Pensacola Bay."[61]

2. Chase Loses His Assistant

In December 1848 Lieutenant Whiting learned that he was being detailed to duty in Texas. Whiting was sorry to be leaving

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58. Yulee to Totten, Oct. 12, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

59. Lewis to Totten, Oct. 7, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

60. Chase to Totten, Nov. 28, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

61. Chase to Totten, Dec. 8 & 13, 1848; Smith to Beauregard, Dec. 28, 1848, NA, RG 77, Ltrs. Recd. and Sent, Chief Engineer.

Pensacola, but he appreciated "very highly the new field in which he is to be professionally engaged."

Major Chase hated to lose Whiting. On his departure, he commended Whiting for the "exceptional manner in which he has constantly performed his duties." He had "always exhibited zeal & fidelity construed with professional skill in practice as well as theory by which the public interest has been advanced."[62]

Lieutenant Whiting was on detail for 16 months. The Department on March 12, 1850, notified Major Chase that his brilliant assistant, having completed his assignment in Texas, would be returning to Pensacola.[63] Chase was delighted, and welcomed Whiting back as his assistant.[64]

At the request of Bvt. Brig. Gen. Thomas Childs, commanding the Defenses of Pensacola Harbor, Major Chase in October 1851 directed Lieutenant Whiting, in addition to his other duties, to serve as Assistant Quartermaster and Commissary at Fort Barrancas. His reason for doing so resulted from relocation of regimental headquarters into Pensacola. This move had left no artillery officers at Barrancas Barracks, and General Childs had no one to whom he could assign these duties.[65]

Lieutenant Whiting in mid-January 1852 applied to the Department for a change in stations. To justify his request, he observed

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62. Chase to Totten, Dec. 17, 1848, NA, RG 77, Ltrs. Recd., Chief Engineer.

63. Totten to Chase, March 12, 1850, NA, RG 77, Ltrs. Sent, Chief Engineer.

64. Chase to Totten, March 22, 1850, NA, RG 77, Ltrs. Recd., Chief Engineer.

65. Chase to Totten, Oct. 25, 1851, NA, RG 77, Ltrs. Recd. Chief Engineer.

that he had "served a long time in this part of the country & conceive that I have some title to service elsewhere." His preference, if his desires had any weight, was California.[66]

Major Chase, as Whiting's superior, recommended that the request be granted, and that he be sent "to California or Oregon, should the arrangements of the Department permit."[67]

Whiting gained part of his request. In June 1852 he was reassigned to Fort Carroll, Maryland. Two years later, having in the meantime been sent to Texas, Lieutenant Whiting was ordered to California as assistant engineer for the fortifications to be constructed at Fort Point.[68]

3. Major Chase's Travels

Thirteen months before Lieutenant Whiting's reassignment to Fort Carroll, Major Chase on January 14, 1851, reached Washington from Pensacola. He had left his station on a seven-day leave, with a view of asking the Department for a 30-day extension, to begin January 7. To justify this action, Chase cited "pressing private business necessary to be arranged before Congress adjourned."

Secretary of War Charles M. Conrad approved Chase's request, as it was recommended by the Chief Engineer.[69]

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66. Whiting to Totten, Feb. 29, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

67. Chase to Totten, Feb. 29, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

68. Totten to Chase, June 21, 1852, NA, RG 77, Ltrs. Sent, Chief Engineer.

69. Chase to Totten, Jan. 15, 1851, NA, RG 77, Ltrs. Recd., Chief Engineer.

Chase returned to Pensacola on February 24, his trip south from Washington having been "retarted somewhat by indisposition arising from a severe cold."[70]

Major Chase on February 4, 1852, wrote Chief Engineer Totten that he had "some business" to transact with the Secretaries of the Interior and Treasury "relating to my private affairs." This would require him to be absent from his station for about 30 days. He asked for leave, with permission to take advantage of it whenever it was convenient for him to travel to "Washington within the months of February or March."

Secretary of War Conrad approved Chase's request on February 12.[71]

It was May before Chase got around to taking his leave. While in Washington on June 21, Chase asked for and was granted a 7-day extension of his furlough which was to expire on the 24th.[72]

If there were an appropriation for the Pensacola forts by the 32d Congress, Major Chase inquired into the possibility of the Department assigning Lt. James C. Duane as assistant to replace Lieutenant Whiting.[73] Chief Engineer Totten was agreeable, provided Congress enacted a Fortifications Bill. Congress failed to act. With no construction funds available, there was no need to order Lieutenant Duane to Pensacola.[74]

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70. Chase to Totten, Feb. 26, 1851, NA, RG 77, Ltrs. Recd., Chief Engineer.

71. Chase to Totten, Feb. 4, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

72. Chase to Totten, June 21, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

73. Ibid.

74. Ibid.

Major Chase, while in Washington, learned that Bvt. Col. Robert E. Lee had been appointed Superintendent of the U.S. Military Academy. Lee's reassignment, Chase knew, would leave a vacancy on the Board of Engineers. He accordingly expressed interest in rejoining the Board. General Totten was reminded that Chase had served on the prestigious Board in 1848, but he had been relieved when ordered to California.[75]

Chief Engineer Totten promised to keep Chase's request on file. If Colonel Lee were detached from the Board, Chase would be given consideration as his replacement.[76]

Major Chase returned to Pensacola for a brief stay at the end of June 1852. After submitting his end of the fiscal year reports, Chase traveled north on a 90-day furlough. Master-Mason John Sweeny was left in charge of the public works.[77] On October 1 Chase notified the Department that he had returned to his post from the "north, Boston, Niagara Falls, etc."[78]

4. Chase as a Critic of the System

a. His Memoir on Reorganization of the Board of Engineers

Major Chase, to demonstrate his administrative interests, prepared and submitted two memoirs reflecting on the organization and duties of the Engineer Department. On June 22, 1852,

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75. Ibid.

76. Totten to Chase, June 21, 1852, NA, RG 77, Ltrs. Sent, Chief Engineer.

77. Chase to Totten, July 20, 1852, NA, RG 77, Ltrs. Recd. Chief Engineer.

78. Chase to Totten, Oct. 1, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

he drafted a memoir criticizing procedures followed by the Board of Engineers. According to regulations the Board was to "make examinations and plans, subject to the revision of the Chief Engineer and the sanction of the Secretary of War." But in practice this was frequently not adhered to. Many Third System forts had been planned by the Chief Engineer and "by individual officers of the Corps . . . authorized by him." Several of these works had been completed, while others were in various stages of construction. In addition, "extensive improvements and modifications of existing works," involving large expenditures, had been executed by General Totten, "without calling for plans of the same from the Board of Engineers."

He did not propose to examine the background for this development, but he would suggest a

> remedy by which it may not again happen that plans of important works and their modifications shall be made under the "direction of the Chief Engineer," owing to the difficulty of drawing the widely dispersed members of the Board from their individual trusts.

Chase suggested that in the future all officers of the Corps of field rank be relieved of construction duties, after 10 years' service as project superintendents. These officers were to constitute a "Committee of Fortifications" of which the Chief Engineer would be ex officio president.

The committee would "examine, revise, and determine all plans submitted to it for the national defense; the System for the same, and the sites embraced therein having been determined upon by a commission appointed by the Secretary of War under the authority of Congress."

Whenever it was determined to fortify a new site on the coast, an officer of the Corps of Engineers would be assigned the duty of "devising the necessary plans, details, etc," and adapting them to the site, formulating necessary estimates, and the explanatory Memoir.

The subject documents would be reviewed by the Committee of Fortifications. The author would then be called on to defend his proposal. The project would then be submitted to the Secretary for his approval. If approved, the Secretary would call upon Congress for an appropriation.

Organization of a Committee on Fortifications would result in the disbandment of the Board of Engineers. The Committee would also act as counselors to the Chief Engineer in administration of the United States Military Academy.[79]

General Totten saw Chase's proposal as a reflection on his administration and an attempt to limit his authority. It was therefore filed without comment, and may have eliminated its author from consideration for appointment to the Board as Colonel Lee's replacement.

b. His Memoir on Transfer of Certain Responsibilities of the Topographical Engineers to the Corps

Like many senior Engineer officers, Major Chase had been dismayed by Secretary of War Joel Poinsett's August 1838 order relieving the Corps of responsibility for all work relating to internal improvement, and placing them in charge of the Topographical Engineers. The latter had been organized in accordance with a recent act of Congress. Internal improvement projects involved were divided into 5 categories: (a) improvement of existing harbors by construction of piers, breakwaters, jetties, etc., and establishment of artificial harbors; (b) improvements to navigation as inland waterways; (c) survey and construction of military roads; (d) building of lighthouses; and (e) surveys associated with the aforementioned activities.

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79. Chase to Totten, June 22, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

As the Corps of Engineers' duties pertained principally to construction and maintenance of fortifications and military buildings, Chase argued that categories a, b, and d of the duties assigned to the Topographical Engineers were "fully within the province of the Corps of Engineers." Changes made by Secretary Poinsett had, in his opinion,

> imposed an inequality of duties upon the respective Corps, the Topographical Engineers being charged with so many, as to render an increase of the Corps necessary, and, in default of the same, to make it imperative to employ persons from Civil life to assist in performing the duties.

The Corps of Engineers simultaneously had been relieved of more than one-half its projects, which it had heretofore successfully performed.

With reduced military construction, Chase believed time was favorable for transfer of responsibility for certain categories of internal improvement projects from the Topographical Engineers to the Corps.[80] Once again, the Department ignored a Chase suggestion.

5. Mobile Bay Interlude

With no construction funds for the Pensacola fortifications, the Department in the spring of 1853 ordered Major Chase to Mobile Bay. There he would oversee the contract for building a dredge and a number of dumping scows, and improving the ship channel into the harbor.

Major Chase was disappointed with this assignment. On April 23, in announcing his departure for Mobile, he wrote General Totten: I am "contenting myself for the present with the single remark that in this instance, I have been assigned to duties which, in their

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80. Chase to Totten, July 22, 1852, NA, RG 77, Ltrs. Recd., Chief Engineer.

nature and importance, are not consistent with my rank . . . nor my past service."[81]

Chase, in the summer of 1853 to escape this irksome duty, secured a furlough to expire on September 1. To benefit his wife's health, they traveled to Sharon Springs, New York. From there on August 11, he wrote the Department. As the waters were very beneficial, and Mrs. Chase's condition was improving, he asked that his leave be extended to October 1. This would enable them to remain at the spa until the first of September.

So far as he knew, his duties on the Gulf for September would be limited to a trial of the dredging machinery and dumping scows, scheduled for delivery. After these had been received, A.C. James, the contractor, would turn his men to deepening the channel into Mobile harbor.

Arrangements had been made with Captain Leadbetter to perform his Mobile Bay duties, provided his leave was extended.[82]

Secretary of War Jefferson Davis approved Chase's request.

A yellow fever scare on the Gulf Coast, in the late summer, prevented the contractor from completing the dredging machine and scows as scheduled. Consequently, Major Chase wrote General Totten that there was no necessity for his immediate return to his duty station. He had been advised by friends in New Orleans and Pensacola to

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81. Chase to Totten, April 23, 1853, NA, RG 77, Ltrs. Recd., Chief Engineer.

82. Chase to Totten, Aug. 11, 1853, NA, RG 77, Ltrs. Recd., Chief Engineer. Captain Leadbetter was serving as superintendent of construction for the Mobile Bay forts.

remain in the north for the present. Chase therefore on September 26 asked for another one-month extension of his furlough to November 1, "on the condition that, if the public interest requires, I would be in readiness at any time to proceed to the Gulf."[83]

Chase's request for additional leave was endorsed by General Totten and approved by the Secretary of War.

Major Chase and his wife returned to Chasefield on November 12, after an absence of more than 4 months. Reporting for duty, Chase notified his superiors, "I have presumed upon the indulgence of the Department by procrastinating my return to eleven days over the expiration of my furlough." But before doing so, he assured Chief Engineer Totten, he had satisfied himself that "nothing of an official character could claim my attention" on the Gulf Frontier before November 11.[84]

On February 13, 1854, Major Chase was taken sick by a severe attack of pleuro-pneumonia. He was unable to leave his room until the end of the month. Chase on March 5 informed the Department of his sickness, and reported it would be at least another month before he could return to duty. Captain Leadbetter being absent, Major Beauregard, at his request, had traveled from New Orleans to Mobile to inspect A.C. Jones' dredging machine, which failed to pass the test.

As Chase was experiencing difficulty recouperating his strength, his doctor had recommended a change of air and a return to Pensacola as beneficial. Chase accordingly asked to be relieved "from the charge of the improvements of Mobile Harbor." Captain Leadbetter, who expected to return to the city by March 10, had expressed a willingness

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83. Chase to Totten, Sept. 26, 1853, NA, RG 77, Ltrs. Recd., Chief Engineer.

84. Chase to Totten, Nov. 12, 1853, NA, RG 77, Ltrs. Recd., Chief Engineer.

to assume responsibility for the project. While at Pensacola, Chase could attend to "some light duties that demand attention about Forts Barrancas & McRee."[85]

General Totten endorsed and Secretary of War Davis approved Chase's request. He was directed to turn over the Mobile Bay project to Captain Leadbetter and remain at Pensacola.

6. Major Chase Travels for His Health

Hoping to secure some relief and to speed his convalescence, Major Chase on May 10 signed for 7 days' leave and left for Blandon Springs, Alabama. He had been advised that these celebrated waters might benefit his health. Writing the Department of this action, Chase asked that his leave be extended to 30 days. Mail service between Pensacola and the Springs was a day and one-half, so if necessary, he could return to his duty station on brief notice.[86]

Chase, when he left Blandon Springs on June 5, felt that his health was again normal. Traveling by way of Mobile, he reached Pensacola on the 10th.[87]

News that Congress for the first time since 1850 was likely to enact a Fortifications Bill was welcomed by Major Chase. As it would be a number of months before such an appropriation became available, Chase wanted to spend the interval in the north. To justify a request for another 30 days' leave, Chase explained that he needed a radical change of air to "improve my health which languished somewhat under the intense and continued heat of the present summer." He promised to hold

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85. Chase to Totten, March 5, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

86. Chase to Totten, May 10, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer. Secretary of War Davis approved Chase's request on May 22.

87. Chase to Totten, June 6, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

himself ready to return to Pensacola on a moment's notice, if his presence were needed.[88]

He also had some private business to attend to in New York City, relative to construction of a railroad from Pensacola to Montgomery, Alabama.[89]

Chase delayed his departure from Chasefield for a number of weeks. He was there on August 1, when he learned that he had been granted an extension to his leave. Satisfied that Congress would enact a Fortifications Bill, Chase wrote the Department that he would not avail himself of his furlough, but for the urgency of his railroad interests.

Before a construction program could be resumed on the Pensacola forts, the wharves needed to be rehabilitated or rebuilt. Five to 6 weeks would be required to attend to these projects. Arrangements had been made to accomplish them during his absence, should operations be resumed. Stone for jetties and lime and concrete for masonry, in any event, could not be obtained from the New York Agency in less than 30 days.[90]

7. Major Chase is Forcibly Transferred

Major Chase left Pensacola in early August. He was in New York City on the 28th, when he was handed a bombshell in the form of orders signed by Chief Engineer Totten. Forty-eight hours before, Totten had written Chase that on or before November 1 he was to take charge of construction of Fort Taylor at Key West from Lt. Horatio G.

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88. Chase to Totten, June 28, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

89. Ibid.

90. Chase to Totten, Aug. 1, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

Wright, who had assumed supervision following the death of Captain Scarett. As soon as it could be accomplished, he would be relieved of responsibility for the Pensacola forts and surveys of the Flint and Chattahoochie Rivers by Capt. Gustavus W. Smith.

He would probably be leaving Pensacola before his successor arrived. He would leave the works "in care of some person . . . qualified for this purpose; so that Capt. Smith may be able to receive them with all the plans and other papers, property and funds belonging to them, without it being necessary . . . to leave Key West to make the transfer."[91]

Chase acknowledged receipt of the orders and caught a train to Washington for the purpose of rallying support of influential friends to fight the transfer. From Washington's Willard Hotel, Chase on September 1 notified the Department that his leave would expire on the 6th, giving him hardly enough time to return to his station. But as he hoped to remain in the city a few more days, he asked for a 7-day extension.[92]

On September 1, the day before he was notified that his furlough had been extended, Chase met with General Totten. He asked to be relieved from the orders assigning him "to the charge of the construction of Fort Taylor . . ., and to be permitted either to remain at . . . [his] present station . . . or to remove to a northern station to which . . . [his] long service in a Southern climate entitled" him. Totten vetoed his request.

Next day Chase formally protested Totten's decision, because: (a) he was entitled by reason of "continuous service of

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91. Totten to Chase, Aug. 26, 1854, NA, RG 77, Ltrs. Sent, Chief Engineer. Captain Scarett had died at Key West on June 22, 1854.

92. Chase to Totten, Aug. 28 & Sept. 1, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

upwards of 35 years on the coast of Louisiana, Mississippi, Alabama, & Florida . . ., not to be sent farther south to the insulated station at Key West, but to be transferred to a station at the north of the importance and responsibility corresponding to my rank." (b) His claim to be exempt from operation of Totten's order of August 26 was as good as that of Lt. Col. Sylvanus Thayer, Maj. Richard Delafield, Capt. George W. Cullum, Maj. John Sanders, and Maj. P.G.T. Beauregard. The enumerated officers had been continued on their respective stations, though none of them had been thereon more than four years.

He was agreeable to waiving, for the present, his claim to a northern station, provided he was allowed to remain at Pensacola.

Chase asked that his written protest be laid before Secretary of War Davis, with whom he wished a personal interview.[93]

Totten on the 4th forwarded Chase's protest to the Secretary of War, without comment.

On September 7, 1854, General Totten discussed the Chase situation with Secretary of War Davis. If notes were made of this conversation, they were not filed with the communications received by the Secretary of War for this period.

Totten left Washington on the 9th thus preventing the Secretary from having a personal discussion with him, respecting the "matter at issue" between the Chief Engineer and Major Chase.

Chase, his furlough due to expire and unable to learn how long Totten would be absent, started for Florida. On doing so, he wrote Totten that Secretary of War Davis had refused to overrule his Chief

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93. Chase to Totten, Sept. 2, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

Engineer, and that he was prepared to turn over his command to his successor. After reaching Key West, he promised to "take such farther action in the matter as shall be due alike to my rights, and to the public interest committed to my charge."[94]

General Totten, on his return to the capital city, forwarded to Major Chase a copy of his September 7 letter to Secretary of War Davis, along with the Secretary's decision endorsed thereon.[95]

This communication found Chase at Pensacola. As his orders were to be at Key West by November 1, Chase explained his actions: After closing out his "accounts, etc, & putting everything relating to the works in this harbor in a condition to be easily received by his successor," he had been ready to start for Key West on the 1st. He had proceeded to New Orleans to take passage on the steamship, Philadelphia for La Habana, from where he could sail without delay to Key West in the steamer Isabella. Arriving in New Orleans, he learned that Isabella had broken her shaft, and service from Cuba to Key West had been disrupted.

He then read that the steamer Pampero would be casting off from Pensacola for Key West on November 7,[96] whereupon he returned to Pensacola, and booked passage on Pampero. She reached Key West on the 16th.

Writing General Totten on the 17th, Major Chase announced that Lieutenant Wright was momentarily expected from Dry Tortugas. On

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94. Chase to Totten, Sept. 9, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

95. Totten to Chase, Oct. 30, 1854, NA, RG 77, Ltrs. Sent, Chief Engineer.

96. Chase to Totten, Nov. 8, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

Wright's arrival, he would relieve him of responsibility for construction of Fort Taylor.[97]

8. Captain Smith Fails to Report

Capt. Gustavus W. Smith, Chase's designated successor, was notified in late August 1854 that, upon being relieved of his duties at the United States Military Academy by Maj. John G. Barnard, he was to proceed to Pensacola and take charge of the Engineer operations in that harbor.[98]

Smith did not go to Pensacola. On December 18, 1854, he resigned his commission to be employed as construction superintendent for enlargement of the U.S. Treasury building in Washington.[99]

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97. Chase to Totten, Nov. 19, 1854, NA, RG 77, Ltrs. Recd., Chief Engineer.

98. Totten to Smith, Aug. 26, 1854, NA, RG 77, Ltrs. Sent, Chief Engineer.

99. Cullum, Biographical Register, Vol. II, P. 45.

XI. STRENGTHENING THE BARBETTE TIER OF THE CHANNEL FRONTS: 1855-60

A. Lieutenant Newton Takes Over as Project Engineer

Captain Smith's resignation compelled General Totten to select another one of his officers as Major Chase's replacement at Pensacola. His choice was Lt. John Newton. Since 1852 Newton had been assigned to the Atlantic Coast of Florida, Georgia, and South Carolina, supervising improvements to navigation on the St. Johns River, repair of the St. Augustine seawall, repair of Forts Pulaksi and Jackson, and trial and inspection of a dredgeboat for Sullivan's Island, South Carolina.

Born in Virginia in 1822, Newton was graduated from the United States Military Academy on July 1, 1842, as No. 2 in a class, which included such illustrious names as W.S. Rosecrans, G.W. Smith, Mansfield Lovell, A.P. Stewart, John Pope, Seth Williams, Abner Doubleday, D.H. Hill, George Sykes, R.H. Anderson, Lafayette McLaws, Earl Van Dorn, and James Longstreet. Commissioned a 2d lieutenant in the Corps of Engineers, Newton remained at the academy as assistant to the Board of Engineers and Assistant Professor of Engineering until July 1, 1846, when he was ordered to Fort Warren, Massachusetts, as assistant engineer. From 1846 to 1849, he was assistant engineer at Fort Trumbull, Connecticut. The next three years were spent as superintending engineer for Forts Wayne, Porter, Niagara, and Ontario.[1]

Lieutenant Newton acknowledged on December 27, 1855, receipt of his orders. He promised to start from Charleston for Pensacola as soon as relieved of his duties. It was late January before he closed out his accounts and turned over his books to Captain George W. Cullum. On the last day of the month, Newton reached Pensacola.[2]

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1. Cullum, Biographical Register, Vol. II, pp. 38-9; Ezra J. Warner, Generals in Blue: Lives of the Union Commanders (Baton Rouge, 1964), pp. 344-45.

2. Newton to Totten, Dec. 27, 1854, and Feb. 1, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

B. Newton's First Year at Pensacola, 1855

1. Davis Board Calls for Heavier Armament

A board representing the Engineer and Ordnance Departments had been organized by Secretary of War Davis to make a study of the armament of the nation's forts as established by the 1839 Board. Technological advances afloat and ashore called for change. European naval powers were arming their ships with heavier guns. Her Majesty's ships had had their 18- and 24-pounders replaced by 42- and 68-pounders. More and more warships were now powered by steam, and in an attack on seacoast forts would be able to maneuver much more effectively than vessels under sail. Many of the ships now coming off the ways were driven by screw propellers rather than the more exposed sidewheels. Heavier guns, 8- and 10-inch columbiads, were being cast and proved themselves in tests. Some of these guns had been sent to and mounted in the coastal fortifications, replacing lighter weight guns prescribed by the 1839 Board. Explosive shells were becoming more popular and were being substituted, more and more, for solid shot.

At Fort Pickens, the 1839 Board had called for 63 42-pounders, 17 32-pounders, 49 24-pounders, 5 18-pounders, 13 12-pounders. 6 field guns, 26 24-pounder flanking howitzers, 13 8-inch seacoast howitzers, 1 13-inch mortar, 4 10-inch seacoast mortars, 9 10-inch siege mortars, 4 8-inch mortars, 2 16-inch stone mortars, and 5 coehorns. There were at the fort, at the time of Lieutenant Newton's arrival, the following armament: mounted in the casemates 45 32-pounders, 10 8-inch columbiads, 6 24-pounders, and 26 24-pounder flanking howitzers; mounted en barbette 10 32-pounders, 46 24-pounders, 6 18-pounders, 14 12-pounders, 12 8-inch seacoast howitzers, and 4 10-inch mortars; and dismounted 7 32-pounders, 2 24-pounders, and 1 8-inch seacoast howitzer.[3]

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3. Newton to Totten, March 6, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer; "Report of the Secretary of War of Dec. 8, 1851, on the Subject of Fortifications, in Answer to a Resolution of the House of Representatives of March 3, 1851, found in House Executive Document No. 5, 32d Congress, 1st Session. Twelve 8-inch columbaids had been landed at Pickens, but two had been transferred to Fort McRee for test firing. All the casemate guns on the Channel Fronts were either 32-pounders or 8-inch columbiads. There were a few 24-pounders pointing toward the Barrancas.

The Davis Board submitted its report, which made substantial changes in the armament of the country's seacoast defenses, early in 1855. Chief Engineer Totten notified Lieutenant Newton on April 4 of the modifications applicable at Fort Pickens. Its future armament would consist of:

South Front Curtain . . .	seven 42-pounder casemate guns
South Front Flanks	six 24-pounder casemate guns
Channel Fronts, Faces and Curtains	fifty 42-pounder casemate guns
Southwest and Northwest Flanks .	eight 24-pounder flanking howitzers
North Front Curtain. . . .	six 42-pounder casemate guns
North Front Left Face . . .	one 42-pounder casemate gun
North Front Flanks	six 24-pounder flanking howitzers
East Front Flanks	six 24-pounder flanking howitzers
South Front Faces, Left Flank of Curtain .	thirteen 8-inch columbiads en barbette
South Front Right Flank . . .	four 12-pounder guns en barbette
Southwest Channel Front . . .	twenty-three 8-inch columbiads en barbette
Southwest Channel Front Salients .	two 10-inch columbiads en barbette
Northwest Channel Front . . .	twenty-four 8-inch seacoast howitzers en barbette
North Front, Right Face and Flank, and Curtain	eleven 32-pounder guns en barbette
North Front, Left Face and Flank .	six 8-inch columbiads en barbette
East Front, Salients	two 10-inch columbiads en barbette
East Front, Faces	six 24-pounder guns en barbette
East Front, Curtain	thirteen 24-pounder guns en barbette
East Front, Flanks	six 12-pounder guns en barbette
Siege Battery	(two 8-inch seacoast howitzers ((four 10-inch siege mortars ((two 8-inch siege mortars ((two stone mortars ((five coehorn mortars
Field Battery	four 6-pounder guns two 12-pounder howitzers

Guns firing solid shot, Newton was informed, had been introduced by the Davis Board, because the Ordnance Department had argued, successfully, that columbiads were not adapted to hot shot. Columbiads, mounted en barbette, would require a different traversing platform from those currently in use. Its form, materials, etc., however, had not been determined by the Ordnance Department.[4]

As the heavier armament to be mounted on the barbette tier required new platforms and pintles, it would be months before the fort was readied to receive it.

2. Steps are Taken to Place Fort Pickens in a Defensible Condition

a. Manifest Destiny in the Gulf and Caribbean Cause the Military to Look South

In the 1850s many Americans believed that it was the nation's "manifest destiny" to absorb large areas of its neighbors to the north and south, or as some extremists insisted all the land in the Western Hemisphere. The settlement of the Oregon boundary question, the victory in the Mexican War, the discovery of gold at Sutter's Mill in California, had started a rush into the new lands and whetted the greed for more. Most of the subscribers to manifest destiny belonged to the Democratic Party, for the Whigs, especially those in New England, were generally the conservative property holders who wanted no drastic change in the status quo. The majority of the adventurers, or filibusters as they were called, who sought to put their belief in manifest destiny into direct action were proslavery Southerners. Encouraged by their success in Texas, they wanted more land to the south for their "peculiar institution."

During the Whig administration of Zachary Taylor, efforts were made to prevent filbustering expeditions. Because of local

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4. Totten to Newton, April 4, 1855, NA, RG 77, Ltrs. Sent, Chief Engineer.

public sentiment, however, the administration's desires were frequently frustrated. Under the Franklin Pierce Presidency (1853-1857), there were few, if any, restrictions on the outfitting of filibustering expeditions in the United States. The spirit of the decade was one of adventure and romance, an enthusiastic nationalism and conviction of the United States' imperial mission, and an unshakable belief in the nation's superiority to the world.

Such an attitude was certain to lead to international tension and possibly war. The Ostend Manifesto of October 1854, authored by the U.S. Minister to Spain, Pierre Soulé, trumpted that the United States should buy Cuba at once and that by this sale "the interests of Spain would be greatly and essentially promoted" because the purchase money could put that near-bankrupt country on its financial feet. The manifesto went on to say that "if Spain, dead to the voice of her own interests, and activated by stubborn pride and a false sense of honor, should refuse to sell Cuba to the United States . . . then, by every law, human, and divine, we should be justified in wresting it from Spain if we posses the power."[5]

The United States repudiated the Ostend Manifesto, the Spanish Cortes voted against even considering the sale of Cuba, and Soulé resigned as minister to Madrid. Chief Engineer Totten, cognizant of the implications of the Ostend Manifesto, had alerted his superintending engineers to be ready for war with Spain.

Although repudiation of the Manifesto had salved the difficulties with Spain, there was trouble with Great Britain over Central America. The Clayton-Bulwer Treaty of 1850 had provided that neither the United States nor Great Britain would ever "occupy, or fortify, or colonize, or assume or exercise any dominion over Nicaragua, Costa Rica,

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5. Edward S. Wallace, Destiny and Glory (New York, 1957), pp. 29-30, 136-37.

the Mosquito Coast or any part of Central America." But there was disagreement over whether this meant the British were to pull out of their pre-treaty holdings in the area--the Bay Islands, Greytown, and the Mosquito Coast. Commo. William Vanderbilt had moved into Nicaragua with his Accessory Transit Company and had established and exploited a trans-isthmus route. The Pierce administration, pehaps privy to the filibustering expedition William Walker was outfitting in California to take over strife-torn Nicaragua, sent Chief Engineer Totten to inspect the Gulf Coast forts. Realizing that Walker's action could lead to war with Great Britain, Totten was to see that the forts were readied for defense.[6]

b. Totten's April 16, 1855, Inspection

General Totten spent the third week of April 1855 in and around Pensacola. It was his first visit to the area since 1848. On April 16, accompanied by Lieutenant Newton, he inspected Fort Pickens. Totten observed:

> (1) On the scarp a number of cracks, a few rather larger, and wider than on his last visit. He saw that the scarp in front of the casemates, particularly those of the northwest and southwest curtains, had moved outward from the arches since the joint was last pointed. Although the distance was not great, the motion had not been arrested. When new traverse circles and centres for the barbette columbiads were put down, action must be taken to prevent a farther bulging by the scarp.
>
> (2) Bad leaks were observed in the scarp of the right face, south front. These seemed to extend down into the loopholes from the brick-paved exterior slope. Nevertheless, Totten expressed the opinion that the best exterior slope we can make over casemates in sandy sail is "a good pavement of bricks."

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6. Ibid., pp. 157-59; The American Heritage Pictorial History of the United States, 2 vols. (New York, 1968) Vol. 1, p. 350.

(3) If there were any leakage in the casemates of the curtain and flanks of the East Front, the grassed surfaces of the exterior slopes were to be paved.

(4) The superior slopes of the earthen parapets were to be kept in grass, while existing paved superior slopes were to remain as they were. If it could be avoided, no part of the superior slope on the East Front was to be paved.

(5) The paved superior slopes of the Channel Fronts, to protect them in time of peace, were to be surfaced under the muzzles of the guns with boards nailed to battens. Otherwise, the blast from the guns would destroy the pavement.

(6) The terreplein of the Channel Front guns would be broken up in a number of places in introducing the new columbiad centres and circles. While awaiting an appropriation to underwrite this project, the terrepleins were to be repaired by cleaning out all joints in the pavement next to the vertical surfaces (the breast-height and banquette walls, platforms, stone traverse circles, etc.) to the full depth of the bricks. The joints then to be nearly filled with "very soft mastic." If there were found to be a bed of mortar beneath, to prevent the mastic from being absorbed, pure tar would be used. The filling was not "to rise quite to the surface." Sand fill would then be added.

(7) If the paved terreplein were not divided into "separate positions," it was to be by cleaning out and the joints refilled. All continuous joints, such as at the junction of the planes of the slope and at the back of the coping, were to be treated in the same fashion.

(8) A thin wall of brick, laid in blocks, should be substituted for shingles or clapboards on the interior face of the parapet above the breast-height wall.

(9) To retain the mastic between the coping blocks of the masonry parapets, red cedar pins should be inserted to a depth of several inches to serve as dams.

(10) A "blocking course" atop the parade wall near the north cistern would be removed.

(11) Inside the casemates every pintle must be removed and the distance that its lower end enters the solid masonry, below the tongue-hole, measured. The pintle should enter into, and bear against, at least six inches of "reliable masonry, otherwise the hole must be drilled deeper." If there were any doubt of the firmness of that bearing, it was to go three or four inches deeper, as the pintle was long enough.

(12) Missing traverse and barbette circle irons must be replaced and loose ones tightened. All would be lacquered.

(13) Bricks broken loose from the arches were to be replaced immediately by a "first rate brick layer." Lieutenant Newton was to carefully replace all broken or cracked brick, "in a way to restore strength, and not to be seen as a patch."

(14) Near the Northwest Bastion magazine, a partition wall had been undermined. This was to be repaired. On doing so, the masons were "to include the pointing up . . . of all cracks in casemate magazines, etc., including the joint at the junction of piers and arches with the scarp."

(15) Cracks on the outside, of any magnitude, were to be pointed, "if only that we may see whether the motion goes on."

(16) All pointing was to be done by competent masons, "in the best manner, and at the same time in a style not to draw the eye by contrast with the adjoining work."

(17) All serious cracks in the paving of the casemates were to be repaired.

(18) The three magazines were to be examined to see that the doors and shutters opened and shut without binding; the locks, hinges, and fastenings were true; the keys turned easily and bolts shot without friction; the wire gauze was in order; and the shutters and outer doors were kept open.

(19) The cisterns were to be checked for leaks, as the ordnance-seargent reported the water would not rise above a certain level.

(20) Grass in the ditch was to be cut close to enable Lieutenant Newton to "see the condition of the surface, as well as that of the little cunette running along its middle."

(21) The casemates outfitted as officers' quarters in the North and South Fronts were to be inspected to see if there was any dry rot in the "wash boards," and flooring. Doors, windows, and fittings were to "be put in perfect order as soon as we can get money enough."
(22) The hangings and fastenings of the gates and postern were to be placed in good working order. When they were, they must move easily without rubbing, be easily, securely, and quickly locked. When open or shut, they would be supported at the lower corner, so the weight shall bear on the hooks and hinges only when they were being opened or closed.
(23) After being closely mowed, the terreplein and banquettes of the land fronts, including the bastions, were to be measured and leveled to insure that every part accorded with the plan.
(24) All grassed surfaces and slopes, having been poorly maintained by Major Chase, probably needed repairs. They must in the future be "closely shaved," well weeded, and closely cut. The wire grass was admirable in the sand, and now as it was well established, it could be made to extend to every portion designed to be covered with "a close sward."
(25) The covered way would be mowed and examined, and the counterscarp put in order.
(26) Cracks of any magnitude in the masonry beyond the ditch were to be pointed.
(27) Shot furnaces were to be thoroughly cleaned, doors fitted, iron lacquered, and a few shavings burned in each to see if the draught was clear. Lieutenant Newton was cautioned not to raise any fires in the furnaces or the masonry would crack. For practice, the artillerists were to be provided with small movable iron furnaces.
(28) The wharf would have to be repaired. But the work must be limited to that actually necessary to land materials to be used in the current construction program.
(29) The conduits for water off the casemate roofs, standing against the parade walls, were to be cleared of obstructions.[7]

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7. Totten to Newton, June 21, 1855, NA, RG 77, Ltrs. Sent, Chief Engineer.

c. Totten Sets Priorities

In establishing priorities for the necessary work, Lieutenant Newton was to first repair the iron traverse circles, put the shot furnaces, gates, postern, and magazines in order; make "indispensible repairs" to floors of gun casemates and passages connected with them; and repair and replace defective bricks and repoint casemate arches. Items of next priority were: repair of wharf and of the pavement of upper terreplein; stoppage of the more serious leaks; mowing of grass and resodding; and repointing cracks in the exterior scarp.[8]

3. Newton Moves to Meet the Emergency

a. Positioning New Traverse Irons in the Casemates Tier

Lieutenant Newton, employing funds allotted by the Chief Engineer for contingencies, moved promptly to ready the fort for defense. Workmen were turned to in late April countersinking pintle-holes in the casemates bearing on the channel. Care was taken to insure that the pintles were allowed a penetration of 7 inches below the tongue-hole. Traverse circles wherever depressed blow grade level were raised. The eight traverse circles in the Tower Bastion were taken up, foundations repaired, and relaid. The flank and other guns in the remaining bastions, Newton found, were mounted upon traverse circles "resting directly upon sand." The flank guns (24-pounder howitzers) were light, so their traverse circles were leveled and adjusted. This would permit their use in emergency, but in the future their traverse circles should be taken up and properly relaid on foundations.

In clearing out the casemates and dismounting and remounting cannon, the pavements were of necessity "much broken." They were repaired.[9]

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8. Ibid.

9. Newton to Totten, May 17 & July 16, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

The Department in August approved Newton's proposal for solid foundations for the traverse circles in the bastions.[10]

On June 21, 1855, General Totten had asked Lieutenant Newton for an estimate of the cost of the necessary repairs to Fort Pickens. He was to divide the items into two categories: the more and less urgent. These would be funded as money became available from the contingency fund. Estimates would also be prepared and submitted of the cost of projects needed to complete the fort.[11]

Replying, Lieutenant Newton, after describing the emergency projects undertaken to place the fort in a condition to repel attack, reported that the new traverse irons, ordered in early March, had not arrived. To pay for the work undertaken and materials, Newton needed to draw on the contingency fund for $700. This did not include funds needed as payment for the new traverse irons.[12]

The Department responded by making available from the subject account $1,000.[13]

When the traverse iron were finally received from the New York Agency, Lieutenant Newton was disappointed to see that they were undrilled for reception of their fastenings. This work would have to be done on-site, "under the disadvantage as to time and money, of using imperfect drilling apparatus."[14]

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10. Totten to Newton, Aug. 6, 1855, NA, RG 77, Ltrs. Sent, Chief Engineer.

11. Totten to Newton, June 21, 1855, NA, RG 77, Ltrs. Sent, Chief Engineer.

12. Newton To Totten, July 26, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

13. Kurtz to Newton, Aug. 6, 1855, NA, RG 77, Ltrs. Sent, Chief Engineer.

14. Newton to Totten, Sept. 30, 1855, NA, RG 77, Ltrs Recd., Chief Engineer.

In the autumn of 1855 the new traverse irons were drilled and put down. On December 10 Newton called on the Department for another $500 to be remitted to him from the contingency fund "to be applied in the repair of Fort Pickens, in relaying a few traverse irons," repointing, etc. Already a liability of $103.72 had been incurred in this account.[15]

General Totten chided Newton for this action. Hereinafter, he cautioned, "you will not . . . incur any liability of any sort on account of appropriation for contingencies of fortifications beyond such amount as may have been specially assigned therefrom."

In the future, before any obligations were incurred on behalf of Fort Pickens beyond the means already allotted, Newton would prepare and submit for approval estimates of the cost of proposed repairs.[16]

Lieutenant Newton assured the Chief Engineer that the $103.72 for traverse irons was part of the purchase price. He had been careful and would continue to be about expending funds from the contingency account. Consequently, many items noted by General Totten on his April 16 inspection had not been attended to, because Newton did not deem them of "indispensable necessity."

In putting down new casemate traverse irons, his workmen had commenced on the South Front, because these guns would be the first to open fire on a hostile fleet approaching the bar. He had been dismayed to discover that the traverse stones had been laid without foundations by Major Chase. How many might be in this condition, he could not say. Before his men could proceed to another front, it was necessary to mount two 8-inch columbiads at Fort McRee.

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15. Newton to Totten, Dec. 10, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

16. Totten to Newton, Dec. 22, 1855, NA, RG 77, Ltrs. Sent, Chief Engineer.

When he had reported all the heavy casemate guns, with exception of those in the bastions relaid upon foundations, he had been misinformed. He had depended for this information on the master-mason, who had lied.

Newton promised not to lay any more casemate traverse rails until "every foundation" had been personally examined.[17]

b. Tending to the Shot Furnaces

Lieutenant Newton in mid-May 1855 informed the Department that each of the six shot furnaces was divided into three divisions, each division being 8'3" in length. He estimated that each furnace would hold 45 32-pounder shot, or a total of 270 for the six.[18]

By late July Newton's workmen had placed the shot furnaces in first-class condition.[19]

c. Clearing Fields of Fire

During the early summer workers removed the dune which partially masked the fire of the channel front casemates.[20]

d. Repair of Breaks in the Terreplein

Several large breaks in the terreplein pavement, observed and commented on by General Totten, had been repaved and jointed with mastic.[21]

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17. Newton To Totten, Jan. 2, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

18. Newton To Totten, May 11 & 16, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

19. Newton to Totten, July 26, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

20. Newton to Totten, May 17 & July 16, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

21. Ibid.

e. Repair of Wharf is Delayed

Lieutenant Newton had informed General Totten that the wharf was in ruinous condition. As its repair was the responsibility of the Quartermaster Department, he hoped General Totten could get General Jesup and his people to take action.

Another problem was lack of a crane to facilitate lifting heavy guns from the holds of ships and placing them upon the wharf. If the current dispute with Great Britain were to lead to war, an ordnance officer should be rushed to Pensacola to receive such armament as may be landed. Of even greater importance, the Ordnance Department must provide "machinery of all kinds necessary for receiving and transporting artillery."[22]

Tensions with Her Majesty's government having eased, there was now no urgency. There was time for the Engineer and Quartermaster Departments to debate responsibility for repair of the wharf. Each dragged its feet. In late July, Newton wrote the Chief Engineer that, although timber had been stockpiled, the wharf had not been repaired.[23]

4. Additional Maintenance Required to Meet Standards

Lieutenant Newton on September 30 notified the Department that additional maintenance projects, observed by General Totten on his visit, requiring attention included: (a) putting down new traverse rails; (b) pointing large cracks in the scarp and the lines of separation of the heads of casemates from the scarp; (c) taking up and relaying with foundations traverse circles of 7 large casemate guns and of 26 24-pounder flank guns; (d) repair of pavement, which must be relaid

22. Newton to Totten, April 9, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

23. Newton to Totten, July 26, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

after the aforementioned work; (e) repair of cisterns; (f) repair and cleaning water conductors fronting Officers' Quarters; (g) leveling sand hills masking guns of the northwest curtain; (h) repair of wharf; (i) arranging terreplein of barbette tier for new armament; (j) repair of quarters; (k) cleaning ditch; (l) stopping leaks; (m) relieving coping and pavement from expansion; (n) grading embankments; and (o) cultivating grass.[24]

Repair of the wharf might be postponed, Lieutenant Newton observed, unless it was the intention to send the 42-pounder guns assigned to the casemates of the channel fronts or other armament. The general pointing of the masonry could likewise be deferred, as could the "rearrangement of the terreplein from the fact that proper resistance against the recoil of heavy guns has not yet been provided." The Officers' Quarters, though in bad condition, would suffice in an emergency. The quarters were not furred, but they should be.

Troops, even in peacetime, should be posted at the fort, if only to take care of the armament. "A proper refitting of the casemates would contribute much to the comfort of the officers."[25]

C. Newton's Second Year at Pensacola, 1856

1. Repairs and Maintenance

a. Repair and Readjustment of Traverse Irons, Foundations, etc.

In mid-January 1856 Lieutenant Newton, after investigating the fabric, wrote the Department that 20 of the stone casemate traverses for heavy guns had no foundations. To provide

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24. Newton to Totten, Sept. 30, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, 1st & 2d Sessions, 34th Congress (Washington, 1856), Serial 811, Vol. 1, pt., 2, pp. 201-02.

25. Newton to Totten, Sept. 30, 1855, NA, RG 77, Ltrs. Recd., Chief Engineer.

foundations for these emplacements, as well as those of the 26 24-pounder flanking howitzers, would cost $2,440.[26]

The gun positions, lacking foundations, were located: seven in the South Front curtain, three in the left flank of the Southwest Channel Front, three in the right face of the Northwest Channel Front, one in the North Front's left face, and six in the North Front's curtain.[27]

Chief Engineer Totten approved the request for an allotment for foundations under the traverse stones resting on sand. Newton could proceed with the project immediately, with the $2,440 charged against the Department's contingency funds.

In carrying out the project Lieutenant Newton was to "take special care to keep the whole lower battery, and all the galleries and casemates connected with them, or with the magazines . . . in a state of perfect police," permitting nothing to occupy, or to be placed in any casemate or gallery related to the defense. Above all, he was to see that no Engineer supplies or property were stored in these areas.[28]

Workmen in the late winter and spring accordingly took up and relaid with masonry foundations 46 traverse circles on the casemate tier. On the barbette tier, a number of traverse irons were taken up and refastened, after the alignment of the stones had been corrected. Pavements, where fractured, were relaid.[29]

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26. Newton to Totten, Jan. 21, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

27. Ibid.

28. Totten to Newton, Feb. 25, 1856, NA, RG 77, Ltrs. Sent, Chief Engineer.

29. Newton to Totten, March 27 & Oct. 2, 1856; Monthly Reports of Operations at Fort Pickens for Feb.-April 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

b. Repair of Wharf

On February 25 the Department notified Newton that at a future date it planned to "allot" funds for construction of a "permanent wharf." Should any heavy ordnance be received, a temporary derrick with an ordnance gin was to be erected.[30]

Lieutenant Newton, satisfied that the Quartermaster Department would continue to shirk its responsibilities, in April had his workmen rebuild the wharf.[31]

c. Repairs to Conduit, Cistern, Brickwork, Woodwork, etc.

During this period, the artisans and laborers took down, cleaned, and repositioned the iron conduit pipes; the Northwest Bastion cistern was cleaned and repaired; masonry was repointed and repairs to brickwork of counterscarp galleries made; gates, doors, and gateways were renewed or repaired; the cunette in the ditch cleaned; magazine doors, shutters, and ventilators repaired; ironwork repainted; and the earthen slopes mowed.[32]

2. Newton's Estimates for Placing the Fort in a State of Complete Efficiency

To fund these projects, the Department had allotted $4,000 from contingencies. Newton was now called on to submit for approval by the Department projects necessary to mount the heavier armament called for by the Davis Board and to place the fort in a condition for defense.

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30. Totten to Newton, Feb. 25, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

31. Monthly Report of Operations for April 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

32. Newton to Totten, March 27 & Oct. 2, 1856; Monthly Reports of Operations at Fort Pickens for Feb.-April 1856, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, 1st and 2d Sessions, 34th Congress (Washington, 1856), Serial 811, Vol. 1, pt. 2, pp. 201-02.

This would be in addition to the $4,000 made available from the contingency fund. But, the Chief Engineer cautioned, "do not engage yourself to any extent beyond the sum of $4,000 . . . until you have authority to do so in answer to the estimates just called for."[33]

In mid-March Lieutenant Newton notified the Department that to place Fort Pickens in a "State of Complete efficiency," in the shortest possible time, would cost $30,000 and require eight months. Cost of applying mastic to the terrepleins and strengthening the scarp and parade walls, to permit mounting of the new armament, was estimated at $52,587.

The fort could be put in a state of defense, employing the current armament, for $12,000 and take three months. To complete the fort, "in what relates to security against attack," with urgency not being the prime requisite, would take $94,000 and require 18 months.

Sixty thousand dollars would be needed, if the fort were to be armed as proposed by the Davis Board by December 31, 1856. There would be no advantage in placing in his hands a smaller sum.[34]

Lieutenant Newton's efforts to prepare detailed estimates, such as required by the Department in making allotments, were hampered by the discovery that there was only one construction drawing in the Pensacola files. It, being a general plan "showing the principal lines, the arrangement of the barbette tier of guns, without dimensions or references," was of little assistance.[35]

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33. Totten to Newton Feb. 25, 1856, NA, RG 77, Ltrs. Sent, Chief Engineer.

34. Newton to Totten, March 17, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

35. Newton to Totten, April 16, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

Newton was undaunted, however. On April 17, 1856, he wrote the Department that, after completing the essential projects now under way, the repair of the "parapet and terreplein on the right flank and face of S. front, where a copious leak now shows itself," should be undertaken. This leak had arisen from the general unsoundness of the brick facing and not from any separate large crack.

There should be a general renovation of the fort to include asphalting of roofs, taking up and replacing barbette tier terreplein and parapets, putting down new pintles and traverse circles, repair of Officers' Quarters, strengthening scarp and parade walls, pointing, etc. Newton estimated the cost at $76,000.

He also recommended the addition of service and storage magazines, mining galleries of the counterscarp, a mask for the casemate guns of the northwest and southwest channel fronts, and a parapet of increased thickness for the East Front and the right and left flanks of the North and South Fronts.[36]

Newton, having been promoted captain, in early August transmitted to Chief Engineer Totten detailed estimates for: (a) complete rehabilitation of the Officers' Quarters, now "in a state of advanced decay"; (b) positioning of pintles, etc. for the heavy guns to be mounted on the channel and land fronts; (c) taking up and replacing parapet, terreplein, and breast-height walls of entire fort, except the east curtain; (d) applying mastic to all arches; (e) the probable strengthening of parade walls and of certain parts of the scarp-wall by a backing of concrete; (f) repointing and washing the walls inside and out with some paint or wash; and (g) the "enriching and planting with grass" the terreplein and parapets to be taken up.

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36. Newton to Totten, April 17, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

These estimates, Captain Newton continued, did not "make provision for other modifications, which have not yet been discussed with the Department": (a) the addition of new service and storage magazines; (b) the strengthening of the floors of those now in use for storage of powder; (c) for providing for defense of the saliant place of arms by a system of mine galleries; (d) the requisite passages from the counterscarp into the main work; (e) curtains for protection of the casemate guns of the southwest and northwest channel fronts; and (f) the necessity of replacing the brick floors of casemates used for barracks with wood flooring.[37]

The breakdown of Newton's estimates showed:

578 cubic yards of brick masonry	$ 8,212
979 cubic yards of concrete	6,853
Renewing, repointing, and washing of walls	3,550
19,166 cubic yards of embankment and excavation	6,608
7,842 square yards of grading, planting and enriching	2,941
7,717 square yards of asphalt on roofs, 1,779 square yards of asphalt on vertical surfaces	19,076
100,000 shingles for sustaining interior slopes	400
Repair of Officers' Quarters	8,000
Lumber for general service	617
Paints, glass, & putty	400
76 pintle and traverse stones for columbiads	13,800
13 pintle and traverse stones for 24-pdrs on land front	2,275
Plank walls	1,200
One overseer for 2 years	2,400
One sub-overseer for 2 years	1,200
One clerk for 2 years	960
Contingencies	5,000
Total	$83,442[38]

Captain Newton was disappointed to learn in August that Congress had adjourned without making an appropriation for work needed

37. Newton to Totten, Aug. 6, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

38. Ibid.

at Fort Pickens. Writing the Department on August 29, Newton reminded the people there that General Totten on his 1855 visit to Pensacola had complained of the fort's "dilapidated appearance." On submitting his memoir of September 30, 1855, Newton had called for an appropriation of $40,000 "for a beginning of the necessary repairs." Since then he had expended "a small sum from contingencies to repair doors, gates, posterns, etc., in placing casemate and barbette batteries in a serviceable condition, and in sundry other necessary restorations."

To make accurate and detailed estimates, he had requested of the Department copies of the construction drawings. On March 17 he had submitted a gross estimate, and on August 6 he had forwarded his annual detailed estimates, "obtained with all the accuracy possible from the old drawing" in the files.

In repair of Fort Pickens, a guiding consideration must be the probable lapse of time before the new armament of the barbette tier became available. Upon this depended the taking up and replacement of pintles, etc., the strengthening of parade and scarp-walls, asphalting the casemate arches, and removing and replacing the parapet and breast-height walls. He believed that in any event operations must be undertaken for protection of the arch masonry against seepage.[39]

On September 8 the Department informed Captain Newton that the drawings needed to prepare estimates for repair of the fort were in the hands of a draughtsman and would be forwarded at an early date.

It was expected, Capt. Horatio G. Wright wrote, that officers of the Corps, in absence of special instructions, would formulate

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39. Newton to Wright, Aug. 28, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

such projects and estimates as were deemed necessary. Their figures, however, were liable to revision, reductions, or total suppression by the Chief Engineer, in accordance with his nation-wide responsibilities.

In General Totten's absence Wright was unable to give instructions as to how available funds were to be expended. For assistance in this matter, Newton was referred by Wright to Totten's lengthy letter of June 21, 1855.[40]

Before another two weeks had passed, the drawings had been completed. On September 20 Captain Wright mailed eight plans to Newton. They were: (a) Plan of Fort Pickens, (b) Plan and details on large scale of half north, half east front, (c) Plan and details of half North Front, (d) Plan of Tower Bastion, (e) Sketch showing proposed manner of strengthening part of scarp-wall of right Face, South Front, (f) Sketch of Southwest Bastion, (g) Plan and sections showing counterforts and relieving arches for strengthening part of scarp-wall Northwest Basion, and (h) plan of portion of bastion Fronts and 2 sections.[41]

3. Captain Newton Suggests Charges

a. New Defenses Needed to Withstand a Siege

Certain of the proposals advanced by Captain Newton, in his August 6 letter, had been triggered by close study of the fort. In the months since his arrival at Pensacola, he had observed that there were a number of "grave errors in the plan and arrangement" of Fort Pickens. These included: (a) the direction of the North and South Fronts; (b) the consequent contraction of the East Front; and (c) the exposure of the flanks of the Southwest and Northwest Bastions to

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40. Wright to Newton, Sept. 9, 1856, NA, RG 77, Ltrs. Sent, Chief Engineer.

41. Wright to Newton, Sept. 20, 1856, NA, RG 77, Ltrs. Sent, Chief Engineer

breaching batteries on the crest of the glacis. The latter defect made construction of "interior retrenchments nearly impossible," and a breach in the shoulder angle of these bastions would endanger the large magazines, compelling the garrison to surrender.

Finally, there were galleries for mines in the "bastions of attack," where they were no use except by chance, and no defenses of this type along the "salient places of arms," where they were essential.

To alleviate this situation, Newton recommended construction of galleries for mines at the positions enumerated. The only way of prolonging a "siege to a respectable duration," Newton wrote was by the concentrated effect of artillery and mines upon the besiegers established on the crest of the glacis." Despite the garrison's efforts, sand hills would "so cover the earlier operations of the siege, as to mask the enemies progress . . . during that interval."

The casemate guns of the Northwest and Southwest Channel Fronts, he reported, were exposed to curvated and recochet fire, grazing the parapet of the East Front. To cope with this, Newton suggested a "mask of masonry separate from, and distant a few feet from the parade wall."

He found that the parapet of the East Front was 10 feet thick, with an exterior slope of sod, artificially sustained with clay. If reduced to the proper slope, the thickness of the parapet would be 15 feet. The same degree of reduction, Newton found, applied to the other parapets. Such a thickness was insufficient.[42]

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42. Newton to Totten, April 16, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

b. Additional Storage and Service Magazines

To guard against a siege there should be available 100 rounds of ammunition for each gun bearing on the channel, and 400 rounds for each cannon aimed "upon the besiegers' approaches." This required a magazine storage capacity for 313,000 pounds of powder for the proposed armament and 217,000 pounds for the present armament. The three magazines, if filled to capacity with only enough space left to permit the doors to be opened for taking out a barrel, had a capacity of 272,600 pounds of powder. This was a deficit of 40,400 pounds in event the weight of the armament was increased as proposed, or a surplus of 55,600 pounds with the present armament.

Captain Newton proposed to provide the additional storage space by converting the large casemate in the Southwest Bastion into a magazine. To do so, the seepage would have to be isolated and stopped.

Additional space was also required for service magazines, where cartridges were filled and shells prepared. Vetoing use of the casemates contiguous to the cisterns in the Northwest and Southwest Bastions for this purpose, because of dampness, Newton recommended construction of three service magazines at the foot of each stairway leading to the barbette tier.

c. Armament of the East Front

Turning to the proposed armament of the faces and curtains of the land fronts (24-pounders) and the remainder of the barbette tier--32-pounders, 8-inch columbiads, and 8-inch seacoast howitzers--Newton suggested the advantage of having the armament of the land front "consist of a certain proportion of the different caliber of the other fronts." This would permit indiscriminant transfer of guns between the land and channel fronts in event of damage.

d. Rehabilitation of Officers' Quarters and Wood Flooring for Certain Casemates

The garrison needed to defend the fort under siege was 1,128 officers and men. There were quarters for the requisite number of officers, although one-half the space would probably be required for a hospital. The Officers' Quarters were in bad repair. The enlisted men were to be lodged among the guns in the casemates, excepting the southwest and northwest curtains. No mattresses could be allowed in the casemates, so the soldiers would have to bed down in their blankets on brick paving. To improve this situation, Newton proposed substituting a wood floor for brick in certain casemates. Wherever a recess or passageway affording space, bunks would be put up.[43]

Storage for provisions for a 10- to 15-day siege was ample, the recesses behind the flank guns was available for this purpose. In addition, "the 2 wide communications from the parade to the gun casemates" of the north and south curtains, and the casemates along the left face of the South Front could be used for storage. This, in Newton's opinion, was sufficient.[44]

4. Ordnance Department Sends an Officer to Pensacola

a. Test Firings Disclose Unexpected Short Coming

In May 1856 there was artillery practice at Fort Barrancas with the 8-inch seacoast howitzers. On the third round, two of the tongue-holes disengaged from the pintles, and the chassis,

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43. Newton to Totten, April 16 & 17, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer. The casemates proposed for this treatment were in the flanks of the Northeast and Southeast Bastions, in the passageways connecting these flanks, in portions of the casemates of the north and south curtains behind the Officers' Quarters, and the Northwest, Southwest, and Tower Bastions. In event of war, the substitution of wood flooring would be necessary for the troops' health. Newton to Totten, March 17, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

44. Newton to Totten, April 16 & 17, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

carriage, and gun were dismounted, being thrown off the pintles and traverse circles into the sand.

Captain Newton could not account for this unless the barbette pintle "did not engage sufficiently in the tongue-hole" of the howitzer.

What was disturbing was that: (a) under the new armament plan the northwest barbette channel front of Fort Pickens was to be armed with 8-inch seacoast howitzers, and it was important to ascertain the feasibility of attaching these guns to the present pintles; (b) the Ordnance Department should be informed of the condition of the Fort Barrancas ordnance; and (c) the necessity of test firing with five rounds every gun in the Pensacola Harbor defenses. He therefore had requisitioned needed ammunition.

Also disheartening had been the recent test firing of two 8-inch columbiads at Fort McRee. One of them after a few ordinary charges, became unserviceable, and the other "displayed manifest weakness when firing was suspended."

In respect to the serviceable condition of the cannon, Captain Newton believed those of Fort Barrancas were equal and probably superior to those of the other harbor forts. Fort Pickens' were probably in the "worst order."[45]

The Department referred Newton's letter to Chief of Ordnance Henry K. Craig. After reviewing the subject with members of his staff, Colonel Craig informed Newton that the Pensacola gun carriages had been in position from ten to fifteen years. For much of this time the forts had been ungarrisoned, and the armament had accordingly failed to

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45. Newton to Totten, May 31, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

secure the care required to "preserve it in good order and serviceable condition." It was therefore to be expected that certain of the woodwork would be "decayed or warped, and the iron parts rusted, and that the carriages unless thoroughly examined before firing, and their defects repaired would give way in some parts under shock of discharge with service charges of powder and projectiles."

To continue firing the cannon in this manner, without an examination, Craig cautioned, would injure some of the sound parts, which are connected with defective ones, causing greater destruction than may be necessary. Colonel Craig would order one of his officers and a mechanic to Pensacola to inspect the carriages and put them in order. All should then be test fired. There was no doubt that the carriages, when sound, would withstand the effects of firing, because they had been tested with service charges, and even heavier ones, and at all elevations.

Colonel Craig could not account for the two 8-inch seacoast howitzers being dismounted, provided the tongue-props were properly supported.[46]

Captain Newton, after reading Colonel Craig's letter and examining the howitzer emplacements, again informed the Department that he believed "a permanent support for the 8-inch seacoast howitzer tongue-prop was necessary, as the "support derived from embedding it firmly in the sand of the terreplein is not sufficient." Comparing the weight and recoil of a 32-pounder on a barbette carriage with the corresponding elements of the seacoast howitzer, Newton found that the recoil of the latter was greater. In trials at Fort Barrancas, the 32-pounders were stable on their platforms, while of the three howitzers

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46. Craig to Newton, June 20, 1856, NA, RG 156, Ltrs. Sent, Chief of Ordnance.

tested, one broke the rear traversing wheel of the chassis by force of its recoil and the other two were dismounted.[47]

b. Preparations for Mounting Four 10-inch Columbiads Begin

In November 1856 Lt. George Balch of the Ordnance Corps received orders from Colonel Craig to mount at Fort Pickens four 10-inch columbiads. Upon being notified of this, Captain Newton wrote General Totten that, if these huge 17,000-pound guns were to be emplaced, he needed to requisition the necessary traverse circles and pintle-centres and be allotted money to fund the project.[48]

On December 2 General Totten wrote that drawings of 10-inch gun platforms would be mailed as soon as completed by Department draftsmen, and construction funds programmed. Pintles and traverse irons would be requisitioned from the Ordnance Department.[49]

Captain Newton requisitioned as directed, through General Totten, the needed irons for four 10-inch columbiads to be mounted in barbette. Two of the huge cannon were to be emplaced on the East Front and the others on the Northwest and Southwest Bastions. Until he received the drawings, it would be impossible for him to prepare estimates of the cost of laying the pintle and traverse stones. As for the two bastion guns, removal of the terreplein directly under the proposed sites and sealing of the arches with mastic would constitute a "small portion of the complete repair of the roofs of all the arches."

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47. Newton to Totten, Aug. 6, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

48. Newton to Totten, Nov. 24, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

49. Totten to Newton, Dec. 2, 1856, NA, RG 77, Ltrs. Sent, Chief Engineer.

The fields of fire for the 10-inch columbiads was dependent "upon the extent of modification, the Dept. may adopt, in the B.H. walls at the salients."

Newton at this time reminded the Department that it had not provided him with drawings for the platforms of 8-inch columbiads.[50]

The Department on December 18 transmitted Newton's letter requisitioning the pintle and traverse irons to the Ordnance Department.[51]

5. Protecting the Forts and Public Property

The departure of Company F, 2d U.S. Artillery, on November 29, 1856, left at Pensacola, except for staff officers, three ordnance-sergeants and one hospital steward. Each sergeant had a large quantity of public property at the fort for which he was responsible. Captain Newton believed he should be placed in command of the Harbor Defenses, because he could not exercise any control, except in an unofficial capacity.

When he relayed this information to General Totten, Newton pointed out that the 63d Article of War prevented his assumption of command, unless specifically assigned it by the Adjutant General.[52]

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50. Newton to Totten and Newton to Craig, Dec. 10, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

51. Wright to Newton, Dec. 18, 1856, NA, RG 77, Ltrs. Sent, Chief Engineer.

52. Newton to Totten, Dec. 10, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer. Company F moved out of Barrancas Barracks on November 23, going aboard the ship chartered to transport it to Fort Monroe, Va. The vessel cleared Pensacola Bay on the 29th.

On December 21, 1856, Captain Newton suggested to the Department a scheme to afford protection to the public property, pending return of a garrison. Although the greater portion of the property consisted of the armament, the ordnance-sergeants could not afford sufficient protection during the night against theft or vandalism. Large quantities of powder, alone, were stored at Forts Pickens and McRee: There was no night guard at either, because the ordnance-sergeants had no quarters within the respective walls. Newton recommended that quarters be arranged for them in the casemates, thus enabling them to maintain a watch during the night.

Even when the outer gates were closed, entrance into the forts could be effected through the embrasures.

The government, Newton continued, in executing its work had mobilized a large number of slaves, and as construction continued additional laborers would be required. As a service to the neighborhood, night patrols could be instituted on the military reservation. This was the practice in the South wherever large number of slaves were assembled. There were about 300 slaves, divided between work at the navy yard and the forts, who roamed about the reservation at night, unmolested by patrols.

For the time being, Lieutenant Balch and his seven Ordnance Department men, on detail at Pensacola, could "protect in a measure the public property." But for its long term security, Captain Newton advanced two proposals: either General Totten could detail ten men from the Engineer Company for duty at the Pensacola forts, or he could authorize employment of five night watchmen at $50 each per month. The first of these suggestions was advocated by Newton.[53]

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53. Newton to Totten, Dec. 21, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

Lieutenant Balch quickly set Newton straight on one point: his ordnancemen were mechanics and would not be used for guard duty.[54]

Captain Newton in early February acknowledged receipt of a letter from the Adjutant General regarding who was to be commander of the Pensacola Harbor Defenses. Adjutant General Samuel Cooper deemed it inexpedient to "specially designate" Newton for the subject command.[55]

6. Quartermaster Buildings Continue to Deteriorate

On December 20, 1856, Lieutenant Balch informed Quartermaster General Jesup that it had been five years since Fort Pickens had been garrisoned. With exception of the house occupied by Ordnance-Sergeant Gardner, all structures for which the Quartermaster Department was responsible were "fast going to ruin." Unless repairs were soon undertaken and the drift cleared from about the storehouse," it will soon arrive at a state in which repairs would be superfluous.

Quarters No. 2 needed to be attended to immediately to preserve it, as the porches on two sides of the structure were sagging badly. The stairs leading to the second floor had fallen; the sills in the shed had rotted; and the kitchen was half-blown down.

The storehouse, built in 1845, was in good condition, but it required repairs to doors, windows, and the exterior whitewashed. As it rested on brick piers and stood near the beach, it was frequently surrounded by driftwood. Since its construction, much of the sand between its front elevation and the wharf road had washed away, leaving the sills nearly three feet off the ground.

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54. Newton to Totten, Dec. 24, 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

55. Cooper to Newton, Feb. 8, 1857, NA, Ltrs. Sent, Adjutant General, Microcopy M-565.

Lieutenant Balch was expecting a big shipment of ordnance stores. The storehouse was the only dry space available, and he had taken possession, positioning a plank incline for ease of access.

The fences about the buildings had nearly all blown down, and the posts were too rotten to permit rebuilding.

Balch urged General Jesup to allot funds for making necessary repairs, as there would never be a more favorable occasion. There were no troops at Barrancas Barracks, while at Fort Pickens the presence of his master carpenter and a large workforce was a great advantage, especially on the Gulf Frontier, "where half an appropriation must often be spent in preparation to work."[56]

Quartermaster General Jesup poured cold water on Balch's request for maintenance funds. As there were no troops assigned to this post, their repair was the responsibility of the Engineer Department. Moreover, he continued, the Quartermaster Department had no funds to earmark for this work.[57]

7. August 1856 Hurricane

A hurricane struck the area on Friday, August 28. Throughout the day high winds blew out of the southeast, bringing surging tides and booming surf. On Foster's Bank, breakers roared across the strand west of Fort McRee, and raised the level of the lagoon to more than two feet above normal high tide. During the evening, the winds veered to the northeast and moderated. But, on Saturday morning, they increased in fury and continued to hammer the bay area until Sunday morning.

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56. Balch to Jesup, Dec. 20, 1856, NA, RG 92, Consolidated Correspondence File.

57. Jesup to Balch, Jan. 10, 1857, NA, RG 92, Ltrs. Sent, Quartermaster General.

"The force and violence of the waves and the rise of water," Captain Newton observed, "did not appear to depend materially upon the local winds, but were undoubtedly caused by the proximity of the storm, then raging along the Gulf Coast, the violence of which was felt as far north as Norfolk."

When he surveyed the damage, Captain Newton saw that the Fort Pickens wharf had been damaged and the Fort McRee wharf wrecked. The forts, themselves, had received no damage. Newton was delighted to see that the 980 feet of jetties, erected for protection of the site of Fort McRee, had kept the surf from undercutting the foundations.[58]

In September, Newton's workmen repaired the storm-damaged Fort Pickens wharf.[59]

D. Captain Newton's Third Year at Pensacola, 1857

1. Totten's Directions for Reconstruction of the Tower Bastion's Barbette Tier

On January 27, 1857, Chief Engineer Totten mailed to Captain Newton a sketch of the Tower Bastion showing "the positions of the barbette guns, as adapted to the newly assigned armament; and the requisite modifications of its parapets."[60]

Although the sketch depicted three gun platforms on the contiguous curtains, Totten's remarks were restricted to the Bastion.

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58. Monthly Report of Operations at Fort Pickens for Aug. 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

59. Monthly Reports of Operations at Fort Pickens for Sept. 1856, NA, RG 77, Ltrs. Recd., Chief Engineer.

60. A copy of the subject drawing titled, "Sketch of the Central Channel Bastion of Fort Pickens, Showing the Position of its Barbette Guns and Required Modification of the Parapet," is found in files of the Florida Unit, Gulf Islands NS.

a. Removal of Old Materials

Newton's initial operation would involve removal of the gun platforms, taking care not to injure them. Each piece was to be marked to facilitate relaying. Next, the sand would be removed from the outer slopes of the roof and the roof valleys. Totten trusted there would be no need to disturb the sand lying in the valley under the central portion of the terreplein.[61]

b. Raising a New Mass of Masonry

Atop the scarp, on the roof surfaces, which would first be repaired and leaks sealed, would be constructed a mass of masonry to reference 6' below the present crest, and 6'6" below the new crest.

c. Providing for and Protecting the Gutters

Newton would check the gutters, after they had been exposed, to see that "the escape is clear" and that the bottoms were tight. If they were, several courses of hard back would be laid dry, as a support for a quadrantal arch bolstered at the key by the scarp. The subject arch to be not more than half a brick thick. A "good deal of curvature" would be given to this little arch, making the triangular void 18" or 2' on the sides. The portion of the masses (a), whether resting on this arch or not, would be carried up a few courses with quality bricks laid in cement. Above they could be formed of brick, or entirely of concrete to reference 6'6" below the new crest. As much of the capital gutter as had to be uncovered must be protected by an arch resting on two courses of dry brick. But in this arch, while the radial joints or voussoir beds were laid in "good" cement, all end joints of the brick were to be left without mortar, thus allowing water to percolate freely.[62]

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61. Totten to Newton, Jan. 27, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

62. Ibid.

d. Changes to the Parapets

To give full traverse to the 10-inch columbiad to occupy the salient, the parapet was to be "much increased in thickness on both faces. This would be accomplished by building an interior parapet wall along the greater part of the length of each face. This wall, founded on the roof surfaces, was to be carried up for the thickness of 2½ bricks to within 10½ inches of the new crest. The space between this wall and the scarp was to be filled with sand, thoroughly rammed in horizontal layers. The top of the sand mass would be slightly rounded, and a half brick, flat, arch turned thereon to support, in part, the coping blocks designed to crown the parapet.

The thickness of the parapet, between the guns on the flanks, had been increased in thickness by two feet. The recesses, thus formed, were necessary to afford adequate traverse for the cannon. The foundation of these additions would rest on mass (a). At the bottom of the recess, a few bricks would be broken out of the old face to tie the walls together.[63]

e. Combating Seepage

If serious leakages were found, Captain Newton was to lay on the surface of the roof bricks, flatwise end to end, about one inch apart, and extending from the little arch up the slope to the ridge. A second course of bricks was to be positioned to bridge the interstice between the lower rows. The latter course to have no other openings than the infilled joints of the bricks afforded. Upon these brick would be laid a 3-inch stratum of clean broken shells. Atop the shells would be spread a layer of sand as aforementioned.[64]

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63. Ibid.

64. Ibid.

f. Readjustments to the Superior Slope and Exterior Crest

When the bastion crest was raised 6 inches, the superior slope would be reduced to a fall of 6 inches, so that the exterior crest of the parapet would be raised one foot, this strengthening the superior slope.

g. Positioning the Coping

A portion of the present coping would be removed. Before laying the brick of the new coping, Newton was to see that the joints between the old blocks were "well filled" with mastic. Care would be taken to lay out the new blocks, as far as practicable, to break joints with the old.

All bricks in the blocks were to be laid in horizontal courses and in horizontal beds, except the upper course which would be laid on edge. The bricks on edge of the inner and outer crests were to be laid without change of form. At those corners of the coping blocks "exposed to violence," small pieces of cut stone would be substituted. There would be inserted in the bed of each of these, the turned up ends of several pieces of 2"x½" bar iron, the bars being carried 15 or 18 inches under the brickwork of the block, and turned down into the mass below to a depth of 3 inches.

Special attention must be given to positioning the coping blocks: they were to be daubed with asphaltic tar; a double or triple thickness of course bagging, thoroughly saturated with the same material, positioned; and against this bagging, the next block built, pressing the bricks, without any intervening mortar, close against the bagging. To give the coping blocks a better finish, vertical planes were to be cut in the inside facings of the stones positioned at the corners.[65]

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65. Ibid.

h. Columbiad Platforms

Platforms for the 10- and 8-inch columbiads were to be identical, the pintle-block a stone 2'6" long by 2'2" in height. The block was embraced at the top by two stones 5'4" long by 2'2" wide by 12" thick, "lying flatwise against opposite sides of the pintle-block--each being notched out for a depth of 6 inches, to receive the pintle-block." They were to be held tightly thereto by two one-inch, round iron bolts, which passed horizontally "through both these flat stones--being fastened by nuts at the ends." In the void spaces (1'8" x 1') beside the pintle-block, between the two aforementioned stones, would be laid stones of the proper size, and about six inches thick. Upon these four stones, enclosing the pintle-block, would be secured the inner circular iron track, with an exterior diameter of 46.20".

The outer circular iron track, 5" wide and 1" thick, with an exterior diameter of 11'1", would be supported by eight equal stones, united to form an octogon, inscribed within "a square of 11'4" side, each stone having a cross section of 1'4" x 1'4"."

The top of the pintle-plate and of the inner track would be 3'6½" below the new crest; and the top of the outer track 4'1½" below the same crest. All platform stones were to be founded on and embedded in a mass of concrete, the bottom of which would be 6'6" below the new crest. Beyond the stones supporting the outer tract, concrete was to extend to the parapet wall in front and to the rear, so as to form a lower step, to be faced with a "one-brick wall laid carefully of the hardest brick in cement--the upper course on edge." The top of this step to be 5'5½" below the new crest. The top of the concrete of the lower step to be arranged for drainage, with the concrete of the upper step sloped upward.[66]

66. Ibid.

i. 8-inch Seacoast Howitzer Platforms

The platforms of the right-flank of the Tower Bastion, designed for 8-inch seacoast howitzers, were to be laid in the same positions as before. There would be some changes, but none that would prevent use of the present pintle-stones, traverse stones, and irons. The bottom of the mass of concrete was to be at the same level as that of the columbiad platforms. In constructing the mass of the parapet, provision must be made for the lower part of the pintle-stone to have its top 4'8" instead of 4'8½" below the new crest, and the top of the traverse irons to be 5'5" instead of 5'½" below the same crest.[67]

j. Refinements to the 42-pounder Platforms

The Ordnance Department, having determined that the 42-pounder barbette carriages needed an intermediate support between the pintle and traversing track, it would be necessary at positions where this type of piece was mounted to provide for it.

On renewing these platforms, there would be placed, at the limit (toward the terreplein) of the central mass of concrete, three polygonal stones, with a cross section of 1'4½"x1'. The subject stones to be founded on a thin bed of concrete. As they would not be surmounted by an iron track, iron clamps would be introduced across the joints, embedding and covering them with lead or zinc. From the top of these stones, which would be 5'3" below the new crest, the concrete mass was to slope up to the pintle-block. At the right and left limits of the platform, to afford a good raccordement between these stones, the top of the concrete mass and the adjoining banquette, a stone "6 inches thick and one-foot broad" would be laid at right angles to the general direction of the parapet. This stone would be 4'9" below the new crest and the bottom 5'3" below the same.[68]

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67. Ibid.

68. Ibid.

k. Banquettes

A banquette, 2 feet wide, was to extend from platform to platform. It was to be founded partly on sand, 6'6" below the new crest, and be faced on the inside with a wall one-brick thick. The veneer and parapet would be separated by concrete. Both concrete and brickwork would be covered with 3-inch flagging. Between the columbiad platforms, the top of the banquette, next to the parapet, would be 4'6" and at the inner edge 4'8" below the new crest. The distance down from the same crest between the gun and howitzer platforms would be respectively 4'9" and 4'11".[69]

l. Securing the Pintle-Bolts and Traverse Rails

To secure the columbiad's pintle-bolt to the pintle-stone, a hole of the proper depth and about 3/4-inch greater diameter than the bolt, would be drilled in the same. The pintle iron inserted, several strips of wrought iron would be driven tightly in and broken off below the surface of the block. The "main portion of the annular space" to be filled with melted lead.

In circular columbiad platforms, the outer traverse rails were to consist of eight equal arcs and the inner of two. Elliptical countersunk holes would be punched through the rails, for the heads of the small bolts (that being leaded to the stones) would hold them in place.[70]

m. Funding the Project

The Fortifications Bill before Congress contained an item for establishment of new armaments at the forts and a small grant for Fort Pickens. Meanwhile, money for this project would be drawn from the contingency fund. Newton was to indicate on his vouchers those to be

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69. Ibid.

70. Ibid.

charged against these accounts, provided Congress enacted the bill in its present form.[71]

2. Totten Refines Several Instructions for the Tower Bastion Project

a. Tower Bastion Crests

On April 8 General Totten provided his project engineer with additional guidance on the subject. Totten, on further study, had concluded to assume the reference of the "old crest" of the Tower Bastion fronts to be as shown in the tracing forwarded with Newton's March 26 correspondence.[72]

b. Repair or Replacement of Lead Sheeting

Information received from Captain Newton that the casemate roofs were covered with lead was important. Experience, Totten wrote, had demonstrated that lead resting on mortar "is apt to have its under surface converted into a brittle oxyd, of which the outer (upper) surface gives no evidence." Newton would examine the under surface. If badly corroded all lead sheeting was to be removed from the roofs, having to be stripped for other purposes, and replaced with mastic.

If the lead were sound, Newton was to solder and patch any leaks, and recover them with two courses of bricks and a layer of shells at heretofore specified.[73]

3. Newton Suggests Changes in the Mode of Operations

On March 26, 1857, Captain Newton, having completed a tracing on which the "casemates are generally laid down to be considered in connection with a table giving certain horizontal distances of many

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71. Ibid.

72. Totten to Newton, April 8, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

73. Ibid.

points of face of parade walls at each valley and ridge," mailed it to the Department. Enclosed with the drawing was a table giving the horizontal distances between the subject points, taken with reference to a vertical line established 5/8" from the parade wall, measured immediately under the coping.[74] These horizontal distances were 6 inches apart and were measured to the bottom of the pier, or the crown of the arch, as the situation warranted. The table also revealed the lateral displacement of the parade wall coping, taken with a reference to a line on top of the coping, parallel with "its true edge."

The study had shown:

a. Coping of Parade Wall

The subject coping projected over the face of the wall from 2 to 1/4 inches, and beyond the back of the wall in three casemates from 5-5/8 to 0 inches.

All coping of the interior and exterior of the fort was "a single course of brick on edge, and seemed deficient in adequate interval for expansion." These intervals were closed with mortar, and were invisible to the eye.

By reviewing the table, it could be seen that the parade wall had "heeled considerable toward the interior." On the northwest and southwest channel fronts, this might be due in part to the "spread of the communication arches," which had been reinforced by Major Chase in the 1840s. This was exhibited in the cracks across the casemate arches of these fronts, the separation corresponding in general with the key of the subject arch, and running parallel with the parade wall.

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74. Copies of the subject tracing and table are found in the files of the Florida Unit, Gulf Islands NS.

In addition, there was a "decided sinking" of the casemate arches at the points supported by the subject communication arches. This caused Newton to fear that added strength may be required to support the columbiads of the barbette tier. He suggested this might be remedied by reducing the width of the communication and by substituting a full centre for the segmented arch.

Cracks in the casemate arches had been pointed by Major Chase, but they had reopened. This could have resulted from the quality of the mortar or additional settlement.[75]

b. Method of Carrying Off Roof Water

Small orifices (5½" x 2") had been left in the parade wall at the valley level, by which water was conducted to vertical iron pipes on the outside of 2-3/4" interior diameter. The pipes discharged underground. Captain Newton had taken all the conduit down and had seen that it was cleaned. It, however, was still choked at the bottom. To correct this, he suggested that the conduit be made to discharge above ground.

The appertures through the parade wall were too small for some of the pipes, in the positions next to the back of the wall. These had been choked with rubbish, and Newton would have them cleaned.

To guard the orifice through the parade wall, at its rear, were three courses of brick, laid flat on the roof, without mortar, and extending about 2-1/2 feet up the slope of the roof.[76]

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75. Newton to Totten, March 26, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

76. Ibid.

c. Roof Coverings

These were of sheet lead. Wherever covered they seemed to be sound.[77]

d. Leaks

The worst leaks were in gun casemates Nos. 1, 2, and 3 of the north front, right flank and face of the Southwest Bastion; the entire Tower Bastion; right face of Northwest Bastion; and all gun casemates of the North Front. Every casemate leaked at its junction with the scarp, and the quarters particularly along the parade wall. Each casemate had minor leaks, not aforementioned, consisting of round spaces, about 2-1/2 feet in diameter. These were "very frequent," and were believed to result from the unsoundness of the roof coverings.

Because of their great number, the causes were not easily isolated. The parade wall had disintegrated through "thrust and want of cohesion; the heads of the arches had separated from the scarp; the lead sheeting was "eaten up split; & the covering of the terreplein & parapet" was nominal.

What was needed was a thorough repair of the roofs.[78]

e. Cisterns

Both casemate cisterns were in bad condition, though the one at the gorge of the Southwest Bastion had been repaired by Newton. Every pier in contact with the cisterns was saturated with water. Perhaps, Newton suggested, it might be wise to dispense with them, and build new cisterns on the parade.

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77. Ibid.

78. Ibid.

The bastion cisterns could be repaired, if that were the Department's desire, by making the floors as tight as possible. Upon them would be laid rows of brick in cement, separated by 2- to 3-inch channels, then a course of brick laid in cement, and finally a covering of mastic. The side walls were to be built of a thickness of one-half brick to a convenient height with numerous headers abutting against the present walls. The brick laid in mortar and coated on the inside surface with mastic. All small drains under the floors were to lead into one or both of the side drains, which were to have their outlets on the exterior of the cistern. In case of a leak, the masonry of the piers would be saved from a deluge of water.[79]

f. Replacing the Brick Paving of the Terreplein

Newton gave the Department some gratuitous advice. He opposed Totten's system of covering the terreplein with a brick pavement, because "not a gun can be mounted or dismounted without injuring the covering, and causing a necessity for repairs." This was true whenever soldiers had anything to do with the operation. He also was against covering the "roofs directly with mastic or any other material on account of the settlement," which at Pickens was continuous.

Would it not be better, he inquired, "to lay solidly a mixture of clay and sand (50 percent by area) six inches thick upon well rammed sand upon the side roof to give a gentle slope, and to back up to the scarp by a third slope?" Upon the clay, a layer of mastic could be applied. He believed the support given the mastic would prevent settlement as change of form within the usual limits, provided the "slopes of the roof were made as moderate as possible."

If this mode of operation were adopted, the terreplein and earthen parapets would have to be taken up. But he thought the "same operation must be undertaken, in the event of paving the

79. Ibid.

terreplein & parapets," because they had not been well rammed by Major Chase, and were inadequate to provide support for paving.

Brick slopes, in Newton's view, were improper, and as a "preservative against leaks have failed." Why the terreplein and parapets could not be made to grow "grass luxuriously," Newton could not explain. The exterior slopes of the land front, often steeper than 45°, were "well sustained and support an enormous growth." This had been effected by mixing clay with the soil of the exterior parts.

Fort Pickens, Newton forecast, would be "a great drain upon the appropriations for several years." In the spring of 1856, he had estimated its repair to cost $90,000. Now he was of the opinion that "we will be fortunate in expending less that $100,000 upon it."[80]

4. Totten Answers Newton's Suggestions with Sarcasm

General Totten replied on April 8. The tone and gist were not calculated to encourage initiative on the part of superintending engineers. While the Department, Totten began, was solicitious of the opinions of its engineers, it had to be "satisfied that the things proposed to be done, or the courses to be pursued . . . are those best adapted to the circumstances." In this, the Department might agree "wholly, or partially, with the officer, or may differ with him; in which case, the officer is . . . no further responsible than, for the manner of executing the instructions he receives."

Concerning Newton's observation that a "thorough repair of all the roofs of Fort Pickens . . . is required," General Totten cautioned that the difficulty in getting an appropriation of $15,000 for repairs was "proof enough" that such a project was out of the question. Moreover, such an expenditure would be bad policy, particularly at a time

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80. Ibid.

when "we want all the money we can secure for fortifications for adding to the efficiency of the general system."

The first item to be attended to at Fort Pickens was "to augment its efficiency." Meanwhile, some other and "indispensible things" must be done.[81]

5. Funding the Project and Formulating a Program

General Totten's reference to $15,000 referred to the Fortifications Bill recently signed into law by President Pierce. It appropriated that sum for repair of Fort Pickens in fiscal year 1858. Newton would prepare and submit for approval by the Department an operating program for expenditure of this sum.[82]

Newton, in formulating his program, budgeted $2,200 for repair of the Tower Bastion, leaving the balance of the Pickens appropriation "unprovided for." In explanation, he complained, it should be "expected from the length of time that I have been in charge that I would be fully acquainted with the views of the Dept." Moreover, as project superintendent, his views should have been solicited. But, he complained, he had "no direct knowledge of the intentions of the Dept. beyond the jobs now" in hand. In addition, he had no reason to believe that "any plan or expression of professional opinion would be agreeable or according to custom, unless the same was required in the process of construction to modify a detail or change the faulty dimensions of some wall."[83]

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81. Totten to Newton, April 8, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

82. Totten to Newton, March 10, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

83. Newton to Totten, March 26, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

6. Newton Profiles the Walls

a. He Continues His Measurements of the Fort

Newton apparently had bluffed the Department, as he did not submit, for approval, a program for expenditure of the $15,000. In April he and several men continued to make measurements. On May 2 he mailed to the Department a sketch containing additional references. Those in red showed the reference of the top of the foundations and the bottoms of the drains; those in blue gave the references of the casemate floors and embrasure sills. The reference of the breast-height wall referred to the top of the wall and not the crest, except where "the top of the wall is the crest, as at the traverse and the two extreme points of the covered way."

At points A, B, and C profiles had been taken, which would be fowarded in tabular form. These points had either been selected at "distinctly marked" positions of the work or by measurement from these at distances of 20, 40, or 80 feet.

As some of the references were taken at intersections of lines, and others at points determined by measurement, Newton cautioned that the plan was not in strict accordance with the sketch, and to take the distance between points, except where the "distance is written may not lead to an accurate result."

Each system of reference, he explained, had its own measurements entered on the sketch, starting from certain points and running in certain directions. The "plane of comparison" was the same as that shown on the sketch forwarded March 26.[84]

The table containing the horizontal distances to supplement the sketch transmitted on the 2d was posted in mid-May.

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84. Newton to Totten, May 2, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of the subject sketch is found in the files of the Florida Unit, Gulf Islands NS.

Distances had been taken "with reference to a vertical line established 2 3/8" from the counterscarp wall, measured immediately under the coping." These horizontals were 6 inches apart and had been measured to the bottom of the wall. The points at which the profiles had been taken were shown on the drawing transmitted May 2, and marked A, B, and C.[85]

b. Newton Visits Ship Island

Captain Newton, before leaving Pensacola on May 4 to join the Board detailed to select sites and prepare plans for new fortifications on the Gulf of Mexico, designated R.L. Sweetman, his foreman, to be in charge during his absence. Sweetman would be paid $120 per month for overseeing the work while Newton was away.[86]

Difficulty in securing transportation to Ship Island enabled Newton to return to his station for a brief visit in the fourth week of May and see how projects were proceeding under Sweetman's supervision. He was satisfied with what he saw, and on the 25th he started for Mobile, where he rejoined the Board.[87]

From Mobile, the Board traveled to Ship Island. The work was quickly completed, and Captain Newton was back on duty in Pensacola on June 4.[88]

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85. Sweetman to Totten, May 19, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of Table B is found in the files of the Florida Unit, Gulf Islands NS.

86. Newton to Totten, May 3, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer. The Department approved Newton's action on May 13. Totten to Newton, May 13, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

87. Newton to Totten, May 24, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

88. Newton to Totten, June 5, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

c. Newton Reports Structural Failures in Flank of N.E. Bastion

On February 7, 1857, four weeks before President Pierce signed the Fortifications Bill, Captain Newton had asked the Department for an allotment of $500 from the contingency appropriation. This sum was needed to pay laborers for mowing grass, the measurement of various parts of the fort, and for stockpiling small quantities of brick, lime, and mortar.[89]

Newton at this time informed the Chief Engineer that the piers of the right and left flanks of the East Front, next to the scarp face, exhibited "symptoms" of falling. Temporary repairs had been made.[90]

Totten called for a report on condition of the piers at the time of their repair.[91]

Eight months passed before Captain Newton compiled the necessary data for the Department. On August 13 Newton mailed to General Totten a drawing of "the flank of the N.E. Bastion," showing a proposed modification and addition to the pier and arch which he believed necessary.[92] The Southeast Bastion, which was similar, did not display "such shocking evidence of weakness" in these features, as to require repair at this time.

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89. Newton to Totten, Feb. 7, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

90. Ibid.

91. Totten to Newton, Feb. 18, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

92. A copy of the drawing of the "N.E. Bastion, Fort Pickens," is found in the files of the Florida Unit, Gulf Islands NS.

The subject pier, when its interior was exposed while the face was being repointed and repaired, exhibited "such a disintigrated or crumbling state of masonry as to call my attention to the pier and arches." The joints of the brickwork and cracks shown in the sketch, indicated by a-c, identified the settlement which was greatest at c. The pier, he explained, was solidly connected by the bond with the wall of the recess and with the back wall of the casemate, so as to drag down a portion of these. The drag was limited by the cracks in its settlement. The end of the pier revealed a nearly vertical crack through its "whole depth," which he did not find "prolonged through the foundation," as far as could be determined. The recess arch, as well as the casemate, demonstrated a change visible to the eye, resulting from "the dip of the pier toward the interior."

Newton had determined by a calculation of the forces engaged to "solve the problem." Included in his computations were the weights of "the adjacent walls in the piers and every circumstance as it exists at present."

The position of the centre of pressure adduced from the thrusts of the recess and casemated arches, and of the weight represented above, was shown on the drawing.

What was found showed no cause for the dipping of the piers to the front. The "disturbance" he attributed to the "sand of the back portion of the pier and contiguous wall being wedged against the scarp" being "incompressible or nearly so, while the support along the face of the pier . . . due to the sand [being] free to move, has proved too feeble to resist the pressure falling upon it." This indicated to Newton that the "area of foundations should be increased, as shown in his sketch by an addition to the front of the pier.

A 2'3" brick facing ought to be carried up vertically. That portion above the spring being an arch coupé would lock into the old arch of the casemate. Strength would be given to this connection by continuing the bend to the base of the pier, and by an additional tie of

flat bar iron, inserted into the pier as far as possible. The sand foundation under the facing was to be rammed solid.[93]

d. Totten Provides an Explanation

After studying the sketch and Newton's letter, it occurred to General Totten that the cracks in the flank of the Northeast Bastion might be of "long standing and have resulted from the rupture of the scarp wall of the face with which the masonry of the pier seems to have been connected."

Captain Newton was reminded that the scarp on both faces of the bastion had been thrown down in 1835 by pressure of the rampart. When rebuilt by Major Chase, signs of weakness were again observed, and it had been strengthened in the early 1840s by adding 3 1/2 feet to the outer face. If the cracks had not "increased sensibly since," there was no need for the proposed addition. The cracks, if further study established that the scarp was stable, would be pointed.[94]

Totten's explanation of the source of the cracks must have been correct, because Newton dropped his proposal to strengthen the flank of the Northeast Bastion. This exchange was not the only one to occur between the two officers during the late summer and autumn of 1857. Along with others, far more vitrolic, they soured relations between General Totten, who was becoming increasingly patronizing, and Captain Newton, who was extremely ambitious.

7. Newton's Proposal for Waterproofing the Terreplein

a. Work Drags

Although Congress had appropriated $15,000 for repair of Fort Pickens in fiscal year 1858, and the expenditure of this

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93. Newton to Totten, Aug. 13, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

94. Totten to Newton, Sept. 7, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

sum prior to June 30, 1857, had been authorized, little rehabilitation work was accomplished in the first seven months of the calendar year. This consisted of mowing grass, repointing and repair of scarp-walls, and profiling the fort.[95]

By August 1857 little had been accomplished on the principal approved project: the repair of the terreplein of the Channel Front Bastions beyond "clearing away and preparing for work." Nothing further could be accomplished pending the arrival of the applicateur. Captain Newton had written the New York Depot of his needs. Lt. Quincy Gillmore of the agency had replied that he would have to send to France for another applicateur, because Mr. Lavavasseur was occupied on another project.[96]

Captain Newton on September 2 informed the Department that the continued delay in pushing repair of the terreplein resulted from the agency's delay in sending an applicateur to apply the mastic. The condition of the lead sheeting was such as to bring "these roofs under the case supposed in the Dept's. letter" of January 27, 1857, requiring the services of an applicateur.

b. He Details His Proposal

The non-arrival of an applicateur had caused Newton to have second thoughts on ways to cope with the situation. He proposed that the roofs in question be "repointed with lead." Although this might

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95. Newton to Totten, Oct. 2, 1857; Monthly Reports of Operations at Fort Pickens for Oct. 1856-Sept. 1857, NA, RG 77, Ltrs. Recd., Chief Engineers; Executive Documents, Printed by Order of the Senate of the United States, 1st Session, 35th Congress (Washington, 1858), Serial 920, Vol. 3, p. 183.

96. Newton to Totten, Aug. 13, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer. Lieutenant Gillmore had replaced Major Frazer as officer in charge of the New York Agency.

be difficult, he believed it should be tried "for the sake of hurrying on the defensive arrangements for this harbor." In addition, he felt the terreplein may be made permanently watertight by following this method: (a) The brick parapets and additions thereto were presumed to be watertight. (b) The earthen parapets were to be made watertight by cutting a portion off the "top, so as to form a plane leading from the back of the B.H. walls to the back of the coping--ramming this . . . well, spreading upon it a layer of bricks, which must be well settled--and finally laying upon the surface thus prepared a coating of mastic." (c) This waterproof covering to be connected with the back of the breast-height wall and the coping by lead and mastic, so the junction would be watertight and rupture proof against unequal settlement. (d) Finally, earth of sufficient depth to permit a growth of grass was to be placed on this covering. Water could be discharged over the coping of the scarp, or if desired could be led to certain points, and discharged through conduit under the coping outside the scarp.

c. Special Situations--The Columbiad Platforms

The terreplein, where the 8- and 10-inch columbiads were to be mounted, was to be treated in this manner. To make the platforms watertight, Newton would excavate to a sufficient depth to allow the growth of grass, prepare a surface by ramming, lay a brick pavement, and upon this apply mastic. The mastic was to be joined to the brick curbing of the gun platform, to the scarp, and to the parade wall. Roof coverings would be broken into shallow valleys and ridges, and rainwater discharged through conduit leading outside the parade or other walls.

d. Special Situations--The Seacoast Howitzer & 42-Pounder Platforms

Where 8-inch seacoast howitzers and 42-pounders were mounted, areas surrounding the pintle could be made watertight, on the surface, by first laying a foundation of concrete to a certain depth, smoothing the top with mortar, then spreading a thin coat a mastic, and upon this positioning the lead. The lead would be perforated with round holes to the extent of the traverse stones. Over the lead would be

applied "an ordinary coat of mastic." This to be topped with slate, laid flatwise, and a course of brick, and the traverse stones. Where lead joined mastic, on either side of the circles, a double coating of mastic, and a perforation of lead was called for.

e. Earthen Parapets

Between the pintles and traverse stones, owing to the penthouses, no grass could be grown, and the mastic covering at these points "may be as high as it was expedient." Outside the traverse circles, the roofs were to be arranged as for the columbiad platforms.

On the earthen parapets no brick or shells would be employed above the mastic. The coarse Santa Rosa Island white sand would provide sufficient filtration. A portion of the sand being secured, if necessary, to get rid of dust. The soil of the surfaces everywhere to be sand and loam to a depth of 6 or 8 inches, "for the growth of grass, and to insure a good footing."

f. Use of Shells and Bricks in the Valleys

For the terreplein, Captain Newton urged that no brick or shell be used, except in the valleys, care being taken not to allow the surfaces of the shell or brick to rise above the ridges.[97]

Though brick had been recommended as a foundation for the mastic by the Department, Newton noted that "this pavement was not to come sufficiently near to the gun platforms to be disturbed by the shock of the firing." The employment of lead and mastic together would, he presumed, keep the brick sufficiently distant to prevent such from happening.

He had never seen why clay, as a foundation for mastic, was not preferable to other materials. Clay surfaces could be

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97. Newton to Totten, Sept. 2, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

coated with mortar to prevent erosion before mastic was applied. He believed an additional coat of lime mortar would prevent "any contact of the mastic & clay."

If clay decomposes mastic, he inquired, what has happened to clay terrepleins of Fort Warren?[98]

8. General Totten Revises His Instructions for Changes to the Terreplein Surfaces & Drainage

a. Installation of the Conduit

General Totten was convinced by Newton's September 2 letter that it was necessary to "substitute a general layer of mastic for the lead." After Newton had stripped away the lead sheeting over the casemate arches, he was to build all additions to the scarp solidly in brick or concrete, faced with brick up to reference 6'6" below the new crest. This addition to the scarp was to be made without constructing or providing for quadrantal arches and continuation of the interior face of the scarp up to the aforementioned reference. Care would be taken to continue all conduits for discharge of roof water through the new masonry and to insure that they were of sufficient size not to be obstructed. The direction given to the prolongation of the conduit was to be established in relation to the new roof arrangement and to the existing conduit. To insure that the conduit was watertight, Captain Newton was to place therein double pipes of sheet lead, the inner one being soldered and enclosed in a second also soldered tight. The outside of the inner pipe to be covered with a "thick wash of clay" and the inside of the outer coated with the same before it was wrapped over the other.[99]

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98. Ibid.

99. Totten to Newton, Sept. 16, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

b. Brickwork of the Walls and Prisms

This attended to, the walls constituting the inner face of the parapet on the faces of the Tower Bastion would be built "directly, for the greater part, on the present roof surfaces." In places, it would be proper to break the old surface of the roof just enough to get a level footing for these interior walls, which were to have a thickness of three bricks.

Instructions found in General Totten's January 27, 1857, letter would be carried out as to the spaces between these walls and the upper part of the scarp.

In building the masses, where they are to limit the roof slope and the aforementioned inner parapet walls, a few courses of brick, next the roof, would be laid parallel to the intersection of the roof slope, to facilitate insertion of the edge of a coat of mastic and lead flashing.

These walls built, there would be laid upon the roof, at the foot of them, a prism of brickwork sloping down from the wall to the roof, so the intersection of this slope with the roof surface would be about 12 inches from the wall, and not less than 9 inches below the top of the prism.

Such a prism must be added at the foot of all vertical surfaces, and at places where the chimneys extended through the roof.[100]

c. Applying Mastic and Positioning Flashings

After the roofs were thus prepared, a single coat of mastic would be applied thereon in the best manner by an applicateur. As for the mastic covering, the only directions Totten had were that the

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100. Ibid.

edges be turned up over the surface of the prism, to the top of the next course of brick and there centered about 2 inches into the joint, and "there retained, here and there, by small wooden wedges."

Next, lead flashings would be inserted about two courses above the insertion of the mastic edges, the lower edge of the lead extending downward to within 2 or 3 inches of the gutter at the bottom of the slope of the prism. Brick fragments, laid along the lower part, would keep the lead from contact with the mastic, and afford a drip. The flashing was to be inserted 2 or 3 inches into a joint cleaned of all mortar, and kept in place by wooden wedges. The joint above the flashing was to be packed with oakum or cotton rope, supersaturated with bitumen.[101]

d. Gutters

Wherever gutters were formed in the roof surfaces, as heretofore directed, "a free passage of water along them must be provided for, by turning brick arches over them," in the manner outlined in Totten's letter of January 27. Wherever the prism fell upon a descending surface, so as not to yield a gutter which could be arched, brickwork must be built up in a manner to preserve a free space in front of the flashing. Usually, a thin wall of brick, laid dry, must be placed between vertical surfaces, and the mass of earth. The subject wall would be in contact with the masonry at only a few points, so that water could run freely between.[102]

e. Gutter Arches

As supports for arches to be turned over gutters, there would be laid upon the mastic, in a thin bed of bitumen, a course of roof slates. On these slates would be laid without mortar, the first

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101. Ibid.

102. Ibid.

two courses of the arch, the brick being in contact above these courses, the bed joints of the brick to consist of good mortar.

The mastic surface, exterior to the gutter arches, to be covered with brick, laid end to end in rows, up the lines of the steepest slope. These rows to be about half an inch apart. Upon this layer would be a second, with the lengths of the bricks at right angles to those of the lower course.

Shells were to be laid on the two courses of brick, in accordance with Totten's letter of January 27. Sand was to be deposited over the stratum of shells, and as the gun and columbiad platforms were to be founded on it, the sand was to be rammed into position in 6-inch horizontal layers.[103]

f. Sod Terreplein

If these instructions were followed, there was no need to pave the terreplein, as it would be formed of a layer of soil 6 to 8 inches thick covered with sod.[104]

g. Waterproofing the Platforms

In constructing the gun and columbiad platforms, the vertical joints were to be filled by two or three thicknesses of course bagging, supersaturated with bitumen rather than mortar, and a coat of mastic applied on top of the concrete surfaces of the subject platforms.[105]

h. Changes in Height of Crest of Parapet Wall

The new parapet crest of the Tower Bastion would be 1'6" above the zero assumed by Newton for the crest, in the plan

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103. Ibid.

104. Ibid.

105. Ibid.

forwarded March 26, 1857. This would necessitate raising the crests above their present heights as follows:

at the north angle of the flank of the Tower Bastion .	1':402
at the south angle of the flank of the Tower Bastion .	1':401
at the north shoulder of the flank of the Tower Bastion .	1':346
at the south shoulder of the flank of the Tower Bastion .	1':342
at the salient angle	1':263[106]

i. Where Newton Was to be Guided by Totten's Instructions of January 27

In portions of the work not changed or suspended by these instructions, Captain Newton would be guided by directions found in General Totten's letter of January 27, 1857.[107]

9. Newton Reports the Applicateur is Coming and Asks for Guidance

On September 8 Captain Newton had written the Department of his fear that repair of the lead sheeting would be very difficult because of "the rotteness & decay of the lead." It seemed inexpedient to recover with mastic, if "we are to have a tight terreplein above, on account of expense." Would it not be better, he inquired, to take up the lead as far as the Tower Bastion is stripped (to the curtain angles) and to repair or renew the plaster? If necessary this part of the roof could be covered with brick as at Fort Barrancas.

In addition, Newton desired instructions as to the amount of work to be accomplished and the detailed plans, as the applicateur was finally en route. He wished to take advantage of his presence "to repair or renew the roofing as far as we shall be able to go in putting down the new pintles."

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106. Totten to Newton, Sept. 19, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

107. Totten to Newton, Sept. 16, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

Newton believed the Southwest Bastion, southwest curtain, and south curtain should be attended to next, in preference to the Northwest Bastion and curtain, which had already been provided with "pintles fit" for 8-inch seacoast howitzers.[108]

10. Newton Takes Issue with General Totten

a. As to Condition of the Lead Sheeting and Leakage

Captain Newton was upset by the statement in General Totten's letter of September 16 that "I should have given these [instructions] sooner, but all the information I had on this subject was that these roofs had been stripped, and that you were ready for the applicateur."

General Totten was mistaken, Captain Newton answered. The roofs of the Tower Bastion had not been stripped before September 1, even as far as the curtain angles. Lieutenant Gillmore of the New York Agency had promised a month's notice of the arrival of the applicateur, to enable Newton to make adequate preparations.

The Department, if it would review the correspondence, would find that Newton had never reported the roofs stripped. The old gun platforms had been removed, but excavation of the sand had been postponed, because of the "pressure for labor at other more important works, and on account of news from Lieut. Gillmore that the arrival of an applicateur would be indefinite in point of time."

Leaks pinpointed in the Tower Bastion casemates were so extensive as to leave no doubt that they belonged to the category referred to in General Totten's letter of January 27, 1857, where services of an applicateur would be required. An examination of the lead sheeting, after removal of the sand, had confirmed this opinion.

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108. Newton to Totten, Sept. 8, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

Newton also objected to General Totten's statement, "I was entirely ignorant of the extent to which his labors [the applicateur] were supposed to be necessary. . . . My impression was that the leakage was considerable only at the junction of the scarp-wall; and my expectation that defects elsewhere might be remedied upon the old surface."

If the Department would study his letter of March 26, 1857, Newton continued, it would see that he had written, "The worst leaks are in gun casemates Nos. 1, 2, & 3 of the N. front. . . . Every casemate leaks at its junction with the scarp. . . ."

Under general remarks, he had noted, "A thorough repair of all the roofs is . . . required."

He had found it impossible to give a "better description of things relating to the roofing, even with the additional information since gained by stripping" the Tower Bastion. From his report of the 26th, it should have been apparent to the Department that the "whole" of the Tower Bastion was in "bad order."

In his letter of September 2, Newton had asked to be allowed to dispense with mastic on the roofs of the Tower Bastion, although "the state of the lead covering is such as to bring these roofs under the case supposed in the Dept's. letter of January 27, and to repair with lead although this may be difficult." Newton on September 8, owing to the difficulty of repairing the lead, had proposed "starting the roofs anew, or to apply the brick 'Scarritt' roofing, relying upon a perfectly tight mastic covering."

Captain Newton had found that the sketch of the Tower Bastion, forwarded with the Department's letter of January 27, "was drawn in much uncertainty as to the extent and nature of the leakages, and the nature of condition of the roof surfaces." In and with his letter of March 26, he had provided all the data he possessed concerning the roofs, "which seemed so complete, that the Dept. has not asked for further details on this point." From then until September 16,

he had received no additional instructions concerning the terreplein covering.

b. For Curbing the Initiative of the Project Engineer

On April 8 General Totten, replying to his letter of March 26, had written, "I have to say that the opinion of officers in charge of operations are not only expected to be offered freely, they are frequently necessary to a full understanding here."

But the Department, Newton complained, had glossed over the real issue.

> I think it was impossible to meet it. I complain that considering the time of my acquaintance with the work, the zeal which I had manifested in my operations here, my professional knowledge, and the time during which I had been in service, I was insultingly passed by when a time had arrived for a display of such knowledge as belongs to an officer of engineers. That was not my wish. After my existence had been ignored, and the courtesy due to my official position here refused, I was then required to measure and level the work for some one else to make a study of, and to prepare the requisite plans.
>
> When I showed a proper feeling under such treatment, the answer I get is, "and it has been my case indeed hitherto that their tone or temper has given doubtful value to any."[109]

c. Department Rejects the Use of Lead and Mastic

The Department's reply, signed by Captain Wright, was terse and ignored the questions raised. Newton was informed that those portions of the counterscarp gallery and casemates finished with "Scarritt roofing" and giving no signs of leakage would not be disturbed. The Department rejected Newton's proposal to employ a combination of

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109. Newton to Totten, Oct. 15, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

lead and mastic, contrary to that referred to in General Totten's letter of April 8.[110]

11. Differences as to Sealing the Casemate Arches

a. Totten Forwards a Revised Plan of the Tower Bastion

The information provided by Captain Newton compelled the Department to take another look at plans for the Tower Bastion. On November 28, 1857, General Totten forwarded a "Sketch, showing the slopes of the terreplein of the" Tower Bastion. The adjustments found necessary for the terreplein of the southwest curtain made it mandatory to change that of the Tower Bastion from the delineation depicted in the drawing titled, "Sketch of the central channel Bastion of Fort Pickens, showing the position of its Barbette guns and the required modification of the parapet," mailed on January 27, 1857.[111]

b. Department Reiterates Its Position

Captain Newton had retained his reservations about a layer of sand, upon the concrete surfaces of the casemate roofs when they were as steep as those at Fort Pickens, constituting a suitable surface on which to apply mastic. He would not attempt "such an arrangement without positive orders to that effect."[112]

Capt. Horatio G. Wright, General Totten being absent, replied for the Department. Newton had misunderstood the

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110. Wright to Newton, Dec. 18, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

111. Totten to Newton, Nov. 28, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer. Copies of the subject plans are found in files of the Florida Unit, Gulf Islands NS.

112. Newton to Totten, Dec. 14, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

Department's instructions. Far from desiring a layer of sand under a course of brick as a foundation for the mastic, General Totten wanted a layer of mastic applied directly to the roof surface. The Department had rejected, on April 8, Newton's proposal to use clay between the mastic and roof surfaces wherever there was seepage. It had, however, reluctantly agreed to allow him to employ a stratum of sand, provided a layer of bricks was laid thereon for the mastic to rest upon.[113]

12. Securing and Funding the New Platforms

a. Newton is Called on to Order Columbiad Platforms & to Begin Removal of Embankment

On September 25, 1857, the Department directed Newton "to order at once all the platforms for the barbette columbiads of the new armament." He would also begin removal of sand from the roofs of the southwest curtain and Northwest Bastion, depositing it behind the guns of the northwest curtain and the Southeast Bastion, preparatory to repair of the roofs of those fronts.

Cost of the platforms would be charged against the general appropriation of $100,000 made by the last session of Congress for mounting heavy guns in the coastal defenses.[114]

b. Handling the Embankment

Reconstruction of the subject terrepleins and the positioning of the new gun platforms confronted Captain Newton with the vexing problem of handing the earth and sand removed from the casemate roofs and parapets. He did not deem it safe to do as the Department proposed and "pile up the earth of the excavation, upon the terreplein of the N.W. & S. curtains on account of the weakness of the parade walls."

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113. Wright to Newton, Dec. 23, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

114. Wright to Newton, Sept. 25, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

If this embankment were "limited to the space behind the guns," it would reach a height of five feet.

It would be better, he informed the Department, if the financial outlook were favorable, "to continue at both ends of the proposed work, and make a certain amount of excavation, throwing the sand into the parade or if more convenient carrying it to the N.E. Bastion." After the sections first stripped were repaired, excavation from the contiguous parts would "come to them under the form of embankment."

He thought the Totten plan of "stripping the roofs entirely" too expensive.[115]

General Totten saw no objection to depositing excavation between neighboring guns and raising the piles to a considerable height. Boards should be positioned to protect the gun carriages during the short time the earth was there. As Newton had wisely suggested, no additional weight was to be placed against weakened portions of the parade wall.

If Newton were certain that the method he had proposed for handling the embankment could be accomplished as rapidly and as cheaply, he was free to adopt it.

Captain Newton was cautioned that, except for temporary expedients such as necessitated piling earth between some of the cannon, the gun positions not affected by the modernization program were to be ready for immediate service.[116]

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115. Newton to Totten, Oct. 2, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

116. Totten to Newton, Nov. 24, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

c. Requisitioning Stone for 28 Columbiad Platforms

Meanwhile, Newton had reviewed for the Department the stone necessary for the new armament. Needed were stones for 42 8-inch columbiad and four 10-inch columbiad platforms. Of these, he had received stone for 15 8-inch and one 10-inch platform. He would leave it to the Chief Engineer to judge how many, if any, of the additional platforms (27 8-inch and three 10-inch) were to be ordered "in view of the small amount appropriated for this work."

He also wished to know whether the expense of positioning the stone, as well as its cost, was to be charged to the $100,000 special appropriation, along with that of the 8-inch seacoast howitzer platforms.[117]

On November 24 General Totten, having returned to his office after an absence of eight weeks, advised Captain Newton that he needed 28 columbiad platforms: 3 for the Tower Bastion, 19 for the curtain of southwest front, and 6 for the Southwest Bastion. His requisition upon Lieutenant Gillmore, at the New York depot, had been amended to reflect this situation, as had the details of some of the stones.

In apportioning percentages of the project to be charged against the appropriation for new armament, General Totten was satisfied that one-half the expense of removal of earth from the terreplein, replacing and regulating the earth thereon, adding to the thickness and height of the parapet, and adjusting its superior slope should be charged against this appropriation. All expense of removal of old traverse circles and pintle centers, and the placing of new platforms and banquettes, including materials and workmenship, must be changed to the subject appropriation.

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117. Newton to Totten, Oct. 14, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer. With his letter, Newton enclosed a "Bill of stone for 8- and 10-inch columbiad Barbette Platforms." A copy of this document is found in files of the Florida Unit, Gulf Islands NS.

The expense of modifying 8-inch seacoast howitzer platforms of the Tower Bastion would likewise be divided equally.[118]

Captain Newton, despite the bleak financial outlook, concluded that the Department would provide funds for the stone for 28 platforms. But to insure there would be no mistake, he wanted the Chief Engineer to know that on January 31, 1858, there would be only $5,000 left from the $15,000 appropriated for repair of Fort Pickens. This was insufficient "even with the amount drawn from the appropriation for gun platforms, to finish completely the S.W. Curtain" and Tower Bastion.

He also desired to know whether the Southwest Bastion was to be remodeled for heavy guns, so he could order the mastic and tar for its repair and if the parapets of that bastion were to come down.

Should he prepare a sketch of the Southwest Bastion, giving the position of the guns? The form and references of the roofs could not be given until the bastion had been excavated, which had not been started.

To make surveys, he was obliged to borrow transits, etc., from the Navy, because he did not have any instruments of this type fit for use. He had two transits, but they would be difficult to repair, as when purchased they had been the "most common and cheap kind."[119]

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118. Totten to Newton, Nov. 24, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

119. Newton to Thayer, Jan. 29, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer. Lt. Col. Sylvanus Thayer, with General Totten on leave was Acting Chief Engineer from December 21, 1857, to December 22, 1858. Thayer remained in Boston, while Captain Wright, in Washington, was responsible for the day-to-day operations of the office.

The Department directed Newton to place his order for the platform stone. If available funds did not suffice to complete the project, money would be made available from contingency funds.

Drawings of the Southwest Bastion were needed by the Chief Engineer to enable him to complete, without delay, plans for remodeling that section of the fort for reception of the new armament.[120]

13. Plans and Directions for Alterations to Barbette Tier of S.W. Bastion and S.W. Curtain

On October 15, 1857, the Department mailed to Captain Newton two drawings. The first was entitled, "Plan Showing the position of the Barbette guns on the curtain of the South West front, with details of gun platforms," and the second, "Sketch, Showing the modification of the parapet, parade wall, etc., on the curtain of the S.W. Front."[121]

Accompanying the plans was a letter calling to Newton's attention construction details to be followed when he began work on these sections of the barbette tier.

a. Crests and Recesses

The crest of this front was to be raised to the same level as that established for the Tower Bastion, and the additions to the scarp and coping surmounting it were to be built in accordance with instructions found in General Totten's letters of January 27 and September 16, 1857. The gun recesses, however, would be commenced on the southwest curtain seven feet below the new crest, rather than 6'6" as was done at the Tower Bastion.[122]

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120. Wright to Newton, Feb. 9, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

121. Wright to Newton, Oct. 15, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer. Copies of the subject plans are found in the files of the Florida Unit, Gulf Islands NS.

122. Ibid.

b. Positioning and Building Coping

"No portion of the existing parade wall was to be removed but such as may be absolutely necessary to make it conform to the drawings." In designing the coping and cornice, it had been assumed that the ends of the casemate piers facing the parade, at the level of the casemate floors, were in a straight line. The coping, consisting of the two upper courses, would project over this line 12 inches at all points, its edge also being a straight line. If this were not the condition, an assumed line, corresponding with the end of the pier, projecting at least toward the parade must be used instead. The edge of the coping to project 12 inches beyond this. The horizontal distance between this edge of the coping at the "present uneven face of the parade wall" was to be divided by projections of the cornice.

The top of the coping was to be on the plane of the terreplein, the edge next to the parade seven inches below the plane of the parapet crest. The coping, consisting of the upper course of bricks (laid on edge) and the course immediately below with its front and back face square with top and bottom, was to be built in separate blocks. The blocks to be built as follows: (a) "build one block complete, and then place against its edge 2 or 3 thicknesses of cotton bagging steeped in bitumen; and (b) build against this bagging another block, and so on."[123]

c. Strengthening the Parade Wall and Applying Mastic

The addition to the back of the parade wall would consist of brickwork or concrete backed by brick, and be founded on the roof surface. The thickness of the present wall and the addition to be at the valleys 5'6", measured from the vertical, and decreasing to each ridge, where the additional portion would be 4½ inches or ½ brick wide.

123. Ibid.

The first six courses of the scarp were to be laid parallel to the roof surface, for the purpose of receiving the turned up edges of mastic, which was to cover the entire roof surface, along with the lead flashing. The sloping portion at the top of the parade wall, behind the coping, was to be covered with a coat of mastic, the edge turned up and inserted in the joint immediately below the coping. The vertical back of this wall, as far down as the lead flashing, to be coated with mastic.[124]

d. Paving the Access to the Conduits and Gutters

At each valley, a vertical opening in the new portion of the parade wall would be left to be closed at the top by a light cast iron covering. The removal of which would provide access to the arched conduit over the gutters.

The present openings through the parade wall, at the gutters, would be altered by insertion of a lead pipe at least 2-3/4 inches interior diameter.[125]

e. Possibility of Substitution of Course of Brick for Layer of Shells

Should he find it less expensive, Captain Newton was to substitute for the layer of shell to be placed on the roof before the sand, a single course of bricks, laid in contact without mortar.[126]

14. Newton Submits His Estimates for Fiscal Year 1859

Captain Newton, in accordance with procedures, had prepared and forwarded to the Department his annual estimates. On October 2 he had placed the cost of repair of the Tower Bastion, the Southwest Bastion and cistern, and south curtain at $35,887. This was in addition to the sum on hand on July 1, $14,772.

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124. Ibid.

125. Ibid.

126. Ibid.

Viewing the subject, in absence of detailed plans due to be forwarded by the Department, he urged that an appropriation of $30,000 be requested of Congress for repair of Fort Pickens.[127]

To justify this figure, Newton reported that the entire terreplein of the Channel Fronts required extensive repairs, and it was probable that all the barbette pintles and traverse stones on these fronts would have to be taken up. Many of these would be replaced by gun platforms of the new pattern. The parade walls, which had sprung, needed strengthening to resist the pressure of the earth fill. Woodwork in the quarters had rotted, and they required a thorough rehabilitation. The terreplein and ramps of the East Front should be graded and repaired, along with the counterscarp terreplein. The breast-height wall of the counterscarp needed brick coping to replace the decayed timber revetment.

There was insufficient storage capacity in the magazines for the new armament. The ditch needed to be regraded, and a brick drain built around the fort.[128]

15. Newton Gets a Draftsman Instead of an Assistant

In mid-September 1857 Captain Newton inquired into the possibility of the Department assigning him an assistant. Although construction funds appropriated for the Pensacola forts for fiscal year 1858 ($50,000) were not huge, he believed the "varied nature of the operation here" would "furnish in a short time, an experience, which it might require years to obtain at other places."

There was almost enough drawing to keep an assistant on the boards full time. The as "finished drawings of the Redoubt . . . must soon be undertaken."

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127. Newton to Totten, Oct. 2, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

128. Ibid.

Moreover, Newton continued, he planned to apply for a furlough in June 1858, as he had not taken any leave in 16 years. If there were no assistant engineer, he would have to leave a foreman in charge.[129]

General Totten denied Newton's request for an assistant, because there were other areas where the need was more urgent.[130]

Rebuffed in securing an assistant, Captain Newton in December wrote the Department that he had employed a draftsman, William James, to prepare drawings of the Redoubt drawbridge machinery. The Chief Engineer having called for a survey and chart of the waters off Foster's Bank, Newton would carry James for a few days to assist with that project. In addition, the progress of the "works" was such as to make it necessary from time to time to prepare drawings of the several parts as completed. This would call for the services of a draftsman. As James was a civil engineer and surveyor as well, Newton asked authority to pay him $4 per day, and to retain him as long as he judged necessary.[131]

The Department, on approving the employment of a draftsman, called for plans in outline of the Southwest and Northwest Bastions to include cisterns and stairs. To be exhibited thereon was "all the masonry" besides "giving the measured dimensions of the casemates, galleries, openings, piers, etc., and positions of the key lines of the arches." A second set of drawings would be prepared of the terrepleins of the subject bastions, showing the emplacements, parapets, etc.[132]

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129. Newton to Totten, Sept. 16, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

130. Totten to Newton, Sept. 20, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

131. Newton to Totten, Dec. 4, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

132. Wright to Newton, Dec. 14 & 15, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

16. Paying for Services and Materials Plague Newton

a. Newton Protests Recent Rules Established by the Treasury Department

Captain Newton was disturbed to learn of new regulations instituted by the Secretary of the Treasury. On July 13, 1857, he complained to General Totten that he was now required to make payment in the "disbursing officer's drafts" instead of "metallic currency, which he believed to be the only legal tender, under the law." Moreover, it had been prescribed that all "money for disbursement" was to be deposited in "the vaults of the Treasurer, the Assistant Treasurer, or the depositories of the United States," upon whom the disbursing agent drew his draft. The subject money would be payable only to the person in whose favor the draft was issued, or if the sum were under $20 in checks payable to the bearer.

The Treasury Department, to make matters worse, had ruled that the small drafts, to be cashed, must be endorsed "to pay small claims," and further that these claims or a number of them may be paid by a draft to bearer. But if they were to be cashed, the Secretary of the Treasury could designate a schedule of claims to be paid. This schedule to be furnished to the Assistant Treasurer.

It was Newton's belief that the Treasury Department had violated the law by prescribing the honoring of drafts payable to bearer, for sums greater than $20, and then seeking "to get back as near to the low as possible" by directing the Assistant Treasurer not to cash the subject drafts unless they had been furnished a list of claims to be paid.

This, Newton protested, was an insult to the government's disbursing officers, because it permitted Assistant Treasurers to "exercise a right of espionage upon our observance of the

law, through the instrumentality of unauthorized forms." For example, in the last paragraph of a recent circular, the Treasury Department had directed the Assistant Treasurers to retain all canceled drafts to be used by the auditor in settlement of the accounts. This action, in view of the certificates which they were obliged to annex to their vouchers, was a gratuitous insult.

Army officers, he continued, were anxious to rid themselves of the disbursement of public money, because it was an extra duty, for which they were not remunerated, forced on them to save the government the expense of hire of additional disbursing agents. Newton found it difficult to endure the "insulting precautions, which the Treasury Dept. from time to time thinks proper to enjoin." He trusted the Chief Engineer would lay before Secretary of War John Floyd, "the objection of an officer and a gentleman to this system of disbursements as improved by the Treasury Dept."

Both the law of Congress and the circulars were impossible of execution at Pensacola. The area, he observed, is dependent upon public works of the Army and Navy. The little specie in circulation had been derived principally from these sources.

To compel disbursing officers to pay only in drafts or shinplasters would result within one month in all the specie being "absorbed or locked up." There was no Assistant Treasurer or Depository nearer than Mobile. As soon as the law was understood to be enforced, his drafts would be discounted, owing to the difficulty and expense of having them cashed. The Treasury Department would thus be the instrument of destroying the credit of the United States in time of peace, with millions in the Treasury. It would also be the means of creating shops at Pensacola for discounting government drafts, the burden of which will fall principally upon "mechanics and others who are dependent" on wages, and who would be compelled to get their paper cashed upon the best terms offered.

Captain Newton desired from the Department answers to five questions:

(a) If a creditor of the United States demands of me a legal tender, can I force him to accept paper?
(b) Is a law of Congress prescribing paper in payment to creditors' binding, until such paper shall have been made legal tender?
(c) If a public creditor refuses paper, and sues, what would be his redress?
(d) Are Army officers, who pay a large claim by draft to bearer, "obliged to go through with the unnecessary and insulting form of previously furnishing the Asst. Treasurer with a schedule of items to be paid under such draft?"
(e) Are large drafts payable to bearer, legal under the law of Congress?[133]

b. Totten Seeks to Pacify His Project Engineer

General Totten was satisfied that Captain Newton misunderstood the law and the Treasury Department's clarifying circulars. The law, he explained, merely provided that disbursing officers were to deposit money for which they were liable with the Treasury or Assistant Treasurers, and draw for "the same only in favor of the person to whom payment is to be made in pursuance of law and instructions." Exceptions were made where payments "are to be made in sums under $20, in which cases such disbursing agents may check in his own name, stating that it is to pay small claims.

A strict interpretation would compel all payments to government creditors to be made by check, where the claim exceeded $20.

133. Newton to Totten, July 13, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

But the Treasury Department, foreseeing there would be difficulties in certain cases unless specie payment could be made, had declared that "the requirements of the law shall be considered satisfied when a disbursing officer obtains specie on his check by sale or presentation at the depository, provided he furnishes the depository with a list or schedule of the claims to be paid with the money."

Circular No. 2 provided that this schedule could be dispensed with under authority of the head of the Department under which the officer was serving. Totten had been informed that Secretary of War Floyd planned to delegate this authority.

If this delegation were given, General Totten wanted his project engineers to "comply as far as practicable with the literal constructions of the law, by making all payments in checks, and that all engagements be made with this understanding." The objection to the requirement of the circular making all checks (not drawn payable to a creditor personally) payable to bearer had been noted and objected to by the Department but without effect.

It was presumed that funds deposited to Newton's credit with depositories in New Orleans, Mobile, and New York City, would enable him to make payments as occasion demanded, with "little loss or embarrassment" either to his operations or "to the creditors of the government."[134]

c. Newton and Totten Clash Over Procedures

Captain Newton was angered by the Chief Engineer's patronizing manner. On August 1 he fired off a strongly worded letter, taking issue with General Totten's interpretation of the law and the effect

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134. Totten to Newton, July 22, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

of the circulars. He also questioned Totten's failure to lay his letter of July 13 before Secretary of War Floyd.[135]

General Totten was "displeased with the tone" of Captain Newton's letter and he searched in vain for the Departmental letters which had provoked it.

Replying, he wrote:

> It would seem wholly unnecessary to say to an officer of your term of service, that the Dept. has in certain matters discretion to regulate the administration of the Corps, and that the officers are bound to conform to its views; and that it is in position to judge far better than can be done by any one at a distance, when matters of duty ought to be brought to the attention of the War Dept. Confining myself to the particular matter forming the subject of your letter, I will say, that when this office . . . had urged its objections to most if not all the provisions of the Treasury Dept. circulars . . . it would have been not only idle to suppose that any representations subsequent made by one of its officers would have been available, but it might reasonably have been looked upon as evinsing an insubordinate disposition, and have subjected it to just reproof for the spirit of opposition it manifested.

Regarding other communications not laid before the Secretary of War, Totten pointed out, they had been withheld at the discretion of "this Dept; and it would continue to do so." He believed most officers of the Corps agreed with this policy, rather than having their "communications submitted with an unfavorable endorsement."[136]

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135. Newton's letter of August 1 was returned to him by the Chief Engineer, so all we know of its contents is from what can be inferred in Totten's August 11 communication.

136. Totten to Newton, Aug. 11, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

This clash between General Totten and Captain Newton aggravated a situation which must have been almost intolerable for the junior officer. Totten, a tireless worker and perfectionist, refused to countenance any independence on the part of his project superintendents. After he became Chief Engineer, Totten had exercised such close supervision that it stifled all initiative on the part of innovative and ambitious subordinates.

d. Treasury Suspends Payments

In mid-December 1857 Captain Newton was shocked to read in the newspapers that the Treasury had suspended payment on all requisitions for funds. This information promised "poorly" for to fund his December operations he needed $9,000--$3,000 each to be charged against the Fort Pickens, Barrancas Redoubt, and construction of permanent platforms for modern armament accounts. "If requisitions for fortifications are...to remain unhonored," it was necessary that Newton "be immediately informed, as we are contracting heavy liabilities every day, and many are still outstanding of large amounts."[137]

The Department on December 23 notified Newton that a "bill providing for emission of Treasury notes" had passed Congress. Consequently, it was believed his requisition would receive early attention.[138]

Newton on January 19, 1858, notified the Department that on New Year's Day, the outstanding indebtness for Fort Pickens was $4,582 and for permanent platforms $1,104.[139] Congressional action relieved Newton of his embarrassment. In February he received a draft from the Treasury covering his obligations.

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137. Newton to Totten, Dec. 14, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

138. Wright to Newton, Dec. 19 & 23, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

139. Newton to Totten, Jan. 19, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

17. Working With the Ordnance Department

a. Repair of the Carriages and Chassis

The gun carriages and chassis had been permitted to deteriorate to a degree, where the Ordnance Department was compelled to send Lieutenant Balch and a team of mechanics to Pensacola Bay. Although a large force was employed, Captain Newton estimated it would require six months to complete the project.[140]

Lieutenant Balch and his mechanics had reached Pensacola Bay from Baton Rouge in October 1856. By February 1, 1857, they had dismounted every gun and all the carriages needing repairs had been dismantled. Upon arrival of the stores en route from the Watervaliet Arsenal, Balch reinforced his crew, and attempted to complete the project by April 30, as he foresaw no advantage to spending six months at Pensacola, if he could finish the work in another 90 days.

At Fort Pickens, the ordnance equipment could be stored in a casemate, although it would be better to have a shed. Whenever the fort was garrisoned, the troops were in the habit of clearing everything out of the casemates, and the "carts and equipment would have to take their chances."

The Fort Pickens implements were "in wretched order," some in boxes, some on "ricketty" shelves, and kept without regard to order. This, Balch observed, was not to be wondered at considering the dilapidated condition of the fort.[141]

On March 5 Lieutenant Balch informed Chief of Ordnance Craig that for the past three months he had had a force of 30 men employed. Much had been done, and yet the principal work, the

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140. Newton to Totten, Jan. 17, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

141. Balch to Craig, Jan. 17, 1857, NA, RG 156, Ltrs. Recd., Chief of Ordnance.

repair of the carriages, remained. The reason, he explained, was the armament, particularly the implements and equipment, was in much worse condition than reported.

At Fort Pickens, it had been necessary to dismount all the 24-pounders on the barbette tier, lower them to the parade, and place them on skids. They had been replaced by 32-pounders as required by the new system.[142]

Lieutenant Balch on May 29 applied for four months' leave to begin about July 10. By that date he would have completed the work at Fort Barrancas; all the implements, equipment, and miscellaneous tools at Forts Pickens and McRee would be in "perfect order and securely stored"; and the carriage work at Fort Pickens nearly completed and that at McRee underway. By mid-July there would be only two to three weeks' work at Pickens and not more than six weeks at McRee. His mechanics and laborers were well organized and a replacement would have no trouble completing the Pensacola Harbor project.[143]

The project, the funds exhausted, was closed down in mid-July 1857. By June 1 nearly $1,500 had been expended on the cannon, which the presence of a garrison would have enabled him to save; $1,000 for penthouses; $1,500 for implements and equipment; and nearly $2,500 on carriages. In the six weeks ending July 15 about $2,000 were programmed for work on the carriages, and $300 for mounting cannon.

At Fort Pickens, Lieutenant Balch reported: (a) all the implements and equipment had been placed in order; (b) 14 12-pounders, 6 18-pounders, 11 32-pounders, and 12 8-inch seacoast

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142. Balch to Craig, March 5, 1857, NA, RG 156, Ltrs. Recd., Chief of Ordnance.

143. Balch to Craig, May 29, 1857, NA, RG 156, Ltrs. Recd., Chief of Ordnance.

howitzer barbette carriages and chassis had been repaired and painted; (c) 10 12-pounders and 11 32-pounders had been mounted on barbette in the positions prescribed by the new armament schedule and covered with penthouses; and (d) 24 8-inch seacoast barbette carriages had been positioned on the parade opposite their emplacements and covered with penthouses. The closing down of the project prevented: (a) repair to 30 24-pounder barbette carriages and chassis; (b) repair to 30 32-pounder casemate carriages; (c) repair of 3 24-pounder casemate carriages; (d) cleaning and painting 26 24-pounder flanking carriages; (e) painting 4 10-inch columbiad carriages; (f) construction of penthouses for 4 10-inch columbiads and 19 24-pounders; and (g) painting 30 32-pounder casemate carriages.[144]

b. Providing Storage Facilities for Ordnance Implements & Vehicles

Lieutenant Balch in early April 1857, to facilitate his work, requested authority to erect on the parades at Forts Pickens and McRee frame buildings for protection of sling carts and traveling forges. The one at Fort Pickens was to be sited opposite the center of the East Front curtain, and a suitable distance from the rampart.

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144. Balch to Craig, June 11, 1857, NA, RG 156, Ltrs. Recd., Chief of Ordnance. Lieutenant Balch reported that he had spent at Fort Pickens $636 for dismounting, removing, and mounting cannon; $70 for scraping, cleaning, and lacquering guns; $136 for transporting carriages and materials within the fort; $181 for breaking up condemned carriages and taking out defective parts; $363 for scarping and cleaning carriages; $672 for carpenter's work in repair of carriages; $183 for painting carriages; $212 for recutting bolts; $138 for repairing, cleaning, and painting implements; $391 for making and putting up racks and shelves for implements; $391 for construction of penthouses; $69 for repair to sling carts; $55 for making ox truck and wagon; $16 for repair of gins; $24 for construction of shed; $19 for repair to boat; $4.50 for repair of boathouse; $5 for ladders; and $94 for making and repair of tools.

Captain Newton, on forwarding the request to the Department, announced he had no objections to either the character or location of the structures.[145]

Before authority was received to proceed, Lieutenant Balch asked to be allowed to "fit up the two casemates or wide communications on the N. and S. fronts of Fort Pickens," next to the cisterns, for his implements. This would involve lining them and closing the ends with a light bulkhead. In case of an emergency, the implements would be removed.

In recommending approval of the request, Captain Newton wrote that these ordnance storerooms would not extend "sufficiently far into the scarp, to interfere with communication between the N. and S. Curtains and the N.W. and S.W. Bastions."[146]

The Department, noting Captain Newton's position, approved both requests.[147]

18. The 1857 Fire

Records on file in Record Groups 77 and 92 at National Archives do not contain any detailed information about the January 1857 fire. Lack of time prevented a review of the Pensacola newspapers for this period.[148]

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145. Newton to Totten, April 8, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer. The structure was to consist of a central building 10 x 17 feet, with two 22 x 8-foot wings. The eaves to be about 8 feet off the ground.

146. Newton to Totten, April 16, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

147. Totten to Newton, April 16 & 27, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

148. Register of Letters Received by the Chief Engineer and Quartermaster General, NA, RG 77 and 92.

On February 3, 1857, the Department called for information whether the buildings recently destroyed by fire were of any value to the Corps in its construction program, and for data on their replacement cost, if they were rebuilt.[149]

Captain Newton reported that the structures had belonged to the Quartermaster Department; that the Corps of Engineers had no present use for them; and should there be a future need he would advise the Department.[150]

19. Captain Newton's Last Months at Pensacola

a. He Travels to New Orleans for a Meeting

Captain Newton left Pensacola on December 14, 1857, for New Orleans to attend a meeting of the Special Board of Engineers. During his absence, Mr. Sweetman would again be in charge of the projects.[151]

On January 29, 1858, Newton asked for authority to increase Sweetman's salary as superintendent to $130 per month, retroactive to the first of the year. To justify the increase, he pointed out that Sweetman was in charge of the work at Forts Pickens and McRee. The government was paying a master-mason $100 per month for duties that were less responsible and onerous. Newton argued that an increase in Sweetman's wages would be "but an act of justice."[152]

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149. Totten to Newton, Feb. 3, 1857, NA, RG 77, Ltrs. Sent, Chief Engineer.

150. Newton to Totten, March 15, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

151. Newton to Totten, Dec. 14, 1857, NA, RG 77, Ltrs. Recd., Chief Engineer.

152. Newton to Totten, Jan. 29, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

The Department approved the desired salary increase on February 16.[153]

b. He Gets His Orders

Captain Newton's time at Pensacola was about over. On February 4, 1858, three years and four days after his arrival at the Barrancas, Newton received a copy of a special order detailing him for duty with the Mormon Expedition. Delighted at the opportunity to escape from his present assignment, and General Totten's overly close supervision, he dashed off a letter thanking Colonel Thayer "for the selection."[154] Newton had wrapped up his business and turned over his papers to Mr. Sweetman by the end of the month. From Mobile, on March 2, he wrote Colonel Thayer, reporting that he was en route to Fort Leavenworth, Kansas, where he would join the expedition.[155]

E. Lieutenant Prime as Superintending Engineer

1. Prime Divides His Time

a. Prime Assumes Responsibility for the Pensacola Projects

On March 2, 1858, the Department designated Newton's replacement. Orders were issued for Lt. Frederick E. Prime, currently stationed at Mobile, to proceed without delay to Pensacola and "assume charge temporarily of Engr. operations in that harbor" from Captain Newton, receiving from him the funds and property for which he is accountable. Prime would retain responsibility for the works at Mobile, assigning "your assistant Lieut. Snyder to position at either Mobile or Pensacola as you may judge best."[156]

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153. Wright to Newton, Feb. 16, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

154. Newton to Thayer, Feb. 4, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

155. Newton to Thayer, March 2, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

156. Wright to Prime and Wright to Newton, March 2, 1858, and Prime to Totten, March 4, 1858, NA, RG 77, Ltrs. Sent & Recd., Chief Engineer.

Prime had excellent credentials. Born in Italy of American parents, he was appointed to the United States Military Academy from New York. Prime graduated No. 1 in his class on July 1, 1850, and was commissioned a brevet 2d lieutenant in the Corps of Engineers. From 1850 to 1852 he was assistant engineer for repair of Fort Wood, Bedloe's Island, New York; in 1852 he helped supervise construction of Fort Schuyler; and in 1853 supervised improvements to navigation on the Hudson River. He was promoted 2d lieutenant on September 13, 1853, and spent the next four years as assistant engineer at Alcatraz. In 1857 he became superintending engineer at Alcatraz. Eighteen fifty-eight found Prime on the Gulf coast as superintending engineer in charge of construction of Fort Gaines and repair of Fort Morgan, Alabama.[157]

On March 5 Lieutenant Prime traveled to Pensacola and assumed charge of the work there, receipting for the funds and property. On his return to Mobile, he ordered Lt. George W. Snyder to "take post at the works in Pensacola Harbour."[158] Snyder, a New Yorker, had graduated from the United States Military Academy as No. 1 in the Class of 1856. Commissioned a brevet 2d lieutenant in the Corps of Engineers, Snyder had been ordered to Mobile as assistant engineer for construction of Forts Morgan and Gaines.[159]

b. Prime Loses His Assistant

Lieutenant Prime found it cumbersome to oversee the Mobile Bay projects and to supervise Lieutenant Snyder's work at Pensacola. He accordingly requested in late March to be relieved of responsibility for the latter.[160]

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157. Cullum, Biographical Register, Vol. II, p. 253.

158. Prime to Wright, March 10, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

159. Cullum, Biographical Register, Vol. II, p. 418.

160. Prime to Wright, March 22, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

The Department, because of the shortage of engineers with supervisory experience, found it impossible at this time to relieve Prime of responsibility for the Pensacola fortifications. His application would be placed on file, and would be reviewed whenever the situation became less pressing.[161]

The need to supervise projects on Mobile Bay and at Pensacola called for much travel on Prime's part. On May 13 he asked the Department to approve his request to be reimbursed for mileage between Mobile and Pensacola for trips made on March 7 and 23, April 15, and May 7.[162]

Lieutenant Snyder was also having problems. Captain Newton, on starting for the West, had left his family at the Barrancas, where they occupied the engineer quarters. Unwilling to ask them to vacate, Snyder took quarters off post and applied for commutation. Rejecting Snyder's voucher, the Department informed him that he was not entitled to commutation, while there were quarters at the post occupied by persons not entitled to public quarters by regulations. If Captain Newton's family continued to occupy the quarters to which he was entitled, Snyder must ask them to vacate.[163]

Snyder used the Department's letter for leverage in getting Newton's family out of the engineer quarters.

By mid-June 1858 funds for the Pensacola projects were nearly exhausted, and they would soon be closed down. Lieutenant Snyder accordingly applied to the Department to be relieved from duty as

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161. Wright to Prime, April 13, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

162. Prime to Wright, May 13, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

163. Wright to Snyder, March 29, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

assistant engineer at Pensacola.[164] Lieutenant Prime was agreeable. On June 25 he wrote Colonel Thayer that Snyder's "services can be dispensed with as soon as it is thought proper to relieve him."[165]

After reviewing the correspondence, Captain Wright forwarded Snyder's application to be relieved from duty as Prime's assistant at Pensacola to Acting Chief Engineer Thayer.[166] Snyder's request was approved by both Thayer and Adjutant General Cooper. In July, Snyder started for the U.S. Military Academy, where he would assume duties with the Board of Engineers for the Atlantic Coast Defenses. On August 8, on the departure of Lieutenant Snyder, Lieutenant Prime moved from Mobile to Warrenton, occupying quarters on the Barrancas reservation.[167]

2. Lieutenant Prime Completes the Programmed Alterations

a. Funding the Project

Lieutenant Prime found on assuming responsibility for Fort Pickens that funds available from contingencies of fortifications and from the appropriation for permanent platforms seemed unlimited as to time. Before committing himself he wished to know if this were correct.

A review of the accounts for Forts Pickens, McRee, and Barrancas revealed that the sums currently allotted were not large. Consequently, if no more money were forthcoming, these works would

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164. Snyder to Thayer, June 14, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

165. Prime to Thayer, June 25, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

166. Wright to Prime, July 6, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

167. Prime to Wright, Aug. 22, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

have "to be left in a state to stand the inclemencies of the weather for a year or two, unless Congress should make an appropriation."[168]

The Department on April 13 assured Prime that its intention was to provide the funds for asphalting the arches, laying platforms, regulating the parapets, etc., at Fort Pickens from the appropriations for permanent platforms and contingencies.[169]

In late April 1858 Lieutenant Prime, as an economy measure, pared the pay roll. He laid off the foreman and one clerk, which resulted in a savings of $200 per month. He at the same time asked authority to increase the salary of the remaining clerk from $70 to $125 per month.[170]

b. Department Insists on the Use of Mineral Tar

Lieutenant Prime was at Fort Pickens on March 22. When he inspected the work in progress, he found that, besides the slates and the courses of brick on mastic, an additional course of brick had been added in lieu of the layer of shells. Lieutenant Snyder explained that it had been impossible to procure shells.

The project had been delayed, he notified the Department, for "want of mineral tar to prepare the vertical (scarp and parade) walls for the reception of the coat of asphalt required by the instructions." As the shipment of mineral tar had been lost, Prime planned to replace it from Mobile or New Orleans. If this were

168. Prime to Wright, March 22, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

169. Wright to Prime, April 13, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

170. Prime to Wright, April 23, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

impossible, Prime inquired, "could cement plastering or coal tar be used overlapping the lead flashings."[171]

The Department, rejecting his suggestion, cautioned that under no circumstances was coal tar to be substituted for mineral tar, as the former was known to be "perishable."[172]

On April 15, 1858, Prime again complained to the Department that the "want of mineral tar" had slowed his workmen. Should it not be rectified, he would have to stop all work. It was pointed out that the force employed was necessarily very small, and "the contingent expense very heavy comparatively." Unless the mineral tar was received by the end of the month, he would pay off a number of men. If it did, he expected to complete the work on the curtains and bastions by June 15.

His 22 laborers, he reported, had completed removal of the earth from the arches of the Southwest Bastion.[173]

Replying for the Department, Captain Wright trusted the mineral tar would be received in time to forestall any delays, as the projects at Fort Pickens were "highly important."[174]

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171. Prime to Wright, March 22, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

172. Wright to Prime, April 13, 1858, NA, RG 77, Ltrs. Sent. Chief Engineer.

173. Prime to Wright, April 15, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer. The construction force charged against Fort Pickens on March 31, 1858, included: one draftsman at $4 per day, 1 master-mason at $2.75 per day, 3 masons at $2.25 per day each, 1 applicateur at $62 per month, 3 carpenters at $3 per day each, 1 blacksmith at $3 per day, 1 rigger at $50 per month, 22 laborers at $1 per day each, 2 clerks at a monthly salary of $70 each, and 1 superintendent at $130 per month.

174. Wright to Prime, April 24, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

c. Perfecting Sketches & Plans of Southwest and Northwest Bastions

On March 17, 1858, Lieutenant Prime transmitted to the Department a "Sketch of S.W. Bastion of Fort Pickens, Drawn from actual measurements under the direction of Capt. John Newton, U.S. Engrs., by William James, C.E."[175] Four weeks later, on April 12, Prime forwarded a "Sketch of N.W. Bastion of Fort Pickens, Drawn from actual measurements under the direction of 1st Lieut. F.E. Prime, U.S. Engrs., by W.H. James, C.E."[176]

Department personnel, although they had reviewed the drawing of the Southwest Bastion forwarded March 17, were uncertain as to the form of the bastion roof surfaces. Prime, as he had reported the roof stripped, would have drawings made of the subject area, exhibiting existing provisions for drainage.

Repair of the Tower Bastion, the southwest curtain, and Southwest Bastion would involve removal of the parapet and terreplein as far as the middle of the first casemate pier on the south curtain, Captain Wright explained.[177]

On May 7 Lieutenant Prime replied that at this time it would be impossible to forward a drawing, showing the drainage and roof surfaces of the Southwest Bastion. This was because he had errored in stating that the bastion had been stripped. He had ordered Lieutenant Snyder to have the earthen parapet removed and as much of the

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175. Prime to Wright, March 17, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of the subject plan is on file at the Florida Unit, Gulf Islands NS.

176. Prime to Wright, April 12, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of the subject plan is on file at the Florida Unit, Gulf Islands NS.

177. Wright to Prime, April 20 & 24, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

breast-height wall as was in a dilapidated condition. This should be accomplished by May 20, and the desired data would be forwarded to Washington.[178]

The requested drawing had been completed by Mr. James by June 20. On that day Lieutenant Snyder mailed to the Department a "Sketch of S.W. Bastion of Fort Pickens showing in blue lines & figures the roof surfaces, & in red lines the positions of casemate & embrasure ventilators--also, sketch of South West curtian showing in red lines the positions of ventilators."[179]

Department draftsmen meanwhile had utilized the drawings received from Lieutenant Prime to perfect a "Sketch of S.W. Bastion, showing the position of its Barbette guns, the modification of the parapet, etc." This was mailed to Prime on May 4. Captain Wright, in the covering letter, pointed out that the "true position of all the gun platforms are shown," as are "their dimensions, with the distance of each below the plan of the crest."

Prime should note that the increased thickness of the parapet would be "made up in the same manner" as with the Tower Bastion, and the instructions given in relation thereto would be followed. So far as possible, the ridges and gutters had been indicated, but they would have to be corrected on receipt of Prime's drawing of the roof surfaces.

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178. Prime to Wright, May 7, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer. James, having completed the Fort Pickens drawings, had been employed to make "a finished drawing of the Redoubt with sections showing the masonry as built, some of which differs in detail from the original drawing." Prime to Wright April 23, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

179. Snyder to Wright, June 20, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

By reference to "the general section of scarp and parade wall," Prime would see that the exterior slope of the earthen parapet, on the land front, varied from 1 on 1.470 to 1 on 1.659. This variance arose because of a difference of level in the top of the scarp. It was the intent that the top of the scarp remain as at present. Upon it would be placed a sloping mass of concrete, faced on the front by a brick wall. The top of the wall to be parallel to the top of the cordon, and at a distance of 2'4½" above it. As the exterior and interior crests were parallel to each other, the surface of the slope would be warped.[180]

d. Covering the Chimneys and Ventilators

Lieutenant Snyder found in the files no drawings detailing how the chimneys rising from the crown of the casemate arches through the terreplein were to be covered.

He wished to know if they were to be covered similar to the Tower Bastion ventilators. Those, he informed the Department, were either covered by a stone, the upper surface of which was on the plane of the terreplein, or by a cast iron cover like the well hole to the drain in the valley of the casemate roof.[181]

On May 24 Captain Wright informed Lieutenant Prime that drawings on file in Washington of the Tower Bastion depicted stacks of two flues rising through the centre of the terreplein and three ventilators on each side of the capital, which are presumed to be terminated on the plane of the terreplein. On the southwest curtain and Southwest Bastion no chimney stacks or ventilators were represented on the drawings. But as the sketches were faulty, it was probable that

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180. Wright to Prime, May 4, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer. A copy of the subject plan is found in files of the Florida Unit, Gulf Islands NS.

181. Snyder to Wright, May 2, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

there were other chimneys and ventilators. No instructions in reference to their finish would be given till receipt of a sketch showing their whereabouts.[182]

On June 12 Prime notified the Department that the chimneys on the southwest curtain had been covered with flagstone and concrete, where they interfered with gun platforms.[183]

e. Work Accomplished in Fiscal Year 1858

On August 18, 1858, Lieutenant Prime submitted his annual report for fiscal year 1858. During the 12 months ending June 30, the artisans and laborers had completed repair of the casemate arches, parade wall, and alterations of the scarp-wall of the Tower Bastion, with the exception of covering the terreplein with clay and planting it in grass. The three columbiad and two 8-inch howitzer platforms were ready to receive their armament.

On the southwest curtain the brickwork had been completed, except for the coping of the parade wall, banquettes, and circular containing walls of the columbiad platforms. The mastic, dry walls, and shells were in place, and the terreplein filled. Seven columbiad platforms had been laid, ready to receive the ironwork.

The Southwest Bastion had been stripped and was being readied for the applicateur. The masonry parapet had been altered.

During the year 342½ cubic yards of concrete had been poured, and 982 cubic yards of brickwork laid, part in mortar and part dry.

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182. Wright to Prime, May 24, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

183. Prime to Wright, June 12, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

The amount expended on the project was $42,790. To complete it required another $10,000.[184]

During the year carpenters had made centers for water conductors, built a water tank, repaired boats and scows, and fashioned straight edges and levels for masons and applicateurs. The masons had built ventilators, coping, and chimneys; arched water conductors, and additions to scarp and parade walls; repaired roofs of arches; cut holes through scarps of bastion faces for conductors; poured concrete, cut stone for coping, and set pintle-stones. Riggers had transported materials and men across the bay; received lumber, brick, cement, lime, and stone; hauled up and launched a scow; built a derrick, raised granite for new platforms to, and removed old traverse stones from the barbette tier. A blacksmith had sharpened tools; made screw bolts, ironwork for repair of wharf, lead pipes, iron clamps for stone angler blocks of breast-height and scarp-walls; and cramp irons. An overseer had supervised the laborers. A tallyman had received the brick and stone. A caulker had caulked the scow. The applicateur had applied mastic to the roofs of the arches, filled in the coping of the scarp-wall, and to the vertical walls.

Laborers had assisted the artisans, moved materials from the wharf to the fort, mixed and wheeled concrete, helped the riggers to hoist materials onto the barbette tier, took up terreplein, wheeled off brick and sand, stripped lead from the casemate roofs, built platforms for masons, cleaned brick, dismounted cannon, lowered traverse stones and guns from the barbette tier, hauled fuel for applicateur, broke brickbats, cut through parade wall for water conductors, repaired

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184. Annual Report for Fiscal Year 1858, Fort Pickens, dated Aug. 18, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the U.S. for the 2d Session, 35th Congress (Washington, 1859), Serial 976, Vol. 3, p. 826.

wharf, hauled up scow, built staging for masons, applied tar to seams of coping, cut out coping from scarp-wall, sharpened tools, dug wells, assisted in the stables, slacked lime, and cut grass on earthen slopes of the parapet and glacis.

A plumber had been employed to fashion lead flashings, aprons, and pipes. The stone mason had drilled stone for traverse circles and pintle-blocks. A rodman had assisted Mr. Jones in making his measurements.[185]

f. Closing Down the Project

The project, the allotted funds exhausted, was closed down in December 1858. The fort and public property were placed in charge of the ordnance-sergeant, who was instructed by Lieutenant Prime to keep the gates locked.

During the final months of the undertaking, the work force was employed as follows: the stone masons cut covers for ventilators and drilled traverse circles for reception of irons. A blacksmith aided the stonemason, sharpened tools, and laid traverse irons. Brick masons set pintles and traverse stones for remaining columbiad platforms; completed breast-height wall of Southwest Bastion; built ventilators, coping of parade wall, banquettes, and curbing for three 12-pounder platforms; repaired pavement of terreplein, water conductors, shot furnaces, and parade wall. The overseer and rigger supervised the laborers. The applicateur applied mastic around the Southwest Bastion gun platforms. Laborers assisted the mechanics and artisans; mixed, wheeled, and rammed concrete; transported and hoisted materials to the barbette tier; caulked coping of parade wall; repaired piazza roofs of the Officers' Quarters; attended to the mules; removed old traverse stones; made earthen slopes; cut bushes, dug and planted grass

185. Monthly Reports of Operations at Fort Pickens, Oct. 1857-June 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

on terreplein; and saw to general police of grounds preparatory to closing down the project.[186]

g. Prime Asks & Receives Instructions as to Disposition of Salvaged Lead Sheeting

On August 22, 1858, Lieutenant Prime had notified the Department that a large amount of lead sheeting had been salvaged in stripping the casemate arches of the Channel Fronts. Unless it was determined to employ the lead for new embrasures, he proposed to ship it to the New York depot to be sold by Lieutenant Gillmore.[187]

The Department had other plans. The lead would be retained by the service. Prime would, however, advise Lieutenant Gillmore of the quantity on hand, so it could be sent directly to wherever there was use for it.[188]

h. Prime Assumes Added Responsibilities and Moves to Biloxi

On September 1, 1858, Lieutenant Prime applied for four months' leave, to begin as soon as operations currently in progress at Fort Pickens were closed. He estimated this should take place some time during the second half of October. All work for which he was responsible would then be shutdown, allowing his services to be dispensed with. If Congress voted an appropriation applicable for either the Mobile or Pensacola fortifications in fiscal year 1859, he could "give up an unexpired portion of his leave in order to return to my post."[189]

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186. Monthly Reports of Operations at Fort Pickens, July-Dec. 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

187. Prime to Wright, Aug. 22, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

188. Wright to Prime, Oct. 14, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

189. Prime to Wright and Prime to Cooper, Sept. 1, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer. Samuel Cooper was Adjutant General of the U.S. Army.

Colonel Thayer, as Acting Chief Engineer, approved the request for furlough to commence October 15, provided Prime could arrange operations to insure that the public interest would not suffer any ill effects.[190] On learning of this, Prime wrote the War Department that, while on leave, his address would be in care of: Edward M. Cary, Boston, Mass.[191]

Work dragged. On October 14 Prime advised the Department that, because of "a delay in completing repair of Fort Pickens," he would be unable to avail himself of his furlough for some weeks.[192]

On January 7, 1859, Prime was still on the Gulf Coast. That very day he had returned to Pensacola from Mobile, having accompanied General Scott, the general-in-chief, on an inspection of Fort Morgan. Scott had visited Forts Pickens and Barrancas while in Pensacola.[193]

It had been late December before the project was closed and hands laid off. The visit of the general-in-chief had then kept Prime occupied for several days. Following Scott's departure, Prime wrote Adjutant General Cooper that he had not yet availed himself of his four-month leave. He asked that he be allowed to commence his furlough

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190. Thayer to Cooper, Sept. 11, 1858, and Wright to Prime, Oct. 7, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

191. Prime to Cooper, Sept. 21, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

192. Prime to Wright, Oct. 14, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

193. Prime to De Russy, Jan. 7, 1859, NA, RG 77, Ltrs. Recd., Chief Engineer. Lt. Col. René De Russy had relieved Colonel Thayer as Acting Chief Engineer on December 22, 1858. General Totten spent 1859 and 1860 on a reconnaissance of the Pacific Coast.

from such date as he could leave his post, consistent with the public interest in his charge.[194]

The Department detained Prime's letter, addressed to the Adjutant General. Writing Prime of this action, Acting Chief Engineer Lt. Col. René De Russy informed him of the death of the project engineer at Ship Island, Mississippi, Lt. Newton F. Alexander. This made it necessary to retain Prime on the Gulf Coast for another three or four months. In addition, DeRussy felt Prime would find it more agreeable to spend the summer in the north rather than in the south.[195]

On March 7, 1859, Prime learned that it would be "some time" before he could take his leave. Two weeks before Colonel De Russy had written, notifying him that in addition to his duties at Pensacola and Mobile, he had been selected as Lieutenant Alexander's replacement. As such, he would be responsible for construction of the Ship Island fort. For guidance, he was to apply to Major Beauregard at New Orleans for such papers and property pertaining to the proposed work as were in his possession.

Prime was to take post at either Biloxi or Ship Island, and proceed with "an active prosecution of operations."[196]

Acknowledging receipt of the message, Prime traveled to Biloxi by way of New Orleans.[197]

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194. Prime to Cooper, Jan. 7, 1859, NA, RG 77, Ltrs. Recd., Chief Engineer.

195. De Russy to Prime, Jan. 25, 1859, NA, RG 77, Ltrs. Sent, Chief Engineer.

196. De Russy to Prime, Feb. 22, 1859, NA, RG 77, Ltrs. Sent, Chief Engineer.

197. Prime to De Russy, March 17, 1859, NA, RG 77, Ltrs. Recd., Chief Engineer.

i. Prime's May 1859 Visit

Lieutenant Prime returned to Pensacola from Mississippi for a brief inspection of the forts in the fourth week of May. At Fort Pickens, he saw that about 30 feet of the wharf had given way. The cost of repairs would be about $100.

Work completed in December to the barbette tier of the Channel Fronts, despite drenching spring rains, was in good condition, except the exterior slope of the earthen parapet of the flank of the Southwest Bastion. It was "much gullied", the clay having eroded in some places, exposing the sand fill.[198]

Nine men (an overseer, a teamster, and seven laborers) were hired in June and repaired the wharf. To do so, they cut on the Barrancas Reserve 60 trees for piles.[199]

j. Work Accomplished in Fiscal Year 1859

Lieutenant Prime, in submitting his annual report for fiscal year 1859, noted that in the six months ending December 31, 1858, workmen at the southwest curtain had covered the asphalt with dry brick and shells. Drains in the valleys had been built, the terreplein filled, and the remaining columbiad platforms built. The 20 curtain platforms had their irons and pintles in position. The terreplein had been graded, covered with clay, and planted in Bermuda. The upper part of the parade wall had been straightened and a brick coping added.

At the Southwest Bastion, arches had been covered with asphalt, dry brick, and shells; drains built in the valleys;

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198. Prime to De Russy, May 23 and June 13, 1859, NA, RG 77, Ltrs. Recd., Chief Engineer. This was his first visit to Pensacola in four months.

199. Monthly Report of Operations at Fort Pickens for June 1859, NA, RG 77, Ltrs. Recd., Chief Engineer.

terreplein filled, graded, covered with clay, and Bermuda planted. The breast-height wall of the south face and flank had been built; the earthen parapet embanked, covered with clay, and planted with Bermuda. All the columbiad platforms and the three 12-pounder traverse circles and pintles on the flanks had been built, and the irons laid.

Slight repairs had been made to the shot furnaces, the wharf, and to the brick pavement of the northwest and south curtain terrepleins.

The fort was ready to receive all its casemate armament, while the barbette guns could be mounted--the heavy guns on the Southwest and Tower Bastions and the southwest curtain. Other sections of the work mounted the armament called for by the 1839 Board. Magazines were in good order. The quarters could be occupied, though in bad condition.[200]

3. Readying the Barbette Platforms for Their Armament

a. Requisitioning Ironwork for the Columbiad Platforms

On May 7, 1858, Lieutenant Prime had inquired of the Department, is it intended that the Engineer force mount the guns "as rapidly as the platforms are completed?" If so, several of the Tower Bastion positions were ready to receive their columbiads.[201]

When Captain Wright referred this subject to the Ordnance Department, Col. James W. Ripley informed Wright that it was

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200. Prime to De Russy, Aug. 4, 1859, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Document, Printed by Order of the Senate of the United States for the 1st Session, 36th Congress (Washington, 1860), Serial 1024, Vol. 2, p. 649.

201. Prime to Wright, May 7, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

best not to mount the columbiads at present, because the carriages could be "more effectively protected in storage than on the platforms." This was predicated on the assumption that the carriages were properly sheltered.[202]

Prime on May 25 asked the Department to requisition 11 sets of irons for columbiad platforms.[203] Captain Wright accordingly directed Lieutenant Gillmore at the New York depot to ship to Pensacola 11 sets of columbiad traverse irons, bolts, etc. A requisition for pintles was forwarded to the Ordnance Department.[204]

On October 14, 1858, Prime informed the Department that he had paid freight on certain pintles, pintle-plates, etc., supplied by the Ordnance Department. Believing this an expense for which the Quartermaster Department was responsible, Prime had written the New York Quartermaster, who had shipped the items. His letter had not been acknowledged.[205]

The Department reassured him: the cost of transportation on these items was to be charged to the Quartermaster General.[206]

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202. Wright to Prime, June 9, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

203. Prime to Wright, May 25, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

204. Wright to Prime, June 5, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

205. Prime to Wright, Oct. 14, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

206. Wright to Prime, Oct. 21, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

b. Ordnance Department Makes a Complaint

The Ordnance Department complained that certain machinery belonging to it in charge of the Fort McRee ordnance-sergeant had been borrowed by the Engineers and returned in unserviceable condition. In the future, the Chief of Ordnance complained, the Corps must either replace items worn out while on loan or give the ordnance-sergeant a certificate setting forth the condition of the gear on its return.[207]

Troubled by this complaint, Lieutenant Prime went to see Lt. Amos Beckwith, the commander of the troops posted in the harbor. Beckwith, after checking with the ordnance-sergeants, certified that "no article of property whatever has been loaned to the Engineer Corps and returned in an unserviceable state."[208]

4. Condition of the Fort on June 30, 1860

The Ship Island project engrossed most of Prime's time and energy. It was March 1860 before he again visited the Pensacola forts. He found Fort Pickens in the same condition as in May 1859. The new grass on "the terreplein had taken root & promises to do well." The parapet and exterior slope of the left flank of the Southwest Bastion were still in bad condition, "notwithstanding the repairs made to the eroded slopes the previous summer."

There had been no leakage, he was told by the ordnance-sergeant, into the casemates of the Tower and Southwest Bastions and southwest curtain. This was welcomed, as it demonstrated that the sealing of the casemate arches with mastic was succeeding.

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207. Wright to Prime, Sept. 21, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

208. Beckwith to Prime and Prime to Wright, Oct. 7, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

Some of the lead sheeting salvage from the casemate roofs had been boated to Ship Island. Funds transferred from the Ship Island account to Fort Pickens, in payment for the lead, would be sufficient to provide for maintenance of the fort in fiscal year 1861.[209]

On July 6, 1860, from Biloxi, Lieutenant Prime submitted his annual report for fiscal year 1860. Fort Pickens was in the same condition as on June 30, 1859, no appropriation having been made for "continuation of the repairs." The only work undertaken in the past 12 months had been maintenance-oriented, and was directed toward combating erosion of the earthen parapet of the Southwest Bastion.

The fort was ready for its casemate armament; the new barbette armament for the southwest curtain and two bastions; and the old armament on the remaining fronts. The magazines were in good condition, the quarters were dilapidated.[210]

5. Prime's Estimates for Placing the Fort in 1st Class Condition

a. August 1858 Estimate

On August 18, 1858, Lieutenant Prime had estimated that to complete alterations necessary for mounting the heavier armament and to place the fort in first class condition would cost:

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209. Prime to De Russy, March 15, 1860, NA, RG 77, Ltrs. Recd., Chief Engineer.

210. Prime to De Russy, July 6, 1860, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the Senate of the United States, 2d Session of the 36th Congress (Washington, 1860), Serial 1079, Vol. 2, p. 266.

Repair and changes to northwest curtain . . .	$17,600
Repair and changes to Northwest Bastion . . .	15,864
Repair and changes to south curtain	19,558
Repair and changes to north curtain	17,350
	$69,872
Repair of Northwest Bastion cistern	1,210
One magazine in bastion (masonry & woodwork) . .	1,000
Replacement of shingling of breast-height wall of counterscarp by 8-inch brickwall	1,020
Repair of officers' quarters	8,000
Altering floors of casemates & fitting them as barracks & storerooms	4,000
Paving sally port with granite	600
Rebuilding cunette	2,000
	$87,702
Less the value of traverse stones, irons, old lead and materials salvaged from old work that can be reused	- 7,702
	$80,000

No estimate had been prepared of work needed on the East Front, because Lieutenant Prime was unaware of any changes the Department contemplated there beyond positioning of traverse circles on the curtain. The strengthening of the scarp of the curtain by an increased thickness or relieving arches and an increase of the thickness of the parapet had been suggested by Captain Newton.

The casemates to be employed as barracks and storerooms should be designated and outfitted as such. A majority, at the moment, were filled with engineer and ordnance stores, or used as quarters by the whites and blacks employed on the project. Such a situation was undesirable, and should not be allowed to continue any longer than necessary.[211]

Considering the importance of Pensacola Harbor, Prime urged the "speedy completion of repairs of this work & consequent

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211. Prime to Wright, Aug. 18, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

urgency of obtaining appropriation now asked for." Nothing should be done to the "Barrancas until Fort Pickens has been brought to its proper state of efficiency," he wrote.[212]

On September 15 Lieutenant Prime asked the Department for its proposals for improvements and repairs to the East Front.[213] In formulating estimates, Captain Wright replied, it was sufficient to know that the Department proposed to continue the changes in armament at Fort Pickens, and alterations connected therewith in the manner heretofore executed. As to the extent of repairs to the casemate roofs, Prime was to be the judge.[214]

b. November 1858 Estimates

Prime accordingly revised Newton's estimates for repair and improvements to the Channel, North, and South Fronts, and prepared figures for work needed to the East Front. These he forwarded to the Department on November 10, 1858. He listed:

Southeast Bastion--covering casemates of flanks, passage and magazine with asphalt, etc., taking down and rebuilding breast-height wall, 7 columbiad platforms, taking up and putting down 3 12-pounder gun traverse stones and pintles	$11,565
Northeast Bastion--covering flank casemates, magazine and passage with asphalt, etc., taking up and putting down 4 32-pounder gun traverse circles and pintles, same for 3 12-pounder guns, removing one 32-pounder gun traverse circle and pintle and replacing by one columbiad platform.	$ 9,970

212. Prime to Wright, Aug. 14, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

213. Prime to Wright, Sept. 15, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

214. Wright to Prime, Oct. 14, 1858, NA, RG 77, Ltrs. Sent, Chief Engineer.

East Curtain--excavating in rear of scarp-wall so as to allow it to be strengthened from the first offset 6 feet above the foundations, building mass of breastwork at foot of exterior slope, putting down traverse circles and pintles for 13 24-pounder guns, regrading slopes, removing counterforts on exterior of scarp. . . . . $ 9,058

Cisterns--repair of one in Northwest Bastion and furnishing it and one in Southwest Bastion. . . . $ 381

North Curtain--covering arches with asphalt, etc., strengthening and straightening parade wall, concrete back of scarp, taking down and rebuilding breast-height wall, taking up and replacing 7 32-pounder gun traverse circles and pintles. $13,176

South Curtain--covering casemates with asphalt, etc., strengthening and straightening parade wall, backing scarp with concrete, mass of brickwork foot of exterior slope, taking up 7 24-pounder gun traverse circles and pintles, putting down 7 columbiad platforms. . . . $14,958

Northwest Bastion--covering arches with asphalt, etc., raising and altering masonry parapet, straightening and strengthening parade wall, taking up and putting down breast-height wall of earthen parapet, putting down 6 columbiad platforms and 2 platforms for 8-inch howitzers. . $17,374

Northwest Curtain--covering casemates with asphalt, etc., raising and altering masonry parapet, strengthening and straightening parade wall, putting down traverses and pintles for 20 8-inch seacoast howitzers. . . . $16,352

Cunette--building brick cunette where there is none and repair of portion already built. . . . . $ 3,182

Sally Port--paving with granite blocks. . . . . $ 630

Breast-height Wall, Counterscarp--topping out breast-height wall with 8-inch brick wall, building 2 small walls 8 inches thick to hold earth of banquette, repair of traverses, cracks in counterscarp wall, and making necessary repairs of earthwork. . . . . $ 3,415

Repair of Officers' Quarters, North Curtain. . . . $ 2,225

Repair of Officers' Quarters, South Curtain. . . . $ 2,919

Completing changes and repairs ordered by Department to Southwest Curtain, Southwest and Tower Bastions. . $15,533

Contingencies	$ 8,265
Total	$129,008
Deduct	
34 sets of traverse stones @ $80	$ 2,720
34 sets of traverse irons @ $8	$ 272
35 tons of old lead @ $130	$ 4,550
300 cubic yards of old masonry employed in concrete instead of shells @ $3.75	$ 1,125
	$ 8,667
Total amount required to complete repairs and changes .	$120,341

These estimates included those necessary to change from the old to a heavier armament; recovering all casemates and protecting them by asphalt and brick drainage, as already done on certain parts of the fort; repair of cracks and straightening coping of parade walls; strengthening scarp and curtain of East Front and removal of counterforts on its exterior; paving sally port; repair of old brick cunette and extending it around entire work; repair of cracks and straightening coping of counterscarp wall, breast-height wall of covered way, and masonry of traverses; carrying breast-height wall of counterscarp to the interior crest and renewing banquettes; and repair of Officers' Quarters and adjoining piazzas.

Lieutenant Prime proposed the completion of this work over 15 months. During the first 12 months, repairs and changes throughout the interior could be finished, except for those to the east curtain and Southeast Bastion. The latter were required as places of deposit for the earth, while other parts of the project were completed.[215]

215. Prime to Wright, Nov. 10, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

c. Congress Fails to Appropriate Funds to Implement the Estimates

To fund this program in Fiscal Year 1861, Prime asked for an appropriation of $75,000. This sum would be applied to altering the barbette armament and repair of casemate arches on the northwest, south and north curtains, and Northwest Bastion; repair of quarters, Northwest Bastion cistern, shot furnaces, and sally port.[216]

Having received no appropriation for Fiscal Year 1860, Lieutenant Prime on July 6, 1860, asked for an appropriation of $75,000 for Fiscal Year 1862. This was to be applied in the same manner as the one previously requested.[217] Secession of the lower south, followed by the Civil War, doomed this request.

6. Company G, 1st U.S. Artillery, Returns to Barrancas Barracks

a. Troops Arrive

To provide medical services for the construction hands (38 at Pickens and 47 at the Redoubt), Captain Newton, when the troops were withdrawn from the harbor in November 1856, signed a contract with Dr. Johnson. After assuming responsibility for the Pensacola forts, Lieutenant Prime, Dr. Johnson having removed from the area, contracted with a Dr. Bishop.[218]

Lieutenant Prime was soon relieved of this expense. On June 18, 1858, Bvt. Lt. Col. John H. Winder and his Company G, 1st U.S. Artillery, landed at the navy yard and occupied Barrancas

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216. Prime to De Russy, Aug. 4, 1859, NA, RG 77, Ltrs. Recd., Chief Engineer.

217. Prime to De Russy, July 6, 1860, NA, RG 77, Ltrs. Recd., Chief Engineer.

218. Prime to Wright, April 7, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

Barracks. The company had sailed from Fort Dallas, Florida, on the 10th. For the first time since the departure of Company F, 2d U.S. Artillery, on November 29, 1856, there was a company of troops in Pensacola Harbor.[219]

With soldiers again stationed at Barrancas Barracks, Lieutenant Prime brought to Colonel Winder's attention the need to provide maintenance for the Fort Pickens cannon. Winder's presence relieved Prime of the necessity of giving orders to the ordnance-sergeants.[220]

b. Troops Occupy Several Engineer Buildings

With construction closed down and Lieutenant Prime stationed at Biloxi, Colonel Winder believed that his troops could make better use of some of the structures belonging to the Corps of Engineers. In June 1859 Prime was notified by the Assistant Quartermaster of Barrancas Barracks that Colonel Winder, as post commander, had claimed the Engineer Quarters and would assign them to one of his married officers.

Writing the Department for guidance, Prime pointed out that the structure in question had been built by Major Chase as an office for the Corps. The office had since been relocated into a room in the barracks. Should this room be needed by the troops, there would be no suitable building for the office, except the house now used as quarters. Prime believed there were at Fort Monroe and other posts quarters built by the Engineers and exclusively under their control. He therefore saw no reason to transfer the subject quarters to the Quartermaster Department.[221]

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219. Returns for Regular Army Artillery Regiments, June 1821-1901, NA, Microcopy M-727.

220. Prime to Wright, June 18, 1858, NA, RG 77, Ltrs. Recd., Chief Engineer.

221. Prime to De Russy, June 25, 1859, NA, RG 77, Ltrs. Recd., Chief Engineer.

As there was no officer of the Corps posted at Pensacola, the Department recommended that the quarters be turned over to the Quartermaster Department. Such action would enable the Corps to avoid a confrontation with Colonel Winder, which could result in referring the subject to the Secretary of War.[222]

Five months later, in November, the Quartermaster General, at Colonel Winder's request, asked for transfer of the Barrancas stables. The Department notified Lieutenant Prime that, with Engineer operations suspended at Pensacola, there was no objection to transfer of the stables to the Quartermaster Department. There was one condition, however, they must be kept in repair and be available to the Corps whenever construction was resumed.[223]

Prime had no objection to use or future joint occupancy of the stables by the Quartermaster Department and the Corps, as long as such did not interfere with the stabling of Engineer teams.

There was considerable Engineer property stored in the stables. Prime asked that it be undisturbed, unless it was deemed absolutely necessary by the Quartermaster Department. If this occurred, the property must be moved and carefully stored elsewhere.[224]

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222. De Russy to Prime, July 12, 1859, NA, RG 77, Ltrs. Sent, Chief Engineer.

223. Wright to Prime, Nov. 21, 1859, NA, RG 77, Ltrs. Sent, Chief Engineer. Prime, having left Biloxi on August 26 to take advantage of his four-month leave, was in New York State at this time.

224. Prime to De Russy, Nov. 23, 1859, NA, RG 77, Ltrs. Recd., Chief Engineer.

Quartermaster General Jesup was accordingly notified by the Acting Chief Engineer that his people must provide for the security of the property stored in the stables, in event of removal.[225]

7. Stormy Summer on Pensacola Bay

Three tropical storms struck the Gulf Coast in the summer of 1860. High winds buffeted Pensacola Bay on June 23. The boat belonging to the Quartermaster Department and charged to Ordnance-Sergeant A.M. Gardner was blown out to sea. She drifted ashore in Alabama, near Mobile Point. As Sergeant Gardner had no funds, Lt. Jeremiah Gilman, as post quartermaster, paid $25 for her recovery. After the vessel was repaired, she was returned to Sergeant Gardner, who needed her in crossing the bay to his Fort Pickens duty station.[226]

A mid-August hurricane did no damage to Engineer property in Pensacola Bay beyond demolishing about 60 feet of a pile jetty under construction for preservation of the site of Fort McRee.[227]

A second hurricane came roaring in on September 15. The Fort Pickens wharf was wrecked, and Sergeant Gardner's sailboat again broke loose from her moorings. She was driven across the bay by huge waves and came ashore on the Barrancas side. The craft was salvaged after the storm abated. When Lieutenant Gilman inspected the vessel, he found the bottom stove in. The cost of effecting repairs, he estimated at $35 and the value of the boat at $80.

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225. Wright to Prime, Nov. 26, 1859, NA, RG 77, Ltrs. Sent, Chief Engineer.

226. Gilman to Johnston, Aug. 26, 1860, NA, RG 92, Consolidated Correspondence File. General Jesup had died and was replaced as Quartermaster General by Joseph E. Johnston on June 28, 1860.

227. Prime to De Russy, Aug. 18, 1860, NA, RG 77, Ltrs Recd., Chief Engineer.

Requesting authority to have the craft repaired, Gilman pointed out that Sergeant Gardner was stationed on Santa Rosa Island and needed a boat. Quartermaster General Joseph E. Johnston agreed, and the craft was repaired.[228]

Severe damage done by wind and water to the wharf and temporary buildings at Ship Island by the mid-September hurricane kept Lieutenant Prime there until mid-October. By the 13th temporary repairs had been effected and all the government property secured. Prime then left Biloxi to inspect the works at Pensacola and Mobile for which he was responsible.[229]

Prime reached Pensacola on the 15th. Except for the wharf he found no damage at Fort Pickens. Unless he was directed to do so, he would not rebuild the wharf. To justify his inaction, he informed the Department that with no construction funds for the fort, there was no need of a wharf, "unless the Ord. Dept. contemplates sending the heavy armament required for a portion of the barbette tier."

Two men were hired. Working under the supervision of Ordnance-Sergeant Gardner, they cut the grass on the ramparts and terreplein slopes and removed weeds that had grown up through the joints of the paved terreplein and the breast-height wall. They also removed clay from the casemates where leakage was serious, secured mineral tar and other Engineer property, and policed the area. It took them to the end of November to complete these tasks.[230]

His business finished at Pensacola and Mobile, Prime returned to Ship Island, as that project was his major challenge.

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228. Gilman to Johnston, Sept. 19, 1860, NA, RG 92, Consolidated Correspondence File.

229. Prime to De Russy, Oct. 10, 1860, NA, RG 77, Ltrs. Recd., Chief Engineer.

230. Prime to De Russy, Oct. 18, 1860, and Monthly Reports of Operations at Fort Pickens for Oct. & Nov. 1860, NA, RG 77, Ltrs. Recd., Chief Engineer.

XII. WAR COMES TO FORT PICKENS: 1861-62

A. Lieutenant Slemmer and Company G Occupy and Hold the Fort

1. South Carolina Leaves the Union

In the summer of 1860 the nation edged toward disaster. The Democratic party split when its leaders converged to nominate candidates for President and Vice President in the November election and to decide on its platform. The Northern wing nominated Stephen A. Douglas of Illinois for the presidency and the Southern faction John C. Breckinridge of Kentucky. The Democratic party a shambles, the victory of the Republican candidate, Abraham Lincoln, was assured. A fourth party, the Constitutional Union, also entered the field soliciting votes for its nominee John Bell of Tennessee. Southern fire-eaters boldly declared that if Mr. Lincoln were elected they would leave the Union.

The Buchanan Administration, unlike President Jackson when confronted by the nullification crisis in 1832-33, failed to take vigorous action to demonstrate force would be used to preserve the Union. At Pensacola nothing was done to reinforce the garrison or ready the forts for defense. The commander of the defenses, Colonel Winder and his second in command Lt. Asher R. Eddy were permitted to go on leave, as was Lieutenant Prime, the engineer.

On November 6 Lincoln was elected President, but it would be four months before the new administration took office. Southern radicals were not prepared to compromise. South Carolina on December 20 led the way, when a state convention voted to secede. On the 26th the United States troops in Charleston Harbor evacuated Fort Moultrie and occupied Fort Sumter. State conventions in early January assembled in Tallahassee, Florida, Montgomery, Alabama, and Jackson, Mississippi, to consider and vote ordinances of secession.

2. Lieutenant Prime Returns to Pensacola

Lieutenant Prime was en route from Biloxi to New York City, when he heard that South Carolina had withdrawn from the Union. Unwilling to believe that the states of the Lower South would follow South Carolina's lead, Prime continued on to his destination.

While visiting friends on January 5, 1861, he received a telegram from his assistant at Mobile, Lt. Chauncey Reese, dated the 4th, reporting that three companies of state troops had left the city by boat to take possession of Forts Morgan and Gaines. They were reportedly operating under orders from Gov. Andrew B. Moore, although Alabama had not yet seceded. After relaying this news to Washington, Lieutenant Prime rushed to the station and boarded the first southbound train.[1]

Prime reached New Orleans on January 10. There he found a letter from Lieutenant Reese, posted the 6th, reporting that about 100 Alabama State Troops were in possession of Fort Morgan. Fort Gaines had been visited by the Alabamans' commander, but it had not been occupied.

Unable to learn what was happening at Pensacola, Prime started for that city on the 11th. On doing so, he notified General Totten that he proposed to close operations at Fort Gaines as soon as possible, but to continue repair of the Fort Morgan wharf, "as far as may be needed to insure its safety."

As yet, he had received no information of any allotments having been placed to his credit for the Gulf Coast fortifications, in accordance with his requisitions. He urged the Department to provide him funds to meet "the outstanding indebtness incurred under the supposition that my requisitions would be filled as usual."[2]

After checking with Colonel Winder, whom he had met traveling south, Lieutenant Prime started for Pensacola by way of Mobile. He carried with him funds for Forts Pickens and Barrancas. At Mobile,

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1. Prime to Totten, Jan. 5, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

2. Prime to Totten, Jan. 11, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

he learned that Colonel Winder had not been permitted to return to his station. Unable to ascertain whether United States troops were in possession of the Pensacola forts, Prime pushed on. He trusted that some "circumstance might enable" him to discharge his mission. Reaching Pensacola on January 13, he found that Forts Barrancas and McRee had been seized by the secessionists. Refused passage across the bay to Fort Pickens, Prime checked in at a Pensacola hotel.

While there he learned that he was to appear before Col. William H. Chase, who commanded the Florida forces in and around the city. Prime, cognizant of the seizure of the forts and his status as an army officer, refused to unless compelled. Colonel Chase complied. Prime was arrested and brought before Chase.

To secure his release, Prime was compelled to give parole that he would not visit Forts Pickens, Barrancas and McRee, or the navy yard, and that he would not communicate with Lt. Adam Slemmer or any other person at Fort Pickens, or with any personnel aboard U.S. ships laying in or off Pensacola Bay, "touching the existing Military, Political, or naval condition of things in the State of Florida."[3]

3. Company G Occupies Fort Pickens

The crisis found bespectacled 1st Lt. Adam J. Slemmer in command of Company G, 1st U.S. Artillery, at Barrancas Barracks and responsible for defense of the Pensacola forts. These were trying days for the 31-year-old Slemmer, because of the daily alarms caused by rumors that the forts, navy yard, and barracks were to be seized by Florida State Troops on orders from Governor Madison S. Perry. On January 5 Slemmer learned that Alabamans had taken posession of Fort Morgan. Although he received no instructions from Washington on the

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3. Prime to Totten, Jan. 17 & 18, 1861; Prime's Parole, Jan. 13, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

subject, Slemmer determined to prevent a similar coup by state authorities at Pensacola.[4]

On the morning of January 7, Lieutenant Slemmer called on Commo. James Armstrong, commandant of the Pensacola Navy Yard, to perfect plans for better securing protection of the public property for which they were responsible. Slemmer was accompanied by Lt. Jeremiah H. Gilman, his second in command, and R. H. Watts and Daniel Saint, leaders of the pro-Union employees at the yard. Additional meetings were held by these officers that evening and early on January 8. Armstrong, in absence of orders from the Navy Department, deemed it inexpedient to cooperate with the army, despite Watts and Saint volunteering to raise 200 volunteers to assist in the defense of the yard.[5]

Before daybreak on the 8th, Slemmer's soldiers began removing powder from the exposed magazines in the Barrancas water battery into the Fort Barrancas magazines. Slemmer issued orders directing that all batteries be placed in working order and at nightfall he alerted the guard detail. As an added security measure the drawbridge leading into the fort was raised. About midnight a group of men (about 20 in all) approached the drawbridge with the intention of taking possession of the fort. The corporal of the guard called the alarm. The would-be assailants failed to answer when challenged or halt when ordered, and were fired upon by the guard. Whereupon they fled in the direction of Warrington. Their footsteps resounded on the plank walk, as

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4. The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies (73 vols., 128 parts; Washington, D.C., 1880-1901), Ser. 1, Vol. 1, p. 334; cited hereinafter as Official Records.

5. Ibid.; Watts to Meigs, Dec. 6, 1865, NA, RG 92, Consolidated Correspondence File. Born in Maine, Gilman was graduated from the U.S. Military Academy in the class of 1856 as a brevet 2d lieutenant, 1st Artillery. Gilman was promoted to 2d lieutenant on October 31, 1856.

the roll of musketry ceased and the guard double-timed back into the fort. These were the first shots fired by the Federals in the Civil War. Slemmer ordered the guard doubled as a precautionary measure.[6]

In the Washington mail on January 9, Lieutenant Slemmer received an order from the War Department in Washington:

> The General-in-Chief directs that you take measures to do the utmost in your power to prevent the seizure of either of the forts in Pensacola Harbor by surprise or assault, consulting first with the commander of the navy-yard, who will probably have received instructions to cooperate with you.[7]

Upon receipt of these instructions, Lieutenant Slemmer, accompanied by Lieutenant Gilman, rushed to the navy yard to confer with Commodore Armstrong. The commodore meanwhile had called a staff meeting. Among those in attendance were Comdr. Ebenezer Farrand, Lt. Comdr. Henry Walke, and Lts. Otway H. Berryman and Francis B. Renshaw. Walke commanded the storeship Supply which had reached Pensacola Bay from Veracruz on December 7 to load provisions for the U.S. squadron operating off that harbor and Berryman was captain of the armed steamer Wyandotte. Farrand and Renshaw were assigned to the navy yard. Armstrong told the officers of his orders from the Navy Department, requiring their forces to cooperate with the Army in the emergency.[8]

Slemmer and Gilman arrived after the meeting had broken up. They found Commodore Armstrong seemingly under the influence of

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6. Official Records, Ser. 1, Vol. 1, pp. 334-35; Jeremiah H. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders of the Civil War, 4 vols. (New York, 1884-87), Vol. I, p. 22.

7. Official Records, Ser. I, Vol. 1, p. 334.

8. Henry Walke, Naval Scenes and Reminiscences of the Civil War in the United States . . . (New York, 1877), pp. 1-2.

Commander Farrand, a rabid secessionist. Swayed by Ferrand, Armstrong hesitated to take the lead in providing for defense of Pensacola Harbor. The recent turn of events had caused intense excitement among the employees of the navy yard and among the inhabitants of the villages of Warrington and Woolsey, and these had added to the consternation of the commodore. He was desirous of doing his duty, and apparently saw it clearly when in the presence of the Army officers.[9] Armstrong, at the insistence of the Army officers, agreed that with the limited means available only one of the forts could be held. Fort Pickens was chosen because of the advantages its possession imparted--command of the other forts, harbor, and naval yard, and its ease of reinforcement from the Gulf. To implement this decision the commodore promised to make Wyandotte and Supply available by 1 p.m. to convey the troops from the mainland to Fort Pickens.[10]

At 10 a.m. on January 9, Lieutenant Slemmer, with part of his command, boarded the storeship Supply which carried them to Fort Pickens. Here the artillerists began to mount guns and make necessary preparations for its defense. Lieutenant Gilman had remained with the rest of Company G at Barrancas Barracks to complete preparations for its evacuation. Gilman at 1 o'clock saw no signs of the promised assistance and called on the commodore to counteract the influence of the secession-mined naval officers who surrounded him. Gilman was informed that the only aid the navy could render would be provisions and the transportation of the troops to Fort Pickens. Upon being informed of this, Slemmer ordered his men to halt all work and return to Barrancas Barracks.

Slemmer next visited Commodore Armstrong, whom he accused of breach of faith. He chided Armstrong for having promised

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9. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders, Vol. I, p. 27.

10. Official Records, Ser. I, Vol. 1, p. 335.

him men and the cooperation of two ships. This, Slemmer continued, was in addition to "giving us provisions" and ferrying Company G over to Santa Rosa Island. With his command, numbering only 57, he would never have dreamed of holding Fort Pickens, a work designed for a 1,500-man garrison. He had moved on the assumption that Armstrong would not renege on a promise, and "had lost a day's time in preparation of Fort Barrancas for defense." After hearing what Slemmer had to say, Armstrong sent for his aides and told them to implement the original design.[11]

Lieutenant Berryman of Wyandotte promised to be ready to leave the dock at 5 p.m., by which time the regulars would be prepared to embark from the Barrancas wharf. As time was critical all hands turned to placing needed public property on the wharf to facilitate its removal to Fort Pickens. The troops and navy yard employees led by Lt. John Erwin kept at these tasks until midnight, when a dense fog rolled in making it impossible for Wyandotte to dock.[12]

About 8 a.m. on the 10th, a large flatboat and several small craft pulled into the Barrancas wharf and the artillerymen and their gear went aboard.[13] By 10 a.m. the troops were across the bay and disembarked on Santa Rosa Island. Lieutenant Berryman in the meantime had detailed 30 seamen from the navy yard to join Lieutenant Slemmer and assist in making preparations for defense of Fort Pickens. During the remaining hours of daylight on January 10, most of the powder and all the fixed ammunition for the field batteries was transferred from the mainland to the island. As a final measure before abandoning the forts

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11. Ibid.

12. Ibid.; Watts to Meigs, Dec. 6, 1865, NA, RG 92, Consolidated Correspondence File.

13. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders, Vol. I, p. 28.

on the mainland, Lieutenant Slemmer had the cannon bearing on the bay spiked, because his redlegs had neither the means nor the time to dismount them. Provisions to subsist the garrison were drawn from the steamer Supply.[14]

4. Secessionists Seize the Navy Yard and Forts

On January 3, 1861, at Tallahassee, delegates chosen by the people of Florida had convened to chart the course their State would pursue. After six days of debate and discussion, on January 10, an ordinance of secession was taken up as the order of business. The ordinance was adopted by a vote of 62 to 7, and the president of the convention instructed to inform the proper authorities of the other Southern states of the action Florida had taken.

A letter from U.S. Senator David L. Yulee to a member of the convention, Joseph Finegan, had important repercussions. Yulee, Maj. William H. Chase's long-time friend, pointed out:

> The immediate important thing to be done is the occupation of the forts and arsenal in Florida. The naval station and forts at Pensacola are first in consequence. . . . The occupation of the navy yard will give us a good supply of ordnance and make the capture of the forts easier. Major Chase built the forts and will know all about them. Lose no time, for my opinion is troops will be soon dispatched to reinforce and strengthen the Forts in Florida.[15]

Senator Yulee's letter had the anticipated consequences. The convention passed a resolution to

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14. Official Records, Ser. I, Vol. 1, p. 336. In addition to the 57 officers and men of Company G, 1st Artillery, and the 30 sailors, there were present at Fort Pickens on the evening of January 10, the 3 ordnance-sergeants from Forts Barrancas, Pickens, and McRee. Returns from U.S. Posts, 1800-1916, NA, Microcopy M-617.

15. Official Records, Ser. I, Vol. 1, p. 442; Soldiers of Florida in the Seminole Indian--Civil and Spanish-American Wars, compiled by the Board of State Institutions (Live Oak, Florida, 1903), p. 35.

> authorize and empower the governor of the State to employ the militia of this State, and such forces as may be tendered to the State from the states of Alabama and Georgia to defend and protect the State, and especially the forts and public defenses of the State now in possession of the State, and that the governor be authorized to make all necessary arrangements for the support and maintenance of such troops and carrying on the public defense; That it is the sense of this convention that the governor should not direct any assault to be made on any fort or military post now occupied by Federal troops, unless the persons in occupation of such forts and posts shall commit overt acts of hostility against this State, its citizens or troops in its service, unless directed by a vote of this convention.[16]

On January 9, the day before Florida's withdrawal from the Union, Governor Moore of Alabama warned the convention assembled in Montgomery to determine his State's future "that Governor Perry . . . has ordered the forts [around Pensacola] to be occupied by the troops of Florida and asks aid from Alabama. The force at his [Governor Perry's] command in West Florida is small and not sufficient to take . . . the forts. Troops from Alabama could reach that point before the troops of East and Middle Florida."[17] Two hundred and twenty-five Alabamans, under Col. Tennent C. Lomax, were accordingly ordered to Pensacola to implement the governor's recommendation.[18]

On January 11, hours after news had reached Pensacola that the convention had voted Florida out of the Union, Lieutenant Slemmer had an unpleasant conversation with Commander Walke of Supply.

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16. J. J. Dickison, Confederate Military History of Florida, 12 Vols. (Atlanta, 1899), Vol. X, pp. 8-20.

17. Official Records, Ser. I, Vol. 1, p. 44.

18. Dickison, Confederate Military History, X, p. 15.

Walke explained that, on the previous day, he had been ordered by Commodore Armstrong to land at Fort Pickens such stores as were required by the Army, taking receipts for them. He would then return with his ship to the anchorage off the navy yard, and unload the rest of the cargo. When Walke showed Slemmer the order, the Army officer "threw down the gun-sights" he was holding, and declared that if Walke deserted him "in obedience to that order, he would not attempt to hold the fort any longer." Walke encouraged Slemmer to do so, "promising to support him with all his command."

More bad news arrived. Lieutenant Berryman sent word that he expected to sail "this evening or tomorrow for the south coast of Cuba."[19]

Lieutenant Slemmer sat down and wrote Commodore Armstrong:

> I understand that it is your intention to withdraw from this fort the protection of the U.S.S. Wyandotte and the store-ship Supply, contrary to the agreement between you and myself day before yesterday. I again have the honor to state, as I did to you in presence of several officers at our last interview, that without the aid of those vessels it will be utterly impossible in my opinion, for me to protect this harbor, and I shall therefore, in case this assistance is withdrawn, instantly relinquish all hopes of defending the place, and report the state of affairs immediately by a messenger to Washington. I most respectfully request an immediate answer as to whether the assistance above referred to is to be withdrawn or not.[20]

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19. Walke, Naval Scenes, pp. 2-3; Official Records, Ser. I, Vol. 1, p. 336.

20. Official Records of the Union and Confederate Navies in the War of the Rebellion (31 Vols.; Washington, D.C., 1895-1929), Ser. 1, Vol. 4, p. 12; cited hereinafter as Official Records-Navies.

Commodore Armstrong replied:

> that the U.S. storeship Supply was sent to Fort Pickens by my order merely to convey the provisions you required and to return to this navy yard. The Supply is not a vessel of war, and having been sent to this station on the special service of conveying stores and coal to Vera Cruz for the vessels of the Home Squadron stationed there. It is my duty to dispatch her to that port at the earliest moment practicable, in conformity with the orders I have received from the Navy Department, from which orders I can not deviate further. The steamer Wyandotte may be retained for the purpose of cooperating with you until further orders.[21]

On the night of January 11-12, Wyandotte and Supply anchored in lee of the Fort Pickens batteries. Early on the 12th Commander Walke received a note from Commodore Armstrong that the navy yard was besieged by Alabama and Florida State Troops. Walke showed the message to Lieutenant Slemmer. To verify this turn of events, Slemmer wrote Armstrong, "I am informed that the navy-yard is besieged. In case you determine to capitulate, please send me the marines to strengthen my command." No reply came.[22]

The force left to hold the navy yard numbered 38 Marines and 30 sailors. Its defenses, with evacuation of Fort Barrancas and the Redoubt, were non-existent. No guns were mounted at the yard except those used to salute the colors. The investing force led by Colonel Lomax consisted of uniformed militia companies well armed with rifle-muskets. Their number was estimated from a high of 800 to a low of 300. At 1 p.m., on January 12, Commodore Armstrong was informed that

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21. Ibid., p. 13.

22. Official Records, Ser. I, Vol. 1, p. 326.

some gentlemen desired to see him. He was then introduced by Commander Farrand, his executive officer, to Richard L. Campbell and Capt. Victor M. Randolph, who informed Armstrong that they came with a large force in the name of the State of Florida to demand an immediate and unconditional surrender of the yard. They stated that if this demand were refused, they would take possession by force of arms, as they had a regiment eagerly awaiting the signal to attack. These statements were corroborated by Commander Farrand.

The issue presented to Armstrong was either a bloody and hopeless resistance or surrender. To avoid the useless effusion of blood, Armstrong accepted the latter alternative. The United States flag was hauled down and the Florida emblem hoisted in its place.[23] For his surrender of the navy yard, Commodore Armstrong was court martialed, convicted, and sentenced "to be suspended from duty for the term of five years, with loss of pay for the first half of said term and to be reprimanded by the Honorable Secretary of the Navy in general orders."[24]

Sentries on the parapets of Fort Pickens, upon seeing the United States flag lowered, informed Lieutenant Slemmer. With capture of the navy yard everything on the mainland and Foster's Bank fell into the secessionists' hands, including the large dry dock, the workshops, materials, and supplies of all sorts. Fortunately, Supply and Wyandotte, the only United States vessels in the harbor, were commanded by loyal men and were saved. Wyandotte took Supply in tow and moved out of the bay. That evening Lieutenant Berryman sent word to Slemmer that his orders of the previous evening were to cooperate with the Army, but he must not fire a shot unless his vessel was attacked. He could offer the artillerists no assistance in case they were assaulted. The garrison of

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23. Official Records-Navies, Ser. 1, Vol. 4, pp. 48-53.

24. Ibid., pp. 54-55.

Fort Pickens--87 officers and men--was left to depend on its own means for defense.[25]

On the mainland the secessionists moved against known Union men. Lieutenant Erwin succeeded in reaching Supply; Saint was captured, sent out to the ships without a change of clothes, and his personal property seized by the Rebels; Watts escaped into the woods. When he emerged from hiding at the end of the month, he was allowed to return to his home on promising not to communicate with Fort Pickens or the fleet.[26]

5. Slemmer Refuses to Surrender Fort Pickens

Fort Pickens, the soldiers and sailors found, was in a dilapidated condition, as this was the first time it had been garrisoned since 1851. Many guns were not mounted, and a tremendous amount of hard work would be necessary to prepare it for possible siege. Upon their arrival there was not an embrasure shutter in place. Orders were given for some to be built, while others were removed and brought over from Fort McRee.[27]

On January 12, just before sundown, four men (three in uniform) walked up to the sally port, and demanded admittance as "citizens of Florida and Alabama." They were informed that no unauthorized persons were permitted to enter the post. After receiving this information they asked to see the commanding officer. Lieutenants

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25. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders, Vol. I, p. 29; Official Records, Ser. I, Vol. 1, p. 337; Returns from U.S. Posts, 1800-1916, NA, Microcopy M-617.

26. Watts to Meigs, Dec. 6, 1865, NA, RG 92, Consolidated Correspondence File.

27. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders, Vol. I, p. 29.

Slemmer and Gilman proceeded to the gate, where they recognized a Mr. Albert, an engineer from the navy yard, who introduced the three uniformed men as Capt. Victor M. Randolph, late of the U.S. Navy, Maj. Samuel D. Marks, and Lieutenant Rutledge.

After a pause, Captain Randolph commenced, "We have been sent to demand a peaceable surrender of this fort by the governors of Florida and Alabama."

To which Lieutenant Slemmer replied, "I was here under the orders of the President of the United States, and by direction of the General-in-Chief of the Army; that I recognized no right of any governor to demand a surrender of United States property; that my orders were distinct and explicit."[28]

One of the state officers exclaimed sharply, "Do you say the governor of Florida is nobody, the governor of Alabama nobody?"

Slemmer replied, "I know neither of them and I mean to say that they are nothing to me." The interview was ended and the visitors withdrew.[29]

At midnight the garrison was mustered and told to man the cannon in anticipation of an attack. The night was dark and rainy but otherwise quiet. January 13 was spent by the artillerymen and sailors strengthening their positions, and with nightfall sentinels were posted in advance of the glacis. The night was again dark and rain poured down. Suddenly through the occasional flashes of lightning ten men were discovered outside the fort reconnoitering the Federal position. The

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28. Official Records, Ser. I, Vol. 1, p. 337.

29. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders, Vol. I, p. 29.

intruders fired one shot which was returned by the sergeant-of-the-guard. All was then quiet. The 14th passed with nothing of interest transpiring. By this time the garrison was exhausted by the daily routine of mounting guns, preparing fire bases and hand grenades, and the one hundred percent watches maintained during the hours of darkness.[30]

On January 15 William H. Chase returned to Fort Pickens. The builder of the fort was now a colonel of Florida State Troops. He was accompanied by Commander Farrand, who had resigned his commission in the U.S. Navy. Chase asked for and was granted an interview by Lieutenant Slemmer.

Colonel Chase announced, "I have come on business which may occupy some time, and, if you have no objection, we had better go inside to your quarters."

Slemmer interrupted, "I have objection, and it could hardly be expected that I would take you into the fort."

Chase countered, "As I built the fort and know all its weak and strong points, I would learn nothing new by going in, and had no such object in proposing it."

"I understand that perfectly," Slemmer acknowledged, "but it would be improper for me to take you in; and, however well you have known the fort before, you do not know what it now contains, nor what I have done inside."

"That is true," Chase admitted, "and I will state my business here. It is a most distressing duty to me. I have come to ask

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30. Official Records, Ser. I, Vol. 1, p. 337.

of you young officers, officers of the same army in which I have spent the best and happiest years of my life, the surrender of this fort. I would not ask it if I did not believe it right and necessary to save bloodshed; and fearing that I might not be able to say it as I ought, and in order, also, that you may have it in proper form, I have put it in writing and will read it."[31]

Chase took a manuscript from his pocket and began to read, but after reading a few lines his voice began to shake and his eyes filled with tears. He stamped his foot, and said, "I can't read it. Here Farrand, you read it." Commander Farrand took it, and remarking that he did not have his glasses passed the paper to Lieutenant Gilman.[32] Gilman took it and read aloud:

> I have full powers from the governor of Florida to take possession of the forts and navy-yard in his harbor. I desire to perform this duty without the effusion of blood. You can contribute toward this desirable result, and in my judgement, without sacrifice of the honor of yourself or your gallant officers and men. Now, as commissioner on the part of the governor of the State of Florida, I request the surrender of Fort Pickens and the public property it contains into my hands, to be held subject to any agreement that may be entered into between the commissioners of the State of Florida and the Federal Government at Washington. . . . If the Union now broken should be reconstructed Fort Pickens and all the public property passes peacefully under Federal authority. If a Southern Confederacy separates itself from the Union would it not be worse than folly to attempt the maintenance of Fort Pickens or any other fortified place within its limits?[33]

As the state officers prepared to depart for the mainland this conversation took place:

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31. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders, Vol. I, p. 30. Chase had resigned from the Army in 1856 to become president of the Alabama & Florida Railroad Company.

32. Ibid., p. 31.

33. Official Records, Ser. I, Vol. 1, pp. 337-38.

Slemmer: "Colonel, how many men have you?

Chase: "Tonight I shall have between eight and nine hundred."

Slemmer: "Do you imagine you could take this fort with that number?"

Chase: "I certainly do. I could carry it by storm. I know every inch of this fort and its condition."

Slemmer: "With your knowledge of the fort and of your troops, what proportion of them, do you imagine, would be killed in such an attack?"

Chase (shrugging his shoulders): "If you have made the best possible preparation, as I suppose you have, and should defend it, as I presume you would, I might lose one-half my men."

Slemmer: "At least, and I don't believe you are prepared to sacrifice that many men for such a purpose."

Chase: "You must know very well that, with your small force, you are not expected to, and cannot, hold this fort. Florida cannot permit it, and the troops here are determined to have it; and if not surrendered peaceably, an attack and the inauguration of Civil War cannot be prevented. If it is a question of numbers, and eight hundred is not enough, I can easily bring thousands more."

Slemmer: "I will give this letter due consideration, and as I wish to consult with the captains of the Supply and Wyandotte before replying, I will give you my answer tomorrow morning."[34]

There was a twofold reason for Slemmer's request: To gain time for his exhausted men to catch their second wind, and to consult with the naval officers on any subject affecting the common flag. The interview then terminated.

Next morning (the 16th), to the surprise of the garrison, Supply and Wyandotte hoisted anchor, and, getting underway, made for the bar en route out into the Gulf. A boat with Lieutenant Gilman started in pursuit. Gilman's craft overhauled Supply, and he asked the

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34. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders, Vol. I, p. 31.

reason for the Navy's precipitant withdrawal from Pensacola Bay. Commander Walke explained that he was obliged to leave for the North, and was taking advantage of the favorable wind. He agreed, however, that Wyandotte must remain with Lieutenant Berryman to lend the Army any assistance required.[35]

Lieutenant Slemmer then forwarded a letter to Colonel Chase. It read:

> Under the orders we now have from the War Department, we have decided, after consultation with the Government officers in the harbor, that it is our duty to hold our position until such a force is brought against us as to render it impossible to defend it, or until the political condition of the country is such as to induce us to surrender the public property in our keeping to such authorities as may be delegated legally to receive it.
>
> We deprecate as much as you or any individual can the present condition of affairs, or the shedding of the blood of our brethren. In regard to this matter, however, we must consider you the aggressors and if blood is shed that you are responsible therefor.[36]

Supply, having taken aboard 61 paroled officers and men from the navy yard, 7 invalids, 11 employees, and 17 dependents, including the wives and children of Lieutenants Slemmer and Gilman, now stood out of the harbor and sailed for New York. Wyandotte followed her across the bar and anchored off the Santa Rosa shore.[37]

6. Steps are Taken to Cool Passions

On January 17 Wyandotte put up her sails and disappeared over the horizon. The weather was miserable, with a cold wind out of

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35. Official Records, Ser. I, Vol. 1, p. 338.

36. Ibid.

37. Walke, Naval Scenes, pp. 8-9, 14. Slemmer's and Gilman's families had boarded Wyandotte on January 10, the day the troops had evacuated Barrancas Barracks and had been transferred to Supply on the 11th. Supply reached New York on February 4.

the northeast and rain in the afternoon. Ashore the soldiers and sailors mounted a 12-pounder and an 8-inch seacoast howitzer in the Northeast Bastion and sought to get a 10-inch columbiad into position. Previously three 32-pounders had been emplaced in the Southeast Bastion, the 24-pounder flank howitzers made effective, and the field battery unlimbered on the ramparts. All were ready for immediate service.[38]

The next day Wyandotte returned and anchored about two miles off Santa Rosa Island. At noon Commander Farrand arrived from the mainland with a letter from Colonel Chase. It read, "With additional re-enforcements to my forces, arrived and expected, I would again request the surrender of Fort Pickens, referring you to my first letter on the subject, and offering the same terms as contain therein."[39]

Slemmer acknowledged the message, but pointed out that a reply would not be forthcoming until he had an opportunity to communicate with Lieutenant Berryman. It was known that Chase had been reinforced on the 17th by some 300 soldiers, who had arrived from Mobile aboard Oregon. These troops had increased the force arrayed against the Fort Pickens garrison to between 1,300 and 1,400. A gun was fired and a signal hoisted to attract Wyandotte's attention. She closed to within one-half mile and sent a boat ashore to pick up Lieutenants Slemmer and Gilman.

The night of January 18, like many of the preceding ten days, was dark and misty. A number of lights were seen passing from the navy yard toward Santa Rosa Island, and it was feared that an attack was imminent. Slemmer had the "long roll" beaten, and the regulars and sailors stood a 100 percent watch. The night passed quietly, however, except for shots from the navy yard as soldiers cleared their pieces.

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38. Gilman to Haskin, Feb. 12, 1875, found in William L. Haskin, History of the First Regiment of Artillery . . . (Portland, Me., 1879), p. 496.

39. Official Records, Ser. I, Vol. 1, p. 339.

On the morning of January 19 Lieutenant Slemmer, having discussed the situation with Berryman, informed Colonel Chase, "In reply to your communication of yesterday, I have the honor to state that as yet I know of no reason why my answer to your communication of the 16th should be changed, and I therefore very respectfully refer you to that reply for the answer to this."[40]

There was a cold northeast gale on the 20th, with a drenching rain during the night. A shore party sent by Lieutenant Berryman assisted the regulars in mounting a 10-inch columbiad. The huge gun had to be moved a long distance, and with their "unperfect appliances" it was a difficult task getting it into position.

The foul weather continued. On the 23d the bay was too rough for crossing, and Slemmer allowed one-half of the command to sleep in their quarters. The nor'easter was still blowing on the 23d. Lieutenant Gilman recorded, "Our men were having extremely hard duty, being wet to the skin most of the time, and many of them were without a change of clothes, having left their extra clothing at the barracks or navy yard."

About midnight on the 23d a small steamer was seen to come from the direction of Pensacola and tie up at the Barrancas wharf. Lieutenant Slemmer, apprehensive that she had been sent to tow invasion barges across the bay, ordered his men to their battle stations.[41]

On January 24, not having had any mail since the 9th, Lieutenant Slemmer sent one of Wyandotte's small boats, flying a white flag, to the navy yard to obtain the garrison's mail. His request was refused by the postal officials.

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40. Gilman, "With Slemmer in Pensacola Harbor," Battles and Leaders, Vol. I, p. 32; Gilman to Haskin, Feb. 12, 1875, found in 1st Regiment of Artillery, pp. 496-97.

41. Gilman to Haskin, Feb. 12, 1875, found in 1st Regiment of Artillery, p. 498.

Slemmer thereupon addressed a curt note to Colonel Chase:

> I have the honor to request that you will permit Captain Berryman to procure, or have procured for him the mail matter, letters, papers, etc., which may have accumulated for me and my command at the Warrington post office. My mail matter has been refused me from the office, and I therefore make this request of you as commander-in-chief of the forces, and from a knowledge of your personal character.[42]

Colonel Chase was absent, having been called to Montgomery to confer on possible steps to be taken to compel the United States forces to yield Fort Pickens. The fire-eaters' ardor had been chilled by a January 18 telegram from a powerful group of Southern senators. It read: "We think no assault should be made. The possession of the fort is not worth one drop of blood to us. Measures pending unite us in this opinion. Bloodshed may be fatal to our cause. Signed by Senators Mallory, Yulee, Slidell, Benjamin, Iverson, Hemphill, Wigfall, Clay, Fitzpatrick, and Davis."[43]

Chase returned from the Montgomery meeting in a conciliatory mood.

The weather had finally cleared on January 26 when Colonel Chase moved to ease tensions. Writing Lieutenant Slemmer, he noted, "I will immediately inquire at the post-office about your mail matter, and attend to your request. I would also inform you that you may be supplied with fresh provisions daily if you desire."[44]

Later in the day, hoping to avoid an unfortunate collision between their opposing forces, Colonel Chase wrote Lieutenant Slemmer:

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42. Official Records, Ser. I, Vol. 1, p. 339.

43. Ibid., pp. 444-45. In the 36th Congress these men represented the following states: Stephen R. Mallroy and David L. Yulee, Florida; Judah P. Benjamin and John Slidell, Louisiana; Louis T. Wigfall and John Hemphill, Texas; Alfred Iverson, Georgia; Jefferson Davis, Mississippi; and Clement C. Clay and Benjamin Fitzpatrick, Alabama.

44. Ibid., p. 340.

> I have given strict orders this morning that no citizen or soldier should be permitted to pass from this side towards Fort Pickens, or to land on Santa Rosa Island, and now I inform you of the fact, and also that I shall use every effort to have my orders executed. I have just been informed that some four or five men started on a fishing excursion on the island, and as they must have been ignorant of my orders just issued, I would request that if they have landed on the island they may be sent back.
>
> Any collision growing out of persons going over to the island or near Fort Pickens would be most unfortunate in the present state of affairs, and I would request you to join me in preventing it; and to this effect I would also request that persons in boats may be warned off, and if any should land, they should be ordered to re-embark. This should be done in a way to prevent angry feeling between the parties.[45]

Lieutenant Slemmer sent Lieutenant Gilman to the yard to make arrangements for procuring the mail and fresh beef. Before the day was over, Gilman had returned with the mail and a note from Colonel Chase, stating that in the future it would be delivered without delay.[46]

Replying to Colonel Chase's second communication, Slemmer observed:

> It gives me much pleasure to learn of your order with reference to the passage of boats and men to Fort Pickens and

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45. Ibid.

46. Ibid., p. 353; Gilman to Haskin, Feb. 12, 1875, found in 1st Regiment of Artillery, p. 500.

Santa Rosa Island from the yard and vicinity. I have given strict orders to allow no boats to land, and in all cases of boats approaching the island I am notified of the fact.

This morning I was informed by my sentinels that a boat with four men was approaching the island above the fort and from the navy yard. I immediately sent and had them apprehended, saw the men myself, and directed that they be re-embarked for the navy-yard.[47]

Lieutenant Gilman was back on the mainland on official business on the 28th. Visiting the barracks, he found their former quarters occupied by Alabama State Troops. He encountered considerable good will, and was told that efforts to solve the crisis might succeed and if so no "further hostilities would be attempted." He asked and received permission to secure Colonel Winder's and Lieutenant Eddy's private property and transfer it to the fort. He also was accompanied back to Santa Rosa Island by the company laundresses, who had been left behind on January 10.[48]

On January 24 Seaman William Doolan crossed over from the mainland in a small boat, landing some distance east of the fort. Reporting to Lieutenant Slemmer, he stated that he had been badly treated at the yard and he wanted to fight for the Union. He warned that they must be on the guard against bribery, as a large sum had been raised for that purpose. Suspecting that Doolan might be a spy, Slemmer assigned him to the kitchen, with orders that he be watched closely and not be allowed outside Fort Pickens.

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47. Official Records, Ser. I, Vol. 1, p. 340.

48. Gilman to Haskin, Feb. 23, 1875, found in 1st Regiment of Artillery, p. 500.

Several days later, on a dark night, Pvt. Owen McGair, while on picket, found himself surrounded by a small party from Warrington. They recognized McGair, and, after some small talk, told him that he could make himself a wealthy man. He seemed willing, and they made known their plan. He was to see that the embrasures, where there were no guns, were left open at night. McGair would relay this information to them by a means agreed upon. As a reward for his treachery McGair was to receive the money. As he was in their power, McGair seemingly entered into the scheme. Details were arranged, and, after giving McGair an advance, the intruders withdrew.

Early next morning Private McGair reported what had transpired to Lieutenant Slemmer, and turned over to him the money received.[49]

7. Lieutenant Prime's Final Weeks on the Gulf Coast

Lieutenant Prime meanwhile had been released from arrest by Colonel Chase. With a copy of his parole, he traveled to Biloxi by way of New Orleans. On January 17, at New Orleans, he received a message from General Totten, who had resumed his duties as Chief Engineer two weeks before. Totten informed Prime that Secretary of War Joseph Holt had ordered all construction on Gulf Coast fortifications for which he was responsible stopped. "No further liabilities" would be "contracted except for objects necessary for the preservation of the government property."

Prime was to report to the Department all outstanding obligations against the works under his supervision; their amounts; the dates they would become due; and the Department would do all in its

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49. Ibid., pp. 498-99. Another man who joined the garrison in January was Patrick Travers. Discharged in December on completion of his 5-year enlistment, Travers had gone to New Orleans to book passage home to Ireland. Learning of Company G's difficulties, he returned to Pensacola, slipped over to Santa Rosa Island, and on February 2 re-enlisted in the company. Ibid., p. 499.

power to make provision to discharge them. Measures were to be taken to reduce these obligations to the absolute minimum.

At fortifications seized by the secessionists, all expenditures were to cease.[50]

Lieutenant Prime from Biloxi reported that a remittance of $2,307 on account of Fort Gaines would enable him to pay off the liabilities incurred for the Gulf Coast fortifications, except for those at Pensacola. Another $500 on account of Fort McRee "would probably cover all liabilities incurred there."

To balance the accounts in his Cash Statement, after payment of all liabilities, these remittances were called for:

On account of Fort Gaines	$5,293.71
On account of Ship Island fortifications	280.01
On account of Fort McRee	500.00
	$6,073,74[51]

On January 18 Alabama secessionists had seized Fort Gaines and the Engineer property on the east end of Dauphin Island. Then, on the 20th, a force of armed Mississippians, making their third descent on Ship Island within a week, took possession of the Federal property there for which Lieutenant Prime was responsible.

This, Prime reported, with the forceable occupation of Fort Morgan and his arrest at Pensacola had relieved him of "all connections with my other works, unless it be Fort Pickens, now garrisoned by the line of the Army." His duties on the Gulf Frontier were now limited to

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50. Totten to Prime, Jan. 14, 1861, NA, RG 77, Ltrs. Sent, Chief Engineer.

51. Prime to Totten, Jan. 28, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

settlement of outstanding liabilities against the works formerly in his charge. If the Department felt there were other duties to be discharged with respect to these defenses, Lieutenant Prime asked to be notified.[52]

General Totten replied, directing Prime to remain at Biloxi. Unless compelled to leave by the secessionists, Prime was to remain on the Gulf Coast until he had concluded all business connected with his duties. If interferred with in a manner which prevented him from carrying out his instructions, Prime was to proceed to Washington, D.C., and report to General Totten.[53]

The Mississippians allowed Prime to discharge his duties without interference. On March 9 General Totten, five days after Abraham Lincoln's inauguration as 16th President, ordered Prime to come to Washington, as soon as he had closed his accounts and retired the outstanding claims against the United States.[54] Lieutenant Prime left Biloxi in early April. He was in Washington on April 20, when he was ordered to duty at Willitts Point, New York.

B. The Belligerents Watch and Wait

1. Agreement is Effected to Preserve the Status Quo

On January 21, 1861, nine days after surrender of the Pensacola Navy Yard, the U.S. War Department ordered preparation of an expedition for relief of Fort Pickens. Capt. Isreal Vodges was to embark Company A, 1st Artillery, on the powerful sloop-of-war Brooklyn at Fort Monroe, Virginia.[55] The same day Flag-Officer Garrett J. Pendergrast, commander of the Home Squadron anchored off Veracruz, notified the

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52. Prime to Totten, Jan. 30, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

53. Totten to Prime, Feb. 14 & 26, 1861, NA, RG 77, Ltrs. Sent, Chief Engineer.

54. Totten to Prime, Mar. 9, 1861, NA, RG 77, Ltrs. Sent, Chief Engineer.

55. Official Records, Ser. I, Vol. 1, p. 353.

Navy Department that he had ordered the sailing frigate Sabine and sailing sloop St. Louis to Pensacola.[56]

Brooklyn, having embarked Company A (two officers and 86 enlisted men), sailed from Hampton Roads under sealed orders on January 24. Capt. Samuel Barron of the U.S. Navy reached Pensacola in advance of the reinforcements. He informed Lieutenant Slemmer that Brooklyn was en route with Vodges' company and that Macedonia, St. Louis, and Sabine were expected. The warships were not to cross the bar lest they be fired on, and thus precipitate a civil war. Brooklyn, however, was to land Vodges' company on Santa Rosa Island.[57]

On being informed that reinforcements were en route to Fort Pickens, Stephen Mallory, who upon the secession of Florida had withdrawn from the U.S. Senate, telegraphed Senator John Skidell of Louisiana:

> We hear the Brooklyn is coming with reinforcements for Fort Pickens. No attack on its garrison is contemplated, but, on the contrary, we desire to keep the peace, and if the present status be preserved we will guarantee that no attack will be made upon it, but if reinforcements should be attempted, resistance and a bloody conflict seem inevitable. Should the Government thus attempt to augment its force, . . . our whole force--1700 strong--will regard it as a hostile act. Impress this upon the President, and urge that the inevitable consequence of reinforcement under present circumstances is instant war.[58]

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56. Official Records-Navies, Ser. 1, Vol. 4, pp. 67-69.

57. Gilman to Haskin, Feb. 12, 1875, found in 1st Regiment of Artillery, p. 500.

58. Dickison, Confederate Military History-Florida, Vol. X, pp. 20-3; Official Records, Ser. I, Vol. 1, p. 354.

Senator Slidell laid Mallory's message before President Buchanan. The President, not wanting to precipitate a clash which would lead to war and snuff out a last chance for compromise, agreed to a modus vivendi, regarding reinforcement of Fort Pickens which was incorporated in an order to Captain Vodges dated January 29. It read:

> In consequence of the assurances received from Mr. Mallory in a telegram of yesterday to Messrs. Slidell, Hunter and Bigler . . . that Fort Pickens would not be assaulted, and an offer of such assurance to the same effect from Colonel Chase, for the purpose of avoiding a hostile collision . . . you are instructed not to land the company on board the Brooklyn unless said fort shall be attacked. . . . The provisions necessary for the supply of the fort you will land. The Brooklyn and other vessels of war on the station will remain, and you will exercise the utmost vigilance and be prepared at a moment's warning to land the company at Fort Pickens.[59]

Lt. Haldimand S. Putnam, who was intrusted with delivery of this important message, reached Pensacola on February 5, the day before Brooklyn arrived off the bar. On the 1st Lieutenant Slemmer had received a communication from Colonel Chase, "prohibiting all intercourse with the town except to get" the mail and provisions. Later in the day Slemmer had trouble with one of the sailors, although there had been some "growling and dissatisfaction among them on account of their being used as soldiers."

At 5 p.m. the first sergeant reported that a number of the seamen refused to march to supper, because they did not have enough bread. He ordered them locked in the guardhouse, and reported they outnumbered the guard and refused to obey him. Lieutenants Slemmer

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59. John G. Nicolay, The Outbreak of Rebellion (New York, 1881), pp. 55-62; Official Records, Ser. I, Vol. 1, pp. 355-56.

and Gilman found themselves confronted by a mutiny. They reacted with alacrity. Company G was turned out under arms and confronted the sailors. They were asked whether they would obey orders hereinafter. Their reply was not deemed satisfactory by Lieutenant Slemmer, and orders were given to "buck" them. This was done, and they were placed in a line seated on the ground, securely fastened. Those sailors who were on guard then mutined and said they wanted the same punishment. Slemmer gave orders to lash them to the piazza columns. Seeing that their joining the uprising had no effect, and that they would be severely punished, the sailors promised to obey future orders. Of those "bucked" some gave up at 7 p.m., and others during the night. Two held out till nine the next morning. The sailors had learned a hard lesson, and gave Slemmer no further trouble.[60]

February 2 "was a rainy day." At 8 p.m. six shipwrecked sailors were escorted into the fort by the guard. They were drenched, exhausted, and famished. They told Lieutenant Slemmer that their schooner Maria Norton out of Powderhorn, Texas, had been driven ashore on Santa Rosa Island, 25 miles to the east. They remained with the garrison until the 4th, when they boarded a boat which ran them across the bay to Pensacola.[61]

Brooklyn arrived off Santa Rosa Island on February 6, and Captain Vodges learned from Lieutenant Putnam of the order of January 29 preventing the landing of his command. Lieutenant Slemmer told Captain Vodges that at the time he had occupied Fort Pickens there had been only 40 cannon in position, and now after four weeks hard work there were 54. There were in the fort 57 enlisted men of Company G and 31 sailors. The latter, "untrained and insubordinate," would be of little

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60. Gilman to Haskin, Feb. 12, 1875, found in 1st Regiment of Artillery, p. 501.

61. Ibid.

use in event of attack. Fifty-seven gun casemates were unarmed, and most of these embrasures covered with common wooden shutters, which presented a scant obstacle to the foe.

Captain Vodges directed Lieutenant Slemmer, although materials and tools were lacking, to barricade all the embrasures.

Ordnance stores and ammunition were in short supply. There was no ammunition for the columbiads, no cartridge bags, and no flannel. Had it been the policy to place a fort in a defenseless condition, it could not have been done more effectively. There was neither a surgeon nor bunks for the hospital or troops. Although there were plenty of provisions for the present, Captain Vodges urged that some desiccated vegetables be sent to Santa Rosa Island.

When he relayed this grim news to Washington, Captain Vodges complained that all the advantages of the modus vivendi were on the side of the secessionists. He urged that steps be taken to further reinforce Fort Pickens.[62]

Captain Vodges selected Lieutenant Gilman to carry his dispatchers to the War Department. Lt. Loomis Langdon, with the approval of Colonel Chase, was landed from Brooklyn and filled Gilman's billet.

Leaving Pensacola on February 9, Gilman reached Washington on the 13th and reported to General-in-Chief Scott. After Gilman had briefed him on the situation and conditions at Fort Pickens, Scott complimented the command, remarking, "Young man, you have both done nobly; you have been true to your country at a time when she has been false to herself; you shall not be forgotten, God bless you."

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62. Official Records, Ser. I, Vol. 1, pp. 357-58.

On February 25 Gilman returned to Fort Pickens by sea, going by steamer to LaHabana, and there taking passage on a Pensacola-bound schooner.[63]

Lieutenant Slemmer, following his discussions with Captain Vodges, redoubled his efforts to place Fort Pickens in a defensible condition. The limited means available, however, continued to plague the Federals. Twenty-four more guns were mounted. While making the rounds on February 11, Slemmer observed Colonel Chase's men mounting a battery of 8-inch columbiads west of the lighthouse to rake the fort's two northern bastions and the connecting curtain. Slemmer protested to Colonel Chase, who replied, "I do not deem the erection of batteries on this side as aiming at an attack on Fort Pickens; but . . . I will give orders for the discontinuance of the erection of the battery."[64]

Outside the harbor the United States slowly built-up a formidable naval force under the command of Capt. Henry A. Adams. By February 19 this fleet consisted of Sabine, St. Louis, and Brooklyn. In addition, Wyandotte now anchored inside Pensacola Bay, and, flying a flag of truce, was allowed by State authorities to transport coal and water from the navy yard to the ships outside the bar. If Florida authorities curtailed this source of supply, these items would have to be obtained from either Key West or LaHabana--eight or ten days distant by sail.

Adams' ships remained at anchor or underway close enough to the bar to communicate by signal with Wyandotte. Whenever a south-easterly gale blew it was necessary to run offshore. A storm on February 10 dispersed the fleet, driving some of them as far west as Mobile Point. Adams feared that Colonel Chase would take advantage of one of these gales, and attempt to storm Fort Pickens, before he could

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63. Gilman to Haskin, Feb. 12, 1875, found in 1st Regiment of Artillery, p. 502.

64. Official Records, Ser. I, Vol. 1, p. 359.

land reinforcements. In case of necessity, Adams prepared to put ashore, in addition to Vodges' command, 200 men from Sabine, 140 from Brooklyn, and 50 from St. Louis.[65]

2. Confederate Government Assumes Responsibility

In mid-February a new government was organized that would share with the governors of Florida and Alabama responsibility for affairs in Pensacola Bay. During the first week of February a convention assembled in Montgomery, Alabama, not to consider whether the hazard of secession was to be entered upon, but to organize a Southern government. Even so the Montgomery meeting was not an all-southern gathering, for at its assembly (February 4, 1861), it included representation from only six of the 15 slave states (South Carolina, Georgia, Alabama, Mississippi, Florida, and Louisiana).

The atmosphere at Montgomery was one of excitement and elation, accompanied by the bustle of office-seeking and the stir of restless men maneuvering for position. Three principal functions were performed by the convention: It made a constitution for the Confederate States; it chose a provisional president and vice-president; and it acted as a provisional legislature for the new government pending the regular congressional elections. Jefferson Davis of Mississippi was elected provisional president on February 9. He was inaugurated two days later, taking the oath with high resolve, and selected his cabinet. The provisional legislature passed an initial body of laws, which in many instances were but the reenacting of those passed at Washington; commissioners were appointed to treat with the government of the United States; negotiations were set afoot to bring other states within the fold; and in this manner the "new nation" became a going concern.[66]

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65. Official Records-Navies, Ser. 1, Vol. 4, p. 85; Cornelius Cronin, "Reminiscences of Cornelius Cronin, Gunner, U.S. Navy."

66. J. G. Randall, The Civil War and Reconstruction (New York, 1953), pp. 212-13.

The Confederate War Department moved promptly to place an officer in whom it had confidence in charge of the forces collected in and around Pensacola. On March 1 Colonel Chase resigned his command to accept appointment as major general of Florida State Troops.[67] Col. John H. Forney of Alabama assumed command until relieved on March 11 by Brig. Gen. Braxton Bragg. A West Point graduate and Mexican War hero, Bragg had been assigned to the command by his friend President Davis on March 7.[68] The new commander, a stern disciplinarian, set to work with his customary vigor and attention to detail to organize an effective fighting force. Calls were made upon the governors of Alabama, Mississippi, Louisiana, Georgia, and Florida for more than 5,000 additional troops. Forney was appointed inspector-general, and under his supervision a vigorous training program instituted. Capt. Hypolite Oladowski, Bragg's chief of ordnance, perfected plans for more effective use of the cannon sighted on Fort Pickens.[69]

3. Captain Adams Frustrates General Scott's Orders

On March 12, eight days after Abraham Lincoln's inauguration as President, General-in-Chief Scott ordered Captain Vodges to land his command, "reinforce Fort Pickens, and hold the same till further orders."[70] Because of circumstances beyond Scott's control more than a month was to pass before this order was implemented. General Bragg meanwhile had ordered work resumed on the batteries, informing Lieutenant Slemmer that such action seemed fully justified as a means of defense, "especially so under the threats of the new administration."[71] Thus, the conditions of the modus vivendi were broken.

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67. Official Records-Navies, Ser. 1, Vol. 4, p. 215; Soldiers of Florida, p. 324.

68. Official Records, Ser. I, Vol. 1, pp. 448-49; Grady McWhiney, Braxton Bragg: Field Command (New York, 1969), p. 155.

69. Official Records, Ser. I, Vol. 1, p. 449.

70. Ibid., p. 360.

71. Ibid., p. 362.

Despite these threats and counter-threats, relations between Confederate and Federal forces in the bay area remained amicable. On the morning of March 12 four runaway slaves appeared at Fort Pickens believing they would be granted asylum. That afternoon the fugitives were returned to Pensacola had turned over to the city marshal for return to their masters.[72] To add to the Federals' difficulty their supply of fresh beef was curtailed. The contractor alleged that he was without funds for the purchase of cattle.[73] The real reason, however, was an order from Bragg, dated March 18:

> The commanding general learns with surprise and regret that some of our citizens are engaged in the business of furnishing supplies of fuel, water, and provisions to the armed vessels of the United States.
>
> That no misunderstanding may exist on this subject, it is announced to all concerned that this traffic is strictly forbidden, and all such supplies which may be captured in transit to such vessels, or to Fort Pickens, will be confiscated. To more effectually to enforce this prohibition, no boat or vessel will be allowed to visit Fort Pickens, or any United States naval vessel, without special sanction.[74]

Bragg was omnipresent. In cooperation with Col. William J. Hardee, commander at Fort Morgan, the bastion guarding the eastern approaches to Mobile Bay, a reconnaissance was undertaken preparatory to opening of a new line of communication between Mobile and Pensacola. It was hoped that an easier and less exposed route could be developed between these key points by utilizing water and land transportation, via Bon Secours, Bear Creek, and Perdido Bay, thus eliminating a long, slow overland trek from Blakely.[75]

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72. Ibid.

73. Ibid., pp. 361-62.

74. Ibid., p. 451.

75. Ibid., pp. 453-54.

By March 30 the 1,100 officers and men of Bragg's command, most of whom had never been away from home, had assimilated many of the rudiments of soldiering and formed a cadre around which an expanding army could be organized. While the infantry learned the fundamentals, Captain Oladowski supervised the emplacement of a number of siege guns in Fort McRee. Two heavy batteries, each consisting of four 8-inch columbiads, were established, one near the lighthouse and the other in the neighborhood of the naval hospital.[76] Fort Barrancas was armed and manned.

Bragg and his staff had moved heaven and earth in their efforts to strengthen the defense of Pensacola Bay. The forts would be very difficult for the Federals to reoccupy, and in the future would menace Fort Pickens. The Yankees' protested against continuation of these efforts, but Bragg, unlike his predecessor, Colonel Chase, refused to halt efforts to fortify the area. After each protest the Confederates seemingly redoubled their efforts, and the Federals expressed fears that the forts could only be repossessed at a fearful cost.[77]

Brooklyn, having been ordered to Key West on March 22 for provisions, returned on March 31 with the orders from General Scott for Captain Vodges to land his company at Fort Pickens.[78] Vodges showed his instructions to Captain Adams, the senior United States officer present. Captain Adams noted the date of the orders (March 12) and concluded that they had been given without clear comprehension of the situation at Pensacola. He decided to ignore them. He felt their implementation would be viewed by Confederate authorities as a hostile act, and precipitate a collision against the wishes of the Lincoln administration. Adams told Vodges that "both sides are faithfully

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76. Ibid., p. 365.

77. Ibid.

78. Official Records-Navies, Ser. 1, Vol. 4, p. 125.

observing the agreement entered into by the U.S. Government with Mr. Mallory and Colonel Chase."[79]

As senior officer present, he had visited General Bragg the day before, and Bragg had assured him that the Confederates would not violate the conditions of the modus vivendi. Breaking off the discussion with Vodges, Adams stated, "I can not take on myself under such insufficient authority as General Scott's order the fearful responsibility of an act which seems to render civil war inevitable."[80]

C. Federals Reinforce Fort Pickens

1. The Administration Decides to Act

Soon after his March 4, 1861, inauguration, President Lincoln's advisors brought to his attention the isolated condition of Fort Pickens. At a cabinet meeting on March 29, it was decided to reinforce the fort.[81] To Secretary of the Navy Gideon Welles was left the selection of the ships and the manner of conducting the affair. Capt. Montgomery C. Meigs of the Corps of Engineers, during the previous weeks, had been working on a scheme whereby the United States could reinforce Fort Pickens and reassert its authority in that area.[82] Meigs' plan, initially proposed to Secretary of State William H. Seward, envisioned chartering a large steamship capable of carrying 600 troops and their equipage, and a warship to protect their landing.

Welles, after conferring with Seward, adopted Meigs' plan and designated Col. Harvey Brown, commander of the 5th Artillery, to lead the expedition.

Brown's orders, dated April 1, read:

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79. Ibid., p. 110.

80. Ibid.

81. Nicolay, Outbreak of Rebellion, p. 51.

82. David D. Porter, Naval History of the Civil War (New York, 1881), p. 100.

You will proceed with the least possible delay to that place [Fort Pickens], and you will assume command of all the land forces of the United States within the limits of the State of Florida. You will proceed to New York, where steam transportation for four companies will be engaged. The engineer company of Sappers and Miners; Brevet Major Hunt's Company M, Second Artillery; Captain Jahns' Company C, Third Infantry; Captain Clitz's Company E, Third Infantry, will embark with you.

The object and destination of this expedition will be communicated to no one to whom it is not already known. The naval officers in the gulf will be instructed to co-operate with you, and to afford every facility in their power for the accomplishment of the object of the expedition, which is the security of Fort Pickens against all attacks, foreign and domestic. Should a shot be fired at you, you will defend yourself and your expedition at whatever hazard.

You will make Fort Jefferson your main depot and base of operations. You will be careful not to reduce too much the means of the fortresses in the Florida Reef, as they are deemed of greater importance than even Fort Pickens.[83]

2. Lieutenant Porter Sails in "Powhatan"

The naval escort would be commanded by Lt. David D. Porter, a son of Commodore William D. Porter. On April 1 Porter was issued confidential instructions signed by President Lincoln "to take command of the steamer Powhatan, or any other United States steamer ready for sea."[84] Porter was ordered "to New York, and with the least possible delay [to] assume command." He would then proceed to "Pensacola Harbor, and at any cost or risk prevent any expedition from the mainland reaching Fort Pickens or Santa Rosa."[85]

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83. Official Records, Ser. I, Vol. 1, pp. 365-66.

84. Official Records-Navies, Ser. 1, Vol. 4, p. 108.

85. Robert S. West, The Second Admiral (New York, 1937), p. 81.

That night Lieutenant Porter left Washington for New York, and at 10 a.m. the next day presented to Capt. Andrew H. Foote (acting commandant of the Brooklyn Navy Yard) the order to fit out Powhatan. Porter's instructions were a most unusual method of doing business and surprised Foote. Three hours were needed to convince him that he should obey the President's order, and that he was not to telegraph the Secretary of the Navy for instructions to relieve him from his embarrassment.[86] Foote at last consented to call Capt. Samuel Mercer into the conference, and show him the letter. Mercer, after examining the document, stated Foote must obey the President's orders to the letter. Mercer was rather pleased with getting rid of an old worn-out ship, and offered to remain with Powhatan as her captain, outfit her, and take her down the harbor as far as Staten Island, to conceal the important movement. Captain Meigs also urged Foote to obey the President's order, and he finally consented to do so. The outfitting of Powhatan was ordered to proceed.[87]

At 2 p.m. on April 2, Powhatan's engines were apart, and the navy yard workmen were preparing to place her in drydock. Foote directed that a double force be worked day and night until she was ready for sea. Officers granted shore leave were recalled, and on April 4 the crew was put on board. On April 6, four days after Powhatan was taken in hand, steam was up, everything in place, the pilot aboard, and the lines ready to cast off.

Lieutenant Porter boarded the ship in citizen's garb, and was unobserved among the crowd bidding their friends goodbye. He went into the cabin and locked himself in the captain's stateroom. The ship pulled away from the dock at 1 p.m., proceeding as far as Staten Island

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86. David D. Porter, Incidents and Anecdotes of the Civil War (New York, 1885), pp. 17-20.

87. Porter, Naval History of the Civil War, p. 102.

before Captain Mercer left her.[88] While she was lying off Tompkinsville, Staten Island, waiting for return of the boat which had taken Captain Mercer ashore, a swift steamer came alongside, and Lt. Francis A. Roe of the Navy handed Porter a message reading, "Give the Powhatan up to Captain Mercer." It was signed by the Secretary of State.[89] Secretary of the Navy Welles had apparently convinced the President that Powhatan should be diverted from the expedition for the relief of Fort Pickens to the one being formed for the succor of Fort Sumter.[90]

Lieutenant Porter read the dispatch, and decided that there was only one thing to do--disobey it. The artillery for Brown's expedition was aboard Powhatan, and the steamer Atlantic, with the troops, he supposed had sailed at noon and was at least ten miles at sea. If he stopped to restore the ship, the expedition might fail. In addition, his orders were from the President. He determined to obey them. Porter had Roe telegraph Washington: "I received my orders from the President and shall proceed and execute them."[91]

3. Colonel Brown Organizes His Command

Colonel Brown and Captain Meigs, assisted by Col. D.D. Tompkins (the officer in charge of the New York Quartermaster Depot),

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88. Ibid., p. 103.

89. Official Records-Navies, Ser. 1, Vol. 4, p. 112.

90. Execution of the President's plan to reinforce Forts Sumter and Pickens had become involved in a series of muddles. Orders issued through Secretary Welles of the Navy Department assigned Powhatan to the Sumter expedition; but Secretary Seward put through an order, which the President signed without reading, transferring Powhatan to the force designated for Pickens. When Lincoln overruled Seward, directing him to restore the ship to the Sumter expedition, Seward bungled the matter by sending the new order in his own name, and Porter refused to obey it in opposition to the previous order in the President's name. Randall, Civil War and Reconstruction, pp. 238-39.

91. Official Records-Navies, Ser. 1, Vol. 4, p. 112.

also spent a hectic five days. The steamer Atlantic, Capt. Alfred G. Gray master, was chartered. Company A, 2d Artillery, reinforced the expedition. It was equipped for service in the field and brought along its cannon, horses, and mules, etc. Colonel Brown organized a staff including Capt. George L. Hartsuff as adjutant, Capt. Rufus Ingalls as chief quartermaster, Capt. Henry F. Clarke as chief commissary, Asst. Surg. Charles Sutherland as chief surgeon, and Lt. George F. Balch as chief of ordnance.

As the expedition's destination was a secret known only to Colonel Brown, Captain Meigs, Lieutenant Porter, the President, and several other top Washington officials, the outfitting of Atlantic as a transport and the taking on stores, many of them of warlike character, aroused attention. Newspaper reporters swarmed around the dock, "prying for threads of items which they could weave into plausible theory." When the troops arrived, "wonderment" zoomed.

For weeks the citizens' attention had been focused on Fort Sumter as the only place in need of relief. Fort Pickens was hardly known to the public. All leaped to the conclusion that the expedition's goal was Fort Sumter. Doubts, however, multiplied when a "full-equipped" light battery boarded Atlantic. Onlookers now asked, what use could a battery of horse artillery be at Fort Sumter? With no censorship, the Confederates were as bewildered as Colonel Brown's troops and the spectators as to the expedition's mission.[92]

4. Supplying the Expedition

The assembly and embarkation of the two companies 2d Artillery, two companies of the 3d Infantry, and the company of Sappers and Miners--392 officers and men--was the easiest task confronting Colonel Brown. Major headaches were faced by the Quartermaster,

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92. John C. Tidball to John H. Calef, "A Distinguished Horse Artilleryman," found in Journal of the Military Service Institution, Vol. CLIV, July-Aug., 1908, pp. 118-120.

Ordnance, and Commissary Departments, because without rations and war matériel Fort Pickens could not be held.

On February 17, ten days after his arrival off Santa Rosa Island, Captain Vodges had notified the War Department that there is a great deficiency of ammunition and supplies for so large a command. Medical stores were limited. The casemates were open, and as they had brick floors, Lieutenant Slemmer had housed his men in the Officers' Quarters of the north and south curtains. But if the garrison were reinforced, these would be required by officers. To compel the enlisted men, in absence of bunks, to sleep on damp brick casemate floors would be disasterous to their health.[93]

Captain Vodges had prepared and sent by Lieutenant Gilman a requisition on the Ordnance Department for a large quantity of ordnance and stores. This was aimed at filling deficiencies reported by Lieutenant Slemmer. Some of these shortages should have been apparent to Washington personnel through a review of post returns, which showed only a small quantity of "ammunition, projectiles or materials on hand--and no 10-inch shot or shell" for the four 10-inch columbiads.[94]

The Lincoln administration, having decided to hold the forts, ordered the stores listed on the requisition shipped from the Watervliet Arsenal to the New York Arsenal. On March 18 Bvt. Maj. W. A. Thornton of the New York Arsenal notified Colonel Tompkins of the New York Quartermaster Depot that by tomorrow his people would "close shipping the supplies" for Fort Jefferson, and on the 21st commence delivery of those destined for Fort Pickens. Included were:

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93. Official Records, Ser. I, Vol. 1, p. 361.

94. Balch to Ripley, June 5, 1861, NA, RG 92, Consolidated Correspondence File.

6 10-inch columbiads
6 10-inch columbiad carriages
4 24-pounder flank 'defense howitzers
4 24-pounder flank defense howitzer carriages
30 32-pounder casemate carriages
36 24-pounder barbette carriages
12 8-inch seacoast howitzer carriages
18 32-pounder barbette carriages
1 18-pounder barbette carriage
2 12-pounder barbette carriages
1 large sling cart
600 10-inch columbiad shells
300 42-pounder shot
300 12-pounder stands of grape
300 12-pounder canister shot
750 stands of 32-pounder grape
750 stands of 32-pounder canister
50 stands of 18-pounder grape
50 stands of 18-pounder canister
650 8-inch shells for seacoast howitzers
50 8-inch stands of canister for seacoast howitzers
600 fuzes and plugs for 10-inch shells
650 fuzes and plugs for 8-inch shells
600 cartridge bags for 10-inch columbiads
3,000 cartridge bags for 24-pounder howitzers
300 42-pounder cartridge bags
600 12-pounder cartridge bags
1,500 32-pounder cartridge bags
100 18-pounder cartridge bags
700 8-inch seacoast howitzer bags
8,000 friction primers
100 pounds of slowmatch
4 garrison gin blocks
30 gallons of sperm oil
200 tarred sinks
50 10-inch fire balls
1 ton of smith's coal
Implements and equipments for all the guns and carriages called for.

Major Thornton estimated that for space purposes the bulk of this shipment would be as great as those consigned to Forts Jefferson and Taylor.[95]

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95. Thornton to Tompkins, Mar. 18, 1861, NA, RG 92, Consolidated Correspondence File.

The problem of getting the cannon and ordnance stores to Fort Pickens vexed Colonel Tompkins, because there were already at the depot, awaiting shipment to Santa Rosa Island, 40 tons of similar items turned over to him by Major Thornton in the fourth week of February. Tompkins, writing Quartermaster General Joseph E. Johnston, pointed out that in the "present unhappy condition of the country it would probably be impossible to send" to Fort Pickens this critically needed military hardware, unless the government was willing to place it aboard "an armed vessel or under a strong naval convoy." Having broached the subject, Tompkins awaited further instructions.[96]

Quartermaster General Johnston, because of the explosive nature of the situation, discussed it with General-in-Chief Scott. In accordance with Scott's decision, Johnston telegraphed Tompkins on the 21st "to make no preparation for the transportation of the ordnance stores . . . until further orders."[97]

Lieutenant Balch, Colonel Brown's chief of ordnance, reached New York on April 3. There he learned that the ordnance shipment had been "lying at the New York Arsenal" for two weeks. Although Balch did not know the expedition's destination, he was responsible for "the wants" of his department. In response to "a vague general order from Col. Erasus D. Keyes," he selected a "few of the most important stores on the invoice awaiting transportation" to Fort Pickens for embarkation on the steamer Atlantic. These included 8- and 10-inch shells, cartridge bags, fuses, fireballs, and musket cartridges. Because of the "haste & confusion" with which Atlantic put to sea, and the amount of other stores loaded, Lieutenant Balch was permitted to embark only a

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96. Tompkins to Johnston, Mar. 20, 1861, NA, RG 92, Consolidated Correspondence File.

97. Johnston to Tompkins, Mar. 21, 1861, NA, RG 92, Ltrs. Sent, Chief Quartermaster.

few boxes of ordnance stores. He left a memorandum with Colonels Keyes and Tompkins, "explaining what stores were imperatively necessary, that they were all ready for shipment, and requesting that they might be forwarded" by Illinois, which was then being loaded and was scheduled to follow Atlantic.[98]

The Commissary Department, learning that an expedition for the relief of Fort Pickens was being outfitted, forwarded to Colonel Tompkins 250 barrels of subsistence stores. The Engineer Department also had "a small lot of freight" for the same destination.

On checking with New York shipping interests, Tompkins found that he could charter for $1,000 a vessel, whose captain was agreeable to making one attempt to land these stores on Santa Rosa Island. If unsuccessful, he would deliver them to any ship whose master was willing to take them to Key West.[99]

Quartermaster General Johnston telegraphed his approval of the steps taken by Colonel Tompkins.[100]

5. Expedition Sails

On April 6 Colonel Brown, accompanied by Captain Meigs, reached New York City from Washington. That afternoon the soldiers embarked on Atlantic. She sailed next morning at 3:30 a.m. After a rough voyage, in which she was buffered by rough seas, Atlantic put

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98. Balch to Ripley, June 2, 1861, NA, RG 92, Consolidated Correspondence File.

99. Tompkins to Johnston, April 4, 1861, NA, RG 92, Consolidated Correspondence File.

100. Johnston to Tompkins, April 4, 1861, NA, RG 92, Consolidated Correspondence File.

into Key West on the afternoon of April 13.[101] At daybreak next morning Atlantic sailed for Fort Jefferson, where she arrived at 1 p.m. Brown inspected the fort and found its defenses in excellent condition. Atlantic departed "the Gibraltar of the Gulf" on April 14. Colonel Brown now told the officers and men their destination.[102] Great was the amazement of many, because "we still could not see of what use a light battery would be on Santa Rosa Island." The seas, stirred up by a "heavy norther," were rough as the steamer headed northwest. Captain Gray held a course and speed to bring his ship off Fort Pickens on the evening of the 16th.

6. Major Tower Reaches Fort Pickens

The War Department knew that its soldiers isolated on Santa Rosa Island needed the assistance of a second engineer to place Fort Pickens in condition to resist attack. Lieutenant Prime's parole precluded his joining Lieutenant Slemmer. On February 20 Secretary of War Holt personally selected the man to report to Fort Pickens as engineer officer. He was Bvt. Maj. Zealous B. Tower.

Secretary Holt had made an excellent choice. Tower, a brilliant engineer, had a distinguished combat record in the Mexican War,

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101. Official Records, Ser. I, Vol. 1, p. 394. While at Key West to augument his heavy ordnance, Colonel Brown drew from Fort Taylor a battery of 12-pounder howitzers and 6-pounder guns, three 10-inch siege mortars for which shells had been embarked at New York, and a supply of ammunition for the field pieces, Ibid., p. 395.

102. Ibid., p. 395. At Fort Jefferson four mountain howitzers with prairie carriages, light and suitable either for the sands of Santa Rosa Island or for service upon the covered ways of Fort Pickens, with supplies of fixed ammunition, spherical case and canister, were taken aboard. To assist in landing artillery at Fort Pickens, a scow was taken in tow, but it broke loose from its fastenings before Atlantic left the harbor.

and was available. Born in Cohasset, Massachusetts, in January 1819, Tower had entered the United States Military Academy in 1837 and graduated No. 1 in the Class of 1841. Commissioned a 2d lieutenant, he was assigned to the Corps of Engineers. From 1841 to 1843 he was stationed at the Academy as Assistant Professor of Engineering. For the next three years he was assistant engineer at Hampton Roads. Serving with Scott's army in the Mexican War, Tower was present at the siege of Veracruz and the battles of Cerro Gordo, Conterras, Churubuso, Molino del Rey, and the storming of Chapultepec. He emerged from the war with three brevets for gallantry.

From 1848 to 1853 he was superintending engineer for the defenses of Portland, Maine, and Portsmouth, New Hampshire. In 1853 Tower was transferred to the Pacific Coast, where he was superintending engineer at Alcatraz until March 1857 and at Fort Point from then until July 31, 1858. While in California on July 1, 1855, he was promoted to captain. Tower, on returning to the Atlantic seacoast, took leave and spent most of 1859 and 1860 traveling in Europe and the Near East. While in Italy, he observed the war between the Austrian and the Franco-Piedmont armies. Tower was back in the United States in October 1860 visiting friends and relatives in Cohasset. The week previous to Abraham Lincoln's election victory, Tower reached Washington, where he was assigned temporary duty under the Secretary of the Treasury.[103]

The orders Major Tower received from Chief Engineer Totten directed him to proceed to New York City, and after carrying out his verbal instructions, travel to Fort Pickens by sea. To facilitate his work, $1,000 from the appropriation for contingencies had been placed at his credit with the assistant treasurer in New York City.[104]

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103. Cullum, Biographical Register, Vol. II, pp. 3-4; Warner, Generals in Blue, p. 510; Tower to De Russy, Oct. 3 & Nov. 1, 1860, NA, RG 77, Ltrs. Recd., Chief Engineer.

104. Totten to Tower, Feb. 20, 1861, NA, RG 77, Ltrs. Sent, Chief Engineer.

On February 19 General Totten, in expectation of such a move by Secretary Holt, had forwarded a requisition to the New York Agency for engineer supplies urgently needed for defense of Fort Pickens. If no sandbags could be obtained, bagging was to be loaded aboard a vessel chartered by the Quartermaster Department for shipment of Ordnance stores to the beleaguered fort.

The bagging from which the sandbags were to be made was to be strong, course, and cheap. If there were not enough room for 100 barrels of cement, 75 barrels or less would be sent. The lumber, as it was least necessary, could be omitted.[105]

Major Tower arrived off Santa Rosa Island aboard Brooklyn on her March 31 return from Key West. Visiting Fort Pickens in early April, he found that Lieutenant Slemmer and his small force had erected blindages to protect two of the magazines, and had filled up the "entrance way, reducing the opening to a space about 7-foot square putting on an additional set of gates on the outside flush with the batteries so that men could not stand on the bridges without being exposed to the flank guns." Before this had been done, at least a score of men could have "concealed themselves in the recess as it existed."[106]

7. Garrison Suspects Treachery

On April 9 R. H. Watts was told by one of Boyakin Williams' servants that Ord.-Sergt. Elias H. Brodie had agreed to betray the fort for $50,000 and a commission in the Rebel army. The night of the 10th had been fixed upon, and General Bragg was said to have organized a storming force of 2,000 men, four steamers, and a number of scows. As he was closely watched, Watts sent a lady to relay this news to Mrs. Richard Wilcox, wife of a navy yard watchman. Wilcox was of Northern birth and was a friend of the Union.

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105. Totten to Gillmore, Feb. 19, 1861, NA, RG 77, Ltrs. Sent, Chief Engineer.

106. Tower to Totten, April 17, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

On the morning of the 10th, Wilcox waited anxiously for the mail boat to come over from the fort. As soon as it arrived, Wilcox escorted the noncommissioned officer in charge, as was customary, to the office of yard commandant Duncan L. Ingraham. After giving his permission to the Union soldier to proceed to Warrington to pick up the mail, Ingraham called Wilcox aside and told him, "Be careful with your charge to-day, let no one communicate with him." These words confirmed what he had heard.

As soon as they were out of sight, Wilcox told the noncommissioned officer to warn Lieutenant Slemmer to be prepared for the worst. The Rebels, he explained, "would cross that night at twelve o'clock to surprise the fort, and that one of his own sergeants was in the plot and in communication with two rebel citizens of Warrington."[107]

The noncommissioned officer told Lieutenant Slemmer of Wilcox's warning. Slemmer, after having Sergeant Brodie arrested and sent aboard Brooklyn, called upon Major Tower. Satisfied that General Bragg planned to attack, Slemmer asked Tower to spend the night ashore. Tower agreed, as everything was foreboding. Martial law had been proclaimed by Bragg, "stores closed, and boats & vessels collected on the East side of the Navy Yard." To further complicate matters the night was black and stormy.

The garrison stood a 100 percent watch on the night of April 10. Major Tower and Lieutenants Slemmer and James M. Whittemore made the rounds from 9 o'clock to 5 a.m., "rousing up the men & keeping them to their posts & watching." The next night saw a repetition of this routine. Despite the rain two fires were kept burning to light the ditch.

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107. Watts to Meigs, Dec. 6, 1865; Richard Wilcox, "How Fort Pickens, Florida, was saved from the Rebels, April 11, 1861," Incidents of the War, NA, RG 92, Consolidated Correspondence File.

Major Tower's fears were for the embrasures. There was but one man to each and one extra to each flank. A corporal and 6 men were on picket at the sally port, and the rest on the ramparts.[108]

8. First Reinforcements Land

Relief was finally at hand. On April 6 to supplement the orders to Colonel Brown, Secretary of the Navy Welles sent for Lt. John L. Worden, of subsequent Monitor fame. Welles told Worden to hasten to Pensacola with dispatches for Captain Adams. The substance of these orders was that Fort Pickens be immediately reinforced.[109] Worden departed Washington on the next morning and reached Pensacola about midnight on April 10. Such a gale was blowing the next day that Worden was unable to deliver his dispatches to Adams until the afternoon of April 12.[110] Upon receipt of Welles' instructions, Adams prepared to reinforce Pickens, first notifying Captain Vodges of the changed situation.

About 2 a.m., on April 13, the exhausted garrison welcomed Captain Vodges' Company A, 1st Artillery, and 110 Marines led by Lt. John C. Cash who came ashore in boats through the surf. Fort Pickens had been reinforced, and the modus vivendi of January 29 was

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108. Tower to Totten, Apr. 17, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer. Sergeant Brodie was confined aboard Brooklyn for several months. He was finally released and transferred to Fort Trumbull, Connecticut. In 1863 he was court martialed and convicted for remarking in public that he wished Colonel Slemmer, who had been wounded at Stones River on December 31, 1862, had been shot through the heart. Brodie in 1861 was a veteran of 22 years in the Army and had fought with both Taylor and Scott in Mexico. Court Martial Proceeding Against E. H. Brodie, NA, RG 123.

109. Official Records-Navies, Ser. 1, Vol. 4, p. 111.

110. Ibid., p. 137. For a detailed account of Worden's mission, the reader should consult "Lincoln's Courier: John L. Worden's Mission to Fort Pickens," edited by James P. Jones, Florida Historical Quarterly, Vol. XLI, No. 2, pp. 145-53.

now a scrap of paper.[111] Although the U.S. forces on Santa Rosa Island did not learn about it for several days, Confederate batteries in Charleston Harbor at 4:30 a.m., on April 12, had opened fire on Fort Sumter, the Civil War had begun.

Major Tower was satisfied that the reinforcements had frustrated Confederate plans to take Fort Pickens before they could be put ashore. On April 17 he wrote General Totten:

> The reinforcement surprised them. They had not progressed quite as far as they intended in their process of reducing the garrison and delayed too long. One night they surprised one of the picket guard and made him offers to spike the flank guns and gave him 50 dollars as an advance.

Some of the cannon had been "tampered with." The landing of reinforcements had bolstered morale. But to defend the island more were needed. The Navy could only help "when the weather will allow the ships to lie along the beach." But late March and early April storms had scattered the sailing ships. What were needed were more steamers with heavy shell guns.

To continue to hold the fort, it would be necessary to occupy five miles of Santa Rosa Island to the eastward.

Major Tower had been disappointed with the fort's "interior accommodations and armament." He, however, was confident that, if given the means, he could "render the interior secure" and with additional troops the island could be held. Santa Rosa Island was "very favorable to the enemy" yet he was satisfied that they had a "very wholesome dread of the Navy and they can do much if they will." But it was "common knowledge" that Captain Adams and his officers were "afraid of storms and shore batteries." One fire ship could have prevented the reinforcements from landing.[112]

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111. Official Records-Navies, Ser. I, Vol. 4, pp. 115-17; Tower to Totten, April 17, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

112. Tower to Totten, April 17, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

Captain Vodges, once his men were ashore, feared General Bragg would counter by landing a force on Santa Rosa Island east of the fort. To deter the Confederates from such a maneuver, Wyandotte and Brooklyn anchored to sweep this exposed area with broadsides.[113] Bragg, as expected, assumed that Worden had brought the dispatches effecting the reinforcement of Fort Pickens, and ordered his arrest. Worden was apprehended and incarcerated for several months.[114]

The day after the landing it was reported to Captain Vodges that a small boat had tied-up at the wharf under a flag of truce, and that the bearer, Capt. Robert C. Wood, wanted an interview with the commander of the post. Upon Vodges' arrival at the dock, Wood informed him that he had a verbal message from General Bragg. Wood stated, "I was directed by General Bragg to inquire why the armistice in respect to re-enforcing Fort Pickens has been violated by throwing re-enforcements into it."

Vodges replied, "I have never been a party to any armistice; I have been sent by the General Government to take command of the post, and have entered under the orders of the General Government." Wood, turning to Lieutenant Slemmer, remarked, "I was directed to inquire of the former commanding officer why the armistice has been violated."

Slemmer answered, "I have always obeyed the orders of my superiors." The interview then ended.[115]

9. Colonel Brown's Command Arrives

More troops were coming. The steamer Illinois arrived off Santa Rosa Island on the evening of April 16. Colonel Brown met with

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113. Official Records-Navies, Ser. 1, Vol. 4, pp. 115-17.

114. Ibid., p. 118.

115. Official Records, Ser. I, Vol. 1, p. 378.

Captain Adams, who promised naval assistance in landing his command. To hoodwink General Bragg, Brown determined to put his force ashore immediately. Atlantic anchored about two miles east of Fort Pickens, and three-quarters of a mile off-shore. Here the landing would be screened from the Rebels' view by the dunes paralleling the beach. By 2 a.m., on the 17th, the Sappers and Miners and the footsoldiers of Companies C and E, 3d Infantry, were ashore. Next morning they were followed by the redlegs of Companies A and M, 2d Artillery. The men came ashore in boats provided by the Navy, while the horses of Battery A were lowered into the water by slinging. After being released from the ship's tackle, they swam ashore, "being towed by a boat a short distance to give them a start toward" the island.[116]

10. Major Tower Briefs Chief Engineer Totten

The coming of Atlantic and the landing of the Company of Sappers and Miners, along with the arrival of Lts. Chauncey B. Reece and Walter McFarland, officers of the Corps of Engineers formerly posted at Forts Taylor and Jefferson, bolstered Major Tower's morale. With their assistance he planned to establish redoubts covering the eastern approaches to the fort. He also needed more 8-inch shell guns. Although there was an immense amount of work, which included providing quarters for the newcomers, Tower on April 17 wrote General Totten that he was in good spirits and would not on any account be elsewhere.

Major Tower, since his arrival, had developed a keen appreciation of Lieutenant Slemmer. "What he has gone through," he wrote General Totten:

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116. Ibid., pp. 378-79; Tidball to Calef, "A Distinguished Horse Artilleryman," pp. 120-21. The only casualties during the landing were three horses drowned. Four had died previously and had been thrown overboard in the boisterous passage, making seven lost in passage out of seventy-three embarked.

> entitles him to great rewards and I hope the President will immediately brevet him major and appoint him to a staff appointment of Capt. in the Adjutant General's Department. He deserves it all. For he has passed through a severe trial equal to many battles and I regard his position as having been more dangerous and more trying than that of Major Anderson. I could not feel it 'til I came here & took a part in it myself.[117]

Major Tower had previously requested 100,000 sandbags. Twenty thousand had been sent. They would be used for erecting traverses and parados, to cover the parapets, for bombproofs and blindages, and to reinforce the bastion magazines. Lieutenant Slemmer had mounted 55 guns on the parapets, 50 being the regular barbette armament--32-, 24-, 18-, and 12-pounders--and three 8-inch seacoast howitzers and two 10-inch columbiads. The 12-pounders were on the flanks, and would have been more serviceable for a small garrison than the heavy guns, because of their ease in handling. The cannon, Tower complained, were not "what they ought to be and the parapets and ramparts are not in a good condition over a part of the work." The parapets are faced with bricks which must be removed.[118]

Calling for reinforcements, Major Tower informed General Totten that when fighting commences, we must attack. He had been disappointed by the "reluctance of the navy to furnish reinforcements after the order had come" from General Scott

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117. Tower to Totten, April 17, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer. Maj. Robert Anderson commanded the Fort Sumter garrison. Lt. Godfrey Weitzel also of the Engineers was present and commanded the Company of Sappers and Miners.

118. Ibid.

to land Capt. Vodges' company. It seems that the Navy Dept. did not send the order to Capt. Adams & he would not act without orders from his own Dept. When the troops had collected opposite to us in large masses, Capt. Vodges & I tried to induce the Naval Comdr. to land the company. Lt. Slemmer also wrote a letter requesting immediate reinforcements. But they were not given till after the arrival of the official messenger [Lieutenant Worden].[119]

Major Tower warned Totten that General Bragg's forces were active. Among his officers, Bragg had several graduates of West Point, who had been Tower's friends. They included Lt. Walter H. Stevens formerly of the Engineer Corps and Lt. William R. Boggs of the Ordnance Department. The Rebels were casting shot at the navy yard, and placing guns in battery between sandbag revetments, to the east and west of Fort Barrancas. All traffic between Santa Rosa Island and the mainland having been cut off, he was unable to ascertain Braggs' strength. Some of the officers placed it as high as 7,000.[120]

Major Tower's letter was three weeks reaching Washington. Replying on May 6, General Totten commended his engineer for the "zeal and energy displayed" in strengthening the defenses of Fort Pickens. Lieutenant Gillmore of the New York Agency, as requested, had been directed to send Tower another 20,000 sandbags.[121]

11. "Powhatan" Arrives and Tons of Supplies are Landed

The sloop-of-war Powhatan reached Fort Pickens on April 17, a day after Atlantic. On her voyage out from New York she had also encountered gates, which reduced her speed. At sea Lieutenant

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119. Ibid.

120. Ibid.

121. Totten to Tower, May 6, 1861, NA, RG 77, Ltrs. Sent, Chief Engineer.

Porter had ordered seamen over the side to paint out the gunport shutters so that Powhatan resembled a mail steamer. Thus camouflaged, Porter hoped to run his ship past the forts and batteries at the entrance to Pensacola Harbor before the Confederates were alerted to her identity. Once inside and beyond Fort Barrancas, he would have nothing to fear from the Rebels and would be able to prevent any attempt on their part to land a force on Santa Rosa Island. As the coast came into view, Porter conned a course across Pensacola Bar, and stood toward Fort McRee, the crew at their battle stations.

A barge with Captain Meigs on board hailed Powhatan. The ship stopped and Meigs came aboard, handing Porter a message from Colonel Brown protesting against his entering the harbor on grounds that Fort Pickens was unprepared for an attack by the Confederate batteries, and if Powhatan entered the harbor it would draw their fire upon the fort. After discussing Brown's protest with Captain Meigs and carefully considering the matter, Porter reluctantly turned Powhatan's bow toward the steamer Atlantic and anchored within twenty fathoms of the beach.[122]

Assisted by the sailors, Brown's soldiers were turned to landing tons of supplies from Atlantic and Powhatan. A difference in opinion as to where they should be stored had to be resolved. Captain Meigs wanted to establish the depot about three miles east of the fort. Colonel Brown and Major Tower objected, because such a depot would be exposed to capture or destruction by Rebel raiders. The fort, until a line of redoubts had been established and more reinforcements arrived, must be the main depot.[123]

The work associated with landing tons of supplies and equipment was laborious and tedious. Whenever the surf permitted, the

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122. Porter, Naval History of the Civil War, p. 103.

123. Tower to Totten, Apr. 17, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

disembarkation was carried on in the small boats carried on Powhatan, Brooklyn, Wyandotte, Sabine and St. Louis. The paddle-box boats from Powhatan were especially useful. One of them had a Dahlgren boat-howitzer and was kept ready to protect the beach party from marauding boats of the foe. No Southerners, however, interrupted the landing.[124] With Brown's men safely ashore, the 100 Marines and sailors landed on the night of April 12-13 with Vodges' company returned to the ships.

Much more difficult than landing the supplies was getting them from the beach to the fort, a distance of several hundred yards, made terribly difficult by "deep and often very hot sand, through which everything had to be carried by hand." There was no lumber to spare for construction of a plank road. There were no mules or carts with which to relieve the soldiers. Lieutenant Slemmer had managed to bring over from the Barrancas in January one mule and a cart. The mule, however, had deserted. Wading into the bay, he swam across to the mainland and joined the Rebels.[125]

12. Colonel Brown's First Days Ashore

Colonel Brown pronounced Fort Pickens' defenses miserable. The guns mounted by Lieutenant Slemmer were too few--two 10-inch columbiads, four 8-inch seacoast howitzers, seventeen 32-pounders, seven 18-pounders, and eleven 12-pounders. All were smoothbores. Brown urged the requisition from the Navy of a number of heavy rifled guns. Orders were issued employing the entire garrison in mounting additional guns, building roads, and preparing quarters.[126]

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124. Official Records, Ser. I, Vol. 1, p. 397.

125. Tidball to Calef, found in "A Distinguished Horse Artilleryman," p. 121.

126. Official Records, Ser. I, Vol. 1, p. 379.

The problem faced by Major Tower was basically reversing the fort's defenses. They had been constructed to defeat a fleet attempting to force its way into Pensacola Bay, supported by a column operating against its eastern approaches. Now the threat was from the mainland, the front designed for lighter armament and containing two of the three magazines. Brown drove his officers and men, because he did not know when Bragg might attack, the South having thrown down the gauntlet on April 12-13 by bombarding Fort Sumter into surrender. "Everything had to be done on the jump," Lt. John E. Tidball of Company A, 2d Artillery, recalled, "for we did not know at what moment Bragg might open on us. He had lost one chance by delay, and we thought it probable that he might endeavor to retrieve his loss by taking us while yet entirely unprepared to resist a bombardment."

The garrison was turned out daily, at 3 a.m., as working parties. Capt. William F. Barry of Company A, Tidball recorded, "somehow had the morale over old Harvey Brown, and would not allow his horses or carriages to be utilized, except to a very limited extent, for transportation purposes." How he had "acquired this morale" his men never knew, because "old Harvey was a most energetic old fellow himself and generally carried his point."[127]

On April 17, the morning after he had landed on Santa Rosa Island, Colonel Brown wrote General Bragg:

> I have the honor to inform you that I have arrived at this post, and that I shall, unless assailed, act only on the defensive, and make only such disposition of my forces as is necessary to protect them from any enemy, foreign or domestic. I have also to inform you that no movement of the troops of my command or of United States vessels in this vicinity will have any other than a defensive object, unless we shall unhappily be

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127. Tidball to Calef, found in "A Distinguished Horse Artilleryman," pp. 121-22.

compelled to act offensively, repelling aggression against the flag, persons, or property of our country.[128]

That afternoon, as if to challenge Brown, a flotilla of steam tugs, schooners, and barges (about 25 in all) started across the bay. They were crowded with troops and headed for the shore of Santa Rosa Island, opposite the beach at which Powhatan and Atlantic were landing supplies. Approaching to within a mile and one-half of the bay shore, the flotilla stopped and appeared to be preparing to make a landing. Lieutenant Porter, aboard Powhatan, sent his crew to their battle stations. An XI-inch Dahlgren was cast loose, and a shell fired. It burst above the flotilla. This resulted in a rapid retreat toward Pensacola. Bragg had taken Powhatan and Atlantic for supply ships which he hoped to capture. The Dahlgren was reloaded and pointed in the direction of the navy yard, where a group of idle soldiers were watching the operation. It was fired again. A shrapnel shell exploded in the yard, scattering the spectators.[129]

13. More Reinforcements and Supplies Arrive

On April 20 the steamer Illinois reached Santa Rosa Island from New York with additional reinforcements (Companies H and K, 2d Artillery) and supplies. Bolstered by the newcomers, Colonel Brown's command ashore now mustered 853 officers and men. With this force Brown and his officers believed it would be difficult for the Confederates to make an amphibious landing on the western beaches if subjected to a bombardment by Brooklyn, Powhatan, and Wyandotte. To provide for the security of the eastern portion of Santa Rosa Island, a larger force was

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128. Official Records, Ser. I, Vol. 1, p. 380.

129. Porter, Incidents and Ancedotes, pp. 24-25.

necessary. Until more troops arrived, Brown proposed to throw up field works in advance of Fort Pickens' eastern approaches.[130]

The increased strength of the garrison compounded the problems confronting Post Commissary Clarke. On April 22 he wrote Commissary General George Gibson that to subsist the reinforced garrison four months' rations for 1,000 men should be forwarded to Fort Jefferson. There they would be stored and transported to Fort Pickens as needed.

Besides the authorized rations, Captain Clarke asked that these extra supplies be sent: canned meat for issue at least once a week, one pound to the ration; desicated vegetables for issue four times per week; a supply of canned tomatoes in the same proportion; dried apples and peaches for issue once a week, ten pounds of either to each 100 rations; molasses for issue twice weekly, one gallon to each 100 rations; pickles for issue once a week, one and one-half gallons to 100 rations; 300 gallons of whiskey; six half chests black and two half chests green tea; 350 pounds crushed sugar; and 250 pounds java coffee.

Captain Clarke justified the request for the large quantity of anti-scorbutics on the impossibility of securing locally beef on the hoof and fresh vegetables.

The authorized meat ration was to consist of 5/7 pork, 1/7 salt beef, and 1/7 bacon; the bread 5/6 flour and 1/6 hardtack; the beans and rice, 2/3 beans and 1/3 rice. General Gibson was to ship a few extra barrels of rice.

All the ration barrels were to be strongly hooped and headed, and all the boxes strapped with iron, because they would be subjected to rough handling in transshipment.[131]

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130. Official Records-Navies, Ser. 1, Vol. 4, p. 140. Counting the crews aboard the ships, the force subject to Brown's orders was more than 3,000.

131. Clarke to Gibson, Apr. 22, 1861, NA, RG 92, Consolidated Correspondence File.

14. Federals Initiate a Blockade

On April 27 Lieutenant Porter received from Captain Adams, the senior naval officer afloat, an important order. It read:

> The Powhatan will be a permanent guard ship for the present and hoist the guard flag. You will have all vessels bound in or out of Pensacola boarded by a lieutenant, who will report to me immediately if he learns anything of importance.
>
> If any vessels bound in are found to have munitions of war on board, they are not to be allowed to enter the harbor. No force is to be used in stopping those bound out. The Wyandotte will afford assistance in towing your boat and intercepting vessels when necessary.[132]

This order was issued and enforced at Pensacola before receipt of information concerning President Lincoln's proclamations of blockade (dated April 19 and 27). News of the President's order did not reach Pensacola until the evening of May 12.[133]

15. Bragg Protests and Waits for Orders to Attack

On April 6, 1861, General Bragg had been alerted by his superiors in Montgomery, then the capital of the Confederacy, of the outfitting in New York of Colonel Brown's expedition. He was informed, "The Government at Washington have determined to re-enforce Fort Pickens and troops are now leaving for that purpose."[134]

Bragg had already written Confederate Secretary of War Leroy P. Walker that the Federals had placed an officer of Engineers

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132. Official Records-Navies, Ser. 1, Vol. 4, p. 131.

133. Ibid.

134. Official Records, Ser. I, Vol. 1, p. 456.

(Major Tower) in Fort Pickens in violation of the agreement "not to re-enforce." From information reaching his staff, he had reason to believe the garrison within Fort Pickens was rapidly becoming demoralized. Bragg felt the United States Government and some of its agents were acting in bad faith, and the Confederacy was absolved from all obligations under the agreement of January 29. He hesitated to attack, however, unless ordered to do so. Bragg correctly believed an attack was a political rather than a military decision, because it would lead to war.[135]

The Confederate government was unready to authorize such action. But, recognizing the critical situation, Secretary Walker called on the governors of Alabama, Georgia, Louisiana, Florida, and Mississippi for additional troops. These were rapidly forwarded to Pensacola and by April 12 Bragg's force had been increased to about 5,000 men.[136] When informed of the landing of Captain Vodges' reinforced company on the morning of April 13, Bragg vainly protested and notified his superiors of the changed situation. On the morning of the 17th Bragg's scouts reported the arrival of Atlantic with Colonel Brown's relief expedition.[137] After the debarkation of Brown's men, affairs became more tense along the opposing works frowning at each other across the bay. April passed into history with the modus vivendi shattered to the Federals' advantage, but, unlike at Fort Sumter, hostilities had been averted.[138]

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135. Ibid., p. 457.

136. Ibid., pp. 457-59.

137. Dickison, Confederate Military History of Florida, p. 24.

138. Official Records, Ser. I, Vol. 1, p. 463.

D. Federals and Confederates Prepare To Bite the Bullet

1. Confederates Strengthen Their Positions

Although the modus vivendi was no longer operative, no fighting erupted as both sides strengthened their positions to be ready whenever hostilities came to Pensacola Bay. On the night of May 5 Confederate engineers placed obstructions in the channel between Forts Pickens and McRee. These obstacles, it was hoped, would prevent the Federal fleet from forcing its way into the harbor.[139] To solve a difficult logistical problem, the Confederates rushed to completion, by the second week in May, the Florida and Alabama Railroad.[140] Over this supply artery, Bragg received a number of powerful siege guns and mortars. He ordered these heavy weapons emplaced in five positions his engineers had recently completed. At this time (May 1861) Bragg viewed shortages of cartridges and cartridge-boxes (forty-dead men) as his most serious problems. In March requisitions had been made upon the Baton Rouge Arsenal for these items, but no response was received. Bragg now dispatched one of his staff officers to Louisiana to expedite the matter.[141]

2. Colonel Brown Works His Men Hard

The Confederates' exertions on the mainland were matched by the Union forces on and off Santa Rosa Island. Captain Meigs, before returning to Washington with dispatches for the War Department, suggested to Colonel Brown that he place part of his command in an entrenched camp outside Fort Pickens. A favorable site was found about one and three-quarters of a mile east of the fort. The camp had a

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139. Ibid, p. 467; Dickison, Confederate Military History of Florida, p. 26.

140. Official Records, Ser. I, Vol. 1, p. 407. At the time the Confederates opened fire on Fort Sumter, this railroad, running northeastward to Montgomery, had not been completed.

141. Ibid., p. 465. Bragg's powerful batteries were located as follows: Number I at the navy yard; Number II in rear of the Warrington Church; Number III near Barrancas Barracks; Number IV near the old lighthouse; and Number V south of the new lighthouse.

number of advantages: it was beyond range of the 12-inch seacoast mortars at the navy yard; it was commanded by the guns of the Federal fleet; a road could be built between the entrenched camp and the fort, protected by sand ridges forming natural breastworks against horizontal fire for nine-tenths of the distance; a boat channel could be easily cut through the island just above the camp; and the men and horses would be healthy, and safe from the annoyance of hostile fire.[142]

Lieutenant Tidball recalled that the camp among the pines, near the beach, was pleasant, as it was "fanned by the gentle breezes of the gulf." Two companies of the 3d Infantry soon joined Barry's battery and "nice jolly fellows they were." The camp "became a sort of sunning place for the less fortunate cooped up in the stifling air of the crowded fort. They made us frequent visits."

Naval officers also came, "bringing their bands to charm us with sweet music, no less charming than their own good songs and stories."[143]

The soldiers were continually employed in unloading ships, storing provisions, and erecting additional fortifications for their protection.[144] Other problems now arose to plague the Federals. In the hustle and confusion of the departure of Brown's expedition from New York, articles of prime importance stored in warehouses ready to be loaded were left behind, while items of little need were taken aboard. Among the former were the 8- and 10-inch shells for the garrison's big columbiads. A request by Lieutenant Balch to have these shells loaded on Illinois, which sailed subsequent to the departure of Atlantic, was

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142. Official Records, Ser. I, Vol. 1, pp. 386-87.

143. Tidball to Calef, found in "A Distinguised Horse Artilleryman," p. 123.

144. Official Records, Ser. I, Vol. 1, p. 407.

neglected. The Fort Pickens troops, by borrowing from the Navy, were able to obtain enough shells to last for one day's continuous firing.[145]

As the hot summer months approached, there was a noticeable increase in the number of soldiers reporting for sick call. This could be attributed to several factors, one of which was the arduous labor under a torrid sun. Scurvy had broken out in Company G, 1st Artillery (Slemmer's command), and Colonel Brown, the certification of Asst. Surg. John Campbell that a temperate climate was necessary for the troops to recoup their health, ordered them to Fort Hamilton, New York. By May 12, the day Company G boarded the ship Philadelphia for the trip north, the garrison had lost two men by death and two by desertion to the enemy.[146]

Company G was replaced on May 31, when Company F, 1st Artillery, arrived at the post from Key West.[147]

On May 13 Captain Clarke, to insure that the troops were properly rationed, called on Commissary General Gibson to send by way of Fort Jefferson cattle on the hoof. Fifteen critters weighing about 900 pounds each net, would provide a "sufficient supply of fresh Beef for this garrison, for one month."

The cattle shipment, to include a dozen for the Fort Jefferson garrison, should be sent monthly from New York to LaHabana, via the mail steamer. The assistant commissary in New York City, notifying the Fort Jefferson commissary by the previous steamer, so there

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145. Ibid., p. 401; Balch to Ripley, June 3, 1861, NA, RG 92, Consolidated Correspondence File.

146. Official Records, Ser. I, Vol. 1, pp. 407-11; J. Thomas Scharf, History of the Confederate States Navy . . . (New York, 1887), p. 610; Returns for U.S. Posts, 1800-1916, NA, Microcopy M-617.

147. Returns for U.S. Posts, 1800-1916, NA, Microcopy M-617.

would be a schooner at LaHabana to receive and transport the cattle to his post and Fort Pickens. Sufficient hay and oats must be sent with the cattle to feed them for at least six weeks from the day they left New York.

If it were impracticable to ship the cattle by the Cuban route, Captain Clarke asked that they be shipped by "the different transports that may come from the north to Fort Jefferson and this point." Too many should not be sent at a time, because of the difficulty of taking care of them.[148]

3. Errors by the Quartermaster Department Plague Efforts to Strengthen the Defenses

Major Tower by May 19 was able to report considerable progress in strengthening the fort's defenses. Men working under his direction had erected "traverses, merlons, service magazines upon the terreplein, blindages, etc." The sally port opening had been reduced. Two columbiad platforms had been relocated--one onto the Northeast Bastion and the other onto the Southeast Bastion. Four 10-inch columbiads had been mounted.

Everything, Tower complained, in a letter addressed to General Totten, marked confidential, had been mismanaged. Three "successive steamers sailed from New York after Lt. Slemmer's & my joint requisition had reached Washington by Lt. Gilman & not one of the required articles for the defense of the work was sent or has yet arrived." There were not one-half enough sandbags. Fortunately, however, he had obtained 5,000 gunny bags from Atlantic and about an equal number from Fort Jefferson.

Steamers reaching Santa Rosa Island had been loaded by the New York Quartermaster "with many useless things, while those

148. Clarke to Gibson, May 13, 1861, NA, RG 92, Consolidated Correspondence File.

absolutely necessary for defense have been neglected . . . or put upon sailing vessels."

More reinforcements should have been sent, and this was known by Captain Meigs. "Why they have not been sent," he knew not. General Bragg, Tower estimated, had about 8,000 men, and had "almost encircled" Fort Pickens with his batteries. If the Confederates landed on the island and drove off the fleet, they would have to surrender. The bombardment, when it came, would be "powerful and from large guns & sea coast mortars for which we have called for in vain." Somebody is "responsible for all the neglect" Tower charged, "but whom I know not. God grant that it may not prove fatal to the government. No shot has yet been fired, but rumor says that the bombardment will commence in two or three days."

John S. Jennings had arrived off Santa Rosa Island with three 10-inch columbiads, but the foul weather prevailing off the coast for the past several days had prevented landing them. When brought ashore, two of them would be mounted in an exterior work to divert some of the Rebels' fire from Fort Pickens, and "to get nearer to the opposing batteries." Unfortunately, no traverse circles had been shipped with the columbiads, and it would consequently take about a week to get them in position.

He had already exhausted the cement and lime sent. To obtain pintles, he had been compelled to break out two from the southwest Channel Front, as there was no place to mount them. "In truth," Tower warned, "nothing will be able to stand in the work except under a close traverse covered nearly around." His four 10-inch columbiads were "completely hemmed in." If he had unlimited sandbags, he would emplace some columbiads on the curtain, but "they would have to fire across the fort" to "attain the principal batteries." It would be "impossible to use any uncovered guns & the terreplein is rather narrow for a parado" on the channel fronts.

Why no seacoast mortars had been sent was unexplicable. "No others were of any account. Now we must take what comes." Tower had chosen to make this a matter of "record to show what has been done for this important place. After months of delay three 10-inch guns with some shot & shell have arrived without the means of mounting the guns except by a long & tedious process of construction." But, Tower added, "I will cease complaining & hope for good luck."[149]

Two days later, on May 19, Major Tower wrote the Department that he had received from Fort Jefferson in March 20 barrels of cement and from the Navy 500 bread bags, all of which had been expended in strengthening the defenses.[150]

General Totten, on reading Tower's confidential letter, called upon him "to furnish the Department with precise requisitions for whatever you may need of supplies to be furnished on account of the Engineer Service." On the same date, June 8, Totten telegraphed the New York Agency to rush 20,000 sandbags to Fort Pickens.[151]

Captain Meigs meanwhile had returned to Washington from Florida. He alerted Assistant Quartermaster General Ebenezer Sibley to the failure to forward promptly critically needed stores requisitioned by Lieutenant Slemmer in early February. On May 14 Sibley accordingly telegraphed Quartermaster Tompkins in New York, "Have you received estimates recently from Fort Pickens?" If he had, Tompkins was to notify

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149. Tower to Totten, May 17, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

150. Tower to Totten, May 19, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

151. Totten to Tower, June 8, 1861, NA, RG 77, Ltrs. Sent, Chief Engineer.

Sibley what Quartermaster stores were needed. The supply of forage at the post must be "kept up," he added.[152]

Colonel Tompkins replied that he was aware of the importance of "keeping Fort Pickens fully supplied with every article which it is the duty of this Department to furnish."

He was providing the Department with a list of items sent to Santa Rosa Island from his depot in the weeks since April 5. All that was required by Captain Ingalls on his first requisition, except some lumber, had been shipped. The lumber had been held back, when Colonel Tompkins was told that its length made its loading on a steamer difficult. He was now negotiating with a shipping company to embark the lumber and other articles recently called for by the Fort Pickens troops.

Because of the heavy expense of shipping forage to Santa Rosa Island, Colonel Tompkins urged that a six-month supply be sent to the post by sailing ships. Such an arrangement would reduce the cost of transportation for this item by 100 percent. At the same time, the public animals would not be "exposed to starvation by the failure of a vessel" to reach its goal.[153]

One shortage of which Major Tower had complained was corrected on May 18 by arrival of the schooner J. N. Genin with a supply of 8- and 10-inch columbiad shells, and a large quantity of solid shot for the 42-pounder smoothbores. The task of unloading a vessel anchored in an open roadstead proceeded slowly and was not completed until May 27.[154]

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152. Sibley to Tompkins, May 14, 1861, NA, RG 92, Ltrs. Sent, Quartermaster General. Quartermaster General Johnston had resigned his commission on April 22 to enter Confederate service.

153. Tompkins to Sibley, May 15, 1861, NA, RG 92, Consolidated Correspondence File.

154. Official Records, Ser. I, Vol. 1, pp. 407-11.

On June 1 the schooner John Roe arrived with the remainder of the ordnance stores requisitioned by Captain Vodges on February 9. Colonel Brown's chief of ordnance, Lieutenant Balch, was understandably displeased with the way the Quartermaster Department had handled Vodges' requisition. Writing Chief of Ordnance James W. Ripley, he pointed out that more than three months had passed between submission of the requisition and receipt of the stores. Such a delay was unpardonable, when it was known that Fort Pickens was "in a state of siege, surrounded by batteries served by from four to eight thousand men, and up to this time utterly unable to return a protracted and vigorous fire."

For the Quartermaster people to permit urgently needed ordnance stores to be shipped on sailing ships, when three large steamers had, between April 5 and 20, sailed from New York City to Santa Rosa Island showed "a great want of foresight and energy somewhere." But to do so, "in unarmed vessels carrying but eight men each, at [a] time when privateers are threatening our communications . . . evinces a most culpable neglect." Fortunately, Balch continued, the stores had slipped through. No attack had been made, and "the stores, although delivered so long after they should have been here, can yet be made available in the defense of the work."[155]

4. Army Establishes and Arms Two Batteries

By the last week of May, the Federals had completed and armed two batteries exterior to Fort Pickens. Battery Cameron, on the bay side of the island, 600 yards northeast of the fort, mounted two 10-inch columbiads. Battery Lincoln, emplacing two 10-inch siege mortars and four 8-inch seacoast howitzers, was on the strand east of Battery Cameron. The latter had been erected under supervision of Lieutenant Tidball, and confronted the Rebel navy yard battery at a range of 1,200

155. Balch to Ripley, June 3, 1861, NA, RG 92, Consolidated Correspondence File.

yards. As Lieutenant Tidball recalled, "Here was a steep sand ridge easy to cut down and form into a battery. By hook or by crook I got a few men to assist me in the work, and in a little while had my mortars in position." Tidball was his own "engineer, superintendent and head workman."[156]

5. Army Convinces the Navy to Keep at Least One Steam Warship off Santa Rosa Island

The primary problem which continued to plague the Federals was that Fort Pickens, being designed to cover the channel, had one extremely vulnerable point--its East Front provided the Confederates established a beachhead on Santa Rosa Island. Colonel Brown directed Major Tower to prepare a report on this critical situation. Tower responded:

> It is my opinion that Fort Pickens cannot be successfully defended against the enemy's forces now arrayed against us unless a sufficient number of the steamships aid your command to prevent any landing upon Santa Rosa Island. If the enemy once establish themselves on this island in the absence of a powerful steam fleet, they can in a few days build batteries to prevent ships from approaching this end of the island, and rapidly advance and reduce this work by a short siege. The heavy fire upon the flank and rear of our land fronts will prevent us from making a strong resistance if it does not dismount nearly all our guns.
>
> Two curtains [the east and south] of our land fronts have no guns upon them, and the flank guns are seen in reverse. The Navy must hold the island until reinforcements arrive, or our nation must suffer another disgrace in the loss of Fort Pickens. Circumstances have much changed during the past three weeks, the power of the enemy being nearly doubled in men and heavy guns.[157]

The "Tower Report" had been triggered by recent naval movements off the Gulf Islands Coast. In the first week of May, the

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156. Tidball to Calef, found in "A Distinguished Horse Artilleryman," p. 122; Official Records, Ser. I, Vol 1, pp. 416-17.

157. Official Records, Ser. I, Vol. 1, pp. 415-17.

Lincoln administration determined to enforce the blockade declared by the President in his proclamations of April 19 and 27 by sending additional naval forces to the Gulf. On May 4, to implement this decision, Capt. William W. McKean, aboard the steam frigate Niagara docked at the Brooklyn Navy Yard, received these instructions from the Secretary of the Navy:

> You will . . . on the receipt of this [order] proceed to the Gulf and take measures for instituting and carrying into effect a rigid blockade of the Mississippi, and such other ports, especially Mobile, as the forces under your command will admit, and in connection therewith use all diligence to capture the vessels with arms and munitions on board.
>
> Herewith you will receive a copy of the President's proclamation ordering a blockade. This on your arrival out you will proceed to carry into effect, giving public notice thereof in the best manner you can, allowing no vessels to obtain ingress into the port or river blockade. Neutrals will be allowed fifteen days to leave, with or without cargo.[158]

Niagara weighed anchor and steamed out of New York Harbor at 2 p.m., on May 5. Five days later she was off Charleston, where she cruised for three days, warning off a number of vessels. From there Niagara proceeded to LaHabana, and then to Pensacola. She reached Santa Rosa Island on the morning of May 25. Upon arrival McKean, as senior naval officer present, issued orders to the commanders of Brooklyn and Powhatan to precede to the mouth of the Mississippi. McKean planned to cruise with his ship off Mobile Bay.[159]

The Army officers were distressed by McKean's plans. Their position, as outlined by Major Tower, was grim. The foe was "daily increasing his batteries," and it was presumed that today General Bragg has a "greater weight of metal bearing upon us than the Allies had at Sebastopol." Lieutenant Slemmer's company had been evacuated and

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158. Official Records-Navies, Ser. 1, Vol. 4, pp. 155-56.

159. Ibid., pp. 181-297.

sent north, while the Marines and sailors had returned to their ships. To replace these men, a 60-man company (Company F, 1st Artillery) was daily expected from Key West.

Colonel Brown and his officers were troubled by newspaper stories, reporting that Captain Meigs, on his return to New York, had stated that Fort Pickens had been "relieved and could withstand a siege for six months." Major Tower could not credit such a statement, "because it would argue an ignorance on the part of Capt. Meigs inexcusable in any graduate of the Military Academy." Their situation, if the Confederates attacked, would be desperate. Pickens, as everyone knew, was "beleaguered by 10,000 men with nearly one hundred guns of large caliber including ten inch Sea Coast mortars bearing upon the flank and reverse of its two land fronts and defended by 800 men in a hot climate wearied with hard work and with scarcely sufficient ammunition for three days' firing." They would do well to hold out "two or three weeks after the Enemy has taken possession of this island which is very favorable for approaches, as ridges of sand run obliquely across it within 500 yards of the works."

So far, the Army had depended on the steam warships "to lie along the Island & by their threatening appearance prevent a landing." Now this was about to change. Upon the departure of Powhatan, Brooklyn, and Niagara, the only fighting vessel off Santa Rosa Island would be Sabine, "a sailing ship immovably anchored at least one half mile from the beach shore to defend the Island with guns that throw shot about one mile." This, in effect, would leave the Army to defend with 800 men five miles of island, "parts of which are almost impassable, partly covered with trees and sand hills & ridges and upon which our light artillery would be of little use & to defend a large fort, old fashioned in its construction, with guns inadequate to fire to the enemy's positions."[160]

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160. Tower to Totten, May 27, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

Colonel Brown accordingly complained to Captain McKean:

> I respectfully present to you that the taking away of these ships will jeopardize the safety of this fort. The force of the enemy on the other side of the harbor is represented to be from 8,000 to 10,000. My force for duty is a little less than 700, exclusive of marines and sailors, so that if the ships are taken away I cannot prevent a landing of the enemy on Santa Rosa Island, their making a permanent lodgment here, and subsequent approaches on this fort.[161]

Captain McKean, after studying Brown's message, met with him. After Brown had reviewed the situation, McKean reiterated his opinion that Sabine, with a small steamer to tow her into position, was sufficient to prevent the Confederates from landing on the island. Brown objected. After several hours, he convinced McKean of the importance the government attached to Fort Pickens. McKean agreed that it was improper to send Niagara to Mobile Bay. He now ordered Comdr. Charles H. Poor to station Powhatan off Mobile Bay, and then to proceed in Brooklyn to the Mississippi Passes. On return of St. Louis, which had been ordered to Key West in the last week of April, McKean would send her and Huntsville, which had left the Brooklyn Navy Yard on May 11, 1861, and had arrived off Santa Rosa Island on May 26, to Mobile Bay. There they would relieve Powhatan, which would then sail for the mouths of the Mississippi.[162]

McKean had been notified by Captain Adams that coal burned by the steamships was in short supply. To rectify this situation, McKean ordered Water Witch to Key West with instructions for Lt. Comdr.

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161. Official Records, Ser. I, Vol. 1, p. 418.

162. Official Records-Navies, Ser. 1., Vol. 4, pp. 181-211. On May 20, five days before McKean's arrival, Wyandotte had been sent by Captain Adams to Key West to pick up the mail. As soon as she returned, McKean planned to dispatch her or Mohawk to blockade the mouth of the Apalachicola River. Mohawk had arrived from Key West on April 30 and had been assigned to blockade the exit from Pensacola Bay at the east end of Santa Rosa Island. Ibid., p. 182.

Thomas T. Craven, commanding the naval forces there, to charter a vessel and ship a load of coal to Santa Rosa Island.[163]

Before the war, the Atlantic and Gulf waters of the United States, with those of the Caribbean, were the cruising grounds of the Home Squadron. At the beginning of hostilities, this squadron was commanded by Flag-Officer Garrett J. Pendergrast. The command was too extensive to be administered by one man, when it became the scene of active operations. It was now divided into three commands. The West Indies Squadron, having as its responsibility United States interests in Mexico and Central America as well as the Antilles, remained under Pendergrast. Flag-Officer Silas H. Stringham assumed command of the Atlantic Squadron with jurisdiction as far south as Cape Florida. Flag-Officer William Mervine on May 6, 1861, was assigned to the Gulf Blockading Squadron, which patroled the waters of the Gulf from Cape Florida to the Rio Grande. Mervine, flying his flag from Mississippi, reached his station on June 8, and assumed command.[164]

6. Drifting Drydock Tests Brown's Nerves

Tensions that had been building up since the mid-April landing of the reinforcements nearly exploded before daybreak on May 22. It had been a clear, starlight night, with a strong wind. At 3 a.m. the guard reported that the floating drydock had left the navy yard and was crossing the bay. There had been rumors for days that the Rebels had outfitted the dock as a floating battery. The "long roll" was beaten, "and every man rushed to his post, uncertain as to what deviltry the rebs might be up to. The gloom of the night magnified her size until she appeared . . . like Castle Williams floating off from Governor's Island."

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163. Ibid., p. 182.

164. Alfred T. Mahan, The Gulf and Inland Waters (New York, 1882), pp. 4-5.

When he realized it was the drydock, Lieutenant Tidball thought "Bragg might be attempting a Trojan horse game on us, and that the thing contained armed men with cannon mounted, and all that sort of thing to take us by treachery." The drydock ceased its ominous approach, when it grounded within less than a mile of Battery Lincoln. Daylight revealed to the Federals "nothing but an empty structure of wood, harmless as an old cracker box stranded on the beach."[165]

Colonel Brown was very excited. After calming down he decided it offered an opportunity to free himself from a false position of being obliged to act only on the defensive. He dispatched a message to General Bragg:

> In my letter to you of the 17th ultimo, I announced my intention of acting only on the defensive, unless assailed. Since then your so-called government has commenced an unholy, unjust, and parricidal war on our common country, and you personally have been almost constantly hostilely engaged in erecting batteries against this fort, and last night in anchoring a floating battery within range of and menacing my command. You will therefore be pleased to notice that I shall act on the offensive whenever the interests and honor of my country, in my opinion, require it.[166]

Not receiving an answer, and having requested and obtained the concurrence of other officers of his command, Brown sent a second letter to Bragg:

> It being impossible for me to know the character of the vessel now under my guns, or the object for which she is placed there, or of her removal from there, I can only consider her as designed to act in some manner against this fort or the shipping off this harbor. I have therefore to notify you that any attempt to remove or to occupy her will be considered an act of hostility, which I shall resist with what means I possess, unless I shall receive a satisfactory explanation.[167]

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165. Tidball to Calef, found in "A Distinguished Horse Artilleryman," p. 122; Official Records, Ser. I, Vol. 1, p. 417.

166. Official Records, Ser. I, Vol. 1, p. 419.

167. Ibid., p. 420.

"This was just to Bragg's taste," an officer recalled, because "he, too, was pungent in controversy." Replying, he wrote:

> Your communication of this date announced your intention to "act on the offensive whenever the honor and interests of your country, in your judgment require it." To any action you may take I shall respond with alacrity. Having voluntarily pledged yourself "to act on the defensive, unless assailed" I am no little surprised at your complaint that I, who acted under no such pledge, have been "constantly hostilely engaged in erecting batteries against your fort," when you have been all the while, under my daily observation, doing precisely the same thing against my position. The merits of the controversy between our respective governments I choose not to discuss with you. Impartial history will decide that question for us; but I must insist on the propriety and necessity of your observing those courtesies of style and language which I have a right to expect from one holding your high position, in any future communications addressed to these headquarters.
>
> I am surprised at the excitement which has been caused by the accidental position of the dry-dock from the navy-yard, without troops or armament. I cannot see how it could be regarded in any hostile light, and I had intended removing it as soon as my means and the wind and tide would allow.[168]

The Confederates had intended to tow the drydock from Warrington to Pensacola, where it would be safe in case of bombardment. A strong northerly wind either broke her loose from the tugs or they were unable to control her movements. It then drifted toward the Federal batteries. To prevent the dock running aground on Santa Rosa Island the Confederates anchored it. Bragg, not knowing whether Colonel Brown would accept his explanation, decided not to hazard the loss of tugs in towing the dock to safety, and it was scuttled within less than a mile of Batteries Lincoln and Cameron.[169]

Hardly had the controversy between the two senior officers wained, before Colonel Brown's ire was attracted by an incident nearer home. It was routine for the officers of the guard to patrol the bayside beach at night, employing a boat and crew provided by one of the warships.

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168. Ibid.

169. Ibid., p. 417.

One night when Lt. Francis W. Seeley was officer-of-the-day, he invited Lt. Loomis Langdon to accompany him, and they would burn the stranded dock. Langdon was agreeable. The moon was down, when the two Army officers took their seats in the boat. With the sailors pulling on muffled oars, the small craft headed east. Boarding the dock, Seeley and Langdon gathered a quantity of loose rope, lying about, into a pile, poured on turpentine, and set fire to the mass. Reboarding the small craft, they had the sailors pull for shore. Flames lighted the bay, rousing both camps. Fort Pickens was like a "bee-hive" when they entered, the "parapet lined with excited on-lookers."

Colonel Brown sent a crew which extinguished the fire, before the flames made much headway. He was furious about the affair, and as an officer recalled, "when he got angry he was angry all over. He was angry because he feared Bragg might open his batteries while we were yet far from being ready to resist." Colonel Brown soon drew an admission from Seeley that he knew something of the incident. He ordered Seeley and Langdon court-martialed.

An officer named to act as their counsel interviewed the small boat crew. "O, yes," the sailors replied, "we know all about it, but the officers . . . were drunk, and did not know what they were doing." "Sailor-like," they believed drunkenness was an excuse for anything, and were much "grieved and astonished," when told that in the Army such a charge would be considered an aggravation of the offense. They now changed their story. They discovered that "they knew nothing whatever of the case, further than they had been of the crew that had rowed the boat to the dock, and that two persons, whether officers or not they could not say, had clambered up out of their sight on to the dock." The court accordingly acquitted Seeley and Langdon, "greatly to the chagrin" of Colonel Brown.[170]

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170. Loomis Langdon, "A Court-Martial at Fort Pickens," found in 1st Regiment of Artillery, pp. 448-55; Tidball to Calef, found in "A Distinguished Horse Artilleryman," pp. 122-23.

7. Supply Situation Improves

On May 27, 1861, Major Tower again wrote General Totten. Although 10 days had passed since his last letter, not "one article of Lt. Slemmer's and my requisition" which had reached Washington on April 4 had been received, nor had he been apprised of any being shipped. "Is it possible," he inquired, that "such a requisition has been thrown aside? Who can bear the censure of neglecting such a requisition?"

In the same letter, which he knew had been hand carried by Captain Wright to General-in-Chief Scott, Tower had written that "this Island must be held for a distance of 5 or 6 miles to secure" Fort Pickens. But no more troops had been sent. "We have not forces to secure this Island," Tower protested, and "that must be known just as well at a distance by a person competent to judge as by me." Though it might not be "the policy of the enemy to seize the Island," he warned, "it is my belief that he can do it whenever he chooses."[171]

The government, in response to Tower's May 17 letter, was finally moving to correct the situation. Secretary of War Simon Cameron on May 29 directed Chief of Ordnance Ripley to speed the shipment of additional big guns to Fort Pickens from Governor's Island.[172] Cameron also forwarded a request to Secretary of the Navy Welles, asking for 30 IX-inch Dahlgren guns.[173]

On May 30 Montgomery Meigs, who on his return from Florida had been promoted to colonel, was directed by the Secretary of War "to take charge of the organization and dispatch of an expedition to sail from New York and Portsmouth under sealed orders."[174] The

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171. Tower to Totten, May 27, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

172. Official Records, Ser. I, Vol. 1, p. 442.

173. Ibid., p. 423.

174. Ibid.

energetic future Quartermaster General of the United States Army responded with alacrity. A request was made upon the governor of New York to designate a regiment of volunteers who had enlisted to serve for at least two years. The regiment was to be sent off immediately. Col. William Wilson's 6th Regiment New York Volunteers was selected by Governor Edwin D. Morgan and ordered to embark. Meigs, who seemed omnipresent, quickly had reinforcements of men and matériel flowing to the Florida Gulf Coast.[175]

By the end of the second week of June, Colonel Brown reported the arrival of Star of the South, South Carolina, and Massachusetts with smoothbore siege guns, howitzers, ammunition, hay, oats, and twenty mules and carts. He, however, was disappointed when the repeatedly called for rifled cannon failed to arrive.[176]

8. Conditions as Reported by Major Tower in Mid-June

One of these vessels brought the 20,000 sandbags shipped from the New York Agency in response to Major Tower's May 19 call. On June 14 Tower wrote General Totten, acknowledging receipt of the sandbags, detailing improvements to the defenses, and forwarding two drawings. One of these showed "the positions and strength of the Enemy's Batteries, so far as known by actual observation, and also of our own sand Batteries," and the other "Fort Pickens, Florida, Exhibiting its Armament, the bearing of the Enemy's Batteries upon its different parts, and the Earthwork defences thrown up as covers against the same."[177]

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175. Ibid., p. 427.

176. Ibid., pp. 429-30.

177. Copies of these plans are found in the files, Florida Unit, Gulf Islands National Seashore. Lieutenant Langdon on May 27 had submitted to Colonel Brown a "Sketch of Fort Pickens." The Langdon sketch is reproduced as figure 6, plate V, Atlas to Accompany the Official Records. The Langdon sketch, although less detailed than the one forwarded by Major Tower, shows several features not found on the Engineers' plan. These are: (a) an abatis in the ditch fronting the north and south curtains; (b) heavy blindages along the parapet of the south curtain; (c)

With these sandbags and the 18,000 received from Forts Taylor and Jefferson, there was now no shortage. Heretofore Tower, as an emergency measure, had used "some barrels and boxes and board revetments." The New York bags, being of cotton, rotted rapidly, and in the future he hoped the Agency would forward coffee bagging.

The working parties were progressing slowly in strengthening the defenses. There were two reasons for this. The weather had turned hot, and the mornings were torrid. Colonel Brown had accordingly limited the garrison to three hours fatigue duty daily, from four to seven p.m. Unloading the ships called for large working parties, and the number of men engaged on engineer operations were limited.

By referring to the second of the enclosed plans, General Totten could see that "the parade line of officers' quarters and the contigious curtain is pretty well blinded and that the 10 inch . . . [columbiads] are nearly surrounded by sandbag . . . parapets so as to prevent their being taken in flank or reverse and to limit the surface exposed to mortar shells."

The toil in carrying sand up onto the ramparts was so arduous that Tower had not "yet entirely covered the gorges" of the Southeast and Southwest Bastions. He had avoided overloading the Northwest Bastion, "as the arches throw their weight upon the scarp wall of the bastion faces (a very faulty construction)." He had talked with men who had heard General Chase and Jasper Strong say that the masonry of this portion of the work is very bad. He therefore was certain that, when the bombardment came, Bragg's gunners would concentrate the fire of their 10-inch columbiads on this bastion in expectation of "shaking it down." The curtain of the East Front, as General Totten no doubt recalled, appears to have "moved a little and

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177. (cont.) the parapet of the north curtain raised with sand; (d) a tramway from near the south curtain to the beach to facilitate the movement of stores; and (e) mortar emplacements on the terrepleins of the Northwest, Northeast, and Southeast Bastions.

was . . . supported by two buttresses." Tower, however, presumed that with age the masonry has improved.[178]

No bombproofs had been constructed over the guns, because they would limit the degree to which they could be traversed. The six Fort Pickens 10-inch columbiads could be traversed nearly 360 degrees, while those in Battery Cameron could not. Timber for platforms of the exterior batteries had been secured by demolishing the "old wharf."

Battery Scott, mounting two 10-inch columbiads, was being erected on the point of the island opposite Fort McRee. Work had been delayed because of the non-arrival of the platforms. On hand were five 10-inch seacoast mortars and four beds. Two of these were mounted in Battery Lincoln, and he was hopeful of emplacing the other two in Battery Scott within several days.

Tower had planned to emplace five rifled cannon in the casemates, but the only surplus carriages on hand were barbette. He had two 42-pounders mounted in casemates, and they would be dismounted and their carriages appropriated for two of the rifles.[179]

Traverse circles for the three 10-inch columbiads mounted on the Northeast, Southeast, and Northwest Bastions had been removed from the Southwest Channel Front. The other three 10-inch columbiads were mounted on wooden platforms, the pintle irons and traverse circles taken from the same front. Tower was expecting six columbiad platforms. If they did not soon arrive, he would be compelled to destroy two more of the Southwest Channel Front permanent platforms.[180]

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178. Tower to Totten, June 14, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

179. Tower to Totten, May 27 & June 14, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

180. Tower to Totten, June 14, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

On the first plan, Major Tower had positioned the Confederate batteries "so far as they can be seen." In addition, he warned, the foe might have some masked batteries. Bragg was still at work "increasing his batteries and adding heavy guns," and possibly rifled cannon along a front from Fort McRee to the navy yard. Three guns had recently been dismounted at Fort Barrancas, thrown over the parapet, and replaced by either columbiads, Dahlgrens, or Rifled Cannon."

Major Tower, after evaluating all available information, concluded that the foe could bombard us with not less "than 80 guns, many of large calibers--10-inch columbiads, 8-inch columbiads, Dahlgren Navy Shellguns, 10-inch mortars, rifled cannon, 42- and 32-pounders."

Reports had also been received that the Confederates had occupied the live oak plantation at Town Point. According to other sources, Bragg had a large force engaged in outfitting a floating battery. Tower presumed that if these reports were correct, Bragg would moor the floating battery and with it, the navy yard guns, and those to be erected on Town Point command the inner harbor. Or Bragg might, if the battery were armored, employ it to cover his troops when they stormed the Santa Rosa Island beaches.[181]

Once again, in his June 14 letter, Major Tower complained, "we have not the troops requisite" to hold Santa Rosa Island if the Confederates attack. That it had not already been occupied, he "attributed . . . to the diversion made at the North." He ridiculed the notion that Niagara with "6 shell guns on a side can drive troops from this Island a half mile wide piled up with sand ridges." Three steam frigates, not one, coasting the beach "might have such a morale effect" as to deter Bragg from an amphibious assault.

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181. Tower to Totten, June 14 & 17, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

"If we wish to preserve Santa Rosa," he continued, it must be held by troops ashore. "It is not less necessary to be prepared for an attack here," he warned, because when anticipated it did not come, because all eyes were focused on Richmond and Harpers Ferry.

Totten, from his reading, must know that the Duke of Wellington was not expected to attack Cuidad Rodrigo, but he did. Tower, although he disparied of holding Santa Rosa Island, was confident of defending Fort Pickens as long as "there were 250 good effective men."[182]

9. Colonel Brown Loses Two Companies of Regulars and Gains Billy Wilson's Zouaves

The weather having turned hot and humid, the number of men reporting for sick call increased rapidly. By the fourth week of June at least 90 men reported daily to the surgeon. Most of the sickness could be attributed to hard work in the sun, sleeping in damp casemates, and drinking tainted water. Nearly six weeks had passed since any rain had fallen. One of the fort's cisterns leaked and the others had to be used sparingly. Colonel Brown ordered a temporary hospital built about a mile east of the fort.[183]

In view of these sanitation problems, Brown now cautioned the government not to land a large force on Santa Rosa Island, until after the September gales had dispelled the "miasma" rising from nearby swamps. He also considered the Confederate batteries to be so numerous and advantageously situated as to preclude the entrance of any large Federal ships into the harbor. As he deemed the forcing of the entrance to Pensacola Bay by large ships to be impossible, he recommended the employment of shallow-draft gunboats. Colonel Brown believed these could enter the bay by one of two routes; through the main entrance in

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182. Tower to Totten, June 14, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

183. Official Records, Ser. I., Vol. 1, pp. 431-33.

front of Fort Pickens by following the shoreline and taking advantage of a dark and cloudy night, or through East Pass at the eastern end of Santa Rosa Island. Once inside the bay the Federal gunboats could operate at an advantage, because the Confederates did not have any gunboats and they would be able to intercept Bragg's waterborne supplies. To support the gunboats which had entered the bay, Union troops would be landed near the mouth of Perdido River. A beachhead established, they would strike inland severing Bragg's communications with Mobile, and isolating the Pensacola Confederates.[184]

By the end of June 1861 the armament and munitions Secretary of War Cameron had ordered Colonel Meigs to forward to Fort Pickens had arrived. In one shipment were the long-awaited rifled 42-pounders. Several days later, the steamer Illinois arrived. Aboard were 28 Dahlgren IX-inch guns sent by the Navy Department at the urgent request of the Secretary of War. Colonel Brown was overjoyed by the receipt of the rifled guns, but he was quickly disillusioned by the Dahlgrens. He found them unfit for service ashore and, of greater concern, their shells were fused in such a manner that only one-third of those sent could be fired.[185]

Montgomery Meigs, who had been appointed Quartermaster General in mid-May, was disappointed to learn of Brown's disenchantment with the Dahlgrens. With these and the 10-inch columbiads and rifled 42-pounders, he believed, Brown would enjoy a superiority in "weight or metal" over the Confederates. Meigs had arranged for transfer of the Dahlgrens in response to Lieutenant Porter having volunteered his sailors for positioning these guns in battery, and knowledge that the War Department had ordered 1,000 reinforcements to Santa Rosa Island. It

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184. Ibid., pp. 431-32. The Confederate Navy Department in the autumn of 1861 entered into contracts with Ollinger & Bruce and F.G. Howard for construction of two gunboats at the head of Pensacola Bay, 35 miles from Fort Pickens. Scharf, Confederate States Navy, p. 37.

185. Ibid., p. 433.

had cost the government about $5,000 to ship these naval guns to Florida.

Meigs was understandably "mortified" to learn that the Dahlgrens had not been landed. In taking this action, he believed Brown had blundered, and if the Confederates decided they could afford the powder, they would make Brown "wish for the means of diverting the fire from the Fort, and of distracting" them with the Dahlgrens' IX-inch shells.[186]

At this time orders were received for Colonel Brown to embark aboard ship two of his companies of regulars (Companies A and M, 2d U.S. Artillery) for transfer to the Washington, D.C., area and duty with Brig. Gen. Irwin McDowell's army. They would be replaced by Colonel Wilson's 6th New York. Even before arrival of the New Yorkers, Major Tower protested that substitution of the "undrilled volunteers" for the regulars will weaken our position.[187]

Colonel Brown complained to the War Department of the loss of the veteran artillerists and the decision to replace them with volunteers. General Meigs, as he knew Brown and was familiar with the situation, replied. His letter was dated July 25, four days after the Union defeat at First Manassas.

Meigs chided Colonel Brown that he should not complain about the loss of his regulars. "You would not," Meigs continued, if you were in Washington, and saw the great need of them. "You have a much larger proportion" of regulars than any other army.

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186. Meigs to Brown, July 26, 1861, NA, RG 92, Ltrs. Sent, Quartermaster General.

187. Tower to Totten, June 27, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

Though he did not know what orders General-in-Chief Scott had sent Brown, Meigs did understand the government's policy. It was general knowledge that this was not the season for active campaigning on the Gulf Frontier. Brown's 1,700 men were doing "good service" in "holding the last stronghold of the United States on the Southern coast." In keeping 6,000 to 8,000 Confederate soldiers "unemployed, discontented, unhealthy, and costly," Brown's command was doing more to "exhaust the Rebel government than it could do in any other way." When the frost came, this policy might be changed.

Brown meanwhile must compel Colonel Wilson's zouaves "to drill and bring them into regular discipline." As for Company A, 2d Artillery, the blame for taking it to Florida in the first place was as injust. If Brown blamed those who took it away, he did them injustice. It was Meigs' understanding that Brown had enough guns, horses, and mules for another battery.[188]

On June 26 the redlegs of Capt. Henry J. Hunt's Company M, 2d Artillery, had sailed from Santa Rosa Island aboard the steamship Illinois for New York City. They were followed by Captain Barry's Company A, 2d Artillery, which boarded the steamer Columbia on July 5. A hard time was had in re-embarking the battery, especially the horses, which had to be ferried out to the vessel in "a small scow, a few at a time, and hoisted up the ship's sides" in slings. The ship got underway for New York Harbor on the 6th.[189]

Soldiers of the 6th New York, who had boasted they would "go through Baltimore like a dose of salts" landed on Santa Rosa Island on June 26. Colonel Wilson, one of the regulars recalled:

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188. Meigs to Brown, July 26, 1861, NA, RG 92, Ltrs. Sent, Quartermaster General.

189. Tidball to Calef, found in "A Distinguished Horse Artilleryman," p. 124; Returns for U.S. Posts, 1800-1916, NA, Microcopy M-617.

> was a famous character . . ., a Tammany heeler from the slums of New York, and his entire regiment was composed of the same character. His regiment had been selected especially for its noted worthless character, and sent to Santa Rosa as a place where it could do the least harm, for no good could possibly come out of such a Nazareth. This was a bitter pill for old Harvey [Colonel Brown] to swallow, and loudly did he kick and squirm against it.

Wilson's regiment moved into the camp in the woods one mile east of Fort Pickens vacated by Barry battery.[190]

The regiment reported to Colonel Brown, whom the unit historian recalled, as "not very tall, and rather slender, but straight, and rigid, with a positive stubly grey moustache, outlining a firm mouth."[191]

On July 10, before Colonel Brown's protest of the transfer of the two companies of regulars had reached the War Department, the loss was partially nullified. Company L, 1st U.S. Artillery, having arrived from Fort Jefferson, reported to Colonel Brown for duty on Santa Rosa Island.[192]

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190. Tidball to Calef, found in "A Distinguished Horse Artilleryman," pp. 123-24; Returns for U.S. Posts, 1800-1916, NA, Microcopy M-617.

191. Gouverneur Morris, The History of a Volunteer Regiment (New York, 1891), pp. 39-52. Companies B and E, 6th New York, were detailed to Fort Jefferson in June and Company A to Key West in August. Company I was assigned to Battery Cameron in August and G to Battery Lincoln on September 21.

192. Returns from U.S. Posts, 1800-1916, NA, Microcopy M-617.

E. War Means Fighting and Fighting Brings Bloodshed

1. Two Hot But Peaceful Months

July and August were peaceful months on Pensacola Bay. Both sides continued to strengthen their positions and watch and wait. Elsewhere two major battles occurred. On July 21, in northern Virginia, the Confederates had routed McDowell's army at Manassas, and in southwest Missouri on August 10 at Wilson's Creek the Rebels had won another victory. These battles demonstrated that both North and South were in earnest, and there would be much hard fighting before peace returned to a divided Nation.

The new hospital on the beach was completed by the end of the third week of July. With arrival of a shipment of 8-inch columbiads from Fort Jefferson, Colonel Brown now had all the heavy guns he could employ. Battery Totten, a quarter of a mile east of the fort near the Gulf, mounting two huge seacoast mortars (one 12- and a 13-inch) was nearly finished. Brown's plans called for his engineers to lay out one more battery, emplacing three 10-inch mortars in the center of the island and about one and a quarter miles east of the fort. Upon completion of these works, Brown reported, "this fort will be in complete readiness, and I presume no fort in the United States was ever better prepared for offensive or defensive operations (if manned, which it is not half.)"[193]

On the last day of August, Major Tower lost for the time being the service of one of his assistants--Lieutenant McFarland--who was detailed for temporary duty with the Navy. Two weeks later, on September 13, the garrison was further reduced, when the Company of Sappers and Miners went aboard the ship which returned the unit to New York. They were replaced by Company C, 2d U.S. Artillery, from Fort Jefferson. Lieutenant McFarland rejoined Tower on October 15, by which

193. Official Records, Ser. I, Vol 1, pp. 438, 440.

time orders had been received for Lieutenant Reese to report to Maj. Gen. George B. McClellan in Washington at his first opportunity.[194]

Most of the regulars were quartered in Fort Pickens. Lt. Henry W. Closson of Company F, 1st Artillery, was certain none of his comrades would ever forget "Long Hall" or "Hell Row," as it was enviously dubbed by the outsiders. It was a flank casemate occupied as quarters by a number of younger officers, who at the end of day would congregate and "console themselves for their fatigue and isolation with temperate appeals to pipe and cup." Their furniture was mainly mounted flank howitzers and budge barrels filled with cartridges, which were allotted as seats to the smokers. There were also a few barrels of commissary whiskey, stored in this area for safe keeping, and used as tables. Army cots filled every corner, and there was an inflatable India-rubber mattress belonging to a member of the Engineer Corps, "who claimed credit for . . . self-denial in depriving himself of the usual rosewood." His comrades found pleasure in turning the nozzle, after the engineer had retired, and the air "came murmuring forth as young Bastions sank gently to the cold brick below, and woke to find himself encircled by a whooping throng of savages who had been patiently waiting the catastrophe, having first water-logged the corps' revolver in the wash basin."

Occasionally, "Long Hall" resounded to "John Brown" or "Benny Havens" from "lusty throats" of the young lieutenants, until Adjutant Hartsuff, buttoned up to the chin, appeared at the door and announced that Colonel Brown was of the opinion that there was too much noise. Usually, however, it resulted in "a walk around," with Adjutant Hartsuff as sentry to the slow and mournful tune of "Old Grimes is Dead," and the adjutant returning to Colonel Brown to report, "it must

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194. Tower to Totten, Sept. 3 & Oct. 31, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer; Returns from U.S. Posts, 1800-1916, NA, Microcopy M-617.

be the wind or surf roaring with extra hoarseness through the embrasures of the commandant's casemate."[195]

2. Scurvy Haunts the Garrison

In mid-July Colonel Brown wrote Adjutant General Lorenzo Thomas of his need for a shallow-draft, fast steamer as a tow- and mail-boat. On Tuesday, the 9th, the steamer City of New York had reached Santa Rosa Island. As she came without cargo, Brown presumed she had been sent by Colonel Tompkins to fill this need.

She, he informed General Thomas, was a "large propeller of some 500 or 600 tons," drawing from 14 to 15 feet, and consequently of no use for a tug, and too expensive for a mail-boat, as she had been chartered by the Quartermaster Department at $10,000 per month. Brown had no use for her and, in the public interest, ordered her back to New York.

Brown was distressed by Colonel Tompkins' action in chartering a vessel at such high costs and sending her to Fort Pickens in ballast, when forage and rations were in short supply. He had concluded there must be "something unusual in such an arrangement," and the War Department should know about it.

What he needed was a small fast tug, drawing about 7 feet, to be employed as a mail-boat between Santa Rosa Island and Key West and for towing lighters and small boats employed in loading and unloading ships through the surf.[196]

Adjutant General Thomas referred Brown's letter to Quartermaster General Meigs. On July 26 Meigs wrote Brown that City of New York had been sent, as she was the only vessel meeting the requirements spelled out by Lieutenant Porter. The "expedition and the

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195. Closson to Haskin, Jan. 1875, found in First Regiment of Artillery, pp. 357-58.

196. Brown to Thomas, July 13, 1861, NA, RG 92, Consolidated Correspondence File.

holding" of Santa Rosa Island, Meigs pointed out, was a joint army-navy undertaking. As such, Meigs had approved the charter of City of New York. He was, in view of Brown's feelings, endeavoring to secure a small tug. It was difficult, however, to get "a small steamer without masts or sails safely upon so long a voyage."

Meigs had ordered the purchase in Cuba of "mastless lighters" for use by Brown's command. A number had been contracted for, when the Captain-General had vetoed the transaction by refusing to permit them to leave port. As an alternative, Meigs, within the last several days, had purchased two lighters with donkey engines. They would be sent to Florida on the next voyage of Atlantic.[197]

Colonel Brown had observed with interest the procedure adopted by the Navy for supplying its Gulf Squadron with fresh beef and mutton. The animals were slaughtered in New York, the carcasses packed in ice, and shipped to Santa Rosa Island. Believing this method was preferable to receiving his meat on the hoof, Colonel Brown had his quartermaster request the Commissary Department to send out "a vessel with a supply of fresh Beef & Mutton on Ice" for 900 men.[198]

Quartermaster General Meigs, taking cognizance of Colonel Brown's suggestion, ordered the purchase of "a fast propeller" to transport freshly slaughtered meat, packed in ice.[199] The vessel purchased was Joseph Whitney, and she was renamed McClellan to honor General McClellan. She was outfitted in New York City to carry iced fresh provisions to the Gulf forts. Her master would be Captain Gray,

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197. Meigs to Brown, July 26, 1861, NA, RG 92, Ltrs. Sent, Quartermaster General.

198. Perry to Taylor, June 13, 1861, NA, RG 92, Consolidated Correspondence File. Capt. Alexander Perry had replaced Captain Clarke as Brown's quartermaster, while Col. Joseph Taylor was Assistant Commissary General.

199. Meigs to Brown, July 26, 1861, NA, RG 92, Ltrs. Sent, Quartermaster General.

who had captained Atlantic on her fateful April mission to Fort Pickens.[200]

On August 31 Lieutenant Langdon, now serving as post commissary, requisitioned: 300 barrels of salt beef, 130 head of beef cattle, 500 pounds of ham, 1,500 pounds of bacon, 200 pounds of crushed sugar, 50 barrels of whiskey, 150 bushels of salt, and 300 pounds of tea.

As large quantities of the commissary stores previously shipped and received had "unavoidably spoiled, owing to want of proper places to store them," the situation was becoming critical. The last of the beef cattle had been slaughtered and issued. The troops had not had any vegètables for months. Langdon suggested that a supply of potatoes and onions be furnished, as none can be purchased on Santa Rosa Island.[201]

No rations having been received during the next week and one-half, Lieutenant Langdon requested that the New York Commissary Depot be directed to "make such arrangements as will ensure a prompt and constant supply of potatoes and onions" for Forts Pickens, Jefferson, and Taylor. The health of the Santa Rosa Island troops, although excellent, in other respects, was endangered by want of these staples. Scurvy had appeared. One man was near death and others affected.

To combat this scourge, Langdon had purchased all the anti-scorbutics possible, had written Key West twice, and had done everything he could to induce ship captains to bring in these items. He had delayed writing to the Commissary General in hopes these efforts would succeed, and while awaiting return of a vessel sent to New York for suttler supplies.

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200. Meigs to Tompkins, Aug. 28, 1861, NA, RG 92, Ltrs. Sent, Quartermaster General.

201. Langdon to Gibson, Aug. 31, 1861, NA, RG 92, Consolidated Correspondence File.

Desiccated vegetables had been issued liberally, but once scurvy broke out nothing would check it but fresh vegetables.[202]

The arrival of the steamer McClellan, with a "bountiful" supply of fresh beef, curbed the scurvy outbreak.

Colonel Brown, however, questioned the wisdom of sending "such large quantities packed on ice," unless his command was to be greatly increased. Because of the shipping shortage and its high cost, he thought it unwise to tie-up McClellan, while the frozen meat was being consumed. He also questioned the wisdom of feeding his troops a constant diet of fresh meat. The sudden change from a salt to an exclusive fresh meat ration had felled many of the soldiers with diarrhea.

He urged that in the future not more than ten days' rations of fresh meat be sent on ice, and as much as possible on the hoof. Such action would enable him to promptly discharge the ship; his men would not be gorged by overeating; and in the interval salt and fresh meat could be issued as occasion demanded.

In addition, Colonel Brown complained, although potatoes were now a part of the ration and his command had been for months without fresh vegetables, not a bushel had been shipped on McClellan. Echoing Lieutenant Langdon, he pointed out, a "plentiful supply" of potatoes is essential, "where nothing can be purchased, and the troops depend exclusively on the Government for their supplies."[203]

General Meigs, having received Lieutenant Langdon's letter, on October 7 telegraphed Colonel Tompkins that the Fort Pickens troops are "suffering for fresh provisions." Although McClellan would be returning empty, Tompkins was not to await her return. He was to

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202. Langdon to Gibson, Sept. 9, 1861, NA, RG 92, Consolidated Correspondence File.

203. Brown to Taylor, Oct. 5, 1861, NA, RG 92, Consolidated Correspondence File.

ship to Santa Rosa Island by the first available steamer the fresh vegetables called for by Colonel Brown and Lieutenant Langdon.[204]

3. Blood is Shed

The armed truce was disturbed on August 25, when a vessel sought to put to sea. A shot from Battery Cameron screamed across her bow, and she dropped her sail and quickly retired in the direction of Pensacola.[205]

On the evening of September 2 there was more excitement on Pensacola Bay. Colonel Brown, despite having had Lieutenants Seeley and Langdon court-martialed for attempting to burn the stranded drydock, now ordered Lt. Alexander M. Shipley and a picked detachment of the 3d U.S. Infantry to do what the two lieutenants had tried. His reasons for changing his policy were twofold: (a) during the past several months his forces had greatly strengthened their defenses, and (b) he feared that the Confederates planned to repair and refloat the dock, preparatory to turning it into a floating battery.

Boarding the stranded dock, Shipley and his men found no one aboard. After placing combustibles and shells in the hold, Shipley fired the dock, which burned to the water's edge. This exploit earned for Shipley and his men the thanks of Colonel Brown, and was vividly described in the illustrated newspapers.[206]

Colonel Brown justified the destruction of this property of the United States by stating that his action was necessary to frustrate Confederate efforts to repair and refloat the dock.

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204. Meigs to Tompkins, Oct. 7, 1861, NA, RG 92, Ltrs. Sent, Quartermaster General.

205. Morris, History of a Volunteer Regiment, pp. 47-8.

206. Ibid., pp. 51-2; Official Records, Ser. I, Vol. VI, p. 665; Langdon, "A Court-Martial at Fort Pickens," found in First Regiment of Artillery, pp. 448-55.

Six nights later, on September 8, General Bragg sent a nine-man Marine patrol out in a rowboat. Deserting to the foe, they informed Colonel Brown that the Confederates were continuing their build-up.[207]

Confederate naval authorities at Pensacola were at this time fitting out the schooner Judah as a privateer. She was equipped with a pivot and four broadside guns. While being prepared for sea, she was moored to the wharf at the navy yard and covered by a heavy gun emplaced ashore.[208] Flag Officer Mervine, on being informed of this, determined to destroy Judah before she could put to sea. He ordered an expedition readied. Its mission would be a midnight raid to prevent Judah from sailing.[209]

In the darkness of September 13-14 four small boats cast away from U.S.S. Colorado. The raiding force consisted of about 100 sailors and Marines commanded by Lt. John H. Russell. With oars muffed, the raiders approached Judah about 3:30 a.m.[210] The Confederate sailors, forewarned, greeted the Federals with a volley of musketry as they neared the vessel. Led by Lieutenant Russell, sword in hand, the bluejackets and Marines clambered aboard Judah. After a brief struggle they captured the privateer. The crew of Judah, stiffened by rapidly arriving reinforcements, rallied on the wharf and opened a savage fire upon the raiders.[211]

Lieutenant Russell, upon capturing Judah, ordered Lt. John G. Sproston to take a party and search out and spike the gun emplaced nearby. They were hindered in their search by inky blackness. When at last discovered, fortunately for the Federals, only one man was

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207. Official Records, Ser. I, Vol. VI, pp. 666, 725.

208. Dickison, Confederate Military History of Florida, p. 26.

209. Official Records-Navies, Ser. 1, Vol. 16, p. 670.

210. Ibid.

211. Ibid., p. 671.

posted at the gun, because of the confusion engendered by the night attack. He pointed his musket at Lieutenant Sproston but was shot by Gunner's Mate John D. Barton before he fired. The heavy gun, a 10-inch columbiad, was spiked. The raiders brought off its tampion as a trophy.[212]

Lieutenant Russell by this time had torched Judah, and the schooner blazed. The expedition had, in less than fifteen minutes, accomplished all its objectives. They now re-embarked and rapidly pulled away from the navy yard. The Confederates, thoroughly aroused, opened fire with canister upon the rapidly disappearing Federals.

At daybreak the four small boats were hoisted aboard Colorado. The raiders had accomplished their mission with the loss of 3 killed and 13 wounded. The defenders lost 3 killed and an undetermined number wounded. The burning of Judah is deserving of remembrance as the first Civil War encounter in Florida in which there was loss of life.[213]

4. Battle of Santa Rosa Island Changes Nothing

The Judah raid did not provoke General Bragg into a rash attack on Fort Pickens. The Mexican War hero, in the throes of reorganizing his command, bided his time. The four brigades constituting his little army were consolidated and reduced to two.

The task completed, Bragg on the night of October 9-10, 1861, landed 1,000 men on Santa Rosa Island. The Confederates came ashore on the bay side of the island, about four miles east of Fort Pickens. After forming into three columns, they advanced westward and surprised and routed from their camp a battalion of the 6th New York. Colonel Brown responded to the attack on the New Yorkers' camp with alacrity. At daybreak Union troops advanced from Fort Pickens to engage the Rebels. The Confederates, having failed to reach any of the

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212. Ibid.

213. Ibid., pp. 671-75; Dickison, Confederate Military History of Florida, pp. 26-7.

Union batteries east of the fort, withdrew to the point where they had come ashore. They reboarded their vessels without difficulty, but disaster threatened when a hawser became entangled in one of the ships' propellers. Before they could clear the screw, the Federals came up on the double and opened fire on the crowded transports. The Confederates now cut the obstruction away and the vessel drifted free.

The battle of Santa Rosa Island was over. In this engagement the Confederates reported a loss of 18 killed, 39 wounded, and 30 missing and presumed prisoners of war. Colonel Brown listed his losses as 14 killed, 29 wounded, and 24 prisoners.[214]

Writing General Totten of the battle, Major Tower observed:

> I have no doubt that the enemy were most disappointed with the results. The zouaves [the 6th New York] (excepting the pickets) proved of little account. They are badly commanded. If incorporated with the regulars they might be made effective. Contrary to the reports in the Southern papers the enemy did not spike one gun or burn a Store house. They destroyed about 3/4 of the tents of 5 companies of Zouaves and robbed some of the officers' trunks. They ought to have been more severely punished for coming with 1,000 men within a mile of our work. But in the confusion of a night attack matters do not always get on well.[215]

5. November 22-3 Bombardment

Colonel Brown, angered by the Rebel raid, thundered that "an insult so gross to the flag of my country" can "not by me be passed

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214. Official Records, Ser. I., Vol. VI, pp. 441-62. For detailed accounts of the battle of Santa Rosa Island, the reader should consult E.C. Bearss, Civil War Operations in and Around Pensacola, found in The Florida Historical Quarterly, Vol. XXXVI, No. 2, pp. 144-154; Morris, History of a Volunteer Regiment, pp. 57-64.

215. Tower to Totten, Oct. 15, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

unnoticed," and he "designed immediately to take appropriate notice of it." He proposed a joint Army-Navy attack on the Confederate harbor defenses.[216] To implement this plan, a dispatch was sent via the army steamer McClellan to Flag-Officer McKean proposing an attack on the common foe.[217]

Early on the morning of October 10, while en route to the delta of the Mississippi, Captain Gray of McClellan sighted and spoke Niagara, McKean's flagship. Niagara, accompanied by Colorado, was proceeding to Fort Pickens to procure rifled guns from Colonel Brown. These weapons were to be mounted in the works being constructed by Capt. John Pope's naval forces at Head of Passes. McKean acceded to Brown's request, and next morning the two powerful warships anchored off Santa Rosa Island.[218]

A council of war was held. Major Tower briefed the naval officers. They were told that, according to the most reliable and latest reports, General Bragg had increased his force ashore to at least 7,000. Two regiments had been ordered north but Bragg, in refusing to release them, had asked for reinforcements. The foe now had 18 field pieces, six of which were rifled.

From 20 to 30 10-inch columbiads had been brought in by rail and mounted by Bragg's people. Major Tower's informant, in describing the huge columbiads, had looked at one of the Federals' pieces and had said that the Confederates' cannon were "straight at the muzzle

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216. Official Records, Ser. I, Vol. VI, p. 469.

217. Official Records-Navies, Ser. 1, Vol. 16, p. 701.

218. Ibid., pp. 701-02. Early in October the Federals had entered the mouth of the Mississippi and occupied Head of Passes. Their plans envisioned construction of a fort near the lighthouse at the junction of Southwest Pass and South Pass. For additional information on this subject, see E.C. Bearss, "The Fiasco at Head of Passes," Louisiana History, Vol. IV, No. 4, pp. 301-311.

and were heavier and shorter behind the trunnions and that they were made at Richmond." Continuing, he told Tower that Bragg had as many as eight 10-inch seacoast mortars.

Tower cautioned the naval officers that the armament which the foe had brought in by rail, when added to that surrendered to them at Forts McRee and Barrancas, was heavier than that emplaced in Fort Pickens and its supporting batteries. To show what he meant, he referred them to his armament report for September 30. (See Appendix D for a copy of this report.)

Tower warned that if the Confederates were permitted to emplace heavier guns, the walls of Fort Pickens would "hardly be able to stand them even at 2,300, 2,400, and 2,900 yards. Twenty 10-inch guns of the new [Rodman] pattern, firing at 1½ miles with solid shot, constantly at one part of this old work, of very poor masonry, may possibly shake the walls."[219]

The council, after discussing the situation, decided that the attack would take place at dawn on October 16. The ships were lightened, and arrangements for the bombardment completed, when McClellan arrived off Santa Rosa Island and McKean received news of the Federal setback at Head of Passes.[220] He decided that his presence at Southwest Pass was imperative. Niagara got underway, and Colonel Brown, deprived of the Navy's assistance, suspended operations until such a time as its cooperation could be obtained.[221]

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219. Tower to Totten, Oct. 15, 1861, NA, RG 77, Ltrs. Recd., Chief Engineer.

220. Official Records-Navies, Ser. 1, Vol. 16, p. 702. Under cover of darkness on October 11-12, a Confederate squadron, under Comdr. George N. Hollins, had attacked and driven Captain Pope's force from Head of Passes.

221. Official Records, Ser. I, Vol. VI, p. 469.

On the mainland, the Confederates, in the days following the Santa Rosa Island fight, reorganized their command. The Department of Alabama and West Florida was constituted with General Bragg as its head.[222] On October 22 Bragg left Pensacola for a tour of inspection of his department.

He traveled to Mobile and accompanied by Brig. Gen. Jones M. Withers, the commander of the District of Alabama, spent several days overseeing the defenses of Mobile Bay.[223] Bragg returned to his headquarters, after an absence of six days, and wrote Adjutant General Samuel Cooper:

> I arrived here yesterday from Mobile, and find no change to report. The enemy is in a constant state of excitement on Santa Rosa, and has frequent alarms. He has moved artillery up . . . the island to our landing place of the late expedition. General Withers' command needs much to put it in an efficient condition. He has about 4,200 troops which should be increased to 6,000--mostly raw, and inefficiently organized, armed, and equipped, and very destitute of military instructors. The position of Forts Morgan, and Gaines and Grant's Pass are occupied by his best troops, about 2,000. The two senior officers commanding at the forts are very competent but sadly addicted to drinking, and, therefore, unsafe for those exposed positions.[224]

Rumors of the impending departure of an expedition, commanded by Maj. Gen. Benjamin F. Butler, from New England bound for the Gulf of Mexico had reached General Bragg.[225] He sent a telegram

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222. Ibid., p. 751.

223. Ibid., pp. 755-56.

224. Ibid., p. 757.

225. Ibid., p. 758.

to Adjutant General Cooper requesting, "In view of the heavy expedition now on its way South we should develop all our resources. One regiment here and one at Mobile can be armed by using arms of the sick and disabled. Can they be sent from Huntsville?"[226]

Two days later, Bragg was informed by Judah P. Benjamin, the Acting Secretary of War, that "you are authorized to take two of the Alabama regiments from Huntsville, to be armed with the spare arms at Mobile and Pensacola."[227] Next day the 5th and 8th Mississippi Regiments encamped at Camp Pettus, near Enterprise, Mississippi, were ordered to Pensacola. As the men of these two units were recovering from a siege of measles (the bane of the 1861 recruits), it was thought by the War Department to be imprudent to send them to Virginia or Kentucky at this season.[228] As additional reinforcements for his department, Bragg ordered the 22d and 23d Alabama Regiments, recently organized at Montgomery and equipped by private enterprise, to Mobile.[229]

Bolstered by these reinforcements, Bragg now had an efficient force of about 7,000 men concentrated at Pensacola, with 9,000 additional troops in and around Mobile. He received further favorable news on November 11, when it was reported that the Mobile & Pensacola Railroad was completed.[230] Bragg considered its logistical support as equivalent to 3,000 additional troops. The Confederate authorities, however, continued to be embarrassed by a critical shortage of firearms.

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226. Ibid.

227. Ibid., p. 761. Col. T.H. Watts' 17th Alabama arrived at Pensacola from Huntsville on November 16.

228. Mississippi Official and Statistical Register, 1908 (Nashville, 1908), pp. 550-79.

229. Official Records, Ser. I, Vol. VI, pp. 764-65.

230. Ibid., p. 766.

Many of the recent arrivals at Pensacola and Mobile were unarmed or at best equipped with shotguns.[231]

The "Affair at Head of Passes," which focused the Navy's attention elsewhere, caused the bombardment of the Rebels' Pensacola defenses to be postponed five weeks. It was the fourth week of November before Flag-Officer McKean had ships available for the project. On the evening of November 21, the crews of Niagara and Richmond lightened ship and positions were selected.[232] At 10 o'clock, on the 22d, the Federals opened fire and the noisiest military demonstration in the history of Florida began.[233]

Colonel Brown, on Santa Rosa Island, placed Maj. Lewis G. Arnold in command of all the batteries. The guns of Fort Pickens were organized into seven batteries, each under a veteran officer. They were: No. 1, the 10-inch columbiad mounted en barbette at the northeast angle of the counterscarp, manned by a detachment of Company C, 2d Artillery, commanded by Lieutenant McFarland; No. 2, the Northeast Bastion and east half of the north curtain, armed with one 10-inch columbiad, one 42-pounder rifle, and seven 32-pounder smoothbores en barbette, and one 42-pounder rifle and two 8-inch columbiads in casemate, manned by Company A, 1st Artillery; No. 3, the Northwest Bastion and west half of north curtain, mounting one 10-inch columbiad and five 32-pounders en barbette, and one 42-pounder rifle, two 42-pounder smoothbores, and one 8-inch columbiad in casemates, manned by Company L, 1st Artillery; No. 4, the Tower Bastion and Northwest Channel Front, mounting one 10-inch columbiad en barbette and three 42-pounder rifles, manned by Company K, 2d Artillery; No. 5, the Southwest Bastion and Southwest Channel Front, including one 10-inch columbiad and one 42-pounder rifle en barbette, and two 8-inch

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231. Ibid., p. 770.

232. Official Records-Navies, Ser. 1, Vol. 16, p. 798.

233. Dickison, Confederate Military History of Florida, p. 34.

columbiads in casemates, served by Company E, 3d Infantry; No. 6, the Southeast Bastion, mounting one 10-inch columbiad en barbette and two 42-pounder rifles in casemates, manned by Company C, 3d Infantry; and No. 7 (the mortar battery), four 10-inch siege mortars, one each emplaced en barbette on the Northwest, Northeast, and Southeast Bastions, and one in the ditch fronting the south curtain manned by detachments of regulars and commanded by Lieutenant Langdon.

Taking position in the exterior batteries were: Battery Scott (two 10-inch columbiads and one 42-pounder rifle en barbette and two 10-inch seacoast mortars) Company F, 1st Artillery; Battery Lincoln (four 8-inch seacoast howitzers and one 42-pounder rifle mounted en barbette and two 10-inch seacoast mortars) Company H, 2d Artillery; Battery Totten (one 13-inch and one 12-inch seacoast mortar) Company C, 2d Artillery; Battery Cameron (two 10-inch columbiads en barbette) Company I, 6th New York and a detachment from Company H, 2d Artillery; and the old Spanish Fort Battery (one 10-pounder Parrott) a detachment commanded by Lieutenant Seeley.

In the bombardment the Santa Rosa Island Federals would employ ten 10-inch columbiads, six 8-inch columbiads, eleven 42-pounder James rifles, two 42-pounder smoothbores, four 8-inch seacoast howitzers, four 10-inch, one 12-inch and one 13-inch seacoast mortars, five 10-inch siege mortars, twelve 32-pounder smoothbores, and one 10-pounder Parrott.[234]

At 10 a.m., November 23, as Colonel Brown watched, the fort's signal gun, mounted at the flagstaff, was fired and a red flag positioned on the Tower Bastion. The bombardment was on. Major Arnold had the guns of Batteries Lincoln, Cameron, and Totten open upon the steamer Time and gunboat Nelms berthed at the navy yard wharf. As a secondary target in the same area, Arnold designated a

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234. Official Records, Ser. I, Vol. VI, pp. 472-73.

10-inch columbiad mounted on the stone wharf. Capt. Richard C. Duryea, in command of Battery Scott, fired on Fort McRee and the Lighthouse batteries to support the naval attack upon those positions. The guns of Fort Pickens blanketed all the Rebel works.[235]

Upon discharge of the signal gun, Niagara stood in toward shore, followed by Richmond. Both ships came to anchor with springs on their cables about two miles from Fort McRee. They then opened fire. Flag-Officer McKean saw that the shells from Niagara were falling short. He ordered his ship to close to a distance of one and three-quarters miles. From this station fire resumed with marked effect, many of the shells falling upon the fort and the water battery.[236]

A storm of shells burst among the startled and unsuspecting Confederates. Rebel Marines, manning the 10-inch columbiad at the stone wharf after firing several shots, deserted their piece. Time was repeatedly struck, finally getting away late in the afternoon under cover of a rain and wind storm. Nelms, being a small vessel, escaped at once. Having accomplished his initial firing mission, Arnold directed Batteries Lincoln, Totten, and Cameron to turn their guns and mortars upon Forts McRee and Barrancas, the Lighthouse batteries, Wheat's battery, and the Church batteries. The last named of these was exceptionally annoying to the Federals, because of the power and accuracy of its shells. The projectiles hurled by the 10-inch columbiads against the Rebel works were well directed and seemed to be effective, but the fire of the rifled James 42-pounders emplaced in the Fort Pickens casemates was not.[237]

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235. Ibid., pp. 469-73; Closson to Haskin, Jan. 1875, found in First Regiment of Artillery, p. 359.

236. Official Records-Navies, Ser. 1, Vol. 16, p. 775.

237. Official Records, Ser. I, Vol. VI, p. 474; Ralph W. Donnelly, The History of the Confederate States Marine Corps (Washington, 1976), pp. 18-9.

Confederate batteries in the neighborhood of the navy yard, upon which the Federal attack had burst with fury, were manned by Brig. Gen. Richard H. Anderson's 2d Brigade. Within a few minutes his men recovered from their surprise and returned a vigorous fire. To conserve ammunition, General Bragg ordered his men to regulate and reduce their fire.[238]

In a bold attempt to overwhelm the Rebel cannoneers of Fort McRee and the water battery, Major Arnold called for Captain Langdon's four 10-inch siege mortars, the 13- and 12-inch seacoast mortars at Battery Totten, and the two 42-pounder smoothbores and 8-inch columbiads mounted on the Northwest Channel Front to be turned on Fort McRee.[239] It was hoped that these batteries, in cooperation with the guns of Niagara and Richmond, would destroy Fort McRee.

Fort McRee and its water battery were garrisoned by Mississippians and Georgians led by Col. John B. Villepigue. The Southerners were exposed to a storm of shot and shell. Three times during the long afternoon, the woodwork of Fort McRee burst into flame, threatening to drive out the occupants. The fires were as often extinguished. To add to the Rebels' peril, their magazines were laid bare to the enemy's shells which exploded around them. An unexpected hazard was encountered, when a wooden structure to the windward was fired. Sparks showered from the burning building threatened to detonate the magazines momentarily. Colonel Villepigue was wounded. He, however, refused evacuation to a less exposed position. His coolness and example inspired his men with confidence, and they held a position which at times seemed untenable.[240]

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238. Official Records, Ser. I, Vol. VI, p. 494.

239. Ibid., p. 474.

240. Ibid, p. 492.

By 3:15 p.m. the Fort McRee water battery ceased replying to the Federals and shortly thereafter the barbette guns of Fort McRee were silenced. Encouraged, the Federals redoubled their efforts. The fire of the fort's casemate guns gradually slackened and by 5 p.m. was muted.[241]

Richmond, of lighter draft than Niagara, was able to take a position nearer shore. Here she anchored far to the rear of Fort McRee and its water battery. The Confederate guns consequently could not be brought to bear upon her. For several hours Richmond pounded the Rebel works unhindered. By mid-afternoon the Southerners succeeded in emplacing a masked rifled battery among the sand dunes of the mainland and opened fire. The Confederates were efficient artillerists and soon had Richmond's range. Flag-Officer McKean, seeing that the Rebels had scored several hits upon Richmond, signaled Capt. Francis B. Ellison "to drop out of line of fire."[242]

About 6 p.m. a squall came up out of the northwest, causing a fall in the tide. Niagara touched bottom. McKean had his ship weigh anchor as quickly as possible and stand out into deeper water for the night.[243]

Darkness brought a welcomed respite to a bombardment that had lasted more than eight hours. General Bragg believed, "For the number and caliber of guns and weight of metal brought into action it will rank with the heaviest bombardments in the world." Dwellings in Pensacola seven miles away had trembled with the effect, and immense numbers of dead fish floated on the bay, stunned by the concussions.[244]

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241. Official Records-Navies, Ser. 1, Vol. 16, p. 775.

242. Ibid., p. 776.

243. Ibid.

244. Official Records, Ser. I, Vol. VI, p. 490.

The Federals made use of the cover afforded by darkness to replenish their magazines with powder, shot, and shell. The 10-pounder Parrott was moved from the old Spanish Fort to Battery Cameron.[245]

On the mainland General Bragg's battered command exerted itself to shore up sagging defenses. Staff officers were dispatched to the various works, and, except from Fort McRee, returned with satisfactory and encouraging messages. Fort McRee, they reported, was exposed in front, flank, and reverse, with half of its armament dismounted and magazines exposed. Colonel Villepigue notified Bragg that he was unable to return the enemy's fire and proposed to blow up and abandon the fort. Bragg, upon reflecting as to the effect its loss would have on the morale of his men as well as the enemy, resolved to hold Fort McRee to the bitter end. Maj. Thomas M. Jones of the engineers, accompanied by a large fatigue party, was rushed to Villepigue's assistance. By morning the Confederates had made major repairs. Traverses were erected, and a number of guns remounted.[246]

Next morning, November 23, at 10 o'clock Colonel Brown ordered a resumption of the bombardment. Gun captains of the 10-inch columbiads and rifled 42-pounders were each directed to maintain a rate of fire of one shell every fifteen minutes. The mortars were discharged at half hour intervals.

Afloat there was a fresh wind from the northwest. Flag-Officer McKean did not consider it wise to again employ Richmond, as a shell from the masked battery had opened a bad break on her starboard quarter.[247] Niagara got underway, stood in, anchored in four fathoms of

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245. Ibid., pp. 480-88. Lieutenant Seeley reported, "From my experience with the Parrott rifled gun I consider it to be the most perfect rifled cannon that we have here in our service."

246. Ibid., pp. 490-91; Official Records-Navies, Ser. 1, Vol. 16, p. 776.

247. Official Records-Navies, Ser. 1, Vol. 16, p. 778.

water, and opened fire. Rebel gunners in the water battery returned her fire vigorously. The Federal tars discovered that their shells were falling short, and endeavored to close with Fort McRee. Because of a reduction in the depth of the water, caused by the change in the wind, this was impossible. All the while shells were falling thick and fast about Niagara. At 3:30 p.m. McKean deemed it his duty to withdraw his ship.[248]

The guns of Fort McRee were again silenced by the pinpoint accuracy of Colonel Brown's artillerists. Hammered by the Federals, all the Confederate batteries, except one gun in the water battery and the powerful armament emplaced on the heights east of the lighthouse, ceased firing for about two hours.[249] During this period one of the Yankees' guns manned by Company E, 3d Infantry, on the Southwest Channel Front, was disabled by a Rebel 10-inch shell coming through its embrasure.[250] About 2 p.m. the Federals began throwing hot shot and shell into the deserted villages of Warrington and Woolsey. At 2:30 a house in the southwest section of Warrington was fired, either by Battery Lincoln or Cameron.[251] Flames spread to the nearby church steeple. From there the conflagration was transmitted to other buildings along the street until probably two-thirds of the village was destroyed. Shortly thereafter fires were kindled in Woolsey, the village to the north of and adjoining the navy yard. The yard, too, received its share of

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248. Ibid., p. 776.

249. Official Records, Ser. I, Vol. VI, p. 475. Among the batteries silenced were Wheat's and the Church batteries, Fort Barrancas, and all the guns on the waterfront.

250. Ibid., p. 485. The shell knocked off a number of brick from the embrasure cheeks, and wedged between the carriage and chassis of the 8-inch chambered columbiad, destroying the carriage. The shell, fortunately for the Yankees, did not explode. Six men were wounded by flying brick.

251. Ibid., p. 478.

attention from the powerful Union batteries. Many of its buildings were struck and the hot shot fired one structure.[252]

In accordance with instructions issued by General Anderson, troops not needed to man the batteries retired from the navy yard and its vicinity at the beginning of the attack and took position behind the north wall. There they held themselves ready to oppose a Federal landing.[253]

With darkness the Yankee guns ceased fire, but the mortars continued to harass the Rebels until 2 a.m. During the two-day bombardment the Federals expended nearly 5,000 rounds of ammunition and the Rebels about 1,000. Both commanders issued reports making extravagant claims of damages to the foe, and belittling their own losses. Bragg's report reads monotonously like those of many Allied and Axis commanders in World War II. He would have one believe that about the only structures the trained artillerists of Brown's command hit were churches, hospitals, and "abodes of the humble people." Damage done to the Southern fortifications, while not as extensive as that caused by the Rebel bombardment of Fort Sumter or the Federal shelling of Fort Pulaski, was considerable. This was because of several factors--the dispersed character of the Confederate fortifications, extending from Fort McRee in the west to the navy yard in the east, and, except for Forts McRee and Barrancas and the Redoubt, the Rebel works were of sand and log.

An inspection of Fort Pickens demonstrated the value of sand as a protective cover for masonry. It was "safe to say," one of the Federals wrote, "that, but for the shelter given the parade faces of the casemates, they would have been rendered untenable, for the fort" was subjected to direct, reverse, and flank fire by the Rebel forts and batteries. The casemate arches thus escaped injury, although at several

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252. Ibid., p. 491.

253. Ibid., pp. 494-95.

points embrasure crowns were damaged, as the scarp had been "well peppered." The open stairways from parade to parapet were badly broken and their iron railings twisted and torn. If the Confederates had protected the exposed brickwork of Fort Pulaski with traverses and blindages of sand as Major Tower had done at Fort Pickens, it probably could have resisted the fire of the Union rifled batteries which compelled its surrender, after a short bombardment, in April 1862.[254]

Another factor in the Union success, besides use of sand and logs to protect and reinforce the masonry defenses, was the superiority of the Federal artillerists, a majority of whom had seen service in the "Old Army," and had served a lengthy apprenticeship on the big guns. Recently recruited Confederate artillerists' rate of fire was about one-fifth that of the Federals. In the face of the concentrated and accurate fire of Brown's cannoneers, the Southerners' counter fire was at times silenced.[255]

The claims and counterclaims make it difficult to render a fair evaluation as to the material damages each side suffered during the two-day bombardment. Bragg reported his casualties as 7 killed and 33 wounded.[256] The Federals lost 2 killed and 13 wounded.[257] Defective fuses, and absence of smokeless powder, fixed ammunition, and high explosive bursting charges had contributed to the small number killed and wounded in relation to the number of projectiles expended.

On November 25, two days after the guns fell silent, there was a terrible accident on Santa Rosa Island. A working party of

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254. Closson to Haskin, Jan. 1875, found in First Regiment of Artillery, pp. 359-61; Returns from U.S. Posts, 1800-1916, NA, Microcopy M-617.

255. A consensus by trained Civil War officers was that an artillerist could not be improvised in a day but that time and tuition were necessary to make one.

256. Official Records, Ser. I, Vol. VI, p. 490.

257. Ibid., p. 470; Official Records-Navies, Ser. 1, Vol. 16, p. 776.

regulars was gathering and disarming unexploded shells. One of the men, in removing the powder, carelessly knocked two shells together. The ensuing explosion wiped out the party, killing 5 and wounding 7.[258]

F. Confederates Cut Their Commitments

1. Girding for the Next Test

The bombardment hardened views, causing the opposing commanders to tightened security. On November 28 General Bragg sought to forward mail to Confederate prisoners held by the Yankees. Colonel Brown refused to receive the letters and disdained to state his reasons for so doing. He was not as "courteous and amiable" as he had been after the battle of Santa Rosa Island. Later in the day a small yawl attempted to enter the bay from the fleet, a privilege heretofore accorded the Federals, as until November 22 Rebel vessels had been allowed to dock at the navy yard without interference. Fire was opened, and the crew hurriedly abandoned their vessel and swam for shore.[259]

On December 2 Camp Brown, the cantonment in the woods one mile east of Fort Pickens, was broken up and abandoned by the 6th New York. The volunteers now camped along the entrenched line thrown up across the island from Gulf shore to bay side following the Santa Rosa Island fight.[260]

On December 3 Union forces led by Brig. Gen. John W. Phelps reoccupied Ship Island, Mississippi. This island, lying 12 miles off the Mississippi coast, provided an ideal base for units of the Federal fleet blockading the mouths of the Mississippi River. In addition, a serious threat to Mobile was posed with the Northerners in possession of the islands flanking MIssissippi Sound. Secretary of War Benjamin

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258. Closson to Haskin, Jan. 1875, found in First Regiment of Artillery, p. 361.

259. Official Records, Ser. I, Vol. VI, pp. 771-72.

260. Morris, History of a Volunteer Regiment, p. 71.

accordingly inquired of General Bragg, "whether General Withers had taken any measures to defend Mobile against a coup de main via Pascagoula?"[261] Bragg replied on December 11:

> The danger to Mobile which you suggest is provided for. Mounted men are stationed at the points where the enemy might land, with instructions to report any hostile demonstration, and all our infantry out of the forts and light artillery are in readiness for concentration on any point, and the telegraph could secure re-enforcements from here (Pensacola) in ten hours.[262]

Despite the loss of Ship Island, the Pensacola garrison was weakened during the first week of December by dispatch of the 7th Alabama Infantry Regiment to East Tennessee.[263] All the while, Bragg continued to be plagued by his old bugaboo--shortage of arms. At this time nearly 3,000 men in the Department of Alabama and West Florida were without weapons.[264]

The Confederate government's continued satisfaction with Bragg's conduct of affairs in the West Florida-Alabama region was expressed in a letter from Secretary of War Benjamin on December 27. In offering Bragg command of the newly constituted Trans-Mississippi District, Benjamin wrote:

> You have so thoroughly and satisfactorily prepared the defenses at the latter point [Pensacola] that we scarcely believe another attempt will be made on your defenses, and hope that

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261. Official Records, Ser. I, Vol. VI, p. 774.

262. Ibid., p. 779.

263. Ibid., p. 777.

264. Ibid.

the defenses of Mobile Bay. Anderson, having celebrated the New Year, was drunk. Forgetful of the demonstrated superiority of the Yankee artillerists, Anderson alerted the Rebel batteries to be prepared to open fire. Three-quarters of an hour after the initial firing had ceased, the Confederate big guns roared into action.

The Yankees vigorously replied, using only their heaviest guns. Their rate of fire was much slower than in November, but more accurate. Convinced by experience of the difficulty of destroying or burning the forts or the navy yard buildings, at extreme range with explosive projectiles, the Federals employed rock fire and carcasses. By 9 p.m. a large fire was burning in the navy yard. Within an hour the whole firmament was illuminated as a large and valuable warehouse, full of public property, burned. From this hour on, except for a harrassing fire maintained by the Union mortars, their big guns stood mute. By 2 a.m. the mortars, too, ceased firing and at 4 a.m., January 2, with the return of an irate General Bragg the Confederate cannoneers secured their pieces.[272]

In assessing the results of the second bombardment, one is convined that in this exchange, like that of November 22-23, the Confederates came off second best. Undoubtedly, the principal factor contributing to their continued inferiority was because the majority of the Federal artillerists were regulars. A second reason was the continued shortage of powder and shot which embarrassed the Confederates and limited their target practice.

Colonel Brown observed that the Rebels' fire on January 1-2 was not as accurate as in November, and that few projectiles struck the walls or entered Fort Pickens. The Federals reported two men slightly injured.[273] Though the Confederates did not have any killed or

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272. Ibid., pp. 495-98.

273. Ibid., p. 496.

wounded, considerable damage was caused by the fire in the navy yard.[274] Probably of greater importance, the Confederates had expended a large quantity of ammunition that was almost impossible to replace.

A final upshot of the affair was General Dick Anderson's relief from duty. General Bragg informed Adjutant General Cooper, "I . . . urge on the Department my request for a second in command here who . . . [can] be trusted with this army in my necessary absence."[275]

Upon arrival of an artillerist in the person of Brig. Gen. Samuel Jones, Dick Anderson's replacement, from Virginia, Bragg re-organized his department. He divided the 16,000 troops under his command into two armies: The Army of Mobile and the Army of Pensacola. General Withers retained command of the former and General Jones assumed charge of the latter.[276]

Major Tower, although he planned to prepare a detailed report of the effects of the bombardments on Fort Pickens and the exterior batteries, failed to do so. On March 1, writing General Totten, he explained that the "notes kept will enable me to give some useful information for our corps." Only one shot, he explained, had seriously damaged the scarp. This shot had struck near "an embrasure and started a few bricks on the interior." Generally, damage from the Rebels' 10-inch columbiad projectiles, striking the brickwork, "extended from 15 in. to 2 feet in depth." In the new work built with cement, the effect has been shattering. He warned that if the Rebels emplaced heavier guns, near Fort McRee, they might "smash the wall round the embrasures."

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274. Ibid., pp. 497-98.

275. Ibid., p. 498.

276. Ibid., pp. 815, 816, 820.

by sending Kirby Smith to take your place, if you should leave, that important point will be successfully defended.[265]

News of a Federal raid upon Biloxi, Mississippi, on the last day of the year caused Benjamin to rescind this offer to Bragg.[266]

After the bombardment of November 22-23, General Bragg ordered construction of new batteries on Oak Island, Deer Point, and at the mouth of Big Lagoon. By the end of the year these emplacements had been completed and armed with 10-inch columbiads. These additional fortifications strengthened the Confederates' position in the Pensacola Bay area.[267]

During this period the bluecoats on Santa Rosa Island were reinforced by the 75th New York Volunteers, Col. John A. Dodge commanding.[268] Colonel Brown, still disenchanted with the volunteers, called Adjutant General Thomas' attention to:

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265. Ibid., pp. 788-89. A Floridian, Edmund Kirby Smith was a graduate of the U.S. Military Academy. He had resigned from the Army on March 3, 1861, and was commissioned a colonel of cavalry in the Confederate States Army. In June he was promoted to brigadier general and was severely wounded at First Manassas on July 21, 1861.

266. Ibid., p. 794. On December 31 Flag-Officer McKean had been informed that a Rebel steamer was anchored near Biloxi. He dispatched Comdr. Melancton Smith with the steamers Water Witch, New London, and Henry Lewis to capture her. But upon reaching Biloxi, Smith discovered that the steamer had been removed. He demanded surrender of the town. The command was complied with, and a detachment of seamen and Marines was landed, a small sand battery destroyed, and two guns, a 9-pounder and a 6-pounder, brought off.

267. Ibid., p. 674.

268. Ibid., pp. 673, 782. Brown's return for December showed:

Stations	Troops	Present for Duty		Aggregate Present
		Officers	Men	
Santa Rosa Island:				
Fort Pickens	Detachments 1st and 2d Artillery & 3d Infantry	19	568	704
Camp Lincoln	6th New York Infantry	13	228	474
Camp Seward	75th New York Infantry	32	711	829
		64	1,497	2,007

> The Sixth [New York] Regiment [which], I am sorry to say, so far as the officers are concerned, is in a state of disorganization; criminations, recriminations, charges, and counter-charges, between the officers, and especially between the colonel and two or three espousing his side and the other officers of the regiment, became of such daily occurrence, that I had preemptorily to stop it, and to notify all concerned that I would entertain no more complaints.[269]

Colonel Brown at this time asked to be relieved from his post, citing "that I cannot endure another summer in this enervating climate, and that my health and probably my life will be sacrificed by it. I have now spent upwards of fifteen years in Florida, and I require the bracing influences of a Northern climate."[270]

2. January 1-2 Bombardment

The next clash in Pensacola Bay was precipitated by the Confederates. On January 1, 1862, about 3 a.m., a small steamer was imprudently brought into the wharf at the navy yard within range of the Federal guns. This was the first instance of a boat of any class putting in at the navy yard since the November 22-23 bombardment. Colonel Brown viewed it as sheer bravado or an attempt by the Rebels to draw his fire. He ordered his heavy guns to open upon the steamer. After three shots landed nearby, the vessel pulled hurriedly away from the dock. One of the Southern siege guns briefly returned the Yankees' fire--then all was quiet.[271]

On the mainland General Anderson was in command of the Confederate forces in the absence of General Bragg, who was inspecting

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269. Ibid., pp. 673-74.

270. Ibid., p. 264.

271. Ibid., pp. 495-96.

With 12-inch Rodmans or larger, he forecast, we might "seriously damage and probably render untenable Fort McRee."[277]

3. Confederates Prepare to Abandon the Pensacola Area

Southern disasters in Kentucky and Middle Tennessee in the period January 19-February 16 had sweeping repercussions in all parts of the Confederacy. On February 8, two days after the loss of Fort Henry on the Tennessee River, General Bragg received a message from Secretary of War Benjamin reading:

> The President desires that you will as soon as possible send to Knoxville all the troops you can spare from your command without immediate danger, and he hopes that the number will be at least four regiments. The condition of affairs in Kentucky and Tennessee demands from us the most vigorous effort for defense, and General A.S. Johnston is so heavily outnumbered, that it is scarcely possible for him to maintain his whole line without large additional re-enforcements.[278]

Foreseeing the advance of Union timberclads up the Tennessee River to sever the vital Memphis & Charleston Railroad, Bragg rushed a regiment by rail to north Alabama. This was in addition to the four regiments that entrained for Knoxville.[279] Confederate morale in Bragg's department was chilled further on February 16, when rumors of the loss of Fort Donelson were received. The fall of that bastion guarding the Cumberland River was confirmed in a telegram from Secretary Benjamin to Bragg two days later. Bragg was informed, "the President desires that you proceed as promptly as possible to withdraw your forces from Pensacola and Mobile and hasten to the defense of the

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277. Tower to Totten, March 1, 1862, NA, RG 77, Ltrs. Recd., Chief Engineer.

278. Official Records, Ser. I, Vol. VI, p. 823.

279. Ibid., p. 894.

Tennessee line. In doing this, of course, the first care will be to save, as far as possible, all our artillery and munitions of war."[280]

The War Department proposed to withdraw all Southern forces from Pensacola--as a weak garrison would inevitably invite capture--but would leave an "effective garrison" in the forts guarding the entrance to Mobile Bay. The continued occupation of these forts, it was believed, would deter for an extended period a movement against Mobile.[281]

Bragg was to entrain all his forces in Mobile, as well as those in Pensacola, and send them north on the Mobile & Ohio Railroad to the Tennessee border. At Corinth, where the Mobile & Ohio intersected the Memphis & Charleston Railroad, the Rebels were to detrain and await further orders. Heavy rains had washed out a number of bridges on the Mobile & Ohio, and troop movements were temporarily forestalled. By February 27, however, repairs had been effected and the troop transfers commenced.[282]

On February 28 General Bragg, at the urgent request of General P.G.T. Beauregard, decided to accompany his troops to Corinth.[283] General Jones, as senior officer, would command the department during Bragg's absence.[284] Before leaving for north Mississippi, Bragg informed Jones that he was to

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280. Ibid., p. 828.

281. Ibid.

282. Ibid., pp. 834-35.

283. Ibid., p. 834. In January 1862 Beauregard had been ordered to the Mississippi Valley as second in command to Albert S. Johnston.

284. Ibid., p. 826.

make all dispositions at the earliest moment, working day and night, to abandon Pensacola. Send to . . . [Mobile] all the heavy shell guns, rifle guns, and carriages, etc., complete, with the ammunition for them; all other supplies to Montgomery.

This movement should be made with all the secrecy possible; removing your guns at night, and masking the positions, taking the most advanced first. Keep sufficient troops in position to deceive the enemy until all is ready.

I desire you particularly to leave nothing the enemy can use; burn all from Fort McRee to the junction with the Mobile road. Save the guns, and if necessary destroy your gunboats and all other boats. They might be used against us. Destroy all machinery, etc., public and private, which could be useful to the enemy; especially disable the sawmills in and around the bay and burn the lumber. Break up the railroad from Pensacola to the Junction, carrying the iron up to a safe point.[285]

4. Santa Rosa Island Federals Get a New Commander

The Santa Rosa Island Federals had their problems. On January 15 Colonel Brown complained to the Quartermaster Department that "we have not been sufficiently supplied with so important an article as flour," and we are faced with a shortage. For more than a month, the command had been on reduced rations. To obtain a small emergency supply, he had sent to Key West, otherwise there would not have been a pound in the commissary storehouse.

Captain Langdon had forwarded, on two separate occasions, requisitions. Moreover, it should have been apparent from his monthly returns that flour was in short supply, if the requisitions had miscarried.

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285. Ibid., p. 835.

Two supply vessels, a steamer and a bark, had recently arrived from New York, but neither landed any flour.

A failure to keep the post provisioned, Brown warned, could "be attended with very serious consequences."[286]

Three more weeks passed and still no flour arrived. This time Brown wrote Adjutant General Thomas. "Lest it be charged to negligence" on his part, Brown again reported the flour shortage. He had, for a second time, sent to Key West for a small quantity. But at the moment he did not have enough, although his command was on reduced rations, to last until February 14.

If Fort Pickens were blockaded by the British, he chided, he could not have held out a month, because of the inefficiency of the Quartermaster and Commissary people in Washington and New York.[287]

Colonel Brown's trials, after more than ten months, were about over. The War Department, acting on his request, relieved him of command of the Department of Florida. On February 22 Brown turned over his responsibilities to Brig. Gen. Lewis G. Arnold and boarded a New York-bound ship.[288]

Major Tower by this time was bored with his assignment. Writing General Totten, he expressed "mortification at being forgotten and

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286. Brown to Taylor, Jan. 16, 1862, NA, RG 92, Consolidated Correspondence File.

287. Brown to Thomas, Feb. 4, 1862, NA, RG 92, Consolidated Correspondence File.

288. Official Records, Ser. I, Vol VI, p. 436. Lewis G. Arnold had been promoted brigadier general of volunteers to rank from January 24, 1862.

left shut up in Fort Pickens while my juniors are thrust forward at every point even in important commands." For the past several months, he complained, "the youngest officer might have taken my place." He had no doubt that at one time it had been the Rebels' intention to invest Fort Pickens but that day had passed.

"I have served," he pointed out, "during one sickly season & think therefore that I ought to be relieved. I want my chance in this war." He would prefer to take his "chances with the larger armies instead of being enclosed here."[289]

If General Totten replied, it was by personal letter, of which we have no record. Major Tower was fated to remain at Fort Pickens for another ten weeks.

From blacks, who slipped across Pensacola Bay, Major Tower first learned of our "very important successes in Kentucky & Tennessee." His informants told him that Bragg was "very busy at Mobile; that he has taken guns & men from this place."[290]

General Arnold, however, discounted these reports of a Confederate evacuation of the Pensacola area. Writing the War Department, he observed:

> As my position is a defensive one, on an island, I am perfectly helpless for any offensive movement requiring water transportation for 50 men without naval co-operation. I have not under my command a dispatch steamer or sail vessel, and have scarcely enough surfboats to land stores for the command.[291]

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289. Tower to Totten, March 1, 1862, NA, RG 77, Ltrs. Recd., Chief Engineer.

290. Ibid.

291. Official Records, Ser. I, Vol. VI, p. 705.

The sloop-of-war Vincennes, of the Head of Passes debacle, was the only warship off Santa Rosa Island, but she was a sailing vessel and worse than useless for operations within the bay.

In the second week of January 1862, Secretary of the Navy Welles had made an administrative change in the Gulf. He divided the Gulf Blockading Squadron into two commands, the Eastern and Western Gulf Blockading Squadrons. The Western Gulf Blockading Squadron, with the task of opening the Mississippi from its mouth, was entrusted to Capt. David. G. Farragut, while Flag-Officer McKean assumed responsibility for the Eastern Gulf Blockading Squadron.

February 2 found Farragut aboard his flagship Hartford heading out into the Atlantic from Hampton Roads. After 18 days at sea, Hartford arrived off Ship Island. Here Farragut met Flag-Officer McKean, the necessary transfers were made, and the next day Farragut formally assumed command of his new station.[292]

General Arnold, desirous of taking advantage of the Confederates' discomforture, wrote Farragut on March 15. He called attention to his inability to conduct offensive operations without naval cooperation. Arnold proposed that with the aid of several gunboats a landing be effected at Town Point. He viewed Town Point as the key to Pensacola Bay. Elaborating this point, he wrote:

> The Rebels have, and will have, entire control of the bay and inner harbor as long as they hold . . . [Town Point] and their line of forts and batteries; but if we can take this point, your gunboats can pass out of range of their heaviest guns--from Four Mile Point, on Santa Rosa Island, to Milton, on the main-land, which would enable you to capture or destroy all the rebel steamers and sail vessels in those waters, and more perfectly blockade the harbor of Pensacola.[293]

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292. Mahan, Gulf and Inland Waters, p. 52.

293. Official Records, Ser. I, Vol. VI, p. 711.

Farragut, preoccupied with his forthcoming attack on the forts guarding the Mississippi River approaches to New Orleans, turned down Arnold's gunboat request.[294]

5. Confederates Send Off Most of Their Big Guns

Confederate evacuation of Pensacola was hampered by damage caused to the railroads by heavy rains and local flooding. By March 5 General Jones asked and received permission to retain at least one regiment (the 27th Mississippi) at Pensacola a few days beyond the deadline fixed by General Bragg for the withdrawal of the military from the area. Jones justified this request on his belief that the Santa Rosa Island Federals were unprepared "to attack this place at present."[295]

By March 13 Confederate strength in and around Pensacola had been reduced to the extent that General Jones transferred his headquarters to Mobile. Col. Thomas H. Jones of the 27th Mississippi assumed charge of the Rebel troops as they continued their orderly and unhurried evacuation.[296]

The failure of the Federals to seize the initiative caused Confederates' hopes of retaining Pensacola to soar. General Jones informed Bragg:

> Colonel Jones wrote me on the 16th . . . that all was going on well; that the new troops, though unarmed, were full of energy and zeal, and he adds, "With the army I now have, had I arms, I could defy the attempt of the enemy to dislodge me." Since he wrote, the governor of Alabama has sent him 300 arms, and I have strong hope of being able to send him a sufficient number to arm nearly all the new troops. I am more

294. Ibid., p. 712.

295. Ibid., pp. 838, 840.

296. Ibid., p. 856.

> and more convinced that the enemy's force in the Gulf, and especially on Santa Rosa, has been greatly overestimated. When I left Pensacola only 96 tents could be seen on the island. The season for operations on a large scale on the Gulf is fast passing away, and if we can hold our ground a month or two longer all may yet be well on the Gulf Coast.[297]

General Jones' decision to delay evacuation of Pensacola earned Bragg's approval. Writing Jones on March 28, Bragg, demonstrating a keen appreciation of the problems confronting the Confederate military in the Lower Mississippi Valley, observed:

> Our defenses on the Mississippi are very imperfect, and require all the guns we can command. Will you please hurry forward those left behind. There were in all at least twenty heavy shell guns, besides 8-inch howitzers and rifle guns. Half were ordered via Memphis and the other half to New Orleans. But seven have yet reached Memphis. Please urge them forward. You will change the destination of those to New Orleans, . . . and send them to Jackson, Miss., to be used on the river near Vicksburg.
>
> It is perfectly useless to send guns to New Orleans. If we lose the river, New Orleans must fall; . . . no defense can save it; . . . the railroads would be cut immediately, and starvation would do its work.[298]

Responding to Bragg's letter, the Pensacola Confederates dismounted and rushed ten 10-inch and seven 8-inch columbiads, nine seacoast howitzers, four rifled guns, and two 8-inch howitzers to Jackson, Mississippi.[299] These guns were thus available, when the decision was made to defend the Mississippi River at Vicksburg.

6. Attack on Captain McPherson's Camp

In the last week of March, General Arnold decided to send Capt. Henry W. Closson, with two companies and a 10-pounder Parrott

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297. Ibid., p. 862.

298. Ibid., p. 867.

299. Ibid., p. 869.

rifle, on a reconnaissance eastward along Santa Rosa Island toward East Pass. General Arnold had learned that 200 Rebels, under a Captain McPherson, were encamped on the mainland, opposite Santa Rosa Island, 40 miles east of Fort Pickens.[300] From their base McPherson's people harassed the schooners blockading East Pass.

Closson's combat patrol left Fort Pickens on March 27, and, after a difficult 12-mile march, camped for the night.[301] Dunes and ridges slowed the column, and it took two and one-half days to cover the next 24 miles. At noon on March 31, Closson's command bivouacked four miles from the Rebel encampment. After setting up camp, Closson communicated with the blockading schooner Maria A. Wood. He requested that three surfboats be made ready for a night attack upon the Southerners.[302]

At dusk, leaving animals, disabled men, and surplus gear at the camp, Closson advanced with 170 men. After moving forward about two miles, a signal fire was kindled and long before daybreak on April 1, the surfboats came ashore. By this time the opportunity to surprise the Rebels had ended, as the Federals were sighted by two pickets Captain McPherson had sent over to the island. Closson now ordered the surfboats back to Maria A. Wood and part of his men to return to their camp. With the remainder and the 10-pounder Parrott, Closson crossed Santa Rosa Island. On the north beach, opposite the Rebel camp and about 250 yards from it, the Parrott rifle was emplaced. Silence was observed until the huts in the Rebel encampment were revealed to the anxious Federal gunners by the first streaks of dawn. Closson gave the word to fire. Several well directed shells burst in

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300. Ibid., p. 500.

301. Closson's patrol consisted of men from Company I, 1st Artillery, and Companies D and K, 6th New York Volunteers.

302. Maria A. Wood was a sailing schooner of 344 tons with two 32-pounders.

midst of the camp. Yells and curses were heard and numerous Rebels were seen fleeing through the underbrush in various stages of undress.[303]

After shelling the area thoroughly the Yankees returned to their bivouac. Rations and forage nearly exhausted and the mules broken down by the strain of pulling wagons through 40 miles of heavy sand, it was apparent to Closson that an early return to Fort Pickens was a necessity. To ease the march, Closson transferred six sick men and all the spare gear to Maria A. Wood for transport to Pickens. The command then headed west. Late in the afternoon, while trudging along the beach, a scout reported a Confederate schooner making her way up the sound. The rifled gun was unlimbered and opened fire. Despite the extreme range several hits were scored on the schooner with undetermined results.[304]

On April 2 the patrol arrived back at Fort Pickens. Closson's reconnaissance, besides breaking up Captain McPherson's camp, disclosed that the terrain of Santa Rosa Island was such as to preclude large scale movement of troops. Among the Confederates the raid raised fears that the Yankees were contemplating some sort of mischief.

7. Confederate Defeats at Shiloh and New Orleans Doom Pensacola

The attack on McPherson's camp goaded Governor John G. Shorter of Alabama into writing the Confederate Secretary of War. "Pensacola is," he argued:

> next to Norfolk, the most important point on our entire seaboard to hold at this time. To the Yankee Government its importance, in view of their manifest designs, is incalculable. They want a spacious and safe harbor far South for their vast

303. Ibid., pp. 500-501.

304. Ibid., p. 501.

> naval armament. Here they have it. It is the only one in the Gulf to which their large ships can find access. When they get it, there is the spacious bay to ride in, the navy-yard to repair at, the fine hospital, and other appointments, which cost the Old Government millions of dollars.
>
> This great and important point can be securely held with 5,000 men, properly armed and trained, against any force the Yankee Government can detach for its capture.
>
> But we are now ill provided, and if provisions be not made, and that soon, our comparatively naked condition will be known to the invaders, and they will make a stroke at us and take us I fear, almost without show of resistance.[305]

The Secretary of War, replying, assured Governor Shorter that the government "fully appreciates the importance of Pensacola, and has been making every possible effort to arm troops for its defense."[306] But, in view of acute shortages of war material then existing in the South, the Confederate government was unable to furnish the arms and accoutrements requested by Shorter.

While telegraph wires hummed with messages regarding the evacuation of Pensacola, grim news came from West Tennessee. At Shiloh, on April 6-7, Confederate legions had been repulsed in what up to then was the bloodiest battle in which American arms had participated. In the two-day holocaust many units recently stationed in the Department of Alabama and West Florida played valiant roles: The long months of vigorous training under General Bragg enabled his "corps" to acquit itself honorably.

Before another three weeks had passed, the Confederacy suffered another body blow. Flag-Officer Farragut's fleet, having entered the Mississippi, attacked the twin masonry forts, Jackson and St.

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305. Ibid., pp. 870-71. Governor Shorter had been inaugurated as Alabama's 16th governor in 1861.

306. Ibid., p. 873.

Philip, 70-river miles below New Orleans. The Confederate commander at New Orleans, Maj. Gen. Mansfield Lovell, frantically telegraphed General Jones to rush him some big guns for defense of the Mississippi. To assist the New Orleans defenders and to deceive the Santa Rosa Island Federals, the Pensacola Confederates, under cover of darkness, removed a number of their columbiads, replacing them with fierce looking Quaker guns. It was too late, however. On April 24 General Lovell telegraphed, "The enemy has passed our forts. It is too late to send any guns here; they had better go to Vicksburg."[307]

Col. T.M. Jones, on learning of the loss of New Orleans, concluded that with his limited means of defense, made more critical by the dismounting and transfer of nearly all his big guns, it would be impossible to continue to hold Pensacola Bay. He determined on his own initiative to begin evacuating the remaining big guns and war material.[308] He thus gained an edge on his superiors. On May 6, three days later, he received a telegram from the War Department directing him "to remove at once all Government property, including guns, munitions of war, etc., not necessary for present service."[309]

On receipt of these instructions, round-the-clock fatigue details were organized to insure removal of the heavy guns and public property. All the powder and most of the large shot and shell were removed; the small sized shot was buried. Most of the valuable machinery, including large quantities of copper, lead, brass, and iron, even the gutters, lightning rods, window weights, bells, and pipes, were

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307. Ibid., pp. 661, 882, 883.

308. Ibid., p. 660.

309. Ibid., p. 884.

removed from the navy yard, Barrancas Barracks, and the three masonry forts.[310]

8. Confederates Evacuate the Pensacola Area

On the afternoon of May 7, the Pensacola Confederates were informed that Comdr. David D. Porter, with a number of mortar schooners and gunboats, was off Fort Morgan.[311] Some of Porter's junior officers suspected that the Rebels were evacuating their stronghold guarding the eastern approach to Mobile Bay. To test this thesis the steamer Clifton ran in under the guns of Fort Morgan. Ten shots were fired at the impudent Federal vessel before the captain could extricate his ship from her embarrassing situation. Porter, satisfied that the Rebels were not evacuating Fort Morgan and deciding that the sea was becoming too rough, ordered all his vessels, except his flagship Harriet Lane, to return to Ship Island.[312]

News of Porter's activities off Fort Morgan stimulated the hard working Southerners at Pensacola. On May 8 the 8th Mississippi Regiment was rushed to Mobile. Colonel Jones issued eleventh hour instructions concerning the evacuation to his subordinates. During the night all sick and personal baggage were removed. To deceive the Yankees, sentries were posted as usual on the beach. Under cover of darkness, on the 9th, the Confederates marched from their camps, taking the road to Oakfield. One hour after the departure of the main column, the sentinels were withdrawn and followed.[313]

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310. Ibid., p. 661.

311. Ibid., p. 660.

312. West, Second Admiral, p. 147; Official Records-Navies, Ser. 1, Vol. 18, pp. 478-79.

313. Official Records, Ser. I, Vol. VI, p. 660.

Previously, Colonel Jones had assigned five companies of cavalry to carry out a scorched earth policy. Grim troopers moved to their assigned stations. At 11:30 p.m., on May 9, upon a pre-arranged signal--two blue lights were displayed from the cupola of the Marine Hospital and answered by similar signals from the navy yard and Forts Barrancas and McRee. The troopers then commenced their work of destruction. Scarcely had the signals been extinguished before public buildings, tents, and everything of combustible material from the navy yard to Fort McRee were enveloped in sheets of flames. Residents of Pensacola, seven miles away, aided by the glare from the conflagration, could read a newspaper.

Jones' orders were to destroy anything that could be of use to the foe--explosive shells, wood, and other combustibles were buried in large piles of coal stored in the navy yard before the latter were fired. This would discourage attempts to extinguish the fires.[314]

Having received orders not to destroy any private property, the Confederates' scorched earth policy in Pensacola was limited. A large turpentine factory with a large quantity of resin, the quartermaster storehouse, some small craft, and three steamers used as picket boats were fired. In addition, the torch was put to two privately owned steamers, Mary and Helen. The steamboat Turel, of light draught, was loaded with valuable stores and machinery and proceeded up the Escambia River to a point beyond the Federals' reach. Casemates and galleries of Fort McRee and the storerooms of Fort Barrancas, previously filled with old lumber and shells, were fired.[315]

The Rebels, their work of destruction completed, withdrew from the area. The demolition teams rejoined their comrades at Oakfield, six miles north of Pensacola. Five companies of cavalry covered the

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314. Ibid., pp. 660-61.

315. Ibid., p. 662.

Confederate retreat up the Alabama & Florida Railroad toward Pollard, Alabama.[316]

9. Federals Occupy the Pensacola Enclave

Across the bay, a few minutes before midnight, General Arnold was aroused by the officer-of-the-day, who informed him "that Fort McRee, the navy-yard, Marine Hospital and Barracks, and several other buildings, and two Rebel steamboats were on fire."[317] As the fires had broken out simultaneously, Arnold assumed that the origin was arson. In a vain attempt to curb the incendiarism ashore and put the Rebels to flight, the Federal gunners opened fire. Arnold called for aide-de-camp, Lt. Richard H. Jackson. The aide was told to board the schooner Maria A. Wood, proceed to Pensacola, and demand the surrender of the city of its civil authorities. By 5:30 a.m. Maria A. Wood had arrived off the city, and a boat bearing Lieutenant Jackson was sent ashore under a flag of truce. Acting Mayor John Brosenham delivered the city into Federal hands, and Maria A. Wood returned to Fort Pickens.[318]

At 2 a.m., on May 10, 50 miles to the west, Harriet Lane's lookout reported a brilliant light illuminating the sky in the direction of Pensacola. Commander Porter ordered Harriet Lane eastward at forced draught. She steamed into Pensacola Bay on the course Porter had plotted the previous year for Powhatan. Without communicating with Fort Pickens, Porter proceeded up the bay to Pensacola. En route Harriet Lane encountered Maria A. Wood returning to Santa Rosa Island. A shot was fired across Maria A. Wood's stern. Porter was informed by Acting Master Anthony Chase, of the schooner, that Lieutenant Jackson had stolen the commander's thunder and had already received the city's surrender. Nevertheless Porter, forgetting that General Arnold had no

316. Ibid.

317. Ibid., p. 658.

318. Ibid., pp. 658-59; Official Records-Navies, Ser. 1, Vol. 18, p. 481.

ships to transport men to the mainland, continued up the bay to Pensacola. It was mid-afternoon before Porter returned to Fort Pickens to assist the Army.[319]

Harriet Lane now turned into a ferry. By 3 p.m. she had landed 400 men of Companies A, F, and L, 1st Artillery; Company C, 2d Artillery; Companies C and E, 3d Infantry; two field pieces, their teams, and some baggage carts in the neighborhood of the navy yard. Once upon the mainland, Arnold's troops wasted no time in hoisting "Old Glory" over the navy yard, Forts Barrancas and McRee, and Barrancas Barracks.[320]

On May 12, 1862, Arnold's command took formal possession of Pensacola. The only opposition encountered by the Federals during their march from Fort Barrancas occurred when some Rebel horsemen fired on the advance guard. The march into the city was led by Colonel Billy Wilson's 6th New York, preceded by the "regimental goat neatly labeled in red paint"; a battery of mountain howitzers drawn by quartermaster mules, with a detachment of regulars, followed; and the 75th New York brought up the rear of the 1,000-man column. Entering Pensacola, General Arnold formed his troops in a square around the flagstaff in the plaza and raised the "stars and stripes." As the colors shot to the top of the staff, the only loyalists to make a demonstration were blacks. If there were any pro-Northern whites in the town, they suppressed their emotions. One could never tell when the Federal troops might be withdrawn and Secessionsists knew how to be most unpleasant toward acknowledged Unionists in their midst.[321]

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319. West, Second Admiral, p. 147; Official Records-Navies, Ser. 1, Vol. 18, p. 479.

320. Official Records, Ser. I, Vol. VI, p. 658; West, Second Admiral, p. 147; Morris, History of a Volunteer Regiment, p. 74-5; Returns for U.S. Posts, 1800-1916, National Archives, Microcopy M-617.

321. West, Second Admiral, pp. 147-48; Closson to Haskin, Jan. 1875, First Regiment of Artillery, p. 362; Morris, History of a Volunteer Regiment, p. 74.

Survey parties rapidly totaled the damage caused by the Confederates' scorched earth policy. Colonel Jones' demolition teams had done an excellent job on the navy yard. Commander Porter wrote, "the yard is a ruin." Despite these evil tidings Porter was able to report a number of facilities that could possibly be salvaged.[322] General Arnold informed the Secretary of War, "Fort Barrancas is very little injured by the fire and Barrancas Barracks not at all. Fort McRee is seriously damaged, Marine Hospital destroyed, and several store-houses in the navy-yard . . . burned."[323]

After 16 months the United States was again in possession of the forts and other public property seized by Southern forces on January 12, 1861. Fort Pickens had been as isolated and as vulnerable to attack and capture as Fort Sumter, but affairs in Florida were conducted more judiciously by both parties. Except for a few musket shots exchanged in the second week of January, tense weeks of watchful waiting stretched into nine months.

On September 14, five months after the surrender of Fort Sumter, occurred the first clash in the Pensacola area in which blood was shed. One month later the battle of Santa Rosa Island was fought. In this engagement many of the vices and virtues of the recently organized volunteer armies were revealed.

The bombardments of November 1861 and January 1862 underscored the superiority of the Federal artillery over the

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322. Official Records-Navies, Ser. 1, Vol. 18, p. 482. The stone wharf could still be used, and would hold a large amount of coal. The armory stood, as did the chimney to the smithery, the new casting shop, and new storehouse; the shears were injured near the toe but capable of being repaired as were several pile drivers. There were some chains still in the yard, eight buoys for the channel, five or six anchors, a quantity of ready made ironwork, and a number of piles of 32-pound shot. The diving bells were in good order.

323. Official Records, Ser. I, Vol. VI, pp. 568-69.

Confederates. At Pensacola, this can be attributed to several factors: trained and seasoned cannoneers, and an unlimited supply of powder and projectiles.

With their defeats at Forts Henry and Donelson and the loss of Middle Tennessee, the Confederate command was compelled to reevaluate its commitments. To bolster sagging defenses in north Mississippi and West Tennessee, key bases had to be yielded. Pensacola was ordered abandoned and the forces assembled for the defense of Mobile and New Orleans weakened.

Governor Shorter of Alabama, along with Confederate commanders on the spot, correctly gauged that Pensacola Bay was the best anchorage on the Gulf and urged the Confederate War Department to hold the area. A bankrupt and predominately agricultural people, lacking many of the tools of war, were unable to defend all their key bases in face of Union power afloat. Ten days after occupation of New Orleans by General Butler's soldiers, Pensacola was abandoned by the Confederates. By mid-May 1862 the only vital area on the Gulf Frontier still held by the South was Mobile. The entrance to Mobile Bay, however, could be easily blockaded.

XIII. 1860s SEE MANY STRUCTURAL CHANGES

A. War Bypasses Santa Rosa Island

1. Garrison, May 1862-May 1864

The tide of war which had caused the Confederacy to abandon Pensacola turned in the summer of 1862. Taking the offensive along a 1,000-mile front, Southern armies rolled back the Federals. In a series of battles beginning with Antietam on September 17 and ending with Perryville on October 8, the Union stemmed and reversed the Rebel surge.

During this period, as well as in the ensuing months of 1862 and into 1863, the Pensacola area was largely ignored by the belligerents. Major Tower, with Pensacola in Union hands, was recalled and assigned to duty with Maj. Gen. John Pope's Army of Virginia. Fort Pickens, with most of the regulars on occupation duty on the mainland, was garrisoned by Company K, 2d U.S. Artillery, and succession of volunteer infantry companies. On May 16, 1862, the regulars were joined in the fort by Company I, 75th New York Volunteer Infantry. Capt. Harvey A. Allen of Company K commanded the fort and its garrison, General Arnold having transferred his headquarters to the Barrancas.[1]

On July 16, 1862, Companies I and K, 75th New York, exchanged posts, the former moving to Pensacola and the latter joining Company K, 2d Artillery, at Fort Pickens. Two months later, on September 17, the New Yorkers left Santa Rosa Island for Pensacola, as soldiers of Company D, 15th Maine Infantry, moved into the casemates. On October 23 the fort became home to a third unit, when Company K, 15th Maine, arrived from Pensacola. These three companies spent the winter of 1862-63 in the fort.[2]

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1. Returns from U.S. Posts, 1800-1916, NA, Microcopy M-617.

2. Ibid.; Henry A. Shorey, The Story of the Maine Fifteenth: Being a Brief Narrative of the More Important Events in the History of the Fifteenth Maine... (Bridgton, Me., 1890), pp. 27-9. The 15th Maine had reached Pensacola Bay from New Orleans on September 11.

Captain Allen found himself in command of a four-company battalion on March 28, 1863. On that day the two Maine companies were shuttled across Pensacola Bay and occupied the Redoubt. They were replaced at Fort Pickens by Companies A, D, and G, 7th Vermont Infantry. In July Company F, 7th Vermont, relieved Company G in the Fort Pickens casemates. Company A in August was transferred to the mainland, and the third winter of the war found the fort again garrisoned by Allen's three-company battalion.[3]

The troops, in addition to holding the fort and providing fatigue parties for the Quartermaster and other Departments, were called on for daily guard details. The guard was responsible for the prisoners confined in the casemates. Federal authorities used the fort as a prison for Rebel military and political prisoners, as well as a disciplinary barracks.

2. Quartermaster Department Slights the Garrison

The Federals, during the first 28 months of war, erected several buildings outside the fort. By mid-July 1863 there were ten public buildings on the post, in addition to the fort and wharf. These structures were:

(a) The quartermaster storehouse, a new frame building with attached shed, on the bay side near the wharf. This structure was about 200 feet long, with a pavilion and shingle roof. Inside there were two small ceiled offices with windows, one issuing room, a bedroom for the storekeepers, and a "wareroom." Except for the

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3. Returns from U.S. Army Posts, 1800-1916, NA, Microcopy M-617. The 7th Vermont reached Pensacola Bay from New Orleans on November 14, 1862, aboard the steamer Nassau. The Vermonters replaced the 6th New York. In mid-March 1863 the Federals abandoned Pensacola and concentrated their troops in West Florida at the Barrancas, with small garrisons posted at Forts Pickens and McRee. From February 20 until June 19, the other seven companies of the 7th Vermont were camped on Santa Rosa Island near the fort. On the latter date, the seven companies moved to Camp Roberts on the mainland. Harvey Allen was promoted to major on August 1, 1863.

section of the roof covered with canvas the structure was in first-class condition.

(b) The post hospital was in an old frame house, on the south shore of the island. It was about 80 feet long, had four rooms, and 18 windows. One of the rooms served as a dispensary. The roof leaked, and the building was "not very substantial against the severe Gales and Weather" of the Gulf Coast.

(c) A small frame building near the hospital was used as a kitchen for the sick.

(d) The commissary storehouse, a frame building with an ell, was within several hundred yards of the hospital. It was in tolerable condition, though it had a canvas roof. The north ell had been coverted into an icehouse in May.

(e) A 200-foot stable was merely a scantling covered with paulins to shelter the public animals, hay, and harness.

(f) The carpenter's shop was a low, wooden, canvas covered shed.

(g) The blacksmith shop was a small shed, "covered with boards, leaky, and defective."

(h-j) Three sheds, in the fort's ditch, erected in April and May to shelter commissary stores and prevent pilfering.

(k) The wharf, on the bay north of the fort, extended about 30 feet out into the water. It was constructed of light materials, and the autumn storms were a source of damage.[4]

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4. Ramsay to Meigs, July 18, 1863, NA, RG 92, Consolidated Correspondence File.

When he forwarded this report on the condition of the public buildings to Quartermaster General Meigs, Lt. J. Gales Ramsay (the post quartermaster) reported that most of these structures were in bad repair, because lumber consigned to Santa Rosa Island in January had been diverted to Maj. Gen. Nathaniel P. Banks' command in New Orleans. Moreover, he complained, the buildings were "insufficient to shelter the large Quantity of Commissary and Ordnance Stores" on hand. Many articles were exposed to the weather and even those under shelter were "scantily protected by a Roof of Canvass."[5]

The post quartermaster, on transmitting his requisition to Washington for quartermaster stores, clothing, and camp and garrison equipage for the three months beginning July 1, 1863, reported that they were for immediate use, as "we are entirely out of every article." Although requisitions for quartermaster stores had been forwarded repeatedly to the Chief Quartermaster, Department of the Gulf, beginning as early as December 14, 1862, nothing had been received from that source. A similar requisition had been sent to the Quartermaster General with no better results.[6]

B. Captain Palfrey's December 1863 Inspection

1. Structure as Seen by Palfrey

On October 7, 1863, Major Allen directed a letter to General Totten, requesting that an officer of engineers be sent to Fort Pickens to inspect and report on its condition. The terreplein above the casemates, Allen complained, had at several points fallen in. After a recent rainstorm, a large cavity had occurred. These had been repaired with the means at hand, but with few artificers on the rolls, workmanship was not up to standards.

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5. Ibid.

6. Stewart to Meigs, June 18, 1863, NA, RG 92, Consolidated Correspondence File. Capt. F.V. Stewart was assistant quartermaster at Fort Pickens in June 1862.

The shot furnaces were unservicable and several chimneys had fallen. Wooden parts of the barbette service magazines had decayed and some had given way, necessitating removal of the ammunition. In addition, the service magazines, as constructed in 1861, had been faced for protection from the guns on the mainland, but now an attack from the seaward had to be guarded against. Several of the casemates leaked, and the principal magazine was very damp because of the faulty location of the blindage.[7]

General Totten responded to Major Allen's letter by contacting his senior construction engineer on the Gulf Coast, Capt. John C. Palfrey. A brilliant young engineer, Palfrey, a Massachusetts native, had graduated No. 1 in the Class of 1857 from the U.S. Military Academy. Commissioned a 2d lieutenant in the Corps of Engineers, he was assigned to duty as assistant to the Board of Engineers for the Atlantic Seacoast Defenses. From 1859-1860 he was assistant engineer for repair and construction of fortifications in the harbor of Portland, Maine. In 1861 he was named superintending engineer for Forts McCleary, Constitution, Scammel, Gorges, Preble, and Knox,[8] and in December 1861 he was ordered to the Gulf as project engineer for the fort under construction on Ship Island.

Writing Palfrey on November 10, 1863, Totten directed him, as soon as other duties permitted, to visit Fort Pickens. On his arrival, he would report to Major Allen, and explain that he had been sent to examine the condition of the fort and to undertake such repairs as were "indispensably necessary for its efficiency and urgently needed for its preservation." Funds to underwrite this work would be requisitioned from the Department.[9]

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7. Allen to Totten, Oct. 7, 1863, Allen's Letter Book, a microfilm copy of the subject letter book is on file at the University of West Florida.

8. Cullum, Biographical Register, Vol. II, p. 447.

9. Totten to Palfrey, Nov. 10, 1863, NA, RG 77, Ltrs. Sent, Chief Engineer.

Replying, Captain Palfrey on December 12 informed the Department that, although three weeks had slipped by since receipt of his orders, he had had no opportunity to visit Pensacola. If there were no last minute slip ups, he hoped to be there before another week passed.[10]

Palfrey was better than his word. Taking passage on a fast steamship, he reported to Major Allen at Fort Pickens on Tuesday, the 15th. The next eight days were spent examining the fort and its armament.

He found the parade of the Southwest and South fronts covered with a heavy blindage "on one end with a slope of 3' base, with a thickness of earth 20' at base with the natural slope." The blindage in some places had pressed the parade wall between the piers slightly out of line.

Casemate embrasures on the Northwest and Southwest Channel Fronts and the South Front were masked by a sand ridge about four feet above their level.[11]

The scarp-wall of the curtains of the North and South Fronts had pulled away from the casemate arches to a distance of 1½ or 2 inches at the crown. Major Allen attributed this to the weight of the service magazines, erected under Major Tower's supervision, on the terrepleins above. Captain Palfrey, however, disagreed. Taking cognizance of the small size of these structures, he concluded that this trouble arose from "the scarp having been built originally too thin to sustain the roof covering."[12]

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10. Palfrey to Totten, Dec. 12, 1863, NA, RG 77, Ltrs. Recd., Chief Engineer.

11. Palfrey to Totten, Dec. 23, 1863, NA, RG 77, Ltrs. Recd., Chief Engineer.

12. Ibid.

Guns of the barbette tier, as to be expected, were positioned to resist an attack from the mainland. Only three cannon bore on the channel. Traverses erected in 1861 admirably shielded most of the guns from "land fire, but their narrow embrasures allow no traverse." The temporary traverse service magazines were unserviceable. The three principal magazines were in good condition, although the blindages before the entrances of two were very damp, and shut off all ventilation.

Captain Palfrey was told that the six old pattern shot furnaces had been destroyed.[13]

He observed that the surface gutters of the brick terreplein seemingly were washing out sand from under the brick. This had resulted in "making settlements and holes in the terreplein paving."

The earthen parapets were eroded, while there was no revetment for the top of the breast-height wall.[14]

Captain Palfrey, in view of lessons learned in the war, found the fort's armament too light as to caliber. To demonstrate what he meant, he forwarded to the Department a drawing "showing positions and calibers of guns mounted, and of platforms ready or not ready to receive guns."[15]

2. Suggested Changes to the Armament

Palfrey recommended to Major Allen that, to increase the efficiency of the fort, 10-inch columbiads be mounted in the salient of the Southeast Bastion, salient and left shoulder angle of the Southwest

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13. Ibid.

14. Ibid.

15. Ibid. A copy of the subject drawing, titled, "Armament of Fort Pickens. Dec. 29th 1863," is found in the files of the Florida Unit, Gulf Islands NS.

Bastion, salient and left shoulder angle of the Tower Bastion, and salient of the Northeast Bastion. The remainder of the 10- and 8-inch columbiads should be mounted either en barbette or casemates or in or around the fort. If emplaced within the fort, they were to be en barbette on the Southwest Channel Front.

The nine rifled 42-pounders on the parade should be mounted en barbette--three on the right flank of the Southeast Bastion and six on the south curtain. The four 8-inch seacoast howitzers at the fort should be emplaced en barbette on the Northwest Channel Front. All other circles on this front should receive 32- and 42-pounder smoothbores.

It was desirable that the guns, lying on the casemate floors opposite their embrasures on the Southwest Channel Front, be mounted.[16]

This, however, was only an interim solution. Palfrey recommended to General Totten that the Armament Board be asked to approve a heavier permanent armament for Fort Pickens. He suggested that its barbette armament consist of:

Southeast Bastion--salient a 200-pounder Parrott, right flank three 10-inch columbiads, left salient angle a 10-inch columbiad, left face and flank two 42-pounders, and right face two 100-pounder Parrotts.

Southwest Bastion--salient a 100-pounder Parrott and left face three 100-pounder Parrotts.

Tower Bastion--salient a 15-inch Rodman, right salient a 100-pounder Parrott, and left salient a 10-inch columbiad.

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16. Palfrey to Allen, Dec. 21, 1863, NA, RG 77, Ltrs. Recd., Chief Engineer.

Northwest Bastion--salient a 15-inch Rodman, a 10-inch columbiad in each salient angle, and on the right face and flank two 42-pounders.

Northeast Bastion--salient one 100-pounder Parrott, a 10-inch columbiad in each salient angle, and a 42-pounder on each face and flank.

South Curtain--five 42-pounders and two 100-pounder Parrotts.

Southwest Channel Front--two 100-pounder Parrotts, all other platforms 10-inch columbiads.

Northwest Channel Front--42-pounders throughout.

North Curtain--six 42-pounders and one 100-pounder Parrott.

East Curtain--two 42-pounders.

The casemate armament should include:

Flank Embrasures--one 24-pounder howitzer for each.

South Curtain--one 42-pounder in each embrasure.

Other Four Curtains--one shellgun, either 8- or 10-inch seacoast howitzers or 8- or 10-inch columbiads, at every embrasure.[17]

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17. Palfrey to Totten, Dec. 23, 1863, NA, RG 77, Ltrs. Recd., Chief Engineer.

3. Recommended Repairs and Structural Improvements

Captain Palfrey, after returning to New Orleans, wrote Chief Engineer Totten that for the preservation and efficiency of Fort Pickens this work is necessary:

(a) Removal of enough of the barbette traverses to permit the guns to "cover their full field of fire."

(b) The earthen parapets to be "reformed and top of breast-height wall revetted."

(c) The blindages along the parade fronts to be removed and the inner casemate rooms turned into quarters rather than gun rooms.

(d) The sand dunes obstructing the fields of fire of the casemate guns to be leveled.

(e) Entrance doorways of principal magazines in the Northwest and Northeast Bastions to be blinded with masonry and earth.

(f) Service magazines in the terreplein traverses to be rebuilt.

(g) New platforms would be required, if the Armament Board approved his plan for increasing the fort's firepower.

(h) Buttresses (counterforts) to be erected "against scarp opposite piers" of the north and south curtains.

(i) At least two large shot furnaces should be built. If, however, the development of incendiary projectiles had made hot shot obsolete, the furnaces could be eliminated from this program, as well as the 42-pounder smoothbores. The 42-pounders would be replaced in the suggested permanent armament table by guns firing incendiary projectiles.

(j) The slight damage to the scarp suffered in the bombardments of November 22-23, 1861, and January 1-2, 1862, should be repaired.

(k) Before work was commenced, a temporary barracks and messroom for the workmen, along with a kitchen, storehouse, carpenter's shop, and mule stable, would have to be built.

Captain Palfrey estimated the cost of these projects at $46,000, if they were programmed for the first four months of 1864.[18]

There being no scheduled ships between Pensacola Bay and New Orleans, Captain Palfrey recommended that an engineer officer be assigned to superintend the Fort Pickens project, or that a civil engineer be named by the Department "to direct the construction and receive and discharge all money for it, receiving instructions for construction either from the Department or from me."

To reinforce this suggestion, Palfrey informed General Totten that he had waited at New Orleans three weeks for an opportunity to visit Pensacola. Already, he had been stranded eight days on Santa Rosa Island waiting for transportation back to Louisiana. Denied regular steamship service between the two points, Palfrey believed it would be impossible for him to direct the work from New Orleans.[19]

Captain Palfrey also reminded General Totten that Fort McRee, which with Fort Pickens had been constructed to command the channel, was "destroyed and defenceless."[20]

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18. Palfrey to Totten, Dec. 23, 1863, NA, RG 77, Ltrs. Recd., Chief Engineer.

19. Ibid.

20. Ibid.

C. Altering the Platforms and Rehabilitating the Fort With Captain Palfrey

1. Plans are Prepared for Permanent Blindages

Chief Engineer Totten, after reviewing Palfrey's report, directed him to take steps to preserve the fort and increase its efficiency. Where changes in the structure were proposed, Palfrey, in accordance with procedures, would prepare plans and submit them for approval by the Department. Palfrey, despite the questions he had raised, would be responsible for the rehabilitation of the fort. He, however, was given authority to appoint an assistant engineer to oversee the project.

On March 2, 1864, Captain Palfrey accordingly transmitted to the Department a drawing of the "Traverses for the protection of the Doors of Magazines at Fort Pickens."[21]

General Totten, although nearly 75 years old and in poor health, still reviewed all plans with a critical eye. Dissatisfied with this drawing, he refused to approve it. He objected that the masks would not shield the magazine entrances from projectiles with low trajectories passing along in front or near to, and parallel with the front of the curtain quarters. Moreover, the magazine doorway (four feet) was too thin to be left exposed to direct fire.

Totten's suggested remedy was to relocate the doorways closer to the piers, leaving the passage 2'9" wide, and thickening the exposed door jamb to 6 feet. It would then be safe to terminate the arch that was to extend from the traverse to the magazine wall. By such an arrangement light could be introduced into the adjoining casemate quarters.[22]

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21. Haggart to Totten, March 2, 1864, NA, RG 77, Ltrs. Recd. Chief Engineer. A copy of the subject plan is found in files, Florida Unit, Gulf Islands NS. Samuel B. Haggart was an engineer in Palfrey's New Orleans office.

22. Totten to Palfrey, March 15, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer.

2. Work Gets Underway

A small force of artisans and laborers were hired and put to work rehabilitating the fort in the spring of 1864 under the immediate supervision of Capt. Arthur Hodges of the 38th Massachusetts Infantry. A temporary barracks, kitchen, storehouse, blacksmith shop, and stables to support a 100-man construction force had been erected by June 30. The laborers were then turned to salvaging and cleaning bricks from the ruins of Fort McRee and transporting them from Foster's Bank to Santa Rosa Island, and removing the blindages fronting the north and south parade curtains. After erecting chimneys for the blacksmith shop and kitchen, the brickmasons commenced repairing damage to the scarp suffered in the Rebel bombardments. Because of the poor quality of the masonry, this proved to be a "more extensive" project than anticipated. A shot in one instance was found to have penetrated two feet and had taken out 16 square feet of the scarp.[23]

3. After 25 Years the Army Gets a New Chief Engineer

On April 2, 1864, Captain Palfrey notified General Totten that he had been ordered to report to General Banks' headquarters in the field. Banks' army, supported by the Mississippi Squadron, after occupying Alexandria on Red River was advancing on Shreveport. Palfrey would leave New Orleans later in the day by steamboat for northwest Louisiana.

Payments to his account would be suspended during his absence. He believed arrangements made prior to his departure would enable the construction hands at Ship Island to continue to progress for several months without injury. He feared that the Fort Pickens project would "incur considerable injury and expense for want of supervision." Moreover, the superintendence of the Santa Rosa Island undertaking, even after his return from the field, would be compromised by the

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23. Monthly Report of Operations at Fort Pickens for June 1864; Annual Report for Fort Pickens for year ending June 30, 1864; Palfrey to Delafield, Aug. 10, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

ten-day quarantine instituted on all shipping between New Orleans and Pensacola after May 1.[24]

While Captain Palfrey was in the field, the United States Army got a new chief engineer. General Totten, who had held this important position for more than 25 years, died of pneumonia on April 22. Totten's successor was Richard Delafield, a West Point graduate of the Class of 1818, and a senior officer in the Corps. Promoted from colonel to brigadier general, he assumed his new duties on May 19.[25]

4. Palfrey Reorganizes His Office

Captain Palfrey returned to New Orleans on the failure of the Red River Campaign. There he received several important communications from the Department. On June 21 he learned that General Delafield had formally placed him in charge of Engineer operations at Ship Island, Forts Jackson, St. Philip, Livingston, Macomb, Pike, Pickens, McRee, and Barrancas, Battery Bienvenue, Tower Dupré, and the works at Proctor's Landing.[26]

Acknowledging Delafield's letter, Palfrey reported that he was sending a clerk to Fort Pickens to keep the "books and papers prescribed by regulations." It would also be necessary for him to retain and staff his New Orleans office to facilitate the purchase and forwarding supplies to Santa Rosa and Ship Islands and the hiring of workmen. The clerk hired for the New Orleans office would likewise handle paperwork for the other Gulf Frontier forts. These clerks, with the Department's approval, would be paid $100 per month each.

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24. Palfrey to Totten, April 2, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

25. Warner, Generals in Blue, pp. 117-18.

26. Delafield to Palfrey, June 21, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer.

Captain Palfrey trusted that by these arrangements, he would "avoid the confusion and irregularity which have been introduced into my affairs by the extent and variety of my duties for the last eighteen months."[27]

On July 21 the Department approved Palfrey's proposal to employ a clerk at Fort Pickens at the stipulated salary.[28]

5. Captain Palfrey's July 1864 Visit

a. Funding Certain Projects--Blindages and New Platforms

On June 11 General Delafield notified Captain Palfrey that no appropriation had been asked from Congress to fund repairs at Fort Pickens and the other permanent works at Pensacola in fiscal year 1865, and the Department had no other means.

Thirty-five hundred dollars for blinding the Fort Pickens magazine doors were on hand and this project should be undertaken.

Within the near future Palfrey would be sent instructions to prepare several of the Fort Pickens platforms for 15-inch guns. Meanwhile, steps should be taken to reinforce 20 of the existing barbette platforms. Requisitions for materials to accomplish this must be directed to Mr. Trowbridge at the New York Agency.

Copies of circulars and plans giving requisite information for platforms of 13- and 15-inch guns and for reinforcing existing platforms of 8- and 10-inch columbiads had been transmitted.[29]

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27. Palfrey to Delafield, July 6, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

28. Delafield to Palfrey, July 21, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer.

29. Delafield to Palfrey, June 11, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer.

Palfrey was apprised by the Department on June 15 that Trowbridge had been directed to ship him 20 sets of stones for front-pintle barbette platforms.[30]

b. Work Accomplished by Mid-July

Palfrey, on receipt of Delafield's letter, wrote his assistant at Fort Pickens, Captain Hodges, to reduce the workforce. On July 13 Palfrey availed himself of the first opportunity in months to visit the site. On arrival, he found the construction buildings completed and the blindages fronting the parade of the north and south curtains removed. One of the counterforts on the East Front had been rebuilt. As yet, the earthen blindages thrown up in front of the entrances to the magazines had not been hauled away. Workmen had finished the masonry of all but four of the columbiad platforms of the Southwest Channel Front Barbette Tier. Stone for three of the remaining four was on hand.

c. Palfrey Notes Structural Failures in Certain Arches

With the massive blindages gone, Captain Palfrey saw that the intrados of the "main Casemate Arches had bulged in at the haunch so that the coursing joints are nearly six inches from a straight line." The piers, however, had not started. As an emergency measure, the intrados had been "strongly shored." To correct this situation, he warned, they would "have to be uncovered & probably rebuilt."

Like his predecessors, Palfrey attributed this structural failure to "poor mortar wasting out of the large joints of the arch."

d. Palfrey Gives Hodges Directions

Before returning to New Orleans on July 19, Captain Palfrey directed Captain Hodges

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30. Kurtz to Palfrey, June 15, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer.

> to put in perfect repair all the platforms and Traverse Circles, Barbette & Casemate, to raise the floors of passages under magazine blindages, & to roof over & shingle these blindages, to complete Barbette Columbiad Platforms on Front No. 2 [Southwest Channel Front] so far as materials allowed, to fill in all brickwork that had been chiselled out for repairs, and to prepare the terreplein of curtain No. 1 [the South].

If this work, along with reinforcing the platforms, could be accomplished before granite for the 20 barbette platforms, requisitioned from the New York Agency, arrived, Captain Hodges would discharge the hands. After the stone was received, men would be sent from New Orleans to lay it and alter the Tower Bastion Platform to receive a 15-inch Rodman.

Captain Palfrey recommended that the Ordnance Department not send the giant Rodman and its carriage to Santa Rosa Island until its platform was ready to receive them, as there was no hoisting gear on the island and the wharf needed to be reinforced.[31]

e. Strengthening the Armament

On March 25, 1864, Captain Palfrey had transmitted to the Department a Table of Armament for the 12 masonry works for which he was responsible. At Fort Pickens, he reported, there were on the barbette tier 17 centre-pintle platforms for 10- and 8-inch shellguns and 17 unarmed front-pintle platforms. In the casemates there were 43 front-pintle platforms for small caliber cannons and 10 platforms for 24-pounder howitzers that were unarmed.

Mounted on the fort's barbette tier on centre-pintle platforms were six 10-inch columbiads. Emplaced on this tier on front-pintle platforms were four 8-inch seacoast howitzers, one

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31. Palfrey to Delafield, Aug. 8, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

42-pounder smoothbore, eighteen 32-pounders, six 24-pounders, one rifled 42-pounder, seven 12-pounders, and four 18-pounders. Also mounted on the barbette tier were two 10-inch siege mortars.

In the fort's casemates on front-pintle platforms were six 8-inch columbiads, two 42-pounder smoothbores, five 32-pounders, sixteen 24-pounder flanking howitzers, and seven rifled 42-pounders.[32]

By mid-July the garrison had strengthened the armament by mounting two additional cannon on the front-pintle platforms of the barbette tier--a rifled 42-pounder and a 42-pounder smoothbore; four 10-inch columbiads on centre-pintle platforms; and an addition 10-inch siege mortar. The number of guns emplaced on the front-pintle casemate platforms had been reduced by dismounting five 32-pounder smoothbores and the replacement of the two 42-pounder smoothbores by rifled 42-pounders.

There were at the fort 14 front-pintle and 13 centre-pintle barbette tier platforms without guns, and 27 front-pintle and nine flanking howitzer platforms without armament.[33]

6. Department Sends a Number of Plans and Sketches

a. Plan For Modifying the Tower Bastion for a 15-Inch Gun

To guide Captain Palfrey in a major undertaking, Chief Engineer Delafield in mid-July transmitted to him a sketch of the

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32. Palfrey to Totten, March 25, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

33. Palfrey to Delafield, July 22, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer. In addition, there were a number of extra carriages available. Among these were front-pintle barbette carriages for six 24-pounders and 31 32-pounders, and casemate carriages for ten 32-pounders and five 42-pounders. The four 10-inch columbiads added to the fort's armament had been removed from the exterior batteries, which had been disarmed. The 10-inch columbiads were emplaced on new carriages, while the remainder of the carriages dated to 1849. Allen to Maynadier, May 16, 1864, Allen's Letter Book.

Tower Bastion, showing the method of adapting it to receive a 15-inch centre-pintle gun platform, with earthen revetment. Palfrey was to execute the project, as represented, unless he perceived some details which it would be advantageous to alter. To add to the thickness of the parapet, it was to be coped with stone. The small channel in the coping at the foot of the exterior slope was designed to retain a little moisture, sufficient to prevent the ground drying at the juncture of the earth and stone.

At the other salients, it was proposed to mount large rifled guns on existing platforms, rather than construct new platforms for the huge 49,000-pound shellguns.[34]

b. Plan Causes Problems

On October 22 the Department forwarded to Captain Palfrey a packet containing: (a) Plan of Fort Pickens, showing the position of the barbette guns on the curtain of the Southwest Channel Front, and details of gun platforms; (b) sketch showing the modifications of the parapet, parade wall, etc., of curtain of the Southwest Front; and (c) sketch of Southwest Bastion, detailing positions of barbette guns and the modifications of the parapet. These drawings were copies of those sent to the project engineers in the late 1850s, when they were preparing these sections of the fort for heavier armament.[35]

Captain Palfrey, on studying the plan of the Southwest Bastion, was unable to see anything to "indicate where the additions to Parade wall and the new arch covering of dry brick and asphaltum" were to terminate on the south curtain. The brick toeing at

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34. Delafield to Palfrey, July 19, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer. A copy of the subject drawing, titled, "Fort Pickens, Plans & Sections of 15-inch Gun Platform in Central Bastion," is found in files of Florida Unit, Gulf Islands NS.

35. Kurtz to Palfrey, Oct. 22, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer.

the foot of the exterior slope stopped near line 13-14 on the tracing. A paved brick terreplein began near the same line. From these and other indications, Palfrey concluded that the modifications detailed in the tracing were discontinued near this position.

He had written Captain Hodges to examine the fabric and if this proved to be the case, Palfrey wished to be notified whether to continue these modifications, and if so how far. If the arches were to be recovered, it would be better to do it before relaying the south curtain platforms.[36]

Unable to find any information on this subject in the files, General Delafield relayed Palfrey's communication to Major Prime, under whose supervision this work had been done. Prime was asked to give Palfrey the benefit of his recollections.[37]

Prime, on acknowledging the letter, reported that as far as he could recall, no work had been done on the curtain adjacent to the Southwest Bastion. In this respect, General Totten's instructions had been very specific and had been strictly adhered to.[38]

7. Palfrey's Program for F.Y. 1865 and Proposed Program for F.Y. 1866

The Department in the autumn of 1864, by circular letter, asked its superintending engineers for a report on what they proposed to accomplish with allotted funds in fiscal year 1865. Captain Palfrey in early October notified the Chief Engineer that he

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36. Palfrey to Delafield, Dec. 9, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

37. Delafield to Prime, Dec. 21, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer.

38. Prime to Delafield, Dec. 24, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

intended to put all platforms and circles, casemate and Barbette, in order; to construct permanent traverses before doors of magazines; to make a 15" center pintle Barbette Platform; to alter twenty front pintle Barbette platforms to receive iron carriages; to reform the slopes of the earthen parapet; and to repair masonry injured by artillery wherever necessary to prevent further damage from the weather.

As he had not been apprised of the Department's plans with respect to additional proposed alterations, Palfrey would not ask for an additional allotment. Certain projects, costing an estimated $100,000, were desirable and should be funded in fiscal year 1866. These included construction of: (a) service magazines, (b) traverses, (c) blindages for rear of casemates, (d) revetment for entire circumference of top of breast-height wall, and (e) removal of the beach dunes masking fire of the casemate guns.[39]

8. Funding the Fiscal Year 1865 Program

The 1865 program would be paid for by money allotted by the Chief Engineer from the appropriation for "Contingencies." As there was a limit to these funds, Captain Palfrey in mid-October inquired of the Department, whether the labor for landing, moving, and mounting the guns at garrisoned works, such as Fort Pickens, would be the responsibility of the Engineers or the troops.

In addition, he wished to know if funds would be allotted for repair of the wharf to insure a safe landing of the 15-inch Rodman and its carriage.[40]

On October 26 the Department notified Palfrey that at garrisoned forts, the troops landed, moved, and mounted the guns.

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39. Palfrey to Delafield, Oct. 7, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

40. Palfrey to Delafield, Oct. 12, 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

When there was no garrison, the Corps sometimes did the work, and other times charged the expense to the Ordnance Department, to which pertained the duty of positioning the cannon.[41]

No mention was made by the Department of an allotment for repair of the wharf. Three months later, in mid-January, Chief Engineer Delafield had grim news for Palfrey. The appropriation for "Contingencies" for fiscal year 1865 was exhausted. It would be impossible for the Department to provide the $20,000 needed to fund the repair and rehabilitation of Fort Pickens. Capt. Peter C. Hains at New Orleans, however, had an allotment for contingencies beyond his needs. He would transfer $20,000 to Captain Palfrey.[42]

There was a further improvement in the financial situation in March, when Congress appropriated additional funds for "Contingencies of Fortifications for the current fiscal year." This enabled General Delafield to make available another $11,000 for rehabilitation of Fort Pickens.[43]

9. Projects Undertaken in Fiscal Year 1865

During fiscal year 1865, despite an uncertain financial situation, the construction hands made satisfactory progress. In September the masons continued to repair and patch breaks and damage to the scarp caused by Rebel cannon. Traverse circles for the casemate and barbette guns were repaired, except for some of the columbiad platforms. By the end of the month eight front-pintle barbette platforms and 27 casemate platforms were ready to receive their armament. The

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41. Delafield to Palfrey, Oct. 26, 1864, NA, RG 77, Ltrs. Sent, Chief Engineer.

42. Delafield to Palfrey, Jan. 21, 1865, NA, RG 77, Ltrs. Sent, Chief Engineer.

43. Delafield to Palfrey, March 14, 1865, NA, RG 77, Ltrs. Sent, Chief Engineer.

blindage for protection of entrance to the Northeast Bastion magazine had been roofed and braced.[44]

In October and November the masons, assisted by laborers, continued to patch the scarp and work on the barbette platforms. They also started on the massive foundation for the 15-inch gun platform on the barbette tier of the Tower Bastion. By November 30 they were ready to lay the stone. Several brickmasons were engaged in constructing a traverse in front of the entrance to the Northeast Bastion magazine and repairing the quarters' chimneys. The laborers during the autumn had continued to salvage and clean bricks from Fort McRee. Many of these bricks were broken and used as aggregate.[45]

By the end of January 1865, Captain Palfrey reported that the masonry of the Northeast Bastion magazine traverse was nearly completed, as was the mule railroad leading from the wharf into the fort. Work had lagged on the Tower Bastion 15-inch platform and strengthening the front-pintle platforms to support iron carriages, because of shipping delays. It was the end of January before granite for the new platforms was received and landed.

The carpenters and blacksmiths, besides repairing tools and wheelbarrows, had built and positioned derricks to lift the granite onto the barbette tier, constructed "a shed along parade wall," made centres for the traverse arches, repaired the magazine linings, and strengthened the wharf. An applicateur had been employed to asphalt around the columbiad platforms on the south curtain.[46]

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44. Monthly Report of Operations at Fort Pickens for September 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

45. Monthly Reports of Operations at Fort Pickens for October & November 1864, NA, RG 77, Ltrs. Recd., Chief Engineer.

46. Monthly Reports of Operations at Fort Pickens for December 1864 and January 1865, NA, RG 77, Ltrs. Recd., Chief Engineer. There were on hand at the fort, not mounted, 9 42-pounder smoothbore cannon; 19 32-pounder smoothbore guns, and 20 barbette and 9 casemate carriages;

The masons by the end of March had finished repair of the breast-height wall, while the laborers had regraded and sodded the exterior parapet slopes, where they had been damaged by erosion. When the mule railway for transporting granite blocks from the wharf into the fort was extended through the sally port, the bad condition of the brick flooring necessitated its repaving. The traverse (blindage) shielding the entrance to the Northeast Bastion magazine had been completed. Two centre-pintle columbiad platforms (Nos. 41 and 44) and three front-pintle platforms (Nos. 12-14) had been finished and were ready to receive their iron carriages and guns.

In February there were transferred to Fort Barrancas 14 8-inch siege howitzers, 2 30-pounder Parrotts, and 6 20-pounder Parrotts.[47]

Captain Palfrey on March 1 had forwarded to the Department, "A plan showing all the platforms, Barbette and Casemate, for future Reference in Monthly Reports of Operations."[48] In numbering the platforms of the Barbette Tier, position No. 1 had been assigned to the emplacement on the left flank of the Southeast Bastion. The platforms had been numbered clockwise, with platform No. 91 on the right flank of the Northeast Bastion. The same nomenclature had been followed in numbering the casemate platforms.

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46. (Cont.) 10 24-pounder smoothbore guns and 6 barbette carriages; 2 12-pounder smoothbore guns and no carriages; 4 13-inch seacoast mortars with their beds; 11 8-inch seacoast howitzers; 14 8-inch siege howitzers; 1 10-inch siege mortar and bed; 2 30-pounder Parrotts; and 6 20-pounder Parrotts.

47. Monthly Reports of Operations at Fort Pickens for February and March 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

48. Palfrey to Delafield, March 1, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of this plan is found in files of the Florida Unit, Gulf Islands NS.

The construction people in the last quarter of fiscal year 1865 completed the reinforcing of 12 front-pintle platforms and platform No. 47 for the Tower Bastion's 15-inch gun. The "shed along the parade wall" of the south curtain was rebuilt in April and the one against the north curtain completed in May. Captain Hodges had the masons and laborers rebuild the breast-height wall and set the coping of the Tower Bastion; the carpenters renewed the revetment for the breast-height wall of the counterscarp, built a pile-driver, made and put up water conductors along the parade wall; and the laborers regraded the slopes of the earthen parapets.[49]

General Delafield, on reviewing Palfrey's monthly reports of operations, had his interest aroused by a reference to a "shed along the parade wall." Palfrey was asked for an explanation.[50]

Replying, Captain Palfrey explained that the quarters in the north and south curtains had been fronted by piazzas with slate roofs and brick columns. These had been destroyed by the blindages thrown up in 1861. Without the piazzas, the window frames were exposed to the elements and leaked badly, making the casemate quarters wet and causing the mortar to fall. Water collected in the "holes for ends of rafters," and the "want of shelter from the sun made the casemates hot."

Captain Palfrey had, therefore, had the piazzas rebuilt, substituting shingles for slates.[51]

In mid-May the 15-inch Rodman ordered to the fort the previous autumn was landed on Santa Rosa Island. The number of guns

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49. Monthly Reports of Operations at Fort Pickens for April-June 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

50. Delafield to Palfrey, May 20, 1865, NA, RG 77, Ltrs. Sent, Chief Engineer.

51. Palfrey to Delafield, June 8, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

and mortars on the island had been reduced in April, when one siege mortar and its bed and four 32-pounder smoothbores and their barbette carriages were sent to other posts. In June the 14 8-inch siege howitzers sent across the bay to Fort Barrancas in February were returned.[52]

10. Closing Down the Work

On August 7, 1865, the funds exhausted, Captain Hodges, acting on orders from Captain Palfrey, closed down the project and laid off the hands. The masons and laborers by this date had finished reinforcing 20 front-pintle barbette platforms (Nos. 8, 12-18, 50-51, 54-55, 58-59, 62-63, 76-77, 80, and 83), and the breast-height wall and revetment flagging of the Tower Bastion. The carpenters had completed repair of the revetment of breast-height wall of counterscarp and shot beds for 200 15-inch shells. In July a second 15-inch Rodman, without its carriage, was put ashore.[53]

Nine weeks before, on June 5, Captain Palfrey had written the Department that the work currently underway would be completed, before money for purchase of materials for additional platforms for heavy guns became available. When the project was closed down, it would be necessary to employ a man to guard the Engineer property. He, therefore, asked authority to employ a fort keeper at $30 a month and allow him to occupy quarters and draw a soldier's ration from the post commissary.[54]

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52. Monthly Reports of Operations at Fort Pickens for April-June 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

53. Monthly Report of Operations at Fort Pickens for July 1865; McAlester to Delafield, Aug. 19, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives During the 2d Session of the 39th Congress (Washington, 1867), Serial 1285, Vol. 3, p. 428.

54. Palfrey to Delafield, June 5, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

On July 5 General Delafield approved this proposal.[55]

D. Troops Come and Go

In May 1864 four companies (B, C, E, and H) of the 25th U.S. Colored Troops reported for duty at the fort, along with Company K, 7th Vermont. They joined Company K, 2d U.S. Artillery, and Companies D and F, 7th Vermont. The garrison for the next several weeks numbered eight companies. Company K, 2d U.S. Artillery, on May 18 finally said goodbye to Santa Rosa Island, as the veteran redlegs embarked on the steamer Liberty for Fort Hamilton, New York. On August 10, 1864, Companies D, F, and K, 7th Vermont, joined other units of the regiment aboard the steamship Hudson. The 7th Vermont was en route home, where it would be reorganized as a Veteran Volunteer unit.[56]

Maj. J.W.H. Reisinger's battalion of the 25th U.S. Colored Troops (Companies B, C, E, and H) garrisoned the fort until March 10, 1865, when Companies C and H were transferred to Fort Barrancas. During this period Company H was on detached duty on the mainland from December to February. On June 26, 1865, Companies B and E, 25th U.S. Colored Troops, rejoined Companies C and H at the Barrancas.

As the blacks were moving across the bay, Companies I and M, 1st Indiana Heavy Artillery, were landing on Santa Rosa Island to garrison the fort. These two companies were joined by Company L of the regiment on September 21 and Company F on October 7. The Indiana heavy artillery battalion remained at the post until late December 1865, when it was ordered to Baton Rouge, where the regiment was mustered out in mid-January.[57]

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55. Delafield to Palfrey, July 5, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

56. Returns from U.S. Posts, 1800-1916, NA, Microcopy M-617.

57. Ibid.

Upon departure of the Indianans, two companies (B and C) of the 82d U.S. Colored Troops occupied Fort Pickens. In January 1866 Company B was sent to Tallahassee and was replaced by Companies D and H, which arrived by ship from Fort Jefferson on the 9th. In April Company D was transferred to St. Marks, leaving Fort Pickens garrisoned by two companies--C and D. Four months later, in August, Companies A, E, F, and K, 82d U.S. Colored Infantry, reached the fort. On September 4, 1866, the regiment was mustered out of service and the enlisted men honorably discharged.[58]

To guard the public property, a small detachment from Company E, 5th U.S. Artillery, crossed the bay from Fort Barrancas and moved into the Fort Pickens casemates. Eleven months later, on August 26, 1867, the entire company, to escape a yellow fever outbreak, crossed over from Barrancas and joined the Fort Pickens detachment. The company returned to the mainland on October 20. A detachment continued to occupy Pickens until March 1868, when it was withdrawn. Care and protection of the government property would henceforth be the responsibility of the Engineer and Ordnance Departments.[59]

E. Captain Merrill's Four Months as Superintending Engineer

1. Captain Palfrey Decides to Leave the Service

In the spring of 1865, after four years of war, the Confederacy collapsed. Following the surrender of the Trans-Mississippi forces in the fourth week of May, Captain Palfrey was ordered to Texas with Maj. Gen. Gordon Granger's XIII Corps. As has always happened with the end of a war, America rushed to demobilize. On June 30 Captain Palfrey, having decided he might leave the Army, asked General Granger for permission to return to New Orleans, so he could attend to his duties as Engineer in charge of the masonry fortifications. There, he wished to remain while awaiting action of the War Department on his

58. Ibid.

59. Ibid.

enclosed resignation of his appointment as a lieutenant colonel of volunteers and acting inspector general of the XIII Army Corps.[60]

General Granger vetoed Palfrey's return to New Orleans, "as the exigencies of the service are so great at present."[61] Undaunted by this rebuff, Palfrey wrote General Delafield. He explained that when he had accepted his appointment to headquarters, XIII Corps, he had been assured by Maj. Gen. E.R.S. Canby, General Granger's immediate superior, that his new duties would not interfere with his performing those of supervising engineer for the Gulf Frontier forts. Since then, however, the XIII Corps had been transferred from Mobile Bay to Texas, and it was no longer possible for him to wear two hats.[62] He had therefore resigned his staff position with the XIII Corps, but it had been rejected.

To enable General Delafield to understand his position, Palfrey explained that he had been appointed to the staff during the campaign which had resulted in the capture of Mobile. Now that the fighting was over, and the principal duties of the XIII Corps would be "civil or political", he judged "the exigencies of the service rather require that I should attend to the Permanent works in my charge than that I should remain in garrison with troops in Texas."[63]

General Delafield went to bat for Captain Palfrey. On July 25 he recommended to the Adjutant General that Palfrey's resignation as lieutenant colonel be accepted, because his services were urgently

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60. Palfrey to Emery, June 30, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer. Maj. F.W. Emery was A.A.G., District of Texas.

61. Granger to Palfrey, June 30, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

62. Palfrey to Emery, June 30, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

63. Palfrey to Delafield, July 1, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

needed as Engineer in charge of the forts guarding the approaches to Pensacola, Mobile, and New Orleans.[64]

Palfrey, by the time his resignation as lieutenant colonel had been accepted by the War Department, had determined to leave the Army. He submitted his resignation. When several weeks passed and he heard nothing further on the subject, he telegraphed the Chief Engineer, requesting "to know when I am to expect an order to transfer public property and to leave New Orleans." His resignation, he noted, "was unconditional and its delay is doing me great injury."[65]

2. Captain Palfrey's Final Weeks on the Gulf Coast

The Department's difficulty in finding a replacement for Palfrey was caused by almost one-half of the Corps' officers being on detached duty and not subject to its orders.[66] Palfrey's telegram brought results. On September 13 he was directed to turn over to Capt. John M. Wilson his duties relating to Ship Island and the New Orleans forts and to Capt. William E. Merrill responsibility for the seacoast defenses of Pensacola and Mobile bays.[67]

Two weeks before, on August 29, Delafield had notified Captain Merrill that the resignation of Captain Palfrey had left the Corps without an engineer for the defenses of the approaches to Pensacola, Mobile, and New Orleans. Secretary of War Stanton had accordingly designated Merrill to be project superintendent at Pensacola and Mobile.[68]

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64. Delafield to Palfrey, July 25, 1865, NA, RG 77, Ltrs. Sent, Chief Engineer.

65. Palfrey to Delafield, Aug. 26, 1865, NA, RG 77, Ltrs. Sent, Chief Engineer.

66. Delafield to Palfrey, Aug. 14, 1865, NA, RG 77, Ltrs. Sent, Chief Engineer.

67. Delafield to Palfrey, Sept. 13, 1865, NA, RG 77, Ltrs. Sent., Chief Engineer.

68. Delafield to Merrill, Aug. 29, 1865, NA, RG 77, Ltrs. Sent, Chief Engineer.

Merrill, a native of Wisconsin, had graduated No. 1 in the Class of 1859 from the U.S. Military Academy. Commissioned a brevet 2d lieutenant in the Corps of Engineers, Merrill went south as assistant engineer for construction at Forts Pulaski, Jackson, and Clinch. On September 11, 1860, he was ordered to West Point as assistant professor of engineering. Ten months later, Merrill was sent into the field as assistant engineer, Department of the Ohio. Merrill rose rapidly in rank as the war progressed, serving in both the western and eastern campaigns. By July 2, 1864, he was a major in the U.S. Veteran Engineers and assigned to the Army of the Cumberland.[69]

Captain Palfrey, on receipt of the telegram announcing that Captain Merrill would relieve him of some of his responsibilities, suggested that Merrill travel to New Orleans, as all the Fort Pickens papers were there. Moreover, all work having stopped on the Santa Rosa Island fort, it had been placed in charge of a keeper. Such action on Merrill's part would expedite the transfer and facilitate Palfrey's return to civil life.[70]

Captain Merrill, however, was detained by his present assignment. By early October, Captain Palfrey was becoming increasingly unhappy with the situation. When he complained, General Delafield cautioned him to remain in New Orleans till Merrill came to transfer the accounts. Neither the papers nor Merrill arrived. On October 9 Palfrey wrote General Delafield that nearly three months had passed since he had submitted his resignation. He had been warned by his father that the Merrimack Company, for whom he was to work on leaving the service, was becoming very anxious and unless he soon arrived he would lose his position. Even when the papers were received, they could not be corrected without a visit to Pensacola.

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69. Cullum, Biographical Register, Vol. II, p. 481.

70. Palfrey to Delafield, Sept. 12, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

He had accordingly decided to sail immediately for Boston. A clerk had been engaged to make all possible corrections of the papers under Captain Wilson's supervision. Wilson would then forward them to Boston for Palfrey's review and amendment.[71]

Before writing the Chief Engineer, Palfrey had contacted Maj. Gen. Philip H. Sheridan, commander of the Military Division of the Gulf. Sheridan, after reading Palfrey's explanation of the difficulty, authorized him to proceed to Boston, leaving the necessary transfer papers with Captain Wilson, pending Captain Merrill's arrival.[72]

On October 9 Captain Palfrey turned the Mobile and Pensacola papers over to Captain Wilson. Reaching Boston on the 21st, Palfrey notified the Department that all future correspondence should be addressed to him there.[73]

3. Captain Merrill Takes Charge

Captain Merrill had been detained in Tennessee by his assignment to a board charged with appraisal of property accumulated by the U.S. Military Railroad radiating from Nashville and Memphis. On arrival in Nashville in late October, he found a letter from the Department, reminding him that his orders to go to Pensacola "admit of no delay." Maj. Gen. George H. Thomas, his immediate superior, would not release him, however, until the board had completed its work, which involved property valued at between six and seven million dollars.[74]

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71. Palfrey to Delafield, Oct. 9, 1865; John G. Palfrey to Delafield, Oct. 3, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer. John G. Palfrey was the captain's father.

72. Sheridan to Palfrey, Oct. 5, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

73. Palfrey to Delafield, Oct. 9 & 21, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

74. Merrill to Delafield, Oct. 25, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer. The property of the U.S. Military Railroad was turned over to the Southern Railroads at valuations determined by the five-man Board.

It was mid-December before the board finished its hearings, and General Thomas released Captain Merrill. Traveling to New Orleans, Merrill met with Captain Wilson and reviewed the files left for him by Captain Palfrey. He was disappointed to discover no funds for any of the forts in his charge and "a number of outstanding debts." He was unable to give exact figures, he informed General Delafield, but Captain Wilson had estimated the deficiency at Fort Morgan at $15,000. Wilson knew of no debts charged to Fort Pickens, except the wages of the fort keeper.

Merrill, before leaving for Pensacola, requested the Department to transfer to him "such sums...for the works under my charge as will suffice to clear them of debt and enable me to carry on such operations as the Engineer Department may direct."[75]

Merrill reached Pensacola Bay and established his headquarters at the Barrancas a few days before Christmas. To retire the debts left by Captain Palfrey, he found that he would have to visit Mobile, Fort Morgan, and New Orleans, as soon as he received funds to pay the discharged artisans and laborers. While in New Orleans, waiting for a Pensacola-bound ship, men had called daily at Captain Wilson's office, asking to see him and wanting to know when he would be ready to pay them.

Transportation proved to be a problem. Without even "a row boat" at his command, he could not "stir without an order that will

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74. (Cont.) As every item, ranging from cups to locomotives and machine shops, had to be appraised, it was a time consuming operation and could not be accomplished in a few days. Involved were field trips to Huntsville, Alabama; Atlanta, Georgia; Louisville, Kentucky; and Memphis, Knoxville, and Chattanooga, Tennessee; as well as Nashville, to view fixed property.

75. Merrill to Delafield, Dec. 15, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

enable me to draw mileage or transportation." To visit Fort Pickens he was dependent on the courtesy of the post quartermaster.[76]

Not having received any funds in response to his December 15 request, Captain Merrill on January 27, 1866, asked the Department to place $31,000 to his credit, $30,000 for Fort Morgan and $1,000 for Fort Pickens. These sums were "needed at once, the half of each being already due to laborers and employees."

No disbursements had been made at either fort since August, and the men at each were clamoring for their pay. If laid off unpaid, he warned, "there will be endless complications in settling these indebtednesses." Unless he procured funds within a week or two, he would be compelled to discharge all his employees.

In addition, the Department had not provided any guidelines as to what projects to undertake.[77]

Captain Merrill also acknowledged receipt of orders "to report on the obstructions of Mobile Harbor." As he was biding time at Pensacola, and there were no scheduled boats running between Pensacola and Mobile bays, he requested authority to change his duty station to Mobile. To show the problems involved in travel between the two points, Merrill explained that since his arrival at the Barrancas he had only visited Fort Morgan once. He had been detained there a day longer than he wished, was two days getting to Mobile, and one week in Mobile waiting for a vessel back to Barrancas. As Pensacola and Mobile were in

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76. Merrill to Delafield, Dec. 23, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

77. Merrill to Delafield, Jan. 27, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer. Merrill at this time informed the Department that "Fort McRee and the somewhat anomalous structure [the water battery] to the westward are fast falling into the sea. They can no longer be considered as a part of the Defenses of this harbor."

different military divisions, there was no Army transportation between them, and he was compelled to rely on Navy tugs.[78]

To enable Captain Merrill to pay the employees, past and present, the money owed them, the Department directed Capt. Miles D. McAlester at New Orleans to transfer to Merrill, as a temporary expedient, a sum not to exceed $15,000.[79]

4. Captain Merrill Submits His Resignation

Disgusted with duty in the peacetime Army, Captain Merrill on December 23 had applied for a six-month leave to enable him "to perfect arrangements for leaving the service." The condition of his "private affairs" dictated such action on his part.[80] General Delafield referred Merrill's application to the Secretary of War.

When four weeks passed and he heard nothing about his application, Merrill reminded the Department that "even if I succeed in my present endeavors to leave the service, I am unwilling to leave my successor as helpless as I am."[81]

Soon afterwards Merrill was notified by the Adjutant General that he could obtain a six-month leave on submission of his resignation. On February 23 he wrote Chief Engineer Delafield that he would adopt this procedure and desired to be relieved of his duties on the Gulf Frontier.[82]

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78. Ibid.

79. Delafield to McAlester, Feb. 15, 1866, NA, RG 77, Ltrs. Sent, Chief Engineer.

80. Merrill to Delafield, Dec. 23, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

81. Merrill to Delafield, Jan. 27, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer.

82. Merrill to Delafield, Feb. 23, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer.

This cut the red tape. On March 19 General Delafield wrote Captain Merrill that he was to turn over to Captain McAlester his Pensacola and Mobile Bay responsibilities.[83]

When no letter of resignation was received in Washington, General Delafield telegraphed Captain McAlester on March 29, advising him that he was not to relieve Captain Merrill until the Adjutant General was in possession of this document.[84] This troubled Merrill, because he had pledged himself "to tender his resignation as soon as I could close my accounts with the United States." Even if he had "repented of this step," he would consider himself honor-bound to present my resignation in accordance with my pledge.

His object in adopting this course of action was to secure for himself "an uninterrupted six months leave" to get started in business.[85]

On April 19, 1866, Captain Merrill was notified by General Delafield that his resignation had been accepted. After being relieved by Captain McAlester, he was to come to Washington to settle his accounts that had been disallowed by the 3d Auditor.[86]

F. Captain McAlester's 17 Months as Superintending Engineer

1. Captain McAlester Relieves Captain Merrill

Merrill's replacement, Michigan-born Captain McAlester, had graduated from the U.S. Military Academy as No. 3 in the Class of

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83. Delafield to Merrill, March 19, 1866, NA, RG 77, Ltrs. Sent, Chief Engineer.

84. Delafield to McAlester, March 29, 1866, NA, RG 77, Ltrs. Sent, Chief Engineer.

85. Merrill to Delafield, March 31, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer. Merrill's letter of resignation, addressed to Adjutant General Lorenzo Thomas, was dated March 31. His resignation was to take effect six months after its receipt.

86. Delafield to Merrill, April 19, 1866, and Merrill to Thomas, March 31, 1866, NA, RG 77, Ltrs. Sent and Recd., Chief Engineer.

1856. Commissioned a brevet 2d lieutenant in the Corps of Engineers, McAlester was ordered to Fort Taylor as assistant engineer. From 1857 to 1858 he was detailed to the Board of Engineers for Atlantic Coast Defenses. He spent the next three years as superintending engineer for the defenses of the Narrows to New York Harbor. During the Civil War, McAlester served in 1861 and 1862 with the Army of the Potomac, and on October 30, 1862, was assigned to duty as Chief Engineer, Army of the Ohio. From September 1863 to June 1864, he was at the Military Academy as Principal Assistant Professor of Engineering. He returned to the field in June 1864 as Chief Engineer of the Military Division of West Mississippi. McAlester emerged from the war a brevet brigadier general and captain of Engineers.[87]

On January 1, 1866, Captain McAlester had relieved Captain Wilson as engineer in charge of the defenses of New Orleans and of construction of the fort on Ship Island. General Delafield in mid-March had cautioned McAlester that the House of Representatives had reduced his request for funding construction of the Ship Island fort in fiscal year 1867 to $10,000. With Congress seemingly adverse to making big appropriations for the coastal forts, McAlester must restrict the force and materials currently on hand, "so that the labors may at any time be promptly discontinued with the least practical detriment to the works." The construction force would be reduced as rapidly as circumstances would allow, and no new engagements made, until the Department knew what Congress intended.[88]

Acknowledging this message on March 28, Captain McAlester outlined what he expected to accomplish in fiscal year 1867 at

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87. Cullum, Biographical Register, Vol. II, pp. 419-20.

88. Delafield to McAlester, March 21, 1866, NA, RG 77, Ltrs. Sent, Chief Engineer.

each of the forts under his supervision. Nothing would be done at Fort Pickens, as there was no approved program.[89]

In late April, Captains McAlester and Merrill traveled to Pensacola, where the former formally relieved the latter of his responsibilities for the Pensacola and Mobile Bay defenses. McAlester then returned to his New Orleans headquarters.[90]

2. Lieutenant Payne's July 1866 Inspection

Congress appropriated money for repairing Fort Morgan in fiscal year 1867. Captain McAlester accordingly requested the Department to detail an officer "to report to him without delay to take post at Fort Morgan for the purpose of exercising immediate supervision over engineering operations and engineer property at the fortifications in and about Mobile Bay," and the works at Pensacola. If the Department could spare two officers he would be glad to have both--one for Pensacola Bay and the other for Mobile. The importance of these works, which at Pensacola including Fort Pickens and the Barrancas line (Fort Barrancas, the old Spanish Battery, Barrancas Redoubt, and the connecting defenses) led McAlester to conclude that the government's interest demanded that an officer of engineers be posted at each of these points.

Another factor to be considered in assessing the situation was the difficulty experienced in commuting between Pensacola and Fort Morgan. Transportation between these points, although only 40 miles apart, was slow and could be had but once a week.[91]

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89. McAlester to Delafield, March 28, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer. On the previous day, McAlester had notified the Department of receipt of its March 19 letter, directing him to relieve Captain Merrill of responsibility for Forts Pickens and Morgan. McAlester to Delafield, March 27, 1866, NA RG77, Ltrs. Recd., Chief Engineer.

90. Delafield to McAlester, April 19, 1866, NA, RG 77, Ltrs. Sent, Chief Engineer.

91. McAlester to Delafield, May 25, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer.

General Delafield saw the merit in McAlester's arguments. He agreed to the detail of Lt. David W. Payne to the Fort Morgan project. This was not a solution to the problem, because Payne had been on duty as assistant engineer at Ship Island since December 1, 1865. But the reduction of the Army and the Corps' nation-wide responsibilities made it impossible for Delafield to assign additional officers to McAlester's office.

One of Lieutenant Payne's first missions was to make an inspection of Fort Pickens. Arriving on Santa Rosa Island, he was met by Fort Keeper William Conner. He found the engineer property under cover and in good condition. Neither the buildings nor the property were being put "to improper useage."

The only materials whose retension worried Payne were 76 barrels of cement. Conner told him that the cement had been on hand for nine months. Unless operations were scheduled to resume on the fort in the near future, Payne recommended that it be transferred to another project.

Lieutenant Payne reported the general condition of the fort as good. No immediate repairs were necessary to protect it from the elements. He observed that the scarp, between the sally port and "the middle of the N.W. front, has fallen outwards 1½ inches, measured from the crowns of the arches." It, however, was not a "recent crack." To prevent further tilting, he recommended erection of counterforts, similar to those Major Chase had positioned along the East Front.[92]

The magazines were dry and in good condition. They could, in an emergency, store 1,500 barrels of powder. Their "ordinary capacity" was 810 100-pound barrels. The casemates, except those in the

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92. Payne to McAlester, July 20, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer.

Tower Bastion which leaked badly, were satisfactory. The arch of the passageway leading from the extreme northwest casemate to the one to the right of it was in "such a stage" that it had been bolstered by wooden shoring. The 15-inch gun platform rested partly on this weakened arch, and Payne believed it would "probably be found necessary to renew it or fill it up."[93]

Payne saw that the brick paving of the casemates was in bad shape. It had "settled badly in many places, in one casemate to such an extent as to prevent the traversing of the gun."

All casemate gun platforms, he observed, were of the old pattern. One new platform was needed, the stones of the old having settled to such a degree that they had been removed by the garrison and replaced by timbers. Twenty-three of the casemate platforms were without traverse rails. In these casemates, brick ovens had been built by the troops over the platforms.

One barbette platform was seen to require new traverse stones, while it and another had no irons.[94]

The cisterns leaked but not badly. He recommended removal of the cement plastering. The woodwork in the casemate quarters had rotted. Lieutenant Payne spotted a shot hole in the counterscarp wall of the northeast front, which Captain Hodges' crew had neglected to refill. All the earthen slopes were eroded and needed regrading.[95]

3. Lack of Funds and Minimal Maintenance

Captain McAlester, in submitting his annual report for fiscal year 1866, listed the general condition of Fort Pickens as good.

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93. Ibid.; Palfrey to Delafield, June 16, 1865, NA, RG 77, Ltrs. Recd., Chief Engineer.

94. Payne to McAlester, July 20, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer.

95. Ibid.

The magazines and gun platforms, excepting two front-pintle barbette and 23 casemate without traverse rails, were in satisfactory order.

If an allotment were made from "Contingencies" in fiscal year 1867, McAlester proposed to construct three barbette platforms for 15-inch Rodmans, two of which were to be centre-pintle and the third front-pintle. One of the guns for these proposed platforms had been received from the Ordnance Department.[96]

No money, however, was forthcoming for Fort Pickens. In September, McAlester lost his assistant, when Lieutenant Payne was assigned to duty overseeing a project for improving navigation at the mouth of the Mississippi. Captain McAlester's attention was again focused on Santa Rosa Island in November, when Fort Keeper Conner, who was employed at $30 per month, notified him that he wished to be replaced as soon as practicable. On making inquiries, McAlester found that he could not obtain a replacement at that rate.

The ordnance-sergeant told McAlester that he would take charge of the engineer property at the fort "at a fair additional remuneration for his services." An inquiry revealed that the sergeant was a trustworthy individual, who could discharge the additional duties, without interference with those already undertaken.

Captain McAlester requested authority to employ the sergeant as keeper, paying him $30 per month in addition to his pay as an enlisted man. If this arrangement were unsatisfactory, he needed authorization to raise the keeper's wages.[97]

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96. McAlester to Delafield, Aug. 10, 1866, NA RG77, Ltrs. Recd., Chief Engineer.

97. McAlester to Humphreys, Nov. 21, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer.

Bvt. Maj. Gen. Andrew A. Humphreys, the distinguished engineer and Army of the Potomac corps commander who had replaced General Delafield as Chief Engineer on August 8, vetoed McAlester's proposal. On November 30 he wrote that it was illegal to pay extra compensation to any soldier or government employee whose pay was fixed by law. McAlester was accordingly authorized to raise the keeper's salary to $40.00 a month.[98]

Captain McAlester had learned from Fort Keeper Conner that the seven-man detachment from Company E, 5th U.S. Artillery, posted at Pickens was neither mowing the earthen parapets nor keeping the ditch cleaned out. This had resulted in obstruction of the cunette and an impairment of the drainage, causing the ditch to fill with stagnant water.[99]

When he learned of this situation, Chief Engineer Humphreys directed Captain McAlester to bring the unsanitary condition of the ditch and lack of maintenance to the attention of Bvt. Maj. Gen. Truman Seymour, the officer commanding the Pensacola Harbor Defenses.[100]

Very little money was spent on maintenance and protection of the Pensacola Bay defenses in fiscal year 1867. When he filed his annual report for this period, Captain McAlester listed the fort's condition as good. No operations had been carried on and the engineer property was in charge of a keeper.[101]

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98. Humphreys to McAlester, Nov. 30, 1866, NA, RG 77, Ltrs. Sent, Chief Engineer.

99. McAlester to Humphreys, Nov. 21, 1866, NA, RG 77, Ltrs. Recd., Chief Engineer.

100. Humphreys to McAlester, Nov. 30, 1866, NA, RG 77, Ltrs. Sent, Chief Engineer.

101. McAlester to Humphreys, Annual Report for Fiscal Year 1867, Sept. 21, 1867, NA, RG 77, Ltrs. Recd., Chief Engineer.

When he submitted his estimates for fiscal year 1868, McAlester announced that no appropriation was required for Fort Pickens. The only project contemplated, during the next nine months, was construction of two barbette platforms for 15-inch guns on the Northwest and Southwest Bastions.[102]

Captain McAlester, before the end of September, learned that he would soon be relieved of his responsibilities as superintending engineer for the defenses of Pensacola and Mobile bays and the Ship Island fort. He would, however, remain on the Gulf Frontier and continue to exercise his duties as superintending engineer for the defenses of New Orleans and improvements to navigation at the mouth of the Mississippi.[103]

G. Major Prime's 19 Months as Engineer

1. Prime Returns to the Gulf Coast

a. He Prepares and Submits His Estimates

Frederick E. Prime, who had rendered distinguished service in the Civil War for which he had been breveted a colonel and promoted to major, returned to the Gulf Coast in November 1867. On reporting for duty following an extended leave, Major Prime had been assigned by General Humphreys as Chief Engineer on the Gulf Frontier and ordered to Mobile.[104]

Major Prime reached Mobile from New York City on November 26. He spent the next several weeks getting organized and inspecting the Mobile Bay defenses, the Ship Island fort, and the Pensacola works. On his return to Mobile from Pensacola in

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102. McAlester to Humphreys, Sept. 18, 1867, NA, RG 77, Ltrs. Recd., Chief Engineer.

103. Cullum, Biographical Register, Vol. III, p. 255; Military Service Registers of Officers of the Engineer Corps, 1857-1894, NA, RG 77.

104. Humphreys to Prime, Sept. 1, 1867, NA, RG 77, Ltrs. Sent, Chief Engineer.

mid-December, Prime notified the Department that the Fort Pickens wharf would have to be rebuilt before granite for the additional 15-inch gun platforms could be landed. Although its superstructure was in "tolerable order," the piles had been devastated by teredos. While workmen were repairing the wharf, several other projects should be undetaken at the fort. These included: (a) reopening and repairing the drain from the ditch; (b) repair of "bad places" in the pavement of the terreplein of one of the curtains; (c) lacquering the traverse irons; and (d) regrading the slopes and "placing the ditch in order."[105]

To effect these improvements, along with those required at Fort Barrancas and the Redoubt, Prime asked authority to employ an overseer at $125 per month.[106]

General Humphreys answered Prime's letter on Christmas Eve. There were, he wrote, no drawings on file of the Fort Pickens wharf. Such repairs as were "indispensable" should be undertaken with a view to giving it as "durable character as present circumstances" admit, "as it must form the permanent landing place of this important fort." Prime would provide the Department with a description and estimate of the cost of needed rehabilitation.

The other improvements listed by Prime (the drain, terreplein paving, traverse irons, slope, and ditch) should be executed. Estimates, however, were needed.[107]

Assisted by Capt. Charles R. Suter, Prime prepared the requested estimates. (Captain Suter since 1866 had been assigned to duty as assistant engineer for survey of the Upper Mississippi River.

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105. Prime to Humphreys, Dec. 14, 1867, NA, RG 77, Ltrs. Recd., Chief Engineer.

106. Ibid.

107. Humphreys to Prime, December 24, 1867, NA, RG 77, Ltrs. Sent, Chief Engineer.

Captain Suter on January 28, 1868, had been ordered to report to Major Prime for temporary duty. On June 16, 1868, Suter was ordered to Cincinnati in connection with removal of obstructions from the Western Rivers.) Suter's figures contemplated protection of the wharf pilings by copper sheeting at a cost of $1,725. To justify this expense, Prime pointed out that the piles of the present wharf had not been shielded by metal.

If the Department vetoed his proposal to use sheeting, Prime suggested that whenever a permanent wharf was erected, it should be supported by large hollow iron piles, "sunk by atmosphere pressure and filled in with concrete." Such piling could be "forced down far enough, not to be affected by the abrasions of the bottom, which it is said has been lowered as much as three feet by heavy storms along the wharf at Fort Morgan." When he had been stationed on the Gulf in 1860, a hurricane had wrecked the well built Fort Pickens wharf, with its copper-sheeted piles.[108]

The Fort Pickens estimates, as submitted, called for:

Renewing plank road between fort and wharf	$ 819.00
Repair of wharf, piles protected by copper-sheeting	2,745.00
Repair of wharf, piles not protected	1,020.00
Cutting grass and weeding slopes	400.00
Brickwork, repair of terreplein paving, tops of chimneys, breast-height wall, etc.	350.00
Removal of traverses on Southeast Bastion	300.00
Repair of drain from ditch to wharf	300.00
Clearing Northwest and Southwest Bastions down to roof surfaces, $800 each	1,600.00
Putting in concrete ready for two 15-inch platforms, $1,000 each	2,000.00
Granite and irons for 15-inch platforms, laying same, and freight on same from New York Agency $3,368.79 each	6,737.58
Completing parapet and terreplein for two 15-inch emplacements, $750 each	1,500.00
Purchase of 4 mules	500.00
Storage for 5 months	500.00
Overseer 5 months at $125 per month	625.00
Suboverseer 5 months at $3 per day	390.00

108. Prime to Humphreys, March 3, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

Carpenter 5 months at $2.50 per day	325.00
Blacksmith 5 months at $2.50 per day	325.00
Repair of tools, carts, and boat	200.00
Receiver of materials 5 months at $40 per month . .	200.00
	$20,066.58
Contingencies	933.42
TOTAL	$21,000.00[109]

b. Department Approves His Program

On March 11 Chief Engineer Humphreys reviewed and approved the estimates. Prime was advised that the question of whether to sheet the piles of the Fort Pickens wharf would be left to his judgment. His proposal to employe a suboverseer, as well as an overseer, for the project was approved, and $21,000 alloted for the project.[110]

2. General Humphreys Orders Work on the 15-inch Platforms Deferred

On December 24, 1867, the Department had written Major Prime in reference to the 15-inch platforms to be constructed on the terrepleins of the Northwest and Southwest Bastions. Within the near future there would be trials of the "sufficiency" of the centre- and front-pintle platforms. The centre-pintle platforms had enough strength for the charges now in use, but as these were being increased by the Ordnance Department, no platforms would be built until after the forthcoming tests.[111]

A drawing titled, "Details of S. W. Bastion, Showing 15" Gun Platform & Parapet," was transmitted by the Department to Major Prime on January 7. In a covering letter, General Humphreys explained

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109. Ibid.

110. Humphreys to Prime, March 11, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer.

111. Humprheys to Prime, Dec. 24, 1867, NA, RG 77, Ltrs. Sent, Chief Engineer.

that the plane of comparison was the crest of the parapet, with the references written in feet and inches above and below the subject plane. Four platforms, Nos. 24-27, would be removed to make way for the 15-inch platform, and perhaps a fifth of which Prime would be the judge.

The centre of the 15-inch platform would be adjusted to permit an 18-foot parapet on both faces of the bastion. To obtain the required cover, without altering the drainage of the terreplein, the crest of the new parapet was to be raised three inches above the present crest. Advantage would be taken of the uncovering of the roof surface to increase the thickness of the masonry of the casemate arches to the extent uncovered. This additional thickness of concrete and the foundation of the platform would be constructed in one mass upon the present roof surface.

Construction of the Northwest Bastion platform would be similar, except that the 18-foot parapet would be on the west flank and face of the bastion.

No work, Chief Engineer Humphreys reiterated, would be undertaken on these platforms until results of the tests were known and evaluated.[112]

The decision to hold in abeyance construction of the 15-inch gun platforms on the Southwest and Northwest Bastions compelled the Department to write the New York Agency to suspend, until further notice, preparation of the necessary granite and ironwork. Replying to this communication, Maj. Nicolas Bowen of the agency wrote General Humphreys. He reported that some "small items have been worked & some of the bolts for the iron-work made." Any material modification of the present plans, he continued, could be made without loss.[113]

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112. Humphreys to Prime, Jan. 7, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer. A copy of the subject drawing is found in the files of the Florida Unit, Gulf Islands NS.

113. Bowen to Humphreys, Jan. 29 & 30, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

3. Testing the Stability of the Tower Bastion Arches

a. General Seymour Warns of Grave Structural Failures

On April 14, 1868, General Seymour notified Chief of Ordnance A.B. Dyer that the "two large arches" of the Tower Bastion, "with arch of communication and the vault of this last arch is so weak and has cracked so badly that it has been shored up with timbers...to prevent it falling in." To test the stability of these arches, Seymour urged that the 15-inch Rodman be mounted and fired.[114]

After reviewing the correspondence, which was referred to him by General Dyer, General Humphreys wrote Major Prime. The only data in the Department's files referring to a "want of stability in the arches" was found in Captain Palfrey's report of August 10, 1864. According to Palfrey, the intrados of one of the main casemate arches had bulged in at the "haunches so that the coursing joints are nearly six inches from a straight line, the piers have not started. It is strongly shored up at present, and will have to be uncovered and probably rebuilt."

Records revealed that this report had been made soon after Captain Palfrey had received the drawing for the Tower Bastion's 15-inch gun platform. If the arch referred to had been failing at that time, General Humphreys believed Palfrey would have so reported.

Major Prime was to personally examine the Tower Bastion arches and those in the Southwest and Northwest Bastions, where 15-inch platforms were to be built. He would report on their "sufficiency" to sustain the platforms and withstand the shock of the huge guns being fired.[115]

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114. Seymour to Dyer, April 14, 1868, NA, RG 156, Ltrs. Recd., Chief of Ordnance.

115. Humphreys to Prime, April 25, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer.

Upon receipt of Humphreys' letter, Major Prime searched the files. In addition to the Palfrey letter, he found Lieutenant Payne's report of July 20, 1866, to Captain McAlester. Payne at that time had observed:

> The arch of the passage way leading from the extreme N.W. casemates to the one next to it is in such a state that it has been strengthened by wooden shores. A 15" gun platform en barbette, recently constructed on this bastion, rests partly on this arch; it will probably be found necessary to renew it or fill it up.

The bastion referred to by Payne, Major Prime reasoned, must be the Tower not the Northwest.

On a visit to Pensacola, Prime and General Seymour discussed the problem. He told the general that a decade before Captain Newton, acting on instructions from Chief Engineer Totten, had rebuilt the terrepleins and parapets of the Tower and Southwest Bastions and the Southwest Channel Front; that Captain Palfrey in 1864-65 in laying the 15-inch Tower Bastion platform had uncovered the arch; and that the arches supporting the Castle Williams barbette tier had suffered no damage in the firing of a 15-inch Rodman by Mr. Trowbridge.

Satisfied as to the probable stability of the Tower Bastion arches, Major Prime suggested that they mount and fire the 15-inch Rodman, after first removing the shoring. Such a test, he informed the Department, would demonstrate whether they should proceed with plans to construct 15-inch gun platforms on the Northwest and Southwest Bastions.[116]

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116. Prime to Humprheys, April 29, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

b. Major Prime Studies the Casemate Arches

Before receiving the Department's reaction to his suggestion, Major Prime spent several days on Santa Rosa Island. After studying the masonry of the bastions, he again urged that "if any doubt exists as to the stability of the arches it would be best to mount the 15" gun" in the Tower Bastion "and fire it with heavy charges and at high elevations as was done at Castle Williams."

He had the storing removed from the two principal casemates of the Tower Bastion. He presumed that it had been positioned by Major Tower in 1861.

With the wooden beams out of the way, Prime saw that there was a "crack and settling on the Groin of communication & S main arch" of the Tower Bastion and on "the groin of SW casemate of SW Bastion & East Communication arch."

Despite these defects, Major Prime wrote the Department, "if the arches are prepared as shown in the drawings, with the bulk of the 15" gun platform resting on the large central piers," he did not believe there would be any danger when the huge Rodman was fired.[117]

On May 20 the Department approved Major Prime's proposal to mount and test fire a 15-inch Rodman on the Tower Bastion platform.[118]

c. Casemate Arches Pass a Severe Test

On October 24, 1868, Major Prime notified the Department that the 15-inch Rodman had been mounted on the Tower

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117. Prime to Humphreys, May 14, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

118. Humphreys to Prime, May 20, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer.

Bastion. Unaware of the character of the "experiments by which the stability of the arches should be tested," he asked instructions.[119]

General Humphreys replied. He directed that the test involve firing the huge gun with a solid projectile and 60 pounds of powder at an elevation of five degrees, first to the front and then to the right and left as far as it could be traversed. This test would be repeated with 100-pound powder charge. Next, there would be three discharges with 60 pounds of powder at maximum elevation, followed by a similar number with 100 pounds of powder with the piece at the same elevation.[120]

The tests took place in the fourth week of November. Several changes had to be made in the program as outlined by General Humphreys. There being no solid shot on hand, shells were used. They were first filled with lead concrete poured into the cavity. This increased the projectiles' weight to approximately that of a solid shot. The lead concrete was a mixture of brick fragments and molten lead.

The only powder available was cannon. Major Prime, who had come over from Mobile to supervise the test, deemed it "advisable to ascertain its effects by firing two charges of 30 lbs before using the larger charges."[121]

At an order from Major Prime, a detail of artillerists from Company E, 5th Artillery, from Barrancas Barracks loaded the Rodman with a 419-pound projectile and 30 pounds of powder. The piece was given an elevation of 5° and the carriage traversed to the extreme

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119. Prime to Humphreys, Oct. 24, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

120. Humphreys to Prime, Nov. 6, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer.

121. Prime to Humphreys, Nov. 25, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

left. The lanyard was pulled, the gun roared, and the chassis recoiled 8'3". Major Prime called for the redlegs to reload with the same charge and to elevate the gun to 32°. A second round was fired. The piece was reloaded, the powder change increased to 60 pounds, the elevation reduced to 5°, and fired "a little to left of axis of Bastion so as to clear Fort McRee." This time the carriage recoiled violently, striking the counter-hurters and sliding forward 24 inches. The pintle-plate, in the centre of chassis, was bent in the middle so as to touch the pintle-stone; the rear transom of the chassis was bent about 4 inches from the top by the right friction roller; and the lower part of the steel pin of the eccentric on rear axle of the carriage sheared off.

Despite the damage the test continued. Once again, the Rodman, after being traversed to the left as far as possible, was fired with a 60-pound charge and an elevation of 5°. As the gun could not, because of damage to the carriage on the third round, be fired at extreme traverse to the right, it was pointed for the fifth shot "up Pensacola Bay a little to right of prolongation of axis of Bastion." Major Prime's reason for calling for this sighting was because the "brick masonry of communication arch" showed more signs of deterioration here, and this would subject its fabric to a "fair test." The recoil of the Rodman, although the charge and elevation were the same as heretofore, split the elevating fulcrum. While the artillerists replaced the fulcrum, Prime examined the casemate arches and observed no perceptible change.

For the sixth round, the 15-inch gun was charged with 60 pounds of powder and elevated to 32°. The carriage suffered crippling damage as it recoiled. A triangular piece of iron 3½" x 6" was torn out of the front of the centre transom of the chassis and cracked from the gash to within 4" of the rear of the transom. The rear edge of the transom was bent, and the heads of four of the six bolts fastening the upper hexagonal plate to the pintle-plate sheared off. Two cast-iron supports on each side of the centre of the chassis were broken. No injury was done to the platform and pintle. In the casemates below, no

damage was seen, except "flakes of whitewash which fell from the arch of the left gun casemate."[122]

General Humphreys, after reviewing Prime's report, forwarded it to Chief of Ordnance Dyer, with a request that his people have the carriage repaired so the test could be resumed.[123] Dyer, on promising to see that the carriage was repaired, requested that in continuing the test "60 lbs. of 'cannon' powder be the maximum of charges used."[124]

The carriage was not repaired, and there was no resumption of the tests. More than a year later, in December 1869, in listing the number of 15-inch Rodmans at Fort Pickens, the Engineer in charge reported that gun No. 18, cast by S. McManus & Co., was emplaced on the Tower Bastion. The gun had been fired six times. On hand, but not mounted, were four of the huge guns--Nos. 48, 98, and 105 cast at the Fort Pitt Foundry, and No. 55 cast by C. Ames & Co.[125]

4. Work Accomplished in Fiscal Year 1868

a. On the Fort

Work on the projects approved and funded from "Contingencies" was commenced early in March 1868. The artisans and laborers were under the immediate supervision of Captain Suter, Major Prime's assistant.

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122. Prime to Humphreys, Nov. 25, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

123. Humphreys to Dyer, Dec. 11, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer.

124. Humphreys to Prime, Dec. 15, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

125. Reese to Humphreys, undated, but in response to a circular of Nov. 22, 1869, NA, RG 77, Ltrs. Recd., Chief Engineer.

The earthen slopes of the parapets and glacis were mowed. The drain from the ditch to the bay cleaned and provided with a flood gate; the Engineer quarters repaired and whitewashed; a plank road from the sally port to the wharf built. The terreplein pavement was repaved where required. In mid-June, Chief Engineer Humphreys having removed his prohibition against work on the 15-inch gun platforms, the hands were turned to on the Southwest Bastion. But, because of the late start, they, by the end of the fiscal year, had only progressed to removal of some of the old centre-pintle columbiad platforms and the fabric covering the casemate arches. The sand traverses and service magazine erected in 1861 were removed from the terreplein of the Southeast Bastion.[126]

b. On the Wharf

Major Prime took advantage of the initiative granted by the Department to have Captain Suter rebuild rather than repair the wharf. Employing a scow outfitted for the project, Suter and his men propped up the wharf's superstructure. New copper-sheeted pilings were then driven, by employing a nozzle of a hose attached to the foot of the pile. A jet of water was forced through the hose to remove the sand, allowing the piling to sink from its own weight. Gun carriages, shot, shell, and blocks of granite dropped from the wharf and vessels in discharging cargo and a sunken scow were encountered. These made pile driving a more difficult operation than Prime had anticipated. All told, several tons of old iron, mostly ordnance materials, were recovered. Two cannon were pinpointed in the muck, which Captain Suter planned to salvage.[127]

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126. Prime to Humphreys, July 29, 1868; Annual Report of Operations at Fort Pickens for Fiscal Year 1868, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives During the 3d Session of the 40th Congress (Washington, 1868), Serial 1368, Vol. 3, pt. 2, p. 17.

127. Prime to Humphreys, June 28 & July 29, 1868, NA, RG77, Ltrs. Recd., Chief Engineer.

Whenever it was found impossible to drive a pile due to an obstacle, the hose was employed to "clear it from the surrounding sand," and the obstacle was removed by grappling. Despite problems caused by an underpowered engine, prone to breakdowns, Major Prime concluded that this method of driving piles had succeeded much better than if a piledriver had been used. If a hammer had been employed, with the great amount of debris encountered, there was the probability of damaging and having to withdraw the piling.

By June 30 all the piling of the main wharf had been driven, along with most of the fender piles. If there were no hitches, the wharf would be finished by the end of July.[128]

5. Work Accomplished in Fiscal Year 1869

a. Program and Its Funding

Out of the $21,000 allotted for the project, there had been expended in fiscal year 1868 $13,209.93, leaving a balance of $7,790.07. With this sum in the new fiscal year, the construction people would continue work on the Southwest Bastion to prepare it for the 15-inch gun platform and then be turned to on the Northwest Bastion. As soon as the wharf was completed, steps would be taken to mount and test the 15-inch Rodman on the Tower Bastion platform. Also to be built were wooden shot beds authorized by the Department in accordance with a request from General Seymour. Fatigue parties would be detailed from the Barrancas Barracks garrison to remove from the ditch and stack the projectiles.[129]

Major Prime cautioned the Department that available funds would not suffice to complete the platforms on the Northwest and Southwest Bastions. If additional funds were programmed for fiscal year

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128. Ibid. A copy of the plan of the "Wharf at Fort Pickens" is found in the files of the Florida Unit, Gulf Islands NS.

129. Ibid.; Humphreys to Prime, April 1, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer.

1869, he proposed to build a fence and plant a hedge at the foot of the glacis, and continue maintenance of the earthen slopes.[130]

No appropriation was asked for fiscal year 1870, as Major Prime deemed it inexpedient to program "anything that might interfere with any changes proposed by the Board of Engineers."[131]

b. Adjustments to the Interior Crests of the S.W. and N.W. Bastions

Major Prime in mid-September transmitted to the Department a tracing of the Northwest Bastion. In his covering letter, he pointed out that this drawing exhibited a difference between the interior crest and the one depicted in the plan forwarded by the Department on January 7, 1868. He presumed that the interior crest of the Northwest Bastion should be "kept at the same reference as that of the S. W. Bastion."[132]

General Humphreys, as the construction hands were about to begin work on the Northwest Bastion, answered promptly. When the terreplein and barbette platforms were "revised" by Captain Newton in 1857, the Chief Engineer wrote, it had been found that the level of the interor crest was very irregular. To correct this and provide more cover for the gunners, General Totten had seen that the crest was raised to the horizontal plane of the crest of the Southwest Bastion.

In arranging the 15-inch gun platform for the Southwest Bastion, the Department had found that to have the required cover with the crest, it was necessary to sink the top of the concrete

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130. Prime to Humphreys, July 29, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

131. Ibid.

132. Prime to Humphreys, Sept. 14, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of this drawing (Drawer 78, Sheet 60) is found in the files of the Florida Unit, Gulf Islands NS.

foundations three inches below the terreplein. This necessitated a farther three-inch raise in the crest. Such an additional three inches might be necessary on the Northwest Bastion.[133]

c. Closing Down the Project

On October 16, 1868, Major Prime notified the Department that since beginning work in March expenditures on repair of the fort, "including preparation of S.W. Bastion for 15 in. Gun Platform," totaled in excess of $23,300. This exceeded the authorized allotment by $2,301. To cover this deficit and complete the approved program, he requested an additional allotment of $5,000 from "Contingencies of Fortifications."

Part of the overage, Prime explained, would be refunded by the Ordnance Department, because it had been expended in mounting the 15-inch Rodman on the Tower Bastion.[134]

Chief Engineer Humphreys, because of heavy demands from other areas, was unable to allot any funds from "Contingencies" beyond the $2,300 already obligated. Major Prime accordingly laid off his hands and closed down the project. In the four months since July 1, the men had completed the wharf; mounted the Tower Bastion 15-inch Rodman; built shot beds; made general repairs; extended and repaired the mule railway; taken down the breast-height wall of the Southwest Bastion, removed four gun platforms and their foundations, laid new brickwork, and built a ramp preparatory to laying the 15-inch platform; and whitewashed the quarters.[135]

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133. Humphreys to Prime, Oct. 2, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer.

134. Prime to Humphreys, Oct. 16, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

135. Damrell to Humphreys, Annual Report for FY 1869, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives During the 1st Session of the 41st Congress (Washington, 1870), Serial 1413, Vol. 2, pt. 2, p. 17.

6. Additional Plans of the Fort are Prepared

On March 5, 1868, Chief Engineer Humphreys called on his superintending engineers to provide the Department with drawings of each of the permanent defenses for which they were responsible. Sheet No. 1 was to contain a map with a scale of one inch to fifty feet, with "the horizontal curves of the ground on which would be established the trace and outlines of the works, including all dependent batteries." Sheet No. 2 was to exhibit a plan of the works, at a scale of one inch to twenty-five feet, and if need be to contain delineations of such portions of the works as the casemate tiers, scarp, counterscarp, galleries, etc., as might better the principal plan, if included thereon. Sheet No. 3 was to include sections and profiles, scaled one inch to ten feet, sufficient to exhibit general construction details.

A tracing of each of the aforementioned drawings was to be forwarded to the Department, but not at the same time as the original.

Any and all drawings, belonging to the fortifications, exhibiting the subject details or the manner in which the defenses had been built or were to be constructed, copies of which were not already on file at Engineer Headquarters, were to be transmitted as soon as practicable. To make the records "more perfect," it was General Humphreys' desire that original drawings be forwarded and tracings retained for use at the works.[136]

Major Prime, responding to the Department's Circular, reported that there were in the files these drawings: (a) "Plan of Fort Pickens" no date, no sections, construction lines, etc., for magistral--scale 50' to 1 inch--gives horizontal curves, 3' apart"; (b) "Details of S.W. Bastion--for 15" Gun platform, Washington 7 Jan. 1868"; (c) "Part of S.W. Bastion & South Curtain--Washington Jan. 3, 1868"; (d) "Military Reserves--Santa Rosa Island by order of President Aug. 30, 1857";

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136. Humphreys to Prime, March 5, 1868, NA, RG 77, Circulars and Office Memoranda, 1861-1871.

(e) "A sketch showing the modification of parapet, parade wall, etc., on the curtain of the S.W. front no date"; (f) "Traverses for the protection of the doors of Magazines by S.B. Haggart, by direction of J.C. Palfrey... March 8, 1864"; (g) "Fort Pickens Armament, February 6, 1865"; (h) Sketch showing position of the Barbette guns on curtain of S.W. Front, "with details of gun platforms, Washington, October 26, 1864"; (i) "Plans & Sections, showing alterations in S.W. Curtain according to Dept. tracing January 31, 1865"; (j) "Plan of Masonry around door of magazine--in Bastion A [sic] Fort Pickens, scale 5' to 1-inch, no date"; (k) "Measurement for a flagging revetment of earthen parapet at Fort Pickens, Fla., scale 30 Ft. & 10 ft. to one inch Sept. 1864"; and (l) "Sketch of S.W. Bastion, showing the position of its Barbette guns the modification of parapet, etc."

The drawings on hand, Prime explained, gave sections of all those portions of the fort which had been "remodelled," but sections of other parts would have to be obtained by on-site measurement. Changes to the terrain beyond the glacis did not seem of sufficient importance to warrant a new survey, although the only topographical map in the files was undated. He recommended a survey of the Santa Rosa Island shoreline, because there had been marked accretions west of the fort.[137]

General Humphreys on March 30 explained that the only drawings pertaining to the reservation required by the Department were: (a) Topographical Map of Warrington and Vicinity; (b) Military Reserve on Ship Island; and (c) Topographical Sketch of Ship Island.[138]

Responding to the Department's letter of March 30, Prime explained that there would be delays in furnishing the required drawings not on hand. He had been disappointed in the work of his young

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137. Prime to Humphreys, March 13, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

138. Humphreys to Prime, March 30, 1868, NA, RG 77, Ltrs. Sent, Chief Engineer.

draftsman, and had been unable to employ "the services of the one in New Orleans" recommended by Captain McAlester.

He was embarrassed to report an error in the list of plans submitted in mid-March. The drawing listed as "Military Reserves--Santa Rosa Island" had been found on review to be "Military Reserves of Horn Island." The Horn Island plan, he explained, had been filed in the drawer with the Pensacola Harbor drawings, and he had not noticed the legend until it was traced.[139]

C.J. Lorigan, the civil engineer and draftsman employed by Major Prime, by November 1868 had completed four tracings of Fort Pickens. The tracings (a) "Fort Pickens, Fla., Sections and Elevations"; (b) "Fort Pickens, Santa Rosa Island, Florida, 'Barbette'"; and (c) "Fort Pickens, Horizontal Section Through Embrasures," were transmitted to the Department on November 26.[140]

7. Major Prime's Final Months on the Gulf Frontier

a. Prime Pares His Budget

The 3d Session of the 40th Congress, meeting in the winter of 1868-69, refused to make an appropriation for construction of fortifications. The only monies to fund operations of the Department on the nation's coastal defenses for fiscal year 1870 would be that allotted by the Chief Engineer from the general appropriation for care and preservation of fortifications and contingencies. To enable him to evaluate needs, before making any allotments for the next fiscal year, Chief Engineer Humphreys on May 1, 1869, called on his project engineers for estimates

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139. Prime to Humphreys, May 19, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer. The draftsman-surveyor was paid $3 per day. On September 1, 1868, Major Prime, satisfied with his work at Fort Pickens, raised his salary to $125 per month. Prime to Humphreys, Aug. 28, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer.

140. Prime to Humphreys, Nov. 26, 1868, NA, RG 77, Ltrs. Recd., Chief Engineer. Copies of the subject drawings are on file at the Florida Unit, Gulf Islands NS.

of expenditures needed for maintenance of the defenses under their supervision in the period May 1, 1869-June 30, 1870.[141]

On May 11 Major Prime reported that for the final two months of the fiscal year he needed for Fort Pickens $140--$60 for sundries and $40 per month for pay of the fort keeper. To fund operations of his office, during these two months, $400 was required. This item was to be charged against all the works for which he was responsible--Forts Pickens, Barrancas, McRee, Morgan, and Gaines, and the fort on Ship Island.

In fiscal year 1870, he proposed to limit disbursements at Fort Pickens to such as "may be required for preservation of slopes, cutting grass, weeding, etc.," and such further operations as may be ordered for "continuation of work commenced" on the 15-inch gun platforms.

For preservation and protection of the fort in fiscal year 1870, there must be budgeted $40 per month for pay of the keeper and cost of his rations. In addition to the fort keepers, stationed at all the works except Fort Barrancas, Prime employed in his office one clerk at $125 per month and an overseer at Fort McRee. If operations were completely shutdown during the year, the clerk could be laid off.[142]

b. Major Prime Takes a Furlough

Before Major Prime learned what his allotment would be in the forthcoming fiscal year, he received a leave of absence on May 15. His replacement was Capt. Andrew M. Damrell. A native of Massachusetts, Damrell had graduated No. 12 in the Class of 1864 from

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141. Humphreys to Prime, May 1, 1869, NA, RG 77, Ltrs. Sent, Chief Engineer.

142. Prime to Humphreys, May 11, 1869, NA, RG 77, Ltrs. Recd., Chief Engineer.

the U.S. Military Academy. Commissioned a 1st lieutenant, he was assigned to duty as an engineer with the Army of the Cumberland. He emerged from the war a brevet major. On August 8, 1865, Damrell was ordered to Willetts Point, New York, and on July 2, 1866, was named assistant engineer for construction of the fort at Sandy Hook. Fourteen months later, he was ordered to West Point as commander of the Engineer Detachment and instructor in Practical Military Engineering. On October 26, 1868, Captain Damrell had reported to Major Prime as his assistant.[143]

On July 17, 1869, the Department notified its Engineers that, as the appropriation for "Contingencies" was very much reduced, they, hereinafter, where appropriate, would charge maintenance and protection projects to the appropriation for "Preservation." Remittances already authorized would be made upon requisition.[144]

Captain Damrell, not understanding what was desired, inquired, do the funds turned over to me by Major Prime "belong to 'specific appropriation' for the Works?" He also wished to know whether he would continue to make "expenditures from amount remaining on hand for payment to Fort Keepers, etc.," or if he should apply for remittances from the appropriation for "preservation and necessary repairs for the fortifications" to fund this activity.[145]

Writing Captain Damrell, Chief Engineer Humphreys explained that for a number of years there had been no "specific appropriation" for any of the works under your supervision, except for the fort on Ship Island. The funds received from Major Prime were from the general appropriations for "Contingencies of Fortifications." The

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143. Cullum, Biographical Register, Vol. II, p. 603.

144. Humphreys to Damrell, July 17, 1869, NA, RG 77, Ltrs. Sent, Chief Engineer.

145. Damrell to Humphreys, July 30, 1869, NA, RG 77, Ltrs. Recd., Chief Engineer.

object of the July 17 Circular was to spare the appropriation for "Contingencies" whenever that for "Repairs, etc.," could be applied. It was not intended that funds already drawn from the former appropriation be returned to the Treasury or their expenditure for legitimate projects stopped.

As Prime had been allotted funds from "Contingencies," Damrell would, unless otherwise instructed, continue to utilize them until they were exhausted. In the future, in making estimates, he would include sufficient information to enable the Department to judge whether the funds should be allocated from the appropriations for "Contingencies" or those for "Preservation and Repair of Fortifications," or both.[146]

c. Captain Damrell Submits a Program

Captain Damrell, with Major Prime on leave, prepared the annual report for fiscal year 1869. The fort's condition, he noted, was not good. The earthen slopes were overgrown with weeds and eroded in several places. A number of casemates leaked, and the revetment of the breast-height wall was missing at several points. There was an accumulation of rubbish in many of the casemates. The brickwork of the casemates' interior was in "bad order," while the quarters' woodwork was decayed. One cistern leaked badly, and the armament was in bad order.

To improve the situation, Damrell proposed in fiscal year 1870 to: (a) repair the cistern; (b) sod and weed the earthen slopes; (c) remove rubbish from the casemates; (d) seal and stop the leakage in the casemate arches; and (e) make general repairs to quarters.

Twenty thousand dollars was needed to fund these projects. The financially-strapped Department, however, did not have

146. Humphreys to Damrell, August 12, 1869, NA, RG 77, Ltrs. Sent, Chief Engineer.

any money to allot for rehabilitation of Fort Pickens beyond funding the fort keeper's salary and for limited maintenance work.[147]

H. Major Reese's 10 Months as Engineer in Charge

1. Reese Returns to the Gulf Coast

Major Prime, while on leave, was reassigned. He would not return to the Gulf Frontier. His replacement was Maj. Chauncey B. Reese, no stranger to Fort Pickens and the area. A New Yorker and classmate of Captain Merrill, Reese had graduated from the U.S. Military Academy as No. 4 in the Class of 1859. Commissioned a brevet 2d lieutenant of Engineers, Reese was ordered to Alabama as assistant engineer at Fort Gaines. From January to November 1861, he served at Forts Jefferson and Pickens. Reese, on returning to Washington from Florida, fought with the Army of the Potomac until the summer of 1863, first as commander of an engineer company then a battalion. After a brief tour of duty on the Sea Islands, near Charleston, Reese on April 29, 1864, became Chief Engineer, Army of the Tennessee. Reese came out of the war a brevet brigadier general of volunteers and a major of Engineers.[148]

Major Reese reached Mobile on November 19, 1869, and relieved Captain Damrell as engineer in charge of the defenses of Pensacola and Mobile bays and of the fort on Ship Island. Damrell reverted to his former billet as assistant engineer for these defenses.

2. Reese Makes the 1870 Annual Report

In fiscal year 1870 the only funds ($1,277) spent by the Department at Pickens were for the fort keeper and the occasional hire of "a couple of laborers to care for the public property."

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147. Damrell to Humphreys, Annual Report for F.Y. 1869, NA, RG 77, Ltrs. Recd., Chief Engineer.

148. Cullum, Biographical Register, Vol. II, pp. 482-83.

Major Reese, when he made his annual report for fiscal year 1870, observed that the fort was in "fair condition, although many repairs of a general character are needed." Operations had been suspended since October 1868 while awaiting a decision by the Board of Engineers for Fortifications "as to what modifications shall be made to strengthen the work, and adapt it to a heavier ordnance than it is prepared to receive."

Ordnance Department personnel had dismounted the smaller caliber cannon and had surveyed and burned their wooden carriages. This left mounted on the fort's barbette tier one 15-inch Rodman, nine 10-inch columbiads, and three 10-inch siege mortars. In the casemates sixteen 24-pounder flanking howitzers were still in position.[149]

To fund operations at Fort Pickens in fiscal year 1871, Chief Engineer Humphreys allotted from the appropriation for "Contingencies" $1,800.[150] Major Reese received in mid-August 1870 authorization to spend an additional sum from "Contingencies," not to exceed $120, for purchase of a small boat for the keeper's convenience.[151]

3. Major Reese Dies

On September 23, 1870, 33-year-old Major Reese died of yellow fever at Mobile. Once again, Captain Damrell took charge of the office pending selecting and arrival of Reese's replacement.

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149. Reese to Humphreys, Annual Report of Operations at Fort Pickens for F.Y. 1870, July 30, 1870, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives for the 3d Session,41st Congress (Washington, 1871), Serial 1447, Vol. 2, pt. 2, p. 25.

150. Humphreys to Reese, Sept. 17, 1870, NA, RG 77, Ltrs. Sent, Chief Engineer.

151. Casey to Reese, Aug. 16, 1870, NA, RG 77, Ltrs. Sent, Chief Engineer.

XIV. FIFTEEN RELATIVE PEACEFUL YEARS: 1870-1885

A. Colonel Simpson as Superintending Engineer: 1870-72

1. Maintenance and Protection in Fiscal Year 1871

Chief Engineer Humphreys selected one of the Corps' senior officers as Major Reese's replacement. The new superintending engineer for the defenses of Pensacola and Mobile bays and the fort on Ship Island would be Lt. Col. James H. Simpson. He had graduated from the U.S. Military Academy as No. 18 in the Class of 1832. Commissioned a brevet 2d lieutenant, he was assigned to the 3d Artillery. After service in the Second Seminole War, Simpson in July 1837 was commissioned a 1st lieutenant in the Topographical Engineers. Simpson on August 12, 1861, was commissioned colonel of the 4th New Jersey Volunteer Infantry, and led his regiment in McClellan's Peninsula and Seven Days' Campaigns. Simpson resigned his volunteer commission and returned to duty with the Engineers in August 1862. On June 1, 1863, he was promoted lieutenant colonel of Engineers.[1]

There would be little work on the fortifications in fiscal year 1871, Colonel Simpson's first on the Gulf Coast. On September 17, 1870, five days before Major Reese's death, the Department had allotted from "Contingencies" $1,800 for maintenance and protection of Fort Pickens.[2]

Consequently, only a few minor projects were undertaken during the next nine months. Nine of the 10-inch columbiads were dismounted, and necessary repairs made to the wharf, storehouses, and stables. A fort keeper was employed by Colonel Simpson to look after and care for the public property.[3]

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1. Cullum, Biographical Register. Vol. I, pp. 405-06.

2. Humphreys to Reese, Sept. 17, 1870, NA, RG 77, Ltrs. Sent, Chief Engineer.

3. Simpson to Humphreys, Annual Report for Fiscal Year 1871, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives, During the 2d Session of the 42d Congress (Washington, 1872), Serial 1504, Vol. 2, p. 21.

2. Maintenance and Protection in Fiscal Year 1872

On March 10, 1871, the Department notified Colonel Simpson that President U. S. Grant had signed into law on the 3d an act appropriating for "Contingencies of Fortifications" $250,000. He would submit, as soon as practicable, an estimate of the sum needed from this appropriation in fiscal year 1872 for each of the "defensive works" under his supervision.[4]

Colonel Simpson, after reviewing the bleak financial situation and condition of the Gulf Frontier forts, wrote Chief Engineer Humphreys that in fiscal year 1872 he needed at Forts Pickens and Barrancas for the keeper's salary, for repairs, and for their proportion of the pay of his clerk and messenger $1,800.[5]

On May 17 Chief Engineer Humphreys approved the requested allotment.[6] These funds were employed to pay the fort keeper to look after the fort and engineer property. One minor maintenance project was undertaken. It consisted of repair of the doors of the Southeast Bastion magazine.[7]

3. Maintenance and Protection in Fiscal Year 1873

a. General Humphreys Makes an Allotment

Colonel Simpson was advised on June 22, 1872, that President Grant had signed into law an act passed by Congress appropriating $250,000 for "Contingencies of Fortifications." According to

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4. Casey to Simpson, March 22, 1871, NA, RG 77, Ltrs. Sent, Chief Engineer.

5. Simpson to Humphreys, May 1, 1871, NA, RG 77, Ltrs. Recd., Chief Engineer.

6. Humphreys to Simpson, May 17, 1871, NA, RG 77, Ltrs. Sent, Chief Engineer. There had been expended on Fort Pickens in fiscal year 1871 in Contingency Funds $1,355.

7. Simpson to Humphreys, July 31, 1872, NA, RG 77, Ltrs. Recd., Chief Engineer. During the 12 months, the Department had spent from "Contingencies" at Fort Pickens $1,682.

procedures, Simpson was to submit, as early as feasible, an estimate of sums needed from this appropriation in fiscal year 1873 for the defensive works for which he was responsible.[8]

On July 27 Colonel Simpson wrote the Department that for Forts Pickens and Barrancas, during the subject fiscal year, he needed $1,800 for the keeper's salary, their proportion of the clerk's and messenger's pay, and ordinary repairs.[9]

The Department on August 8 telegraphed Colonel Simpson that he had been allotted from "Contingencies" $1,100 for Fort Pickens and $1,200 for Fort Barrancas. This sum included $460 authorized the previous day for securing the ordnance stores against theft.10

b. Providing for Security of the Ordnance Storerooms

On July 31 Colonel Simpson had notified the Chief Engineer that the officer commanding at Barrancas Barracks had warned that the ordnance property at Forts Pickens and Barrancas was liable to be stolen and there had already been thefts. To curb this, it had been recommended that at Fort Barrancas four heavy doors be made and hung to close the entrances to the scarp gallery, and at Fort Pickens a partition be erected to shut off the casemates used as storerooms and close the embrasures. According to an estimate by Augustus Jones, who was familiar with the structures, cost of the Barrancas doors would be $300 and the Fort Pickens work $160-$175 for the partition and door and $85 for repairs to the embrasures.

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8. Casey to Simpson, June 22, 1872, NA, RG 77, Ltrs. Sent, Chief Engineer.

9. Simpson to Humphreys, July 27, 1872, NA, RG 77, Ltrs. Recd., Chief Engineer.

10. Casey to Simpson, Aug. 8, 1872, NA, RG 77, Ltrs. Sent, Chief Engineer.

Colonel Simpson, on referring the subject to the Chief Engineer, had suggested that this work might be the responsibility of the Quartermaster or Ordnance Departments, rather than the Corps of Engineers.[11]

General Humphreys, however, had determined that the project should be handled by his Department, and included an allotment for this work in the current fiscal year.[12]

c. Colonel Simpson Leaves and Captain Damrell Makes the Annual Report

On January 1, 1873, Colonel Simpson was relieved as superintending engineer by Lt. Col. W.F. Raynolds. Raynolds, in turn, was replaced by the office's long-time assistant Captain Damrell on April 7. Damrell therefore had the task of drafting the annual report for fiscal year 1873, accounting for expenditure of $1,345 in Departmental funds.

During the past 12 months, Captain Damrell informed the Chief Engineer: a partition, with a door, had been positioned between two Fort Pickens casemates to outfit an ordnance storeroom, while several embrasure shutters had been fashioned and hung and several others repaired. Grass and weeds around the Engineer buildings had been cut. The fort keeper had earned his pay by guarding and keeping in order the engineer property.

During the year no guns nor mortars had been received or mounted.[13]

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11. Simpson to Humphreys, July 31, 1872, NA, RG 77, Ltrs. Recd., Chief Engineer.

12. Humphreys to Simpson, Aug. 7, 1872, NA, RG 77, Ltrs. Sent, Chief Engineer.

13. Damrell to Humphreys, July 1873, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives for the 1st Session, 43d Congress (Washington, 1874), Serial 1598, Vol. 2, p. 20.

d. Maintenance of the Engineer and Quartermaster Buildings

Besides the masonry fort, there were at Fort Pickens a number of wooden structures. The Engineer Department was responsible for maintenance of certain of these and the Quartermaster General for the remainder. In the post-Civil War years, these two Departments were financially-strapped, and there was little or no money available for upkeep of these structures. At posts, such as Fort Pickens which were not garrisoned, there were no troops for fatigue parties for housekeeping projects and police details.

In 1870 Major Reese had succeeded in transferring one of the buildings for which the Engineers were charged to the Lighthouse Board as a buoy depot. The Lighthouse people ran a spur from the existing mule railway alongside the transferred structure, so the top of the car came about a foot above the floor. Double doors were installed and the floors braced and reinforced. Cost of this work was about $300.00.

The rehabilitation of this structure and construction of the spur eliminated need for a crane to handle the buoys.[14]

Lt. James B. Burbank, the Quartermaster at Barrancas Barracks, in the summer of 1872 sought to have quarters erected for the Fort Pickens ordnance-sergeant. The sergeant and his family were living in one of the casemate quarters. These, Burbank pointed out, from age, severe service during the war, and "total neglect" since, were damp and unhealthy to a degree to make them unfit for habitation. There were cracks in the masonry which admitted drainage from the parapets, bringing with it large quantities of sand. After a recent downpour two to three bushels of sand were found in one room.

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14. Reese to Lighthouse Board, Jan. 23, 1870, NA, RG 92, Consolidated Correspondence File.

Ventilation was poor. The sergeant's two immediate predecessors had been sick for long periods.

Burbank proposed to erect a quarters on the high ground in front of the fort, which would insure ventilation, sunlight, and a tolerable degree of comfort, "such as is desired by one living at . . . [an] isolated post."[15]

Commenting on Burbank's proposal, the commanding officer of the Department of the Gulf, Col. William H. Emory, informed the War Department that at Fort Pickens there were a number of structures built during the war which had been transferred to the Lighthouse Board. One of these, he believed, could be returned to the War Department for quarters for the ordnance-sergeant. This solution would cost little, and provide the sergeant, who was "old and faithful," with satisfactory housing.[16]

On August 22 Secretary of War William W. Belknap authorized relocation of one of the structures identified by Colonel Emory to the Fort Pickens parade, provided it could be done at a reasonable expense, which must be funded by the Quartermaster Department.[17]

But, on investigating the subject, Post Quartermaster Burbank found the cost of dismantling and relocating a lighthouse building would be as expensive as erecting a new structure. This was because very little of the materials could be salvaged.

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15. Burbank to Hughes, July 26, 1872, NA, RG 92, Consolidated Correspondence File. W.B. Hughes was Quartermaster, Department of the Gulf.

16. Emory to Quartermaster General, Aug. 12, 1872, NA, RG 92, Consolidated Correspondence File.

17. Belknap to Emory, Aug. 22, 1872, NA, RG 92, Consolidated Correspondence File.

He accordingly prepared and forwarded to Colonel Emory two plans and specifications for an appropriate quarters in this climate. Burbank personally favored the "Anson plan" as it cost less. The building should be placed on "high substantial brick piers," because of the flies and snakes, and the rooms sealed with tongue and groove dressed lumber, rather than cheap plaster which would not withstand moisture.[18]

The Chief Quartermaster, Department of the Gulf, after reviewing the correspondence, notified Quartermaster General Meigs that the only building outside the fort available for moving would have to be dismantled. Because of the cost, he agreed with Lieutenant Burbank that funds should be allotted for construction of an "Anson" plan quarters.[19]

No money was available and nothing was done in fiscal year 1873 to provide improved quarters for the ordnance-sergeant.

B. Captain Damrell's First Two Years as Superintending Engineer

1. Damrell's Initiation to Bureaucratic Procedures

On March 22, 1873, Major Raynolds, three weeks before he was relieved, informed General Humphreys that there was "no special work" projected at the Pensacola Bay forts. The only expenditures anticipated in fiscal year 1874 were for pay of the fort keepers and such incidental cleaning up and light repairs, as may be required. To provide for maintenance and protection of the five works, for which the Mobile office was responsible (Forts Pickens, Barrancas, Morgan, and Gaines, and the fort on Ship Island), Raynolds estimated that $1,600 would be the average sum required for each.

As it was impossible to anticipate the extent of repairs which might be required at each of the forts, Major Raynolds

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18. Post Quartermaster to Chief Quartermaster, Department of the Gulf, March 18, 1873, NA, RG 92, Consolidated Correspondence File.

19. Hughes to Quartermaster General, March 27, 1873, NA, RG 92, Consolidated Correspondence File.

recommended that the amount asked for be allotted in gross, or $8,000 for the five.[20]

Major Raynolds had transferred by the time Chief Engineer Humphreys replied. As Fort Barrancas was garrisoned, he informed Captain Damrell, Raynolds' successor, the Department questioned making an allotment from the "Contingency Appropriation" for its maintenance in fiscal year 1874.[21]

Echoing his predecessor, Captain Damrell asked that the allotment for the fortifications, under his supervision, be "a general one, without specifying a particular amount for each." If this were impossible, and it were deemed advisable to exclude Fort Barrancas, he urged that an additional sum be allotted for Fort Pickens, to be applied to Fort Barrancas for any repairs or work that may be needed during the next 12 months and called for by the post commander as had occurred in fiscal year 1873.[22]

On June 2 the Department replied. It could not accept Damrell's reasoning, as Chief Engineer Humphreys, desirous of economizing, believed that where posts were garrisoned the troops should watch the government property belonging to all departments. Damrell would review the subject, reporting "whether there are any circumstances that will prevent this oversight of the property by the garrison," which would compell the Department to have a watchman to prevent loss of its property. If he considered a watchman necessary, he was to report the sum needed for his wages, along with the amount required for general

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20. Raynolds to Humphreys, March 22, 1873, NA, RG 77, Ltrs. Recd., Chief Engineer.

21. Casey to Damrell, May 23, 1874, NA, RG 77, Ltrs. Sent, Chief Engineer.

22. Damrell to Humphreys, May 27, 1874, NA, RG 77, Ltrs. Recd., Chief Engineer.

repairs. In addition, he would give the monetary value of the subject property, and his opinion as to "whether it may not be better economy to sell or transfer it to some other engineer work or to some other Department of the Army."[23]

Captain Damrell dropped the subject, thereby tacitly accepting the Department's position as to the employment of fort keepers.

The Department in mid-July asked Damrell to explain why his estimate of funds for contingencies was submitted for the entire year, rather than in monthly installments as needed to fund operations of his office.[24]

In explanation, Captain Damrell pointed out that he had merely followed the form used by Colonel Simpson, which had been approved by the Department on October 4, 1872.[25]

Replying, the Department gave no explanation of the reason for the change in policy, but asked Damrell to forward estimates for fortifications under his supervision for which allotments had been made from "Contingencies" for one month, at a time, stating the amount required for each defense. If it were necessary to make an estimate for a period in excess of one month, reasons must be given.[26]

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23. Casey to Damrell, June 2, 1873, NA, RG 77, Ltrs. Sent, Chief Engineer.

24. Casey to Damrell, July 22, 1873, NA, RG 77, Ltrs. Sent, Chief Engineer.

25. Damrell to Humphreys, July 22, 1873, NA, RG 77, Ltrs. Recd., Chief Engineer.

26. Humphreys to Damrell, July 25, 1873, NA, RG 77, Ltrs. Sent, Chief Engineer.

2. The "Virginius" Crisis Causes the United States to Look to its Seacoast Defenses

In the autumn of 1873 there was a crisis that threatened war between the United States and Spain. On October 31 the United States merchantman Virginius was intercepted on the high seas off the coast of Jamaica by the Spanish gunboat Tornado. Virginius was suspected by the Spanish government of carrying arms and men to assist Cuban forces that had rebelled against the mother country. Virginius was brought into a Cuban port, and her American captain, 36 crewmen, and 16 passengers summarily executed. The victims included a number of United States citizens. Public indignation in the United States caused the Grant administration to prepare for war to avenge the massacre and free Cuba from Spanish tyranny.

On November 21 the War Department alerted Captain Damrell, along with other Gulf and Atlantic coast superintendeing engineers, "to use all possible dispatch in preparing all your works, so as to be able to place every available gun now at them in the best positions for defense from sea-attack." It was believed that the forts contained more platforms than there were guns ready to mount. If, however, this was not the case, they were to proceed to position the necessary platforms, and, if after doing so they still had unexpended funds on hand, they were to continue "to strengthen and increase the extent of the defenses in accordance with approved plans."

They were to report immediately: (a) the amount of funds available for each work; (b) the additional sum required to finish and put down needed platforms for the "disposable guns at your works"; and (c) the additional amount needed for "erection and preparation of such positions" as you deem "indispensible for an efficient defense."

Damrell, and his fellow engineers, were authorized to employ "wooden platforms or any others that can be procured in the shortest time."[27]

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27. Casey to Damrell, Nov. 21, 1873, NA, RG 77, Ltrs. Sent, Chief Engineer.

Not receiving a prompt reply from Damrell as to the sum required to place the five works under his supervision in condition to resist a naval attack, Chief Engineer Humphreys telegraphed on December 1, "How much will you want?"[28]

On December 3 Captain Damrell replied, "at least $60,000."[29]

Captain Damrell meanwhile had replied to the Department's November 21 letter. He reported that for the works under his supervision he had on hand $5,513, of which $281 was in the Fort Pickens account. To finish and put down wooden platforms for the "disposable guns" at the forts, he needed $53,400, of which $22,200 should be programmed for Fort Pickens. To fund construction of fortifications deemed "indispensable for an efficient defense (including approved plans for modification and extension of old works)" required one million dollars, to be divided equally between Pensacola and Mobile bays.[30]

On December 6 Damrell was notified by the Department that he could secure needed wooden platforms from Capt. C.H. Howell at New Orleans.[31] When he checked with Captain Howell, Damrell was advised that Howell could not furnish the platforms. Informing the Department of this, Damrell announced that, if provided with the ironwork, he could have his people construct the platforms.[32]

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28. Casey to Damrell, Dec. 1, 1873, NA, RG 77, Ltrs. Sent, Chief Engineer.

29. Damrell to Humphreys, Dec. 3, 1873, NA, RG 77, Ltrs. Recd., Chief Engineer.

30. Damrell to Humphreys, Nov. 28, 1873, NA, RG 77, Ltrs. Recd., Chief Engineer.

31. Casey to Damrell, Dec. 6, 1873, NA, RG 77, Ltrs. Sent, Chief Engineer.

32. Damrell to Humphreys, Dec. 8, 1873, NA, RG 77, Ltrs. Recd., Chief Engineer.

General Humphreys replied immediately. On December 10 he telegraphed that Captain Howell would soon receive from Lt. Col. John Newton of the New York Agency three centre-pintle and 37 front-pintle platforms for 15-inch guns. Nine of these would be shipped to New Orleans on the 17th, and, thereafter, nine per week until the entire number had been sent.

Damrell was to contact Captain Howell, as the New Orleans defenses only required ten of the platforms and ascertain "if he can let you have the kinds of platforms you wish for your 15-inch gun carriages." If Howell could not, Damrell was to secure necessary platforms on his own. If irons did not come with the platforms, he was to order them from Colonel Newton. All other platforms needed for his five forts, Damrell must obtain on his own.

To fund the program at Damrell's forts, General Humphreys had allotted $30,000, one-half the sum requested, from "contingencies."[33]

Work which was commenced on receipt of General Humphreys' urgent November 21 communication ceased and the hands were laid off in early January 1874, upon receipt of a telegram from the Department. The Comptroller of the Treasury had ruled, Damrell was informed, that the $30,000 allotted from "Contingencies" on December 10 was no longer available. If he were funding programs from this sum, he was to cease work at once, paying off liabilities incurred up to the date of receipt of this January 6 order with funds from the subject allotment.[34]

The reason for the abrupt cutback in the program was a peaceful resolution of the Virginius crisis. It was established that

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33. Casey to Damrell, Dec. 10, 1873, NA, RG 77, Ltrs. Sent, Chief Engineer.

34. Casey to Damrell, Jan. 6, 1874, NA, RG 77, Ltrs. Sent, Chief Engineer.

Virginius was owned by Cuban revolutionaries and was illegally registered; that she had been carrying arms to Cuba; and was fradulently flying the "stars and stripes." Although Spain refused to punish her officers who had carried out the seizure or salute the United States flag, she released the Virginius survivors and paid an indemnity of $80,000 to the families of the American victims.

During the six weeks that the crisis had been at its height, a number of projects had been undertaken at Pickens and some completed. The cistern in the Southwest Bastion, which had been leaking for years, was fixed. Repairs were also made to two outer and six inner magazine doors and to two postern doors, as well as the engineer storehouses, quarters, and kitchen, which had been reoccupied for a brief period.

Platforms Nos. 15 and 16 had been taken up, and relaid (with high transome stones, front-pintle) for 10-inch Rodmans, and were ready to be armed. Platforms Nos. 19, 20, 23, and 24 had been taken up and relaid (with low traverse stones, front-pintle) for 100-pounder Parrotts and were ready to receive their cannon. Platforms Nos. 57, 59, and 61 had been taken up and were nearly relaid (with low traverse stones, front-pintle) for 300-pounder Parrotts. Platforms Nos. 1, 2, 32-50, and 80-84 had been taken up, preparatory to constructing new platforms for the ordnance on hand.

Fifty wooden embrasure shutters had been built and installed. The old unserviceable railroad track, leading from the wharf into the fort, was taken up, and lumber purchased and stockpiled for its reconstruction.

All the 24-pounder flank howitzers (16) were dismounted by the troops in March and their carriages broken up. There were, accordingly, mounted in Fort Pickens on June 30, 1874, only three guns and mortars -- the 15-inch Rodman with broken carriage on the Tower

Bastion (platform No. 31) and two 10-inch siege mortars on platforms Nos. 87 and 88. The mortar beds were rotten and unserviceable. One 10-inch siege mortar had been dismounted during the year.[35]

3. Yellow Fever Sends the Troops Back to Fort Pickens for Nine Weeks

Yellow fever ravaged the Gulf Coast in 1873. Batteries A, F, and L, 1st Artillery, commanded by Maj. John M. Brannan, garrisoned Barrancas Barracks in September when the fever struck Pensacola. On the 25th three cases were reported to Dr. George M. Sternberg -- one a prisoner in the guardhouse, another a soldier in the barracks, and the third a patient in the hospital. Major Brannan ordered his command across the bay to Fort Pickens, where it was isolated. Brannan, Dr. Sternberg, and a small detachment remained at the post to protect the public property.

The fever was confined to the barracks, and "though for want of fresh" victims it was severe. It lasted into November, and out of the small detachment which remained on the mainland there were 18 cases and six deaths.

The last victim was felled at a season of the year, when, according to the doctors, all danger had passed. There had been no cases for many days, and there had been several frosts. Major Brannan, therefore, had deemed it safe to withdraw his battalion from Fort Pickens. Orders to this effect had been issued, when Ordnance-Sergeant Paxon at the Barrancas was stricken and died on November 12. This postponed

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35. Annual Report, Fort Pickens, Fiscal Year 1874, & Damrell to Humphreys, April 5, 1874, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives for the 2d Session, 43d Congress (Washington, 1875), Serial 1636, Vol. 2, pt. 2, p. 24. The 24-pounder flank howitzers had been dismounted from positions Nos. 4, 6, 10, 32, 38, 39, 60, 61, 66, 75, 77, 78, 80, 84, 85, and 86.

the return of the garrison from Santa Rosa Island until the end of the month.[36]

4. Maintenance and Protection in Fiscal Year 1875

On May 18, 1874, Captain Damrell submitted estimates of the sums from the appropriation for "contingencies" required to fund operations for fiscal year 1875 at each of the defense works under his charge. For salary of the keeper at Forts Pickens and Barrancas; their share of the pay of the clerk and messenger for the Mobile office; and ordinary repairs he needed $1,800. He also asked for $3,000 to repair the Fort Pickens wharf.[37]

When he made his allotments, Chief Engineer Humphreys budgeted $1,800 for Forts Pickens and Barrancas for pay of the keeper, etc. No money was provided for work on the wharf.[38]

Accordingly, operations were confined during the year ending June 30, 1875, to care and preservation of the public property. When he submitted his annual report for fiscal year 1875, Captain Damrell informed the Department that Fort Pickens was "in about the same condition as at the date of the last annual report."[39]

5. Yellow Fever Returns the 1st Artillery to Fort Pickens

In September 1874 yellow fever again struck the Pensacola area. There was posted at Barrancas Barracks at this time Batteries A, F, L, and M, 1st Artillery. On the 7th the first case was reported at

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36. Langdon to Haskin, Dec. 5, 1878, found in 1st Regiment of Artillery, pp. 382-83.

37. Damrell to Humphreys, May 18, 1875, NA, RG 77, Ltrs. Recd., Chief Engineer.

38. Casey to Damrell, June 12, 1874, NA, RG 77, Ltrs. Sent, Chief Engineer.

39. Annual Report, Fort Pickens, Fiscal Year 1875, NA, RG 77, Ltrs. Recd., Chief Engineer. During the year the Department had expended on the fort $1,605.

the navy yard. As soon as this was learned at the barracks, the troops, with the exception of Maj. J.M. Brannan, Capt. Loomis Langdon, Dr. George M. Sternberg, and a detachment, were evacuated and sent across the bay to Fort Pickens. On the 11th Lt. James M. Ingalls was brought back from Santa Rosa Island, sick with the fever, which he was presumed to have contracted a few nights before, while walking in the vicinity of the naval hospital. He was nearly a month recovering. On September 17 Batteries F, L, and M were ordered from Fort Pickens to New Orleans, in anticipation of election riots. Lt. E.K. Russell remained at Fort Pickens with Battery A.

Soon after the arrival of the battalion in New Orleans, the fever broke out there. Cold weather soon came, and none of the troops were felled. Meanwhile there was an interesting development at the Barrancas. Private Tobin of Battery A was detailed as a nurse in the hospital. On the night of November 6, after there had been several frosts, he went into Warrington and spent the night at a "low groggery." While outdoors the weather was cold, the temperature in the tavern was not permitted to drop below freezing. The next day Tobin was down with yellow fever. Battery L returned from New Orleans on November 30, and Battery A from Santa Rosa Island about the same time.[40]

C. Project for Modification of Fort Pickens

1. The "Alabama Claims" Leads the Board of Engineers to Formulate an Emergency Plan

On November 11, 1871, Chief Engineer Humphreys notified the Board of Engineers for Fortifications that he wished it to "take up, in such order and such time as the other duties entrusted to you will permit, the consideration of the modifications needed in the defense" of 14 works, including Fort Pickens. The Board was to advise the Department "of the order and the time" at which it would tour the enumerated forts. Engineer officers in charge of the subject defenses would be members of

40. Langdon to Haskin, Dec. 5, 1878, found in 1st Regiment of Artillery, p. 383; Returns from U.S. Posts, 1800-1916, NA, Microcopy M-617.

the Board, when the forts for which they were responsible were under review.[41]

The Department, on notifying Colonel Simpson of this project, directed him to expedite the deliberations of the Board by entering "upon the study of the subject, giving to it all the time and thought that can be spared from your present duties." It was desired that he be prepared, when asked, to present to the Board "projects in detail for all changes to existing works, and for any new works" that he "may consider indispensible." In this respect, he was reminded that torpedoes as a means of coastal defense were now important, as was the employment of mortar and barbette batteries.[42]

Because of the threat of war with Great Britain over the Alabama Claims, the Board of Engineers rushed to completion an emergency plan. On January 6, 1872, the Board of Engineers called on Chief Engineer Humphreys. They presented notes "setting forth the methods proposed" for placing in a "temporary condition of defense" Forts Pickens, Barrancas, McRee, Morgan, Gaines, Taylor, Jefferson, Pulaski, Moultrie, and Sumter.

Wherever likely to be employed against ironclads, the Board informed General Humphreys, 15-inch Rodmans were to be employed. To be efficient, they were to fire solid shot propelled by 100-pound powder charges.[43]

The Board pointed out that the largest class of ironclads (those drawing more than 23 feet) would be unable to pass Pensacola Bar.

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41. Casey to Board of Engineers, Nov. 11, 1871, NA, RG 77, Ltrs. Sent, Chief Engineer.

42. Casey to Simpson, Nov. 11, 1871, NA, RG 77, Ltrs. Sent, Chief Engineer.

43. Board to Humphreys, Jan. 6, 1872, NA, RG 77, Ltrs. Recd., Chief Engineer.

Currently, there was only one 15-inch Rodman mounted at Pickens, and it was emplaced in the Tower Bastion. To beef up the fort's firepower, the Board recommended emplacement of three more 15-inch shellguns in the fort. One should be positioned at the gorge of the Northwest Bastion, a second on the Southwest Bastion, and the third on the Southeast Bastion. These guns, like the one on the Tower Bastion, were to be on centre-pintle carriages, and be protected on "all sides by a parapet." The breast-height walls, in interest of economy and to speed construction, could be revetted with wood.

On the channel fronts were to be mounted, as soon as centre-pintle platforms were put down, a number of 10-inch Rodmans, and "any 100-pdr., 200-pdr. or 300-pdr. Parrotts that are, or can readily be made available." These cannon to be concentrated in three-gun groups, with sand traverses between revetted with sandbags.

There were currently emplaced in the fort three mortars, and four more on hand. The latter should be mounted "in most favorable positions, probably in the two land bastions, if they can be covered by a traverse."

There were on Santa Rosa Island no suitable guns, except the 15-inch Rodmans. The armament for a good defense, the Board reported, should not be less than 30 guns, manned by five companies of artillerists. To place Fort Pickens "in good temporary condition" for this armament would cost $30,000.[44]

The Board rejected use of electric torpedoes designed to explode on contact as too sophisticated and requiring too elaborate an apparatus to be obtained in haste. Instead, it called for electrical torpedoes to be fired from shore by an operator. They could be either

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44. Notes, Fort Pickens, Board of Engineers, Jan. 6, 1872, NA, RG 77, Ltrs. Recd., Chief Engineer.

tensional galvanic or electromagnetic. The project, in addition to the torpedoes, must include careful local arrangements for triangulation and signaling.

Minimum changes were to be 50 pounds of dynamite or gun cotton, or 200 pounds of the "best force rifle sporting powder." If gun powder were used, and because of the emergency there was insufficient time to prepare iron casings, old barrels, encased in flour barrels, filled in with roofing cement could be employed. The torpedoes were to be anchored with mushroom anchors or blocks of stone, weighing at least 500 pounds, and positioned about 25 or 30 feet below the surface.

When the object was to help protect a fort, the torpedoes were to be placed about 300 feet apart on a one-half mile circle. To close a channel, they were to be positioned about the same distance apart on one or more lines, where they could be covered by shore batteries.

Of the harbors studied, the Board was of the opinion that torpedo defenses were most needed at Pensacola, Charleston, and Key West. They might also be employed with advantage at the entrance to Mobile Bay.

The Board believed that 20 torpedoes at each of these harbors would be adequate. At $1,000 a torpedo, this would require an allotment of $60,000 for Pensacola, Key West, and Charleston.[45]

General Humphreys, after studying the Board's report, requested the Chief of Ordnance to ship to Fort Pickens six 300-pounder Parrotts, four 200-pounder Parrotts, four 100-pounder Parrotts, and six 10-inch Rodmans (or equivalent rifles). Each gun was to be accompanied by a front-pintle barbette carriage.[46]

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45. Notes, Torpedoes, Board of Engineers, Jan. 6, 1872, NA, RG 77, Ltrs. Recd., Chief Engineer.

46. Humphreys to Chief of Ordnance, Jan. 13, 1872, NA, RG 77, Ltrs. Sent, Chief Engineer.

The Ordnance Department accordingly shipped to Fort Pickens six 300-pounder and four 100-pounder Parrotts, and three 10-inch Rodmans. On June 30, 1872, there were on Santa Rosa Island five 15-inch Rodmans, four 15-inch Rodman carriages and chassis, six 300-pounder Parrotts, six 200-pounder Parrotts, four 100-pounder Parrotts, three 10-inch Rodmans, 11 8-inch siege howitzers, 16 24-pounder flank defense howitzers, four 13-inch seacoast mortars, and three 10-inch siege mortars. Of these guns and mortars, only the 16 flank defense howitzers and the 15-inch Rodman on damaged carriage on the Tower Bastion were mounted. No other platforms were in condition to receive the heavier guns on hand, and, in Colonel Simpson's opinion, "none... should be employed, until the fort is modified, involving as it will, a change of parapet and of gun platforms."[47]

The urgency soon passed and there was no need to implement the emergency plan. The dispute over the extravagant claims for indirect damages advanced by the United States before the Geneva tribunal, which threatened to scuttle the Treaty of Washington, was compromised when it was agreed to rule out the indirect damages. The American agent, on behalf of the Grant administration, consented to this, and with "great relief" word came that the suspended discussions had been resumed.

2. Board Goaded By the "Virginius" Crisis Completes its Plans

With the passing of the emergency, the Board could devote its energy to formulating plans for modification of the nation's seacoast defenses in view of lessons learned during the Civil War.

Colonel Simpson traveled to New York City in the autumn of 1872 for a meeting of the Board of Engineers. On October 21 he

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47. Simpson to Humphreys, July 31, 1872, NA, RG 77, Ltrs. Recd., Chief Engineer.

reviewed and signed the reports and plans prepared by the Board for modification of the defenses of Mobile Bay. He also announced his concurrence with the Board's views regarding the Pensacola Bay defenses. The latter report and plans, however, had not been finalized. He accordingly wrote Chief Engineer Humphreys that he had been obliged to defer signing them, and had asked that when completed they be forwarded to him at Mobile.[48]

Nothing more was heard of the modification proposal until the Virginius crisis. The threat of war with Spain caused Chief Engineer Humphreys to write Col. John G. Barnard, senior member of the Board of Engineers for Fortifications. The Board, Humphreys directed, would, at the "very earliest practicable moment, prepare projects and estimates of cost of the modification of Fort Pickens" and other works in Pensacola Harbor. These studies were to be submitted to the Department without delay.[49]

Colonel Barnard convened the Board in New York and it resumed consideration of the plans which had been for some time under discussion. Agreeing on what should be done, the Board submitted a preliminary report.

The Board adhered "substantially to the recommendations" made in its report of January 6, 1872, it being understood that no modifications had been since made. The Fort Pickens casemates, it was pointed out, had been designed for 32-pounders. On a visit to the fort by members of the Board in February 1872, they had observed that in four of the casemates of the north curtain and in two of those of the Northwest Channel Front, the traverse circles had been sunk to permit

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48. Simpson to Humphreys, Oct. 21, 1872, NA, RG 77, Ltrs. Recd., Chief Engineer. Simpson left New York City on October 23 for Mobile.

49. Casey to Barnard, Dec. 4, 1873, NA, RG 77, Ltrs. Sent, Chief Engineer.

emplacement of 8-inch columbaids. By similar treatment, the other casemates could be "speedily arranged for the reception of guns of like caliber."

They had seen three platforms for 10-inch guns on the north curtain, the existence of which they had been unaware of when they made their initial report. Guns could be immediately mounted on these platforms.

If there were sufficient time, the Board recommended that the Northwest and Southwest Bastions each be prepared for reception of one 15-inch Rodman gun or an equivalent rifle, which, with the one mounted on the Tower Bastion, would give the fort three guns of the heaviest caliber. The Northeast and Southeast Bastions would each be prepared for "four heavy mortars with proper traverses and magazines." Other mortars, in large numbers, could be emplaced on the terreplein of the East Front and on the counterscarp.

Exterior to the fort, the Board recommended construction of two earthen batteries, one mounting six and the other ten guns of the heaviest caliber. The estimated cost of the project was $301,715.[50]

General Humphreys submitted the report to Secretary of War Belknap on February 16, 1874, with his recommendation that it be approved. Secretary Belknap approved the study, subject to such changes in details by the Chief of Engineers as in the course of construction may be found advisable.[51]

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50. Board of Engineers to Humphreys, Dec. 10, 1873, NA, RG 77, Ltrs. Recd., Chief Engineer. The report of the Board was signed by Colonels Barnard, Cullum, Tower, and Wright. Battery No. 1, mounting six guns, would be west of Pickens and Battery No. 2, 10 guns, south of the fort.

51. Belknap to Humphreys, Feb. 16, 1874, NA, RG 77, Ltrs. Recd., Chief Engineer.

It was August before the collateral documents (plans and estimates) were prepared by the Board. These items, along with a copy of the report prepared by the Board and approved by Secretary of War Belknap, were transmitted to Captain Damrell by General Humphreys for his information and guidance in construction of the works, whenever Congress funded the project.[52]

3. Army Starts Its Modification of the Defenses

a. Damrell Prepares to Begin Work

On March 10, 1875, seven months later, General Humphreys notified Captain Damrell that Congress by an act signed into law by President Grant on February 10 had appropriated $25,000 for modification of the defenses of Fort Pickens. This sum was to become available on July 1. Damrell would prepare and submit for review and approval by the Department an operating program for expenditure of this money. On doing so, he was to keep in mind that priority was to be given to construction of torpedo casemates and cable approaches, and to the emplacement of the greatest number of guns with their magazines and traverses.

As the act also appropriated $75,000 for "Contingencies of Fortifications," he would also prepare an estimate of the amount needed from this appropriation for care and preservation of the works under his supervision.[53]

Captain Damrell reported on April 12 that the $25,000 would be expended in preparing the Northwest and Southwest Bastions for each mounting a 15-inch Rodman or equivalent gun behind earthen parapets, with traverses or parados, containing necessary magazines. He would construct a parado, with magazine, for the 15-inch Rodman

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52. Casey to Damrell, Aug. 10, 1874, NA, RG 77, Ltrs. Sent, Chief Engineer.

53. Casey to Damrell, March 10, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

emplaced on the Tower Bastion. The Northeast and Southeast Bastions would be arranged for four mortars each. This work would be prosecuted until the appropriation was exhausted, according to the plans submitted by the Board of Engineers and approved by Secretary of War Belknap.

Average monthly expenditures would be $3,000.[54]

On April 24 General Humphreys approved Damrell's Fort Pickens program.[55]

In view of the construction activities programmed for the Santa Rosa Island fort in fiscal year 1876, Captain Damrell did not call for an allotment from "Contingencies" for Fort Pickens for hire of a fort keeper, etc., when he submitted his annual estimates for funds from that account.[56]

Twenty-five thousand dollars also having been appropriated for construction at Fort Morgan by the 43d Congress, Captain Damrell asked authority to hire once operations began at the two forts an assistant engineer and an overseer for each project. The former would be paid $200 and the latter $125 per month.[57]

On May 12 this request was approved by the Department.[58]

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54. Damrell to Humphreys, April 12, 1875, NA, RG 77, Ltrs. Recd., Chief Engineer.

55. Casey to Damrell, April 24, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

56. Damrell to Humphreys, April 12, 1875, NA, RG 77, Ltrs. Recd., Chief Engineer.

57. Damrell to Humphreys, May 8, 1875, NA, RG 77, Ltrs. Recd., Chief Engineer.

58. Casey to Damrell, May 12, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

To facilitate construction at the two forts, Captain Damrell in mid-September requested permission to purchase "ten good mules," the price of each not to exceed $250. The mules would be employed to pull dump cars to run on the wooden tracks he was going to build. These railways would cut labor costs by expediting hauling of sand, which otherwise would have to be moved a considerable distance in wheelbarrows.[59]

This request was promptly approved in Washington.[60] This led to a letter from Damrell, asking permission to provide a full ration of grain to his mules, "while constantly employed in hard service, as the reduced ration is deemed insufficient."[61] His request was approved, provided it was charged pro rata to the works under Damrell's supervision.[62]

Damrell next asked authority to purchase medicine for the hired hands, and to construct a 20x65-foot messhall-kitchen and stables at Fort Pickens. The Department approved purchase of the medicine, but asked particulars as to the "size and finish" of the structures.[63]

On December 22 Damrell forwarded drawings of the proposed structures, estimated to cost $1,500. The area occupied by the present messhall-kitchen, he pointed out, was low and subject to flooding

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59. Damrell to Humphreys, Sept. 15, 1875, NA, RG 77, Ltrs. Recd., Chief Engineer.

60. Parke to Damrell, Sept. 20, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

61. Damrell to Humphreys, Sept. 29, 1875, NA, RG 77, Ltrs. Recd., Chief Engineer.

62. Parke to Damrell, Oct. 6, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

63. Casey to Damrell, Dec. 16, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

during storms. The new structure was to be sited between the wharf and storehouse.[64]

The Department, after reviewing the supporting documents, approved construction of the subject structures at a cost not to exceed $1,500.[65]

Captain Damrell, to facilitate construction, in February 1876 requested the Department to provide him with a lithograph or tracing of a centre-pintle stone platform for a 15-inch gun, adapted to the new ordnance carriage.[66] Not having such a drawing in the files, General Humphreys transmitted the correspondence to Chief of Ordnance S.V. Benét, with a request that he transmit the subject document to Captain Damrell.[67]

General Benét answered immediately. The Ordnance Department, he wrote, had never been called on for centre-pintle carriages for 15-inch guns of increased height. Consequently, neither drawings nor carriages had been prepared. If such were required, drawings and specifications would be readied.[68] General Humphreys accordingly informed Captain Damrell that the "increased height to the 15-inch carriage had only been applied to the front-pintle carriage."

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64. Damrell to Humphreys, Dec. 22, 1875, NA, RG 77, Ltrs. Recd., Chief Engineer. A copy of "Sketch showing proposed location of kitchen & Messroom and Stables" is found in files, Florida Unit, Gulf Islands NS.

65. Casey to Damrell, Dec. 28, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

66. Damrell to Humphreys, Feb. 1, 1876, NA, RG 77, Ltrs. Recd., Chief Engineer.

67. Humphreys to Benét, Feb. 24, 1876, NA, RG 77, Ltrs. Sent, Chief Engineer.

68. Benét to Humphreys, Feb. 28, 1876, NA, RG 156, Ltrs. Sent, Chief of Ordnance.

Enclosed he would find a drawing of the latest arrangement for centre-pintle platforms for 15-inch guns to guide his work.[69]

By mid-March 1876 the Fort Morgan appropriation was exhausted and Captain Damrell closed down the project. As there would be no further need for mules at Mobile Point until work was resumed under another appropriation, Damrell sent them to Fort Pickens. By doing so, he informed the Department, he was saved the care and forage of unemployed animals.

No other transfers of public property between the two projects were anticipated.[70]

b. Yellow Fever Causes a Five-Month Delay

Captain Damrell's plans to commence the Fort Pickens project in the summer of 1875 were doomed by the outbreak of yellow fever on the mainland. This time, unlike the two previous years, the first cases were reported at Barrancas Barracks. On the morning of July 21, the surgeon announced that six people had been stricken. Preparations were made to evacuate the battalion, and by noon the next day most of the troops had been shuttled across the bay to Fort Pickens. There remained at the barracks Major Brannan and family, Captain Langdon, Capt. Alanson Randal and his family, Dr. Sternberg, and 30 enlisted men, including the ordnance-sergeant, hospital steward, nurses, attendants, and soldiers on sick call. In addition, there remained behind 32 women and children belonging to the soldiers' families, and four servants. By this time five more persons were down with fever. Next day there were 16 new cases, many of whom were brought back from Fort Pickens.

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69. Casey to Damrell, Feb. 28, 1876, NA, RG 77, Ltrs. Recd., Chief Engineer.

70. Damrell to Humphreys, March 15, 1876, NA, RG 77, Ltrs. Recd., Chief Engineer.

To assist Dr. Sternberg, three civilian doctors were called upon. Before the end of July, Dr. Sternberg was stricken. The first death was Sergt. Henry Carroll, who died on July 22. His wife passed away on the 24th, as did Captain Randal's son. By the evening of the 25th there were 30 more cases. Lt. George W. Deshler was felled on the 26th and died three days later. The same night Mrs. Ingalls died and three days later her son. The last death occurred on August 15.

Among the garrison and their dependents there were 76 cases, and of these 30 deaths, including the women and children.[71]

The troops did not return to Barrancas Barracks until November 29. Captain Damrell accordingly postponed operations until January 1, 1876. Before bringing his hands over to Santa Rosa Island, Damrell first had them clean and fumigate the outbuildings that had been occupied by the soldiers. Next, the quarters, storehouses, and blacksmith shop were repaired, and the new stables and kitchen-messhall erected. The wharf was reinforced, a railway laid, four cars to haul sand to the fort built, and two derricks made and raised to hoist materials onto the Southwest and Tower Bastions.[72]

c. Accomplishments in Fiscal Year 1876

These preliminary operations finished, a large force in late February was put to work on the Southwest Bastion. Within five weeks, construction had proceeded to a point where Captain Damrell found he needed large numbers of brick for "foundations and backing courses." He believed the Department could economize if he were permitted to salvage bricks from Fort McRee. He accordingly asked authority to remove 20,000 bricks from the ruins of Foster's Bank fort.[73]

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71. Langdon to Haskin, Dec. 5, 1878, found in 1st Regiment of Artillery, pp. 384-87.

72. Annual Report Fiscal Year 1876, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer.

73. Damrell to Humphreys, March 31, 1876, NA, RG 77, Ltrs. Recd., Chief Engineer.

This request was approved by Chief Engineer Humphreys, provided the brick were "accounted for as borrowed from one work and loaned to the other, to be returned in kind when construction was resumed at Fort McRee."[74]

To support the Fort Pickens project, Damrell had hired a boat on January 1 for one doller per day. Three months passed before he realized that Department regulations provided that such an expense needed approval. On April 4 he requested and received the Department's sanction of this action.[75]

By June 30 the men had completed modification of the Southwest Bastion, as contemplated in the approved plans, except for the stone centre-pintle platform. The crew was then transferred to the Tower Bastion.

While employed on the Southwest Bastion, the construction people had positioned 1,934 cubic yards of sand, 121 cubic yards of brick masonry, 242 cubic yards of concrete (2 parts cement, 8 parts sand, and 15 parts broken brick), 65 cubic yards of clay, 84 cubic yards of mold, and 2,094 square yards of sodding. Five granite steps had been cut and laid in entrance to magazine and nine from top of scarp wall to the berm. Seven old platforms (Nos. 22-28) and 236 yards of old masonry had been removed and all drains uncovered, cleared, and placed in good order.

Captain Damrell had found that stone of the desired quality for gun platforms could not be secured locally. He had written Colonel Newton of the New York Agency, who informed him that stone and ironwork for the platforms could be obtained at reasonable rates in the

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74. Casey to Damrell, April 11, 1876, NA, RG 77, Ltrs. Sent, Chief Engineer.

75. Damrell to Humphreys, April 4, 1876, and Casey to Damrell, April 10, 1876, NA, RG 77, Ltrs. Recd. and Sent, Chief Engineer.

Northeast, but that shipping charges before autumn would be exorbitant. This explained why only the foundations for the Southwest Bastion platform had been positioned.[76]

d. Project Shuts Down

To fund the project in fiscal year 1877, Captain Damrell called for $100,000. Congress, however, refused to appropriate any construction money for seacoast defenses for the 12 months beginning July 1, 1876. In subsequent years Captain Damrell's calls for from $75,000 to $100,000 to continue the modernization project fared no better. Congress was understandably reluctant to spend additional large sums on coastal fortifications until the War Department could mature plans for a comprehensive modern scheme for defense of the nation's harbors and ports. For the next 14 years Congress refused to vote funds for construction of seacoast fortifications, thus preventing further work on the Board of Engineers' 1875 plan for modification of the Pensacola Harbor defenses.

Employing the $4,600 remaining from the $25,000 appropriated for modification of Fort Pickens by the Congress, the hands were kept on the job until early August 1876. By the time they were laid off and the project shut down, they had completed modification of the Tower Bastion. This consisted of erecting a breast-height wall and covered-way with sand protection. Some repairs were made to the terreplein, stairs, berms, and water conductors. In prosecution of this work 85 cubic yards of concrete went into the breast-height wall and covered-way, while 220 cubic yards of sand, 24 tons of clay, 180 square yards of sod were "put in the slopes around the bastion."[77]

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76. Annual Report Fiscal Year 1876, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by the Order of the House of Representatives, 2d Session, 44th Congress (Washington, 1877), Serial 1743, Vol. 2, pt. 2, p. 25.

77. Annual Report Fiscal Year 1877, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives, 2d Session, 45th Congress (Washington, 1878), Serial 1795, Vol. 3, p. 20.

At the time operations were suspended, the modification of the Tower and Southwest Bastions had been completed with the exception of the latter's platform.

4. Damrell Secures Data Needed for a Torpedo Defense System

On August 10, 1875, the Department had requested Captain Damrell to secure at his "earliest convenience the set and strength of the currents" in the channels into Pensacola and Mobile Bays "to be used in the future projection of torpedo defenses."[78]

To execute this project, Captain Damrell needed two assistant engineers for Pensacola Bay. The principal assistant to be hired at a salary of $150 per month and the other at $125. He also needed authority to charter a schooner or steam launch, at a rate not to exceed $250 a month.[79]

These requests were sanctioned by Chief Engineer Humphreys.[80]

Captain Damrell, to support activities on Pensacola and Mobile bays, now asked authority to submit a bid, not to exceed $500, for the schooner Lyra, which was being sold at public auction by the Lighthouse Board. In addition, he would need funds, about $1,000 to make her seaworthy, if he were the successful bidder.[81]

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78. Casey to Damrell, Aug. 10, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

79. Damrell to Humphreys, Sept. 20, 1875, NA, RG 77, Ltrs. Recd., Chief Engineer.

80. Parke to Damrell, Sept. 27, 1875, NA, RG 77, Ltrs. Sent, Chief Engineer.

81. Damrell to Humphreys, March 10, 1876, NA, RG 77, Ltrs. Recd., Chief Engineer.

On March 15, 1876, the Department approved Damrell's request to bid on the schooner and to outfit her for sums not to exceed those cited.[82]

Before the month was over, Damrell had asked for and received permission to purchase a rowboat, to cost not more than $250, for use at Fort Pickens.[83]

Upon stoppage of construction at Fort Pickens in August 1876, it became necessary to lay up Lyra. To insure she would be properly cared for, Damrell asked authority to employ a watchman at a wage not to exceed $50 per month.[84]

This request was approved by the Department, provided the money was charged to an existing Fort Pickens allotment.[85]

Lyra was laid up for seven months. On April 3, 1877, an appropriation having been made for a seawall for protection of Mobile Point, Captain Damrell asked for and received permission to transfer the schooner to Mobile Bay. To make the craft seaworthy he was authorized to spend not more than $300.[86]

In the late autumn of 1877, Captain Damrell called for an allotment of $70 from the appropriation for surveys of military defenses.

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82. Casey to Damrell, March 15, 1876, NA, RG 77, Ltrs. Sent, Chief Engineer.

83. Damrell to Humphreys, March 14, 1876, and Casey to Damrell, March 21, 1876, NA, RG 77, Ltrs. Recd. & Sent, Chief Engineer.

84. Damrell to Humphreys, Aug. 9, 1876, NA, RG 77, Ltrs. Recd., Chief Engineer.

85. Casey to Damrell, Aug. 28, 1876, NA, RG 77, Ltrs. Sent, Chief Engineer.

86. Damrell to Humphreys, April 3, 1877, and Casey to Damrell, April 9, 1877, NA, RG 77, Ltrs. Recd. & Sent, Chief Engineer.

The money was needed for repair of the schooner Lizzie to make her seaworthy and enable him to continue investigation of the Pensacola Bay currents.[87] This request was agreed to by the Department.[88]

D. Six Quiet Years

1. Maintenance and Protection in Fiscal Year 1877

a. The Allotment

On June 20, 1876, the Department notified Captain Damrell that President Grant had signed into law an act passed by the Congress, appropriating $100,000 for "Contingencies of Fortifications." He, in accordance with procedures, would submit as soon as possible an estimate of the sums required from this appropriation for the forts under his supervision, "stating clearly the items of application."[89]

Captain Damrell reported that in fiscal year 1877 he needed $8,550 from "Contingencies." Of this amount, Fort Pickens was to be allotted $950 for its share of office expenses (rent, and salaries of clerks, draftsman, and messenger), $660 for the fort keeper's pay, and $600 for alterations to the ordnance storeroom and ordinary repairs.[90]

On July 21 the Department wrote Captain Damrell that from "Contingencies" he had been allotted for Fort Pickens $660 for pay of the keeper and $600 for alterations to the ordnance storeroom.[91] Shortly thereafter, General Humphreys decided on a bureaucratic change.

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87. Damrell to Humphreys, Dec. 11, 1877, NA, RG 77, Ltrs. Recd., Chief Engineer.

88. Twining to Damrell, Dec. 18, 1877, NA, RG 77, Ltrs. Sent, Chief Engineer.

89. Casey to Damrell, June 26, 1876, NA, RG 77, Ltrs. Sent, Chief Engineer.

90. Damrell to Humphreys, July 1, 1876, NA, RG 77, Ltrs. Recd., Chief Engineer.

91. Casey to Damrell, July 21, 1876, NA, RG 77, Ltrs. Sent, Chief Engineer.

On August 2 he wrote his superintending engineers that the July 21 allotments were to be charged to the act approved June 20 "for the protection, and repair of fortifications," rather than the appropriation for "Contingencies."[92]

b. Outfitting an Ordnance Storeroom and Minor Projects

The rehabilitation of the ordnance storeroom had been initiated by a letter from Ord.-Sergt. E. O'Brien, complaining about seepage into the casemate used for storage by his department. O'Brien's letter to the Chief of Ordnance had been referred to Captain Damrell by General Humphreys.[93]

With the $600 allotted for this project, Damrell had "a casemate, on the right of the sally port," repaired and outfitted as an ordnance storeroom. There was some money left in this account, and it was used to provide new hinges for the main gate, clean the cisterns and provide them with new faucets, and to undertake other necessary repairs to insure the preservation of the public property.[94]

2. Maintenance and Protection in Fiscal Year 1878

a. The Allotment

On March 26, 1877, the Department by circular letter advised its superintending engineers that President Grant had signed, on the 3d, an act appropriating $100,000 for "Protection, Preservation and Repair of Fortifications" in fiscal year 1878. They would submit

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92. Casey to Damrell, Aug. 2, 1876, NA, RG 77, Ltrs. Sent, Chief Engineer.

93. Casey to Damrell, March 29, 1876, NA, RG 77, Ltrs. Sent, Chief Engineer.

94. Annual Report for Fiscal Year 1877, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer.

estimates of money needed from the subject appropriation for the works under their charge having no special appropriation.[95]

Captain Damrell replied, informing the Department that he required an allotment of $10,790 from the appropriation. Of this figure, he needed $1,860 for Fort Pickens -- $1,200 for repair of wharf and weeding slopes, and $660 for pay of the keeper.[96]

Chief Engineer Humphreys, after receiving, abstracting, and reviewing his superintending engineers' requests, on May 19 allotted Captain Damrell $4,000 for the defenses for which he was responsible. As this was more than $6,000 below the sum asked, Damrell was to inform the Chief Engineer of his proposed distribution of the $4,000.[97]

Damrell accordingly cut his Fort Pickens request from $1,860 to $990 -- $660 for the keeper's salary and $330 for ordinary repairs and care and feed for two mules. In addition, he programmed $200 for removal of an engine, boiler, and other engineer property from Fort McRee to Pickens.[98]

b. The Work

Maintenance funds having been slashed, only a few minor projects were undertaken in fiscal year 1878. New sills and blocks were placed under the storehouse; minor repairs were made to the messhall, now used as quarters by the keeper; and steps and a small

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95. Casey to Damrell, March 26, 1877, NA, RG 77, Ltrs. Sent, Chief Engineer.

96. Damrell to Humphreys, April 18, 1877, NA, RG 77, Ltrs. Recd., Chief Engineer.

97. Casey to Damrell, May 19, 1877, NA, RG 77, Ltrs. Sent, Chief Engineer.

98. Damrell to Humphreys, May 22, 1877, Ltrs. Recd., Chief Engineer.

platform at the wharf, smashed by the October 1877 hurricane, were replaced.[99]

3. Maintenance and Protection in Fiscal Year 1879

a. The Allotment

On April 23, 1878, the Department wrote Captain Damrell that by an act approved by President Rutherford B. Hayes, in mid-March, Congress had appropriated $100,000 for "Preservation and Repair of Fortifications" in fiscal year 1879. Once again, Damrell would prepare and forward estimates of sums needed for maintenance of the defenses for which he was responsible.[100]

Captain Damrell asked for $10,360 to fund his Fort Pickens program. The breakdown called for $660 for the fort keeper's salary, $200 for the project's share of office expenses, $200 to subsist the two Fort Pickens mules, $300 for "ordinary repairs to fort and buildings," and $9,000 for rebuilding the wharf. This added to the requests for the other works boosted Damrell's estimate to $22,840, or nearly one-quarter of the appropriation.[101]

The Department, confronted with nationwide responsibilities, was compelled to drastically pare Damrell's estimates. On June 27 Chief Engineer Humphreys notified Damrell that he had been allotted $6,850 for preservation and repair of the five Gulf Coast forts. He would provide Washington with data on the division of his expenditures.[102]

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99. Annual Report Fiscal Year 1878, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives, 3d Session, 45th Congress (Washington, 1879), Serial 1844, Vol. 3, p. 24.

100. Twining to Damrell, April 23, 1878, NA, RG 77, Ltrs. Sent, Chief Engineer.

101. Damrell to Humphreys, May 7, 1878, NA, RG 77, Ltrs. Recd., Chief Engineer.

102. Humphreys to Damrell, June 27, 1878, NA, RG 77, Ltrs. Sent, Chief Engineer.

After reviewing his needs, Damrell budgeted $1,610 to Fort Pickens -- $660 for the keeper's pay, $200 for the mules, and $750 for "ordinary repairs."[103]

b. Projects Undertaken

Captain Damrell expended $1,654 on the Santa Rosa Island fort in the year ending June 30, 1879. Laborers were hired at various times to repair and whitewash the outbuildings and to care for the public property. When he filed his annual report in July, Damrell warned that the wharf was in "very bad" shape and needed substantial repairs. The fort's condition, however, was the same as it had been 12 months before.[104]

4. Maintenance and Protection in Fiscal Year 1880

a. Department Calls for and Receives Damrell's Estimates

Congress by an act approved by President Hayes on March 3, 1879, again appropriated $100,000 for "Preservation and Repair of Fortifications" in fiscal year 1880. Superintending engineers were notified by a circular letter to submit, at their earliest opportunity, estimates of sums needed from this appropriation for care of their fortifications. They were cautioned that "no larger sum should be estimated for any work than will strickly be necessary for expenditure for that" defense in the next fiscal year.[105]

Captain Damrell accordingly cut his request for maintenance and protection funds for fiscal 1880 from $22,840 to $16,040 and

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103. Damrell to Humphreys, July 2, 1878, NA, RG 77, Ltrs. Recd., Chief Engineer.

104. Annual Report for Fiscal Year 1879, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives, 2d Session, 46th Congress (Washington, 1880), Serial 1904, Vol. 3, p. 28.

105. Elliot to Damrell, March 14, 1879, NA, RG 77, Ltrs. Sent, Chief Engineer.

those for Fort Pickens from $10,360 to $10,260. Of the Pickens figure, $660 was budgeted for the keeper's salary, $200 for care of and feeding the mules, $400 for ordinary repairs, and $9,000 for construction of a new wharf.[106]

b. General Wright Takes Over as Chief Engineer

An administrative change delayed the Department's reply. In June 1879 Horatio G. Wright, Civil War hero and a senior officer in the Corps, replaced General Humphreys, who had retired after 12 years of service as Chief Engineer. It was July 28 before the Department notified Damrell that he had been allotted $5,000, about one-third the sum asked, for care of the works under his supervision in fiscal year 1880. He would inform the Department how he proposed to program this sum among his five forts.

General Wright at this time cautioned his superintending engineers that requests for maintenance and protection funds for the current fiscal year exceeded $130,000, and seemingly did not include many items the Department believed necessary for repair and preservation of the fortifications. He urged that no more of the amount allotted be expended than "is absolutely necessary," so that any surplus, however small, might be applied to "emergent and important cases elsewhere."

A review of the files had revealed, to his distress, that "more of this appropriation is expended on salaries of Assistant Engineers, Overseers, and Clerks, the forage of public animals, and other similar continuous expenditures, than would seem necessary, while there is no "construction in progress."

Hereinafter, General Wright wanted these rules observed: (a) no assistant engineer, overseer, or clerk would be employed, no vessel or boat engaged, and no public animals retained,

106. Damrell to Humphreys, March 17, 1879, NA, RG 77, Ltrs. Recd., Chief Engineer.

except in special circumstances where their services were required. Any men falling into these categories were to be discharged, any boats laid up or disposed of, and any public animals sold. (b) Fort keepers at ungarrisoned works were to be required, as part of their job, to cut the grass on the parapets and glacis, and to scrap and paint the embrasure irons and other ironwork liable to rust. (c) Salaries paid the fort keepers were in some instances higher than necessary, especially when their use of public quarters and land for gardens was taken into account.[107]

When he reprogrammed, Captain Damrell allotted $785 of the $5,000 to Fort Pickens. Six hundred and sixty dollars were budgeted for the fort keeper's salary, and $125 for foraging the mules. As the keeper would be required to handle minor maintenance, no money was assigned for ordinary repairs.[108]

c. Fort Keeper Becomes Responsible for Minor Maintenance

The keeper was unenthusiastic about his newly assigned maintenance chores. The ordnance-sergeant in September complained to the Chief of Ordnance that the armament was grown up in sedge and weeds. General Wright relayed this news to Captain Damrell, with an order that the keeper keep the slopes and terreplein mowed.[109]

Chief Engineer Wright, at the end of the third quarter of the fiscal year, called on the superintending engineers to report if they would have any surplus from the allotments made from the appropriation for preservation and repair of fortifications. If so, they

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107. Elliot to Damrell, July 28, 1879, NA, RG 77, Ltrs. Sent, Chief Engineer.

108. Damrell to Wright, Aug. 5, 1879, NA, RG 77, Ltrs. Recd., Chief Engineer.

109. Elliot to Damrell, Sept. 18, 1879, NA, RG 77, Ltrs. Sent, Chief Engineer.

were to notify him and deposit the same to the credit of the Treasurer of the United States.[110]

On April 12, 1880, Captain Damrell answered that he had no money to spare from his current allotment.[111]

When Captain Damrell submitted his annual report for fiscal year 1880, he informed the Department that no appropriation for construction had been made for Fort Pickens since Feburary 1875. Consequently, no work except those projects associated with "ordinary repairs and preservation" had been undertaken since August 1876. During the past 12 months, this had included weeding the slopes, cutting grass, cleaning drains, and painting ironwork.

The importance of the fort, he continued, made "it desirable that the modifications recommended by the Board of Fortifications... be carried out, and an appropriation" of $75,000 could be expended for that purpose in fiscal year 1882.[112]

5. Maintenance and Protection in Fiscal Year 1881

a. General Wright Changes the Allotment Procedures

Congress in 1880 again appropriated $100,000 for "Protection, Preservation, and Repair of Fortifications" for the fiscal year ending June 30, 1881.[113] On June 1 Captain Damrell submitted his estimates of the money needed to fund operations at the five forts during

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110. Wright to Damrell, April 9, 1880, NA, RG 77, Ltrs. Sent, Chief Engineer.

111. Damrell to Wright, April 12, 1880, NA, RG 77, Ltrs. Recd., Chief Engineer.

112. Annual Report for Fiscal Year 1880, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer; Executive Documents, Printed by Order of the House of Representatives, 1st Session, 47th Congress (Washington, 1882), Serial 2011, Vol. 3, pp. 46-7.

113. Wright to Damrell, May 27, 1880, NA, RG 77, Ltrs. Sent, Chief Engineer.

the 12 months, beginning July 1. When five months passed and he received no word regarding his allotments, Damrell on October 30 wrote General Wright. He would like to know the amounts allotted for his defenses.[114]

General Wright answered, informing Damrell that no allotments would be made in fiscal year 1881 from the subject appropriation. Calling attention to a circular of August 12, Wright pointed out that he had made a change in the allocation procedure.[115] Henceforth, requests for management and protection money would be separated from those for maintenance. Project superintendents would employ funds appropriated for "Protection, Preservation, and Repair" to meet monthly salaries of their employees, such as the fort keepers. Whenever repairs had to be made at an installation, "a special report" of the work required, along with a detailed estimate of the cost, would be forwarded to the Department for approval.[116]

On February 28, 1881, the Chief Engineer called on his superintending engineers for reports of funds necessary for "ordinary expenses" for fortifications between now and June 30. They would also submit necessary projects for protection and preservation of the works and their estimated cost.[117]

b. Fort Receives Minimal Maintenance

Captain Damrell wrote the Department that the funds on hand on "account of the fortifications" were sufficient for "ordinary

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114. Damrell to Wright, Oct. 30, 1880, NA, RG 77, Ltrs. Recd., Chief Engineer.

115. Elliot to Damrell, Nov. 4, 1880, NA, RG 77, Ltrs. Sent, Chief Engineer.

116. Elliot to Damrell, Aug. 12, 1880 NA, RG 77, Ltrs. Sent, Chief Engineer.

117. Elliot to Damrell, Feb. 28, 1881, NA, RG 77, Ltrs. Sent, Chief Engineer.

expenses" to June 30. To fund operations for "protection and preservation" at Forts Morgan and Gaines, and the Ship Island fort he asked for and was allotted $3,708.[118]

Thus, in fiscal year 1881 the Department's expenses at Fort Pickens were pared to $661, one dollar more than the keeper's salary. The keeper, in addition to looking after the public property, was employed weeding the slopes, cutting grass, cleaning drains, and making minor repairs to the engineer buildings.[119]

6. Maintenance and Protection in Fiscal Year 1882

Captain Damrell and his fellow engineers were advised by circular letter on June 18, 1881, that Congress had passed an act, appropriating $175,000 for "Protection, Preservation, and Repair of Fortifications" in fiscal year 1882. They would report without delay the funds needed for "ordinary expenses" for the works in their charge during the next 12 months. In accordance with the recent administrative charge, they would document needed repairs and the estimated costs thereof.[120]

The Department, after tabulating and reviewing all requests for funds from the appropriation for "Protection, Preservation, and Repair," allotted $9,981 to Damrell for his five forts. He was given the exact amount for which he had submitted estimates.[121]

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118. Damrell to Wright, March 16, 1881, NA, RG 77, Ltrs. Recd., Chief Engineer.

119. Annual Report for Fiscal Year 1881, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer.

120. Elliot to Damrell, June 18, 1881, NA, RG 77, Ltrs. Sent, Chief Engineer.

121. Elliot to Damrell, Aug. 17, 1881, NA, RG 77, Ltrs. Sent, Chief Engineer.

Once again, as in every year since 1876, maintenance was minimal at the fort in fiscal year 1882. The keeper saw to ordinary repairs to the buildings, weeding the slopes, cutting grass, and clearing drains.[122]

7. Caring for the Ordnance Stores

a. Providing New Shot Beds and Lacquering the Ironwork

The Inspector-General, Department of the South, on a May 1877 visit to Fort Pickens saw that the wooden shot beds had rotted and the projectiles needed lacquering. He complained about this to Maj. Henry W. Closson, the commanding officer at Barrancas Barracks. Major Closson responded that he would have his men attend to this on their return from camp, but he had no artificers to direct the work. The beds, he had been informed by Ordnance-Sergeant O'Brien, had been erected by the Engineer Department, and the costs, an estimated $900, allotted from Ordnance Department funds.

Major Closson recommended that the Ordnance Department detail two enlisted men for duty at Fort Pickens, under the supervision of Sergeant O'Brien, to construct new shot beds, paint the projectiles, guns, and carriages, and provide general care of the stores.[123]

Closson's superiors at headquarters, Department of the South, forwarded his communication to Chief of Ordnance Benét, with a request that his Department authorized Major Closson to employ men to lacquer the projectiles, guns, and carriages. It was suggested that the

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122. Annual Report for Fiscal Year 1882, Fort Pickens, NA, RG 77, Ltrs. Recd., Chief Engineer.

123. Closson to AAG, Dept. of the South, June 8, 1877, NA, RG 77, Ltrs. Recd., Chief Engineer.

new beds be built of iron and brick, to avoid the rapid decay of wood which occurred on the Gulf Coast.[124]

Chief of Ordnance Benét referred the correspondence to the Chief Engineer and Captain Damrell. The latter agreed with the Ordnance Officer, Department of the South, that iron and brick beds were practical and would be economical to build. Meanwhile, General Humphreys had transmitted to Captain Damrell plans of "shot beds of a permanent kind used in the defenses of Boston Harbor."[125] Ten days later, on the 24th, Humphreys asked for a report from the Board of Engineers for Fortifications, "whether in view of the present condition, and probable future changes at Fort Pickens, is it desirable to construct permanent shot beds."[126]

The Board gave the project its approval. But with no appropriation to undertake the work, nothing could be done.[127]

Two years passed. The shot beds continued to deteriorate and spill more and more projectiles onto the ground. Writing Headquarters, Department of the South, on November 9, 1879, Major Closson complained that "the decay of the platforms and dispersion of the shot...goes steadily on." He could do nothing with the projectiles until new beds were built. To construct them plans, funds, and materials were needed.[128]

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124. Guiness to AAG, Dept. of the South, July 2, 1877, NA, RG 77, Ltrs. Recd., Chief Engineer. John R.M. Guiness was Chief Ordnance Officer, Dept. of the South.

125. Twining to Damrell, July 14, 1877, NA, RG 77, Ltrs. Sent, Chief Engineer.

126. Twining to Board, July 24, 1877, NA, RG 77, Ltrs. Sent, Chief Engineer.

127. Twining to Board, Aug. 1, 1877, NA, RG 77, Ltrs. Sent, Chief Engineer.

128. Closson to AAG, Dept. of the South, Nov. 9, 1879, NA, RG 77, Ltrs. Recd., Chief Engineer.

After reviewing the subject, Capt. Charles Shaler, the Department's Chief of Ordnance, recommended that the beds be built of iron rails which were cheaper and more durable than cypress or yellow pine.[129]

The correspondence was referred to the Chief Engineer. General Wright agreed with Captain Shaler on the wisdom of employing iron rails for shot platforms, but no funds were avilable for the project. If, however, Chief of Ordnance Benét were agreeable construction and repair of shot beds might be assumed by his Department, as it could "furnish, at the expense of one of its appropriations . . . the iron parts of the beds worked into proper forms." When sent to the forts, they could be assembled by the ordnance-sergeants, assisted by fatigue details from the garrisons. Any materials at the forts belonging to the Engineer Department, useful for foundations, would be made available.[130]

b. Skidding the Tubes

On March 5, 1881, Major Closson requested through channels permission to salvage a number of stones removed when the old Fort Pickens traverse circles were dismantled. He wished to use them as skids for the heavy guns on the parade.

These tubes were now skidded upon timbers, which were rotten and giving away.[131]

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129. Shaler to AAG, Dept. of the South, Nov. 13, 1879, NA, RG 77, Ltrs. Recd., Chief Engineer.

130. Wright to Benét, Jan. 10, 1880, NA, RG 77, Ltrs. Sent, Chief Engineer.

131. Closson to AAG, Dept. of the South, March 5, 1881, NA, RG 77, Ltrs. Recd., Chief Engineer.

Chief Engineer Wright was agreeable. On being advised of this, Captain Damrell notified Major Closson to proceed with his project.[132]

c. Departments Shirk Their Responsibilities

Nothing came of these proposals, however, and the shot platforms and skids continued to deteriorate in the humid Gulf Coast climate. The situation was again called to the War Department's attention in the spring of 1884. Lt. Col. Roger Jones, inspector-general for the Department of the East, was at Fort Pickens in the fourth week of April. He was distressed to see that the cannon tubes on the parade needed to be re-skidded and the shot platforms rebuilt.[133]

Maj. Gen. Winfield S. Hancock, commander of the Department of the East, on referring Jones' report to Capt. John L. Tiernon, commanding officer at Fort Barrancas, suggested that he provide some assistance to the Fort Pickens ordnance-sergeant "in the preservation and decent appearance of the property in his charge."[134]

Captain Tiernon, as an emergency measure, sent a non-commissioned officer and two privates to Santa Rosa Island to help Sergeant O'Brien to care for the ordnance. To get at the root of the problem, the correspondence was referred by General Hancock to the Chief Quartermaster, Department of the East, and Major Damrell. The Quartermaster replied that his Department had no funds for repair of the shot beds. Major Damrell, on bucking the subject to the Chief Engineer, wrote, "The construction of the platforms for shot and shell and new

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132. Adams to Damrell, March 19, 1881, NA, RG 77, Ltrs. Sent, Chief Engineer.

133. Jones to Headquarters, Dept. of the East, April 25, 1884, NA, RG 77, Ltrs. Recd., Chief Engineer.

134. Whipple to Tiernon, April 30, 1884, NA, RG 77, Ltrs. Recd., Chief Engineer. W.D. Whipple was General Hancock's assistant adjutant general.

skids for the guns would improve the appearance of the Fort." If authorized, he would prepare and forward a requisition for funds.[135]

The Chief Engineer, after studying the correspondence, informed the Adjutant General that if any funds became available for repair of fortifications after July 1, Major Damerll would be directed "to renew the platforms for shot and shell."[136]

Although Congress appropriated $175,000 for "Protection and Repair" of the seacoast fortifications in fiscal year 1885, no funds were allotted for rebuilding the shot platforms and skids for the guns. Three more years were to pass before steps were taken to protect and preserve the Fort Pickens ordnance.

d. Ordnance-Sergeant Finally Gets Decent Quarters

The ordnance-sergeant fared better than the ammunition and projectiles. On June 13, 1883, the assistant quartermaster at Barrancas Barracks transmitted to the Chief Quartermaster, Department of the South, an estimate of the cost of constructing quarters for the Fort Pickens ordnance-sergeant. Materials for the frame structure were placed at $449, labor at $287, and contingencies at $56.60. The proposal was approved by the Secretary of War on July 12. And in fiscal year 1884, the ordnance-sergeant, after many years, finally moved his family into decent housing.[137]

His new quarters had not been completed in December 1883, when Ordnance-Sergeant O'Brien reported that there were no

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135. Damrell to Newton, June 16, 1884, NA, RG 77, Ltrs. Recd., Chief Engineer.

136. Newton to Adjutant General, June 20, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

137. "Estimate for Labor and Materials required for Ordnance Sergeant's Quarters at Fort Pickens," prepared by Lt. Charles Humphreys, June 13, 1883, NA, RG 92, Consolidated Correspondence File.

buildings at Fort Pickens for storage of carts, nor housing for the ordnance-sergeant, while three of the casemates were used as an ordnance storehouse.[138] The quarters, which Inspector-General Jones described as "suitable and comfortable," had been finished and were occupied by Sergeant O'Brien by early spring of 1884.[139]

8. Government Refuses an Offer for the Fort McRee Bricks

In July 1881, a group of businessmen contacted Secretary of War Robert Todd Lincoln. They wanted to purchase for $500 all the remaining Fort McRee brickwork. The surf, they noted, was rapidly crumbling the brick walls of the fort, and about two-thirds of the casemated work had disappeared into the sea. The remaining one-third would be destroyed within a few years.[140]

Secretary Lincoln referred the subject to the Engineers. Captain Damrell recommended against acceptance of the proposal, and General Wright concurred. They argued that the bricks were worth more to the United States for rubble in construction of the Pensacola jetties than the sum offered.[141]

Construction of the jetties commenced that autumn. To facilitate work, Captain Damrell requested authority to employ the engine and hose charged to Fort McRee and such implements and stores appertaining to Fort Pickens as could be used to advantage in construction of the Fort McRee jetty. These stores were depreciating in

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138. O'Brien to Quartermaster General, Dec. 21, 1883, NA, RG 92, Consolidated Correspondence File.

139. Jones to Headquarters, Dept. of the East, April 25, 1884, NA, RG 77, Ltrs. Recd., Chief Engineer.

140. Paul Strobach to Secretary of War, July 5, 1881, NA, RG 77, Ltrs. Recd., Chief Engineer.

141. Damrell to Wright, July 24, 1881, NA, RG 77, Ltrs. Recd., Chief Engineer.

value every year. An inventory would be made and all property used would be replaced from the appropriation for improvement of Pensacola Harbor.[142]

The Department approved this request.[143]

E. Major Damrell Gives Way to Captain Hoxie

1. Another Year of Retrenchment

a. F.Y. 1883 Appropriations and Allotments

On June 2, 1882, Captain Damrell was notified by the Department that President Chester A. Arthur had approved an act appropriating $175,000 for "Protection, Preservation, and Repair of Fortifications" in fiscal year 1883. He would report before July 1 the funds necessary for "ordinary expenses" at his five defenses. In addition, he was to detail projects, with estimates, required for upkeep of these forts.[144]

It was late July before Captain Damrell compiled and forwarded the desired information to Washington. For ordinary expenses for the fiscal year at Fort Pickens he needed $660 for the keeper's salary, and for projects he asked for $7,350--$250 for repairs to the buildings and cisterns and the remainder for rebuilding the wharf and railway. The wharf, he noted, was in ruins, the piles either eaten up by teredos or rotten, and the timbers decayed.

For all the forts for which he was responsible, he required $2,736 for ordinary expenses, all but $96 of which was to go to

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142. Damrell to Wright, Oct. 19, 1881, NA, RG 77, Ltrs. Recd., Chief Engineer.

143. Elliot to Damrell, Oct. 24, 1881, NA, RG 77, Ltrs. Sent, Chief Engineer.

144. Elliot to Damrell, June 2, 1882, NA, RG 77, Ltrs. Sent, Chief Engineer.

pay each of the four keepers their $55 per month pay. Projects for which estimates were submitted included $4,067 for a brush and stone apron at Fort Morgan; $6,918.15 for a new wharf at Fort Gaines; and $3,491 for two more jetties to protect the site of the Ship Island fort.[145]

While awaiting word on how his requests had fared, Damrell received some good news. He learned that on September 15, after 15 years as a captain, he had been promoted to major. Shortly thereafter, he was apprised that the Chief Engineer had allotted for the current fiscal year $6,303 for his works from the appropriation for "Preservation and Repair." This was the amount he had requested less $13,793.50 for new wharves at Forts Pickens and Gaines and $3,266 for the Ship Island jetties. These projects were to be held in abeyance until the spring of 1883, when they would be re-evaluated in view of the Department's nation-wide responsibilities and available funding.[146]

The Department in early March 1883, as customary, called on the superintending engineers for reports whether they would have any unobligated funds for fiscal year 1883. Major Damrell replied that no money could be spared from his current allotment.[147]

b. Year of Minimal Maintenance and Protection

No appropriation having been made for construction, operations at Fort Pickens were limited in the 12 months ending June 30, 1883, "to ordinary repairs to buildings, weeding of slopes, cutting grass, cleaning of drains, & to the care and preservation of public property." The condition of the fort, Major Damrell wrote, was the same as at the close of fiscal year 1882. No appropriation for construction having been

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145. Damrell to Wright, July 25, 1882, NA, RG 77, Ltrs. Recd., Chief Engineer.

146. Elliot to Damrell, Sept. 19, 1882, NA, RG 77, Ltrs. Sent, Chief Engineer.

147. Damrell to Wright, March 10, 1883, NA, RG 77, Ltrs. Recd., Chief Engineer.

voted for fiscal year 1884, no work was planned "beyond that necessary for the proper care and preservation of the public property."

Because of the importance of the work, it was desirable that the modification of the fort and the construction of the two exterior barbette batteries be resumed. For these projects, Damrell requested an appropriation of $75,000 to be expended in fiscal year 1885.[148]

2. Maintenance and Protection in Fiscal Year 1884

a. Funding the Operations

On March 20, 1883, Chief Engineer Wright informed his superintending engineers that President Arthur on the 3d had approved an act of the Congress, appropriating $175,000 for "Protection, Preservation, and Repair" of fortifications in fiscal year 1884. They would, in accordance with procedures, forward to the Department two sets of figures--those needed for "ordinary expenses," along with estimates for projects required for the upkeep of the defenses entrusted to their care.[149]

Major Damrell wrote the Department that for "ordinary expenses" in the next fiscal year for Fort Pickens he needed $660 for pay of the keeper. Two hundred and seventy-five dollars were required for repairs of the fort and buildings. To rebuild the wharf and tramway he again called for $7,100.[150]

On June 25 General Wright notified Major Damrell that he had been allotted from the "Preservation" appropriation for Fort Pickens $975 for the keeper's salary and "ordinary repairs." His request

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148. Annual Report, Fort Pickens for Fiscal Year 1883, NA, RG 77, Ltrs. Recd., Chief Engineer.

149. Wilson to Damrell, March 20, 1883, NA, RG 77, Ltrs. Sent, Chief Engineer.

150. Damrell to Wright, May 30, 1883, NA, RG 77, Ltrs. Recd., Chief Engineer.

for funds to rebuild the wharf and tramway was again held in abeyance.[151]

With Congress keeping a tight rein on appropriations, Chief Engineer Wright was in the habit of sending a circular letter to his superintending engineers in March, asking them to deposit to the credit of the Treasurer of the United States any funds from the appropriation for "Preservation and Repair of Fortifications" surplus to their needs.[152]

Major Damrell replied on March 8, 1884, that no money could be spared from the current allotments for any of the forts in his charge.[153] As soon as all the project engineers had reported, the Department, having adjusted its figures and evaluated the needs, notified them that several thousand dollars of unobligated funds from the current appropriation were available. To take advantage of this situation, they were to contact Chief Engineer John Newton by July 1.[154] (Horatio G. Wright had retired as Chief Engineer on March 6, 1884, his 64th birthday, and was succeeded by Brig. Gen. John Newton, who as a captain had been project engineer at Pensacola Bay from 1855-1858.) Major Damrell, because of the short time remaining in the fiscal year, did not ask for any of these funds.

b. Damrell Makes a Detailed Annual Report

General Newton, upon becoming Chief Engineer, changed the format of the annual reports. Henceforth, the superintending engineers would, in making them, detail the structural failures and needed repairs, rather than confining themselves to general

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151. Wilson to Damrell, June 25, 1883, NA, RG 77, Ltrs. Sent, Chief Engineer.

152. Wright to Damrell, March 4, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

153. Damrell to Chief Engineer, March 8, 1884, NA, RG 77, Ltrs. Recd., Chief Engineer.

154. Newton to Damrell, March 26, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

statements, i.e., the defense is in the same general condition as at the time of the last annual report. They would also provide data on the gun platforms as to numbers, how many completed, and the number not ready for armament.

When he filed his annual report for fiscal year 1884, Major Damrell informed the Department that the Fort Pickens brickwork, with exception of two arches under the Southwest and Tower Bastions (which had been cracked since the Civil War), was in "fair state of preservation." A large portion of the scarp and breast-height wall, however, required repointing, as did most of the casemates. The brick paving of the terreplein and most of the casemates had settled and needed relaying. The Southwest Bastion cistern leaked, while the "woodwork in officers' quarters" was completely rotten. The main gate needed to be fixed. The casemates employed as ordnance storerooms and office were in "fair condition," as were the three magazines. Throughout the fort, the wood-and ironwork needed to be repainted. Shot platforms were rotten and unserviceable. The earthen parapets were in "fair condition."[155]

Reporting on the condition of the platforms, Damrell noted, there were:

Barbette Platforms

4-inch front-pintle platforms, low traverse stones, completed 18, 8 of which were ready to receive 100-, 200-, and 300-pounder Parrotts.

2-inch front-pintle platforms, low traverse stones, for 32-pounders--36 completed and 3 incomplete.

4-inch centre-pintle platforms, high traverse stones, for 10-inch columbiads, completed 1.

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155. Annual Report, Fort Pickens, Fiscal Year 1884, NA, RG 77, Ltrs. Recd., Chief Engineer.

6-inch centre-pintle platforms, for 15-inch Rodmans, on the Tower Bastion one completed, and on the Southwest Bastion one ready to receive its platform.

Casemate Platforms

Platforms for 24-pounder flank defense howitzers, 11 completed and 13 incomplete.

Since his last annual report, the two 10-inch siege mortars had been dismounted. Currently, the only gun emplaced in the fort was the 15-inch Rodman, with damage carriage, on the Tower Bastion.

Skidded on the parade were 4 15-inch Rodmans, 4 10-inch Rodmans, 8 8-inch siege howitzers, 4 100-pounder Parrotts, 6 200-pounder Parrotts, 6 300-pounder Parrotts, 2 10-inch siege mortars, and 4 13-inch seacoast mortar. Stored in the casemates were the chassis and carriages for the Rodmans and Parrotts, the iron mortar beds, and 5 limbers and 3 carriages for the siege howitzers.[156]

All ordnance property was stored in the fort, while the engineer property was kept in the frame storehouse, near the wharf. During the past year, the latter property had been cared for by the fort keeper, who was being paid off on August 15. Slight repairs were needed for several of the engineer buildings--the kitchen-messhall and storehouse. The barracks, blacksmithy, and stables were badly decayed, and, when work resumed on the fort, would have to be rebuilt. The wharf and tramway, the Department was reminded, could not be used for landing and moving inland any heavy material.[157]

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156. Ibid .

157. Ibid.

During Fiscal Year 1884 maintenance at Pickens had been limited to minor repairs to the engineer buildings, weeding and mowing the earthen parapets, and care of the public property.[158]

3. Maintenance and Protection in Fiscal Year 1885

a. Keeper's Position is Abolished

Chief Engineer Newton on April 28, 1884, asked his superintending engineers to review the situation at the ungarrisoned forts for which they were responsible to ascertain if at any of them they could dispense with the fort keepers.[159] Such action was necessitated by General Order No. 36, dated April 21, 1884, which provided that all ungarrisoned works would be in charge of an ordnance-sergeant, "as far as regards the care and preservation of the post and the property appertaining to the Engineer Department."

This action had been triggered by the report filed by Inspector-General Jones after his trip to the Gulf Coast in April. Colonel Jones was of the opinion that there was no need for a fort keeper at defenses, such as Ship Island, where there was an ordnance-sergeant.[160] General Hancock, who commanded the Department of the East, agreed with Colonel Jones.[161]

Chief Engineer Newton, upon learning of the Jones' report and General Hancock's views, reiterated his call for Major Damrell

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158. Ibid.

159. Wilson to Damrell, April 28, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

160. Newton to Adjutant General, June 2, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

161. Hancock to Adjutant General, May 20, 1884, NA, RG 77, Ltrs. Recd., Chief Engineer.

to take action to eliminate the fort keepers at some of his Gulf Coast defenses.[162]

To carry into effect General Order No. 36, General Hancock on June 27 announced that Army Headquarters was turning over to the care of the Engineer Department a number of ungarrisoned seacoast defenses extending from Maine to Louisiana. Included were four of the five works for which Major Damrell was responsible--Forts Pickens, Morgan, Gaines, and Massachusetts.[163]

On July 11 Chief Engineer Newton advised Major Damrell that Congress on the 5th had authorized and President Arthur had approved an appropriation of $175,000 for "Protection, Preservation, and Repair of Fortifications" in fiscal year 1884. He would report as soon as possible the sums needed for pay of the fort keepers. At a future date he would be called on for estimates of funds required for maintenance and repair.[164]

Major Damrell replied that he needed $187.50 to pay the salaries of three keepers at $55 per month each: $82.50 each for Forts Pickens and Morgan for six weeks and $22 for the Ship Island fort for two weeks. He had alerted the Forts Pickens and Morgan keepers that they would be discharged on August 16, and had told the ordnance-sergeant to be ready to take charge of the Engineer property.[165]

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162. Wilson to Damrell, June 2, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

163. Special Orders No. 128, Dept. of the East, June 27, 1884, NA, RG 77, Ltrs. Recd., Chief Engineer.

164. Wilson to Damrell, July 11, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

165. Damrell to Newton, July 16, 1884, NA, RG 77, Ltrs. Recd., Chief Engineer.

Chief Engineer Newton on July 22 allotted $187 from the appropriation to be applied to the fort keepers' salaries. There was $82.50 each for Forts Pickens and Morgan to pay the keepers for six weeks at $55 per month, and $22 for the Ship Island keeper's pay for 12 days.[166]

b. Pensacola Forts Are Assigned to the Montgomery Engineer District

Two days later, on July 24, General Newton called on his superintending engineers for "a definite and clear description of the parts of the various works" under their charge requiring "repair and preservation, omitting...the portions which...would be useless after the modification of the fortifications."[167]

A bureaucratic change made by the Corps of Engineers prevented Fort Pickens from getting any funds from this source in fiscal year 1885. On August 30 Major Damrell's zone of responsibility was redefined. West Florida was detached from the Mobile Engineer District and assigned, along with Alabama and Georgia, to the newly constituted Montgomery Engineer District. Capt. Richard L. Hoxie was placed in command of the new district. Appointed to the U.S. Military Academy from Iowa in 1864, Hoxie had graduated No. 3 in the Class of 1868. He was commissioned a 2d lieutenant in the Corps of Engineers and assigned to the Engineer Battalion at Willetts Point. On July 3, 1870, Hoxie was ordered to Massachusetts as assistant engineer for Boston Harbor. He was promoted 1st lieutenant soon afterwards. For 24 months, beginning in July 1872, Hoxie was on duty in the west with the Wheeler Expedition. On July 3, 1874, Hoxie reported for duty as Chief Engineer for the District of Columbia, and on July 25, 1878, he was named assistant to the Engineer Commissioner for the District. On

166. Wilson to Damrell, July 22, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

167. Wilson to Damrell, July 24, 1884, NA, RG 77, Ltrs. Sent, Chief Engineer.

August 16, 1884, Hoxie, now a captain, was ordered to Montgomery. In addition to the Pensacola forts, he would be responsible for harbor and river surveys and improvements.[168]

When Major Damrell submitted his estimates for maintenance projects, in response to General Newton's circular of July 24, he only listed Forts Morgan, Gaines, and Massachusetts. Captain Hoxie, who did not assume charge of Fort Pickens until September 15, failed to submit an estimate. The Department did not take note of this, and there was no maintenance allotment for the Santa Rosa Island fort for the year ending June 30, 1885.

As the fourth quarter of the fiscal year approached, the Department by circular letter asked its superintending engineers to submit estimates for projects that might be accomplished with unobligated funds from the appropriation for "Preservation" for 1885. On February 28 Captain Hoxie replied. He informed the Chief Engineer that he had just returned from a thorough examination of the Pensacola forts. He had found the Engineer buildings and wharf at Pickens "quite dilapidated." The storehouse, however, sufficed to shelter the Engineer property, and he was of the opinion that the reconstruction of these structures and wharf could be deferred until such time as there was an appropriation for continuation of the modification of the fort.

Captain Hoxie was satisfied that no part of the "unexpended balances" could be advantageously expended on any of the Pensacola defenses at this time.[169]

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168. Cullum, Biographical Register, Vol. III, p. 107.

169. Hoxie to Newton, Feb. 28, 1885, NA, RG 77, Ltrs. Recd., Chief Engineer.

XV. FORT PICKENS AND THE DAWN OF THE ENDICOTT SYSTEM

A. Endicott Board Makes its Report

1. Technical Revolution Makes Our Nation's Coastal Defenses Obsolete

In the 1880s the only money spend on seacoast defenses was for maintenance. "The fortifications fell into disrepair and the defense strength of the United States" shrank to perhaps its lowest point since 1812. Simultaneously, great advances were being made in the design and manufacture of heavy ordnance.

One important development involved the substitution of steel for iron in the casting of guns. As the technique of forging large masses of steel improved, it enabled the ordnance people to proceed with the manufacture of the compound tube. The founding of cannon tubes in accordance with this new concept--increasing the size and strength of the tube by the successive shrinking-on of reinforcing hoops--had been practiced, it is true, in the years before 1860. Technology, however, had lagged, and it was not until the Civil War that banded and rifled guns of heavy caliber came into general use. Dr. E. Raymond Lewis, an authority on the subject, has written:

> Not until the late 1890s did the combined availability of good quality steel in large amounts, industrial facilities for producing heavy forgings, and machining techniques able to meet the required standards of precision make it possible to produce substantial numbers of these lighter, stronger, and hence, more powerful weapons.[1]

Another important advance was in the perfection of breech-loading. The principle had been common knowledge for centuries, and it had been employed intermittently until 1855, when Lord Armstrong of Great Britain designed a rifled breech-loading gun that "included so

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1. E. Raymond Lewis, Seacoast Fortifications of the United States: An Introduction History (Washington, 1970), p. 75.

many improvements as to be revolutionary."[2] During the Civil War breech-loading artillery was employed on a limited scale by the belligerents. After 1865, breech-loading field guns replaced muzzle-loaders in the European armies, as well as that of the United States. Not so rapid was the replacement of the muzzle-loading heavy ordnance mounted in coastal defenses. The problem of developing a successful breech-loading gun was technological. To be acceptable, a breech-mechanism had to withstand the great heat given off by the detonation of the propellent, be capable of containing the gasses, and be machined to be opened and closed rapidly. It was not until the late nineteenth century that ordnance technology was sufficiently advanced to produce the well-machined block mechanisms required by the big rifled guns needed for coastal defense.[3]

Three other developments helped speed the emergence of modern coastal artillery: (a) methods of rifling the tubes were improved, which made possible the introduction of more efficient and effective projectiles; (b) the development of disappearing carriages that utilized the firing recoil energy to return the gun to its position in battery behind a parapet, where it could be reloaded and serviced without unduly exposing its crew; and (c) the introduction of improved propellents, nitrocellulose, and nitroglycerine-based powders, to replace black powder.[4]

The effect on heavy ordnance of this technical revolution cannot be exaggerated, because it represented the greatest advance to be made in artillery from the time of its appearance in the fourteenth century until the development of the atomic cannon of the 1950s. As Dr. Lewis has written:

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2. Albert Manucy, Artillery Through the Ages: A Short Illustrated History of Cannon, Emphasizing Types Used In America (Washington, 1949), p. 4.

3. Lewis, Seacoast Fortifications of the United States, p. 25.

4. Ibid. p. 76; Manucy, Artillery Through the Ages, p. 28.

> Compared to the best of the smoothbore muzzle-loading cannon of the post-Civil War period, the new weapons which began to emerge from the developmental stage around 1890 could fire projectiles that, caliber for caliber, were four times as heavy as to effective ranges two to three times as great; and they could do so with remarkably increased armor-penetration ability and accuracy.[5]

During these years, the European naval powers had embarked on ambitious and expensive construction programs--the battleship made her appearance. News of the development of what was considered to be the ultimate weapon afloat caused ranking Army and Navy officers, as well as much of the public residing on the Atlantic and Pacific seacoasts, to become alarmed over the failure of Congress to authorize construction funds for coastal defense since the mid-1870s. Pressure mounted for Congress to take action to correct this situation which had allowed the Second and Third System Forts to deteriorate to a point where the nation's security was jeopardized.

a. President Cleveland Constitutes the Endicott Board

President Grover Cleveland accordingly in 1885 constituted a board headed by Secretary of War William C. Endicott to review the coastal defenses of the United States and to submit recommendations for a program to update them to take advantage of the technological revolution in weaponry. This Board was composed of officers of the Army and Navy, as well as civilians. Not since 1816, when the four-man board headed by General Bernard had made the study leading to the Third System Forts, had the subject of fortifications, types of armament, etc., been subjected to such an exhaustive study. The Endicott Board made its report in 1886.[6]

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5. Lewis, Seacoast Fortifications of the United States, p. 76.

6. Ibid., pp. 77-8.

The Board called for fortifications at 26 coastal points, plus three on the Great Lakes, as well as floating batteries, torpedo boats, and submarine minefields. Dr. Lewis has observed:

> In terms of the cost estimate alone, the overall proposal was greatly unrealistic. Moreover, the detailed provisions, concerning the types and quantities of weapons, drafted while the new ordnance was still at a fairly early stage of development, were necessarily set forth long before precise information was available regarding the actual performance of the production models.[7]

Nevertheless, on March 29, 1887, the Board of Engineers for Fortifications was directed by Secretary of War Endicott to prepare plans for the defense of the nation's more important harbors in accordance with recommendations of the Endicott Board. Operating under these guidelines, the Board "undertook a thorough revision of plans for defense of our chief ports by submarine mines and a study of the precise location of the new armaments rendered necessary by modern modes of attack."[8]

During the period 1887-1896 detailed plans for defense of 23 key ports, including Pensacola, were prepared by the Board of Engineers and approved by the Secretary of War.[9] Besides these major

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7. Ibid., p. 77.

8. Craighill to Lamont, Sept. 29, 1896, found in Report of the Secretary of War; being part of the Message and Documents Communicated to the Two Houses of Congress at the Beginning of the Second Session of the Fifty-Fourth Congress, 3 vols. (Washington, 1896), vol. 2, p. 7. Brig. Gen. W.P. Craighill was Chief Engineer in 1896, while Daniel S. Lamont was Secretary of War.

9. In addition to Pensacola, these harbors were: Portland, Me.; Portsmouth, N.H.; Boston Mass.; Narragansett Bay, R.I.; eastern entrance to Long Island Sound; New York City, N.Y.; Philadelphia, Pa,; Baltimore, Md.; Washington, D.C.; Hampton Roads, Va.; Wilmington, N.C.; Charleston, S.C.; Savannah, Ga.; Key West, Fla.; Mobile, Ala.;

undertakings, partial projects were programmed and approved for defense of the Lake Ports; Cumberland Sound; Kennebec and Penobscot Rivers, Me.; New Bedford, Mass.; and New Haven and New London, Conn. Under consideration were projects for defense of Port Royal, S.C., and the Dry Tortugas.[10]

B. Captain Hoxie's First Two Years as Superintending Engineer

1. Maintenance and Protection in Fiscal Year 1886

a. General Newton Calls for Estimates for Putting the Platforms in "Serviceable Order"

In March 1885, the year that President Cleveland constituted the Endicott Board, Chief Engineer Newton called on his superintending engineers to submit, as soon as practicable, estimates of the cost of "putting in serviceable order the existing platforms of 8-inch, 10-inch, and 15-inch guns, of mortars and rifle guns bearing upon the channel or entrance to the various harbors, for each work." They would also examine the magazines. Separate figures were to be forwarded for each class of gun and mortar.[11]

Captain Hoxie moved too slowly for the Department. On April 10, no figures having been received, General Newton again requested that he provide the desired data as soon as practicable.[12]

Having equipped his office with a typewriter, Hoxie informed the Department on April 18 that to place the designated Fort Pickens mortar and gun platforms in serviceable order he needed:

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9. (Cont.) New Orleans, La.; Galveston, Tex.; San Diego and San Francisco, Calif.; mouth of the Columbia River; and Puget Sound, Wash. Ibid.

10. Ibid.

11. Wilson to Hoxie, March 10, 1885, NA, RG 77, Ltrs. Sent, Chief Engineer.

12. Wilson to Hoxie, April 10, 1885, NA, RG 77, Ltrs. Sent, Chief Engineer.

(a) for the mortar platforms, $50 each for rebuilding two; (b) for the 4-inch front-pintle gun platforms $25 each for resetting two traverses; and (c) $200 for repairing the South Bastion magazine. The latter, he pointed out, was damp, and it would be necessary to strip the top of the arch and cover it with a coat of asphalt, and a layer of hydraulic cement.

Before any extensive construction could be considered on Santa Rosa Point, Captain Hoxie cautioned, the wharf would have to be rebuilt.[13]

b. Funding the Program

Meanwhile Chief Engineer Newton had alerted his superintending engineers that President Arthur had approved on March 3 an Act of the 48th Congress, appropriating $100,000 for "Preservation" of fortifications in fiscal year 1886. They would report before June 1 the sum necessary for "ordinary expenses" in the year ending June 30, 1886. They were to detail the maintenance projects to be executed at each of their works and its estimated cost.[14]

Once again, Hoxie missed a deadline. On June 5 he was chided by the Department, and asked to submit, "at your earliest convenience," an estimate of funds required for preservation and repair of the defenses in your charge for the next fiscal year.[15]

Captain Hoxie answered promptly. To fund operations at Fort Pickens during the next 12 months, he needed $150 for hire of men to mow the grass on the parapets and around the Engineer buildings, and to look after the Engineer property. Three hundred and

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13. Hoxie to Newton, April 18, 1885, NA, RG 77, Ltrs. Recd., Chief Engineers.

14. Newton to Hoxie, March 30, 1885, NA, RG 77, Ltrs. Sent, Chief Engineer.

15. Wilson to Hoxie, June 5, 1885, NA, RG 77, Ltrs. Sent, Chief Engineer.

fifty dollars were budgeted for placing the mortar and gun platforms and the Southeast Bastion magazine in "serviceable order" as outlined in his April 18 letter. For completing the 6-inch centre-pintle platform on the Southwest Bastion $638.70 was required; $3,700 were needed for reconstruction of the wharf; and $269 for rebuilding the tramway. Total cost of this program was $4,657.70.[16]

On June 29 Chief Engineer Newton, having studied the figures submitted and having evaluated the Department's national responsibilities, allotted Captain Hoxie $1,040 to fund his Pickens projects. This money was earmarked: for repair of the Southeast Bastion magazine $200; for resetting two traverses for 4-inch front-pintle platforms $50; for completing platform for the Southwest Bastion 15-inch centre-pintle platform $640; and $150 for care of the Engineer property and cutting grass.[17]

c. Hoxie's First Annual Report Details a Number of Structural Failures

Captain Hoxie filed his first annual report for Fort Pickens for fiscal year 1885. Before doing so, he reviewed the one submitted by Major Damrell for the previous year. In general, Hoxie listed the structural failures enumerated by his predecessor. He, however, added a few and included some details not found in Damrell's report. He observed that the north curtain, near the sally port and Northwest Bastion, had been cracked by a subsidence of the scarp. The wall over the entrance to the Southeast Bastion magazine needed "partial rebuilding" to repair damage from seepage. This had resulted in the magazine being damp and unsafe for storage of ammunition. Its doorway had rotted. The masonry of the cisterns was sound, but they should be "cleaned out and doors with close gratings placed in the openings to

16. Hoxie to Newton, June 16, 1885, NA, RG 77, Ltrs. Recd., Chief Engineer.

17. Wilson to Hoxie, June 29, 1885, NA, RG 77, Ltrs. Sent, Chief Engineer.

them, to prevent access by the public." The shot platforms were destroyed. The earthen slopes of the Southwest Bastion had been tramped over by tourists and the resulting trails had been eroded by rains. Elsewhere the earthen parapets were in fair condition.[18]

Hoxie reporting on the gun platforms, located the 18 4-inch front-pintle platforms, with low traverse stones, which had been completed. Seven were on the south curtain, eight on the Northwest Channel Front, and two on the Southeast Bastion. The first 15 could be readied for their guns with a slight adjustment of the pintle key pins; and the two on the bastion as soon as the traverse stones had been reset with the funds allotted on June 29.[19]

During the past year, work at the fort had been limited to care of the public property by the ordnance-sergeant. With no money for hire of laborers, weeds and grass had made great headway. As his report indicated, Captain Hoxie informed the Department, a large sum could be expended if it were determined to put the masonry of the fort and the woodwork of the quarters in "good condition." Weeds, bushes, and trees had been allowed such a start that "their removal . . . would involve a considerable expenditure." Hoxie did not believe this vegetation a source of "immediate injury to the work ."[20]

d. Hoxie Fumbles the Construction of the Southwest Bastion 15-inch Rodman Platform

For guidance in construction of the 15-inch Southwest Bastion platform, Captain Hoxie asked the Department to forward any lithographs in its files for a centre-pintle platform. He had sought in vain to obtain some from Major Damrell and had ramsacked his "private

18. Hoxie to Newton, Aug. 2, 1885, NA, RG 77, Ltrs. Recd., Chief Engineer.

19. Ibid.

20. Ibid.

collection" in an effort to locate one. There was a 15-inch platform on the Tower Bastion, but it was not of the latest design.[21]

On August 11 the Department sent to Hoxie by registered mail: (a) "Plan and Sections of Parapet and Front Pintle Platforms with Low Traverse Stones, for 15- and 13-inch guns"; (b) "Plan and Sections of Parapet and Platform with Low Traverse Stones for 10- and 8-inch S.B. and 100, 200, and 300 pdr. Rifled guns"; (c) "Plans and Sections of Platforms, designed for XIII- and X-inch Mortars"; (d) "Front Pintle Platforms for 15- or 13-inch Guns, as modified August, 1870"; (e) "Centre Pintle Platform for 15- or 13-inch Guns, as modified August 1870"; and (f) "Front Pintle Platform for 15-inch Gun, Adapted to New Ordnance Carriage of 15-inch increased height."[22]

By mid-October, Captain Hoxie had discovered that the high cost of granite delivered at Santa Rosa Island would increase the cost of the platform to be built above his estimate. In addition, the wharf, if not rebuilt, would have to be extensively repaired before any stone could be landed. He accordingly asked for an $800 increase in his allotment for the project.[23]

The Department was sympathetic to Hoxie's request, and the desired sum was made available.[24]

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21. Hoxie to Adams, Aug. 7, 1885, NA, RG 77, Ltrs. Recd., Chief Engineer. Capt. H.M. Adams, a personal friend, was assigned to Department headquarters in Washington's Winder Building.

22. Wilson to Hoxie, Aug. 11, 1885, NA, RG 77, Ltrs. Sent, Chief Engineer.

23. Hoxie to Newton, Oct. 20, 1885, NA, RG 77, Ltrs. Recd., Chief Engineer.

24. Wilson to Hoxie, Oct. 23, 1885, NA, RG 77, Ltrs. Sent, Chief Engineer.

Hoxie, encouraged by this success, attempted in December to get money to rebuild the wharf. Once again, this proposal was vetoed by the Department, because of lack of funds.[25]

Captain Hoxie entered into a contract for stone for the Southwest Bastion 15-inch Rodman platform with National Granite Co. of Philadelphia and Richmond. After a number of months passed and the firm failed to make delivery, Hoxie, with the end of the fiscal year approaching, bombarded the company with letters and telegrams seeking action. He was too late. On May 27 he learned that the firm had declared bankruptcy. He wrote National's "alleged representative" canceling the order and the Department. He explained to General Newton what had happened and announced that he was readvertising for proposals for the stonework, to prevent the funds allotted for the project from being returned to the U.S. Treasury with the end of the fiscal year.[26]

The Department, cognizant that there were only four weeks remaining in the fiscal year, questioned the "propriety" of Hoxie making a contract for construction of the gun platform to be accomplished in fiscal year 1887, "with an appropriation available for this fiscal year."[27]

Captain Hoxie, on filing his annual report for fiscal year 1886, listed that work had been confined to care of public property and purchase of materials for repairs. The default of the stone contractor, coupled with refusal of the Department to allow him to carry over the project, had caused a large part of the allotment to revert to

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25. Wilson to Hoxie, Dec. 19, 1885, NA, RG 77, Ltrs. Sent, Chief Engineer.

26. Hoxie to Newton, May 27, 1886, NA, RG 77, Ltrs. Recd., Chief Engineer.

27. Wilson to Hoxie, June 2, 1886, NA, RG 77, Ltrs. Sent, Chief Engineer.

the Treasury. Nevertheless, there had been expended for materials and "preliminary" repair of the wharf $632.22. For completion of the work heretofore recommended, an allotment of $4,126.23 was required.[28]

2. Maintenance and Protection in Fiscal Year 1887

a. Congress Fails to Enact a Fortifications Bill

Congress, during the two years following the 1886 submission of the Endicott Board's report, refused to appropriate any funds for protection, preservation, and repair of the obsolete fortifications guarding the nation's ports and harbors. On September 7, 1886, the Department alerted the superintending engineers that the 49th Congress had failed to make an appropriation for "Preservation" of fortifications in fiscal year 1887. Since there would be no allotment, they could dispense with their monthly reports of operations until such time as there was an appropriation and work was resumed.

At defenses, where fort keepers were employed, they were to be discharged. No expenditures were to be made from "Contingencies," and they were to report at once any funds they had on hand, previously allotted from that appropriation.[29]

Captain Hoxie, acknowledging receipt of this circular letter, reported that the fort keeper position at Pickens had been eliminated in 1884 and that he had no "Contingency" funds.[30]

b. Chief Engineer Duane Calls for Semi-Annual Reports

General Newton, having reached his 64th birthday on August 22, 1886, retired from the Army. His replacement as Chief

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28. Annual Report, Fort Pickens, Fiscal Year 1886, NA, RG 77, Ltrs. Recd., Chief Engineer.

29. Wilson to Hoxie, Aug. 9, 1886, NA, RG 77, Ltrs. Sent, Chief Engineer.

30. Hoxie to Newton, Aug. 9, 1886, NA, RG 77, Ltrs. Recd., Chief Engineer.

Engineer was Brig. Gen. James C. Duane. The new chief in mid-October, to make his presence felt, changed the annual report procedure. Henceforth, the superintending engineers would make semi-annual inspections in January, as well as the annual inspection. On submitting the reports, following these inspections, they were to include a "statement of the amount and character of the water supply at each post, and also of the number, character, condition, capacity, and present use of all buildings at each work."[31]

Although he made his inspection in January 1887, Captain Hoxie did not file his report until mid-April. In the months since his annual report, Fort Pickens had been turned into a prison for a number of Apaches from the southwest. The prisoners had been employed in "a general police of the works, removing undergrowth and weeds, cutting grass, cleaning out the Cunette, etc." They had greatly improved the appearance of the fort. No change, however, had occurred in the general condition of the structure.

Water for the fort was secured from rain falling upon the terreplein, from which it was conducted into four brick cisterns, having a total capacity of 193,392 gallons.

On the mainland, Hoxie reported, "flowing wells" were obtained by drilling into a strata less than 300 feet below sea level. If this strata underlay Santa Rosa Island, an abundance of artesian water could be obtained at a small expense.[32]

A table was prepared providing the desired data on the structures. It reads:

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31. Duane to Hoxie, Oct. 16, 1886, NA, RG 77, Ltrs. Sent, Chief Engineer.

32. Hoxie to Duane, April 11, 1887, NA, RG 77, Ltrs. Recd., Chief Engineer.

No. of Building	Fabric	Condition	Present Use	Capacity
1	wood	good	Ord.-Sgt's. Qtrs.	three rooms 106'x13½', 2 stories
1	wood	poor	vacant	formerly used as quarters for Eng. Dept. employees
1	wood	fair	vacant	26½'x14½' black-smithy
1	wood	fair	vacant	45'x14' stables
1	brick	good	vacant	25'x12' bakehouse
1	wood	fair	storeroom Engrs. property	80½'x17½'
1	wood	good	vacant	72'x20½'
1	wood	fair	Lighthouse Depot	151'x26'[33]

c. Apaches Take Over Maintenance of the Fort and Grounds

On August 15, 1887, Captain Hoxie submitted his annual report for the fiscal year. The fort, he reported, was in the same condition as it had been 12 months before, with one exception--the Apache prisoners had removed the weeds and rubbish. This greatly improved its appearance. One of the Engineer buildings, near the wharf, had been turned over to Colonel Langdon for use as a guardhouse.[34]

C. Fort Pickens as an Apache Prison

1. Geronimo, Natchez, and 13 Other Apaches Enter Fort Pickens

The Apache prisoners referred to by Captain Hoxie, in his semi-annual and annual reports, belonged to Geronimo's band, which,

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33. Ibid.

34. Annual Report, Fort Pickens, Fiscal Year 1887, NA, RG 77, Ltrs. Recd., Chief Engineer.

after terrorizing the Southwest for years, had surrendered to United States troops led by Brig. Gen. Nelson A. Miles on September 3, 1886, at Skeleton Canyon, Arizona Territory.[35] The terms of the surrender were such that Geronimo and his followers could not be handed over to civil authorities for trial and punishment as intended by President Cleveland.

A number of influential Pensacolans, on learning that Geronimo, Natchez, and their band had been taken, under heavy guard, to San Antonio, Texas, preparatory to being sent to Fort Marion, Florida, wrote their congressman, P.H.M Davidson. In the letter, dated September 14, they asked Davidson to employ his influence in getting Fort Pickens designated as the Indians' place of confinement.

The Santa Rosa Island fort, they pointed out, was preferable to Fort Marion because: (a) of its superior location from a "sanitary point of view and also with reference to its use as a prison being situated on" an island; (b) it was more than twice as large as the St. Augustine fort, which "was already crowded to its full capacity" by the Apaches sent east in April 1886; and (c) the Fort Barrancas troops would be able to guard the prisoners, and as the Pensacola forts were subordinate to the commander at Fort Marion, the Pickens prisoners would be as much under his jurisdiction as if they were at St. Augustine.[36]

Advised of what was afoot, the editor of The Pensacolian informed his readers that "a move has been set on foot to have some of these red devils sent down to this place and incarcerated in Fort Pickens." Congressman Davidson, responding to pressure from the voters, had strongly endorsed the proposal and had written the War Department. If the congressman succeeded, the editor continued, "he can point with pride as having been instrumental in giving Pensacola an

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35. Odie B. Faulk, The Geronimo Campaign (New York, 1969), pp. 143-51.

36. Ltr. to Davidson signed by a number of constituents, Sept. 14, 1886, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

attraction which will bring here a great many visitors. We hope to see the Indians soon."[37]

Accordingly, on October 20, orders were issued by direction of the President that Geronimo and the male Indians captured with him should be sent from San Antonio, under guard, to Fort Pickens. There they would be kept in close custody until further orders. The remainder of the band captured at the same time--numbering 11 women, six children and two enlisted scouts--was to be sent to Fort Marion, and placed with the other Apaches in confinement there.

The decision made to send the Indians to Fort Pickens, the Army had to take measures to insure they were properly guarded. As was now the practice during the yellow fever season, the Fort Barrancas garrison had been removed from the coast on July 11. Batteries B and H, 2d Artillery, were currently posted at Camp Hancock, near Atlanta, Georgia. On October 21 the commander of the Division of the Atlantic, Maj. Gen. John M. Schofield, telegraphed the battalion commander, Capt. James E. Wilson. His battalion was to return at once to Fort Barrancas, as the 15 adult Indians, now at San Antonio, had been ordered sent to Fort Pickens. On their arrival, the commander at Fort Barrancas would take charge of them.

These prisoners, Wilson was informed, were guilty of "the worst crimes known to law, committed under circumstances of great atrocity," and the President had ordered them held under the strictest vigilance. The commanding officer at Barrancas would be held responsible for the discipline and safekeeping of these prisoners while they were at Fort Pickens.[38]

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37. The Pensacolian, Sept. 18, 1886.

38. Adjt. Gen. Div. of the Atlantic to Wilson, Oct. 21, 1886, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

Captain Wilson, upon receipt of these orders, requested authority to "purchase such materials and hire such labor as may be necessary to properly secure the Apache prisoners."

Fort Pickens, he pointed out, had not been regularly garrisoned for years, and he doubted whether any door or window was secure. It would probably be necessary "to replace locks, bar windows, etc." If given permission, he would see that this work was done.[39]

General Schofield, on forwarding the correspondence to Washington, recommended its approval, and noted that this is a "matter of urgency."[40] On October 26 Quartermaster General Samuel Holabird approved the expenditure of such funds as "may be absolutely necessary to properly secure the Apache prisoners."[41]

Captain Wilson and his battalion in the meantime broke camp, and on October 23 boarded a Pensacola-bound train. By noon the next day the troops were back at Fort Barrancas.[42]

On their arrival, the soldiers read in the weekly Pensacolian for October 23 that the government has "at last come" to its "senses and selected Fort Pickens as the most suitable place to incarcerate the greatest living American General Geronimo and his principle [sic] officers."

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39. Wilson to Adjt. Gen., Division of the Atlantic, Oct. 23, 1886, NA, RG 92, Consolidated Correspondence File.

40. Schofield to Adjt. Gen., Oct. 25, 1886, NA, RG 92, Consolidated Correspondence File.

41. Holabird to Chief Q.M., Division of the Atlantic, Oct. 26, 1886, NA, RG 92, Consolidated Correspondence File.

42. Returns for Regular Army Artillery Regiments, June 1821-January 1901, NA, Microcopy M-727.

The Santa Rosa Island fort, they read, is well suited as an abiding place for one of Geromino's genius, for there he can, like his great prototype Napolean at St. Helena, live once again his conquests without being disturbed by the outside world." The fort "was large and solid and could hold Geronimo and his band," along with several hundred more if Washington saw fit to send them. "We welcome the nation's distinquished guests," the editor wrote, "and promise to keep them so safely under lock and key that they will forget their hair raising proclivities and become good Indians."[43]

The special train from San Antonio, consisting of four coaches, chuffed into Pensacola at 2 a.m. on October 25. Aboard were 15 Apache warriors, their women and children, and a 30-man detachment from the 16th U.S. Infantry commanded by 1st Lt. E.F. Woodbury. At 8:30 o'clock the steamer Twin pulled into the railroad wharf, where the two cars with the 15 male Indians and their guards had been parked. The Apaches were soon aboard the ship.

A reporter for The Pensacolian observed that most of the Indians were undersized, "but very broad, . . . having a complexion somewhat similar to that of the Japanese. Natchez seemed to be much amused by the crowd which had assembled to see him and his braves." En route down the bay, the Indians seemed interested in what they saw. One older man, who refused to "wear his nether garments," was delighted to see porpoises frolicking in front of the craft.

The Indians and their guards landed on the rickity Fort Pickens wharf, and Captain Woodbury turned his prisoners over to Captain Wilson. As one of the warriors was leaving Twin, he reportedly exclaimed, "Won't see Mexico no more."[44]

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43. The Pensacolian, Oct. 23, 1886.

44. Ibid., Oct. 30, 1886. The other two cars with the women and children had continued on to St. Augustine.

2. Captain Wilson Establishes a Routine

Previous to the prisoners' arrival, Captain Wilson had two of the casemate rooms in the south curtain "divided and made secure for their safekeeping." Not having received any special instructions as to their confinement, "except to guard them," he saw that they were issued regular Army rations. He issued to them for cooking and messing purposes three mess pans, four frying pans, and 18 tin cups.

In accordance with Army Regulations, each Apache was issued by the post quartermaster one blanket, two pair of drawers, two knit undershirts, two pair cotton socks, and one pair of field shoes.

Fort Pickens not having been permanently garrisoned since 1867, the parade, terreplein, ditch, and earthen parapets were overgrown with weeds and brush. Lt. C.F. Parker and the guards turned the Indians to clearing up the gounds. They cheerfully worked a seven-hour day.

Captain Wilson had fuel for the prisoners and guards collected from the Santa Rosa Island beaches, but by the end of November it was getting scarce.

Vaccine had been requisitioned by post surgeon, Dr. C.W. Marlborough, and the Indians would be inoculated for smallpox as soon as it was received. As yet, there had been little sickness, Captain Wilson reported on November 30, although one of the prisoners was presumed insane.

George Wratton, an interpreter, had accompanied the Apaches, and his services were invaluable, as he had to "explain everything" to them. The Indians, Wilson reported, had told him they were "satisfied and want to do what is required of them to the complete satisfaction of everyone."[45]

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45. Wilson to CO, Division of the Atlantic, Nov. 30, 1886, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

On November 6, 1886, the number of warriors confined in the fort had increased to 17, when Mangus and another brave arrived from Arizona. The duo had left Fort Apache under guard on October 30, with a third Indian who had died en route.[46]

Several days later, a reporter from The Pensacolian, accompanied by Stephen R. Mallory, visited the fort. He informed his readers that "Geronimo and Loma have the most cruel countenances." The former lacked intelligence, but had the "coldest eye we have ever beheld." Natchez was "very tall and straight with an air of superiority about him which would indicate that he felt that it was encumbent upon him to uphold the dignity of his chieftanship." He was reticent and ignored his visitors. Mangus had a pleasant face. He wore the uniform of a captain in the Army, and although a chief did not "put on so much style" as Natchez. Geronimo, although not a chief, was the leader, and was "obeyed implicitly by the others." He was "a great begger" and would ask for anything that struck his fancy.[47]

3. Colonel Langdon Takes Command

Loomis Langdon, now a lieutenant colonel, returned to Pensacola on December 12, from two month's leave, and resumed command of the troops posted in the area. On January 7, 1887, he informed his superiors that the 17 Apache prisoners, including Chiefs Natchez and Mangus, and Medicine Man Geronimo, were quartered in two casemates, which had been "made as comfortable as they were when occupied" by Company G, 1st Artillery, in January 1861. The Indians had been well supplied with bedding and clothing by the Army. Their outer garments were the "brown canvas suits" identical to those worn by enlisted men on fatigue duty. Their beds were rough bunks made of "such material as could be readily furnished" by the post quartermaster.

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46. Ibid. Three women and five children captured with Mangus were sent to Fort Marion.

47. The Pensacolian, Nov. 13, 1886.

In each casemate room, one of the Indians was detailed as a cook. He prepared the food at the open fireplace, as they did not know how to use cooking stoves.

Their health had continued good. The Indian reported insane by Captain Wilson was "doing very well physically but mentally was neither worse nor better." Surgeon Marlborough, in response to Colonel Langdon's orders, had made a careful inspection of the Indians, the guard, and the fort. No deaths had occurred among the Indians since their arrival on Santa Rosa Island, despite reports to the contrary printed in some eastern newspapers.

The Apaches were "neat and orderly" in their personal habits. Colonel Langdon had reduced their work day to six hours. Before the Indians were turned to cleaning up the fort and grounds, they had been overgrown with weeds, grass, and trees. A pine had been growing out from one of the chimneys. In the ditch, where Langdon had commanded a battery during the bombardments, fig trees more than 15 years old were growing. A grove of young pines had sprung up west of the fort, while the glacis was obstructed with cactus. By early January nearly all this vegetation had been removed by the prisoners. After the fort and grounds had been cleared, the military planned to have the Indians prepare a garden.

The Apaches, in Colonel Langdon's opinion, had suffered at first owing to "the smallness of the ration." The only one who complained was Geromino, and for this he was chided by Natchez. The latter, Langdon considered, "a very manly fellow," who "exercises a good influence over the others." The Indians' ration, on orders from General Schofield, had now been increased.[48]

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48. Langdon to CO, Division of the Atlantic, Jan. 7 and 24, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689. The new ration allowance called for:

Lieutenant Parker had assured Colonel Langdon that the prisoners, not once since their arrival, had displayed any sign of discontent or insubordination. They had done all that was required of them with cheerfulness, alacricty, and intelligence. They entertained hopes of seeing their families, and this had probably some weight with them.

Consequently, Colonel Langdon informed headquarters, Division of the Atlantic, that no reason now exists why the women and children should not be sent here from Fort Marion. If the War Department agreed, arrangements could be readily made "to make the whole party secure as well as comfortable."[49]

On March 24 Colonel Langdon notified his superiors that in the eight weeks since his last report, the health of the Indians had continued good. There had been but two cases of sickness reported, and these were not serious. Post Surgeon Marlborough had continued his twice-a-week visits to the fort, reporting to Colonel Langdon only "in case of something serious requiring" his attention.

The Apaches were still employed outside, policing the fort, ditch, glacis, counterscarp, and grounds. In addition to trees, grass, and weeds, they had removed an immense amount of debris--broken bricks, rotten planks, and stone.

Colonel Langdon at first had prohibited visitors from crossing over from the mainland to see the Indians. In early February,

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48. (Cont.)

per 100 rations:
- 75 pounds of pork (3 days in 10)
- 125 pounds of fresh beef (7 days in 10)
- 112½ pounds flour (bread)
- 15 pounds of beans or 10 pounds of hominy
- 10 pounds of coffee
- 15 pounds of sugar
- 4 pounds of soap
- 4 pounds of salt
- ½ pound of tobacco

49. Ibid.

however, he began to allow tourists to visit the fort. The guidelines which he established required that every applicant for a pass to travel to Santa Rosa Island had to first come to Fort Barrancas to secure it. This enabled Langdon to see who was asking for a pass and to judge whether they were likely to trifle with the prisoners or give them whiskey. Large numbers of persons had thus been to see the Indians. On one day alone there had been 459 visitors, and rare was the day when there was less than 20.

One of the 17 Indians, Colonel Langdon reported, was Go-so, a youth of the right age to teach. If the government were still sending young Indians to Carlisle to be educated, he recommended that Go-so be sent.

Once again, as he had in January, Colonel Langdon urged that the wives and children of the Apaches confined at Fort Pickens be allowed to join them. Public opinion, he cautioned, would sooner or later force the War Department to take such action, but it could earn for itself popular acclaim by initiating the move. Moreover, the prisoners had, since they had been at Pickens, "earned the praise of every one cognizant with their behavior for their exceedingly good conduct."[50]

4. Arrival of the Women and Children

On April 25 Colonel Langdon reported that the health of his charges remained good. During the past month they had been employed "scraping, painting and piling shot and shell" on the Fort Pickens parade. Ord. Sergt. Thomas Henry supervised this project. They had also dug wells near the fort to obtain water for cooking and washing. A prolonged drought had lowered water in the cisterns to a critical point, and Colonel Langdon wished to conserve what remained for

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50. Langdon to CO, Division of the Atlantic, March 29, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689. The Indians confined were: Natchez, Mangus, Geronimo, Per-i-co, Fun, Ah-nan-dia, Na-pi, Motxos, Chappo (a son of Geronimo), Ya-no-yha, Zis-noth-toes, La-zie-yah, Kilth-se-ga-ah, Zhon-ne, Pae-she, Hun-lo-na, and Go-so.

emergencies in case the Fort Marion prisoners were transferred to Pickens.

Alerted that the women and children would, in accordance with his suggestion, be sent to join their menfolk, Langdon had made preparations for their reception.[51]

On April 27 there arrived from Fort Marion, the wives and children of the prisoners. The newcomers numbered 20 women and 11 children too young to be sent to Carlisle. Among the former were Geronimo's three wives--Ze-yeh, Ih-tedda, and She-gha.[52]

5. First Summer

On June 28 Colonel Langdon, in writing of the Indians' quarters, informed headquarters that their bedding consisted of blankets and bedsacks, the latter filled once a month with fresh straw. Their supply of fuel was ample. In addition to their allowance, they were permitted to gather driftwood from the beaches.

Their health continued remarkably good. There had been no deaths in more than eight months. There had been little sickness, and what there was was nothing more serious than "temporary bowel complaints, contusions, accidental and trifling cuts from tools, or the illness sometimes consequent on vaccination." Two of the adults, a man and a woman, were currently confined to their beds with rheumatism and colds.

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51. Langdon to CO, Division of the Atlantic, April 25, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

52. Debo to Slatkavitz, Jan. 18, 1973, files, Florida Unit, Gulf Islands NS. The ages of the children ranged from two months to seven or eight years. Two or three of the adults were more than 60 years of age. General Schofield on Apr. 23 had directed the Fort Marion commander to send to Fort Pickens under proper escort, the wives of the Indians confined there and such of the children not of age to be sent to Carlisle. Schofield to Ayres, Apr. 23, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689. Dr. Angie Debo was formerly on the staff of the Library at Oklahoma State University, while in January 1973 Roy Slatkavitz was a landscape architect attached to the National Park Service's Florida office. Bvt. Maj. Gen. Romeyn B. Ayres was the Army commander at Fort Marion and Langdon's immediate superior.

Colonel Langdon attributed their good health, "partly to the splendid climate," but principally to keeping them employed. Besides policing the grounds and their ordnance work, they were now engaged in planting the parade in Bermuda. They were not worked hard, Langdon explained, because no Indians had "the endurance and willpower of the white man required for a long continued task." In addition, they had lived in the high plateaus and mountains of the Southwest, and would "break down in the lower country, if kept continuously at tasks expected of white men accustomed to labor in this region." Their employment had also kept them from "brooding over fancied wrongs or chafing under a confinement, which, even under the mildest rule, must be radically different in its surroundings from the free life to which they have been accustomed."

The drought, which had begun on March 9, was finally broken on June 25. Fortunately, the prisoners had been able to obtain water from the wells they had dug among the dunes rather than the nearly empty cisterns.

Since their October arrival, there had been no need to reprimand, much less punish, any of them. Of course, Langdon noted, "no credit is due them for behaving well when it is clearly understood that an offender will be promptly put in irons." They did, however, deserve commendation for their cheerfulness of demeanor, for their alacrity in obeying orders and for the zeal and interest they show in the duties assigned them."

Interpreter Wratton was cited by Colonel Langdon for the good influence he exercised over them. Natchez, a much younger man than Geronimo, possessed "a great deal more influence than he over his fellow prisoners."

In late May, Wratton had told Langdon that several of the Apaches had told him that they were desirous of "going into permanent homes on lands they could cultivate as their own." Langdon told Wratton to explain to them that they had had their chance, and

> they had acted badly and lost it deservedly; that they came here with their lives spared by a strong but merciful government and they should be thankful if they were only allowed to let the government forget them for awhile; and that the worst thing they could do was to remind the people of their existence as it might be remembered they had not as yet been punished for their crimes.

Since then they had said nothing more about farms.

Colonel Langdon, however, recommended that the Department of the Interior allot $50 for the Indians to purchase seed to establish gardens.[53]

The Apaches held their annual corn dance on June 10. About 300 Pensacolans, on invitation of Colonel Langdon, attended. They left the Palafox Street Wharf aboard the steamers E.E. Sampson, Mary Wiftich, and Willie C. Upon the guests' arrival, they were escorted into the fort, where they were met by Colonel Langdon and his officers. The dance had been in progress about one hour.

A large fire had been built in the center of the parade. Near the east front, a buffalo hide had been placed on the ground, its hairless side up. Squatting around it, holding long switches, were Natchez, Geromino, and about eight other men. A crude drum was positioned before one of the Indians forming the circle.

Suddenly, the spectators were startled by a cry which seemed to come from all parts of the fort. It was a peculiar cry, "commencing very low and rising until it became very shrill, then dying away with a low wailing sound." It originated with the women and was

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53. Langdon to CO, Division of the Atlantic, June 20, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

the signal for the beginning of the dance. The group around the hide commenced a wild chant, and beat the hide with switches, while the drummer pounded the drum. The dancers, three in number, now appeared. Two were dressed in fancy garb, having on skirts which reached to the knees, and long streamers of colored cloth attached to their arms. They were bare to the waists, and their heads surmounted by pieces of wood resembling horns. The third dancer, with the exception of having his face covered and a breech clout, was naked. Each held in his right hand a long wooden sword and in his left a wooden cross. In perfect rhythm to the chant, they danced around the fire, doing "some doughty deeds in a mimic warfare with the evil spirits." Occasionally, they seemed in need of assistance and retreated. Then brandishing the crosses, they rushed forward and demolished the foe. This kept up until time for the Pensacolans to return to their vessels at 10 o'clock. The dance, however, continued till dawn.[54]

When he submitted his next report on August 9, Colonel Langdon noted that, although it was the sickly season, his prisoners' health continued satisfactory. Since his last report, there has been several cases of illness, but these had been amenable to treatment. The worst of these had been a woman, who had suffered large eruptions following her vaccination, and one felled with erysipelas.

He had continued to work the men, weather permitting, from Monday through Friday. According to the heat and humidity, working hours were from 8 to 11 a.m. and on some days from 1 to 3 p.m. and on others from 4 to 6 o'clock. As heretofore, they were employed policing the grounds, digging and cleaning wells, digging sinks, gathering and cutting firewood, maintenance of ordnance, cleaning vegetation from interstices in the fort's walls, and cutting the "wild cudigo" from the ditch, where there was a dense growth, "a resort for many venomous snakes."

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54. The Pensacolian, June 11, 1887.

On Saturdays the Indians, who did not have wives, were required to do their own mending and washing. To insure that time set apart for their own use was not interrupted, visitors were not allowed in the fort on Saturdays, and only rarely on Sundays. The women were not called upon to do any work except that done by "women of the working people among the whites, such as cooking, sewing, and keeping the interiors of their living places well policed."

Every order, Colonel Langdon reported, was obeyed to the letter, with cheerful alacrity. Their bearing toward the officers, guards, and interpreter was that of "gentle, confiding, dependent children." This did not, however, cause Colonel Langdon to relax his vigilance nor run any risk of "spoiling" them by indulgence or expressions of sympathy. In this, as well as in his efforts at discipline and constant watchfulness, Langdon was seconded by his officers and men, and by Interpreter Wratton.[55]

6. Maintenance and Rehabilitation of the Fort as a Prison

a. Fort Pickens Again Becomes the Responsibility of the Commanding Officer of the Pensacola Bay Defenses

Colonel Langdon, on returning from leave and resuming charge of the Pensacola Bay defenses, had asked that Special Order No. 128, Department of the East, June 27, 1886, be modified to again place Fort Pickens under his command.

On January 8, 1887, Chief Engineer Duane, after studying Colonel Langdon's request, recommended that responsibility for Fort Pickens be transferred from the Corps of Engineers to the commanding officer of Fort Barrancas.[56]

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55. Langdon to CO, Division of the Atlantic, Aug. 9, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

56. Duane to Adjutant General, Jan. 8, 1887, NA, RG 77, Ltrs. Sent, Chief Engineer.

After reviewing the situation and studying the endorsements, Secretary of War Endicott approved this action. On January 13 the Adjutant General accordingly announced that Fort Pickens and its military reservation had been transferred as requested by Colonel Langdon.[57]

b. Repairing the Wharf

With the fort again the responsibility of the commanding officer, Defenses of Pensacola Bay, the Quartermaster Department, not the Corps of Engineers, would have to provide funds and supervision for repair of the wharf and quarters.

The Inspector-General, Division of the Atlantic, was on Santa Rosa Island in the first week of May 1887. He observed the "bad condition" of the Fort Pickens wharf, and made it a matter of record. Commenting on this report, Colonel Langdon pointed out to his superiors that, before the Inspector-General's visit, the post quartermaster had been formulating estimates for its repair. The wharf, he continued, had fallen into "disrepair through storms and lack of appropriations," while it was the responsibility of the Corps of Engineers. In fiscal year 1886 money had been allotted by the Chief Engineer for its repair, but, after some materials had been stockpiled by Captain Hoxie, time had run out and the funds had reverted to the Treasury. Following the January 13 transfer of responsibility for Fort Pickens to his command, Colonel Langdon had conferred with Captain Hoxie regarding repair of the wharf.[58]

To effect repairs, the post quartermaster estimated it would cost $792.27 in Departmental funds. This was in addition to the materials the Corps of Engineers had purchased for the wharf and were

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57. Kenton to Duane, Jan. 13, 1887, NA, RG 77, Ltrs. Recd., Chief Engineer. J.C. Kelton in 1887 was the Army's Assistant Adjutant General.

58. Langdon to AAG, Division of the Atlantic, May 18, 1887, NA, RG 92, Consolidated Correspondence File.

willing to transfer.[59] On June 21 the Adjutant General announced that the Secretary of War had authorized use by the Quartermaster General of materials now on hand at Forts Pickens and McRee purchased by the Engineer Dpartment, as well as an allotment of $518.25 for repair of the wharf.[60]

By early September it was apparent to Colonel Langdon that, in addition to the $528.25 and Engineer materials, it would cost another $3,207 to complete the project. In explanation, Langdon pointed out that the first estimate had merely provided for a "skeleton extension." Now it was found that it would be necessary to rebuild and extend the wharf into deeper water, and "in such manner as will admit of daily use by troops, etc." It must be strong enough to walk on as well as to moor a steamer alongside. The present wharf, the center of which had collapsed, was very dangerous. To reach the island, one had to pass over "a temporary plank which springs with every step."

Many parts of the wharf, which were still standing, were without support and were "gradually sinking down." It was but a question of time before the entire structure fell into the bay. No freight, heavier than four men could carry, could now be landed on the wharf.

The Quartermaster General, despite the urgency of the situation, had to veto the request for additional funds, because the condition of the appropriation for fiscal year 1888 would not warrant such action.[61] In view of the bleak financial outlook, plans to rebuild the wharf had to be abandoned in favor of temporary repairs.

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59. Duane to Adjutant General, May 28, 1887, NA, RG 77, Ltrs. Sent, Chief Engineer.

60. Dunn to Commanding General, Div. of the Atlantic, June 21, 1887, NA, RG 77, Ltrs. Recd. Chief Engineer, R.C. Dunn in 1887 was Adjutant General, U.S. Army.

61. Post Quartermaster to Tompkins, Sept. 7, 1887, NA, RG 92, Consolidated Correspondence File. Col. C. H. Tompkins was Assistant Quartermaster, Div. of the Atlantic.

c. Rehabilitating the Quarters

In March 1887 there was a proposal to transfer all the adult Fort Marion prisoners to Fort Pickens. Despite the size of Fort Pickens, this would cause problems, Colonel Langdon reported on March 19. A large increase in those confined would tax the water supply. Currently, one cistern was half full and the other one-third full. Additional water for cooking and washing could be obtained by sinking surface wells.

Considerable carpenter work would also be required. This would involve boarding up the rear and open ends of the gun casemates against the winter, and installation of pipes to conduct rainwater from the terreplein into the cisterns. A new postern door was required, along with embrasure shutters. These repairs could be made after the arrival of the Fort Marion Indians.

There were, however, arguments against bringing additional prisoners to Fort Pickens. First, the Santa Rosa Island soil was not conducive to the cultivation of gardens; and second, yellow fever was certain to break out sooner or later, and the presence of the prisoners would endanger Langdon's command.[62]

It was accordingly determined to send all the adult Fort Marion prisoners, except the wives of the Fort Pickens Apaches, to Mount Vernon, Alabama.

After arrival of the women and children, Colonel Langdon reported that his prisoners were living in the "unused and dilapidated casemates." The married Indians occupied the old Officers' Quarters in the south curtain, while the bachelors and two or three married Indians, whose wives and children had not joined them, resided in the casemates known as the "Company Quarters" and "Old Hospital" in the north curtain. The doors, windows, floors, and fireplaces of these casemate rooms were in "very bad repair, nothing having been done to

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62. Langdon to CO, Div. of the Atlantic, March 19, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

them since the rebellion." In some instances doors opening on the parade were missing, exposing the inmates to the "Northers," which could be severe during the late autumn and winter.

Considerable repairs were needed before winter to make the quarters habitable. The post having been formally transferred by the Engineer Department, Colonel Langdon supposed the Quartermaster Department should fund the repairs. If this were the situation, the work could be accomplished under his supervision.[63]

To effect necessary repairs to the casemate quarters, Lt. Medorem Crawford, the post quartermaster, called for:

14	new sashes, glazed and painted	@ $1.50	$ 35.00
14	new panel doors 1½"	@ $2.50	60.00
2	gross screws 1½" #62	@ 28¢	.56
36	horizontal rimlocks 7" heavy	@ $1.00	36.00
36	(illegible) door knobs	@ 10¢	3.60
24	pair butts 3"x3½" (loose pin)	@ $2.40	4.80
50	lbs. sash cord	@ 22¢	11.00
96	sash pulleys	@ 08¢	7.68
600	lbs. cut nails $\frac{4d}{100}$ $\frac{8d}{200}$ $\frac{10d}{300}$	@ $3.50	21.00
4,000	feet flooring 1¼"	@ $30 per m	120.00
3,800	feet sheating 1"x8"	@ $16 per m	60.80
150	pieces scantling 2"x6"x15'	@ $16 per m	36.00
23,000	shingles	@ $2.75 per m	63.25
4,000	feet dressed lumber 1½'x12"x14'	@ $30 per m	120.00
300	feet scantling 6"x6"x14'	@ $16 per m	4.80
300	feet scantling 4"x4"x14'	@ $16 per m	4.80
200	feet lumber 1"x6"x16'	@ $16 per m	3.20
480	feet rough lumber 3"x12"x16'	@ $16 per m	7.68
5,500	bricks	@ $12 per m	66.00
10	barrels lime	@ $1.50	15.00
			$682.17
	Labor		
20	days labor of 3 carpenters	@ $3.	$180.00
6	days labor of 2 masons	@ $3.	36.00
23	days labor of 3 laborers	@ $1.50	69.00
			$967.17[64]

63. Langdon to Assistant Adjutant General, Div. of the Atlantic, June 28, 1887, NA, RG 92, Consolidated Correspondence File.

64. Crawford to Langdon, Aug. 29, 1887, NA, RG 92, Consolidated Correspondence File.

The Adjutant General referred the correspondence to Chief Engineer Duane. Replying, Duane reminded the War Department that Fort Pickens had been transferred to the commanding officer, Fort Barrancas, on January 13. Because of the failure of Congress to make an appropriation for fortifications during the previous two fiscal years, his Department had no funds for military construction, repair, or alteration.[65]

It was accordingly determined by Secretary of War Endicott that rehabilitation of the quarters would be charged to the Quartermaster General.[66]

Lieutenant Crawford, to secure brick for this project, along with one at Barrancas Barracks, asked for bids. The proposals submitted were too high and were rejected. As an alternative, Crawford suggested that he be allowed to salvage brick from the ruins of Fort McRee.[67]

Colonel Langdon, on forwarding the subject request to Captain Hoxie, pointed out that, beside the project cited by Lieutenant Crawford, there was other "very necessary work" at the post for which brick were required.[68] Captain Hoxie, in recommending approval of the request, informed the Department that he had sought to utilize the Fort McRee brick for ballast in cribs erected for protection of the shoreline, but they had proved to be unsatisfactory.[69]

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65. Duane to Adjutant General, July 11, 1887, NA, RG 77, Ltrs. Sent, Chief Engineer.

66. Duane to Quartermaster General, July 12, 1887, NA, RG 92, Consolidated Correspondence File.

67. Crawford to Port Adjutant, Dec. 15, 1887, NA, RG 77, Ltrs. Recd., Chief Engineer.

68. Langdon to Hoxie, Dec. 16, 1887, NA, RG 77, Ltrs. Recd., Chief Engineer.

69. Hoxie to Duane, Dec. 19, 1887, NA, RG 77, Ltrs. Recd., Chief Engineer.

On December 23 Chief Engineer Duane recommended to the Secretary of War that Captain Hoxie be authorized to permit the Fort Barrancas quartermaster to salvage and use the remaining Fort McRee bricks.[70] Four days later, the Acting Secretary gave his approval.[71]

The materials secured, the rehabilitation of the quarters was soon completed.

7. Indians Depart

The prisoners, however, did not have long to enjoy their improved quarters. On December 30, 1887, Colonel Langdon reminded the War Department that Go-so was still confined at the fort. He now had three more candidates for the Carlisle Indian school. They were Katie, a 15-year-old girl, and two boys--Chappo, a son of Geronimo, and a son of Natchez. Katie was of marriageable age and already she was the subject of much discussion among the prisoners. Ah-nan-du, who already had a wife living in the fort, wanted to marry Katie.[72]

The Acting Secretary of War on March 7 issued orders directing that Katie be transferred to Carlisle.[73] Katie was released from Fort Pickens on April 19 and boarded a train, on the first stage of her journey to Capt. Richard H. Pratt's school. Seven weeks before, the number of prisoners had been increased to 51 by the transfer of Ostoyay and his wife from Mount Vernon Barracks.[74]

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70. Duane to Secretary of War, Dec. 23, 1887, NA, RG 77, Ltrs. Sent, Chief Engineer.

71. Acting Secretary of War to Duane, Dec. 27, 1887, NA, RG 77, Ltrs. Recd., Chief Engineer.

72. Langdon to CO, Div. of the Atlantic, Dec. 30, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

73. Benét to Sheridan, March 7, 1887, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

74. Returns for U.S. Posts, 1800-1916, NA, Microcopy M-617.

The Inspector-General, Division of the Atlantic, on April 22, 1888, upon a visit to Fort Pickens and Mount Vernon Barracks recommended that the Fort Pickens prisoners be sent to Mount Vernon Barracks. The transfer would leave the battalion at Fort Barrancas free for "any employment that might arise," and also avert the necessity of retaining them on the Gulf Coast in the event yellow fever returned to the Pensacola area during the forthcoming summer.[75]

His recommendation, having been approved by General Schofield and the Army's commanding general, Philip H. Sheridan, was laid before President Cleveland. His approval secured, General Schofield on May 10 signed Special Order 92. Colonel Langdon was directed to send Geronimo and the other Indian prisoners at Fort Pickens, under suitable guard, to Mount Vernon Barracks. There they would be turned over to the post commander. The guard would then return to Fort Barrancas.

The five Indian youths, named in Colonel Langdon's communication of April 23, would not be sent to Alabama with the other prisoners. Instead, they would be sent to Captain Pratt's Indian School.[76]

On May 12 Lt. J.N. Lewis and 20 enlisted men of Batteries B and H, 2d U.S. Artillery, left Fort Pickens with 46 prisoners--15 men, 21 women, and 10 children. The next day the Apaches were turned over to the commander at Mount Vernon Barracks, and Lieutenant Lewis and his detachment returned to Fort Barrancas the next day.[77]

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75. Inspector-General to Schofield, April 22, 1888, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

76. S.O. 92, Headquarters, Div. of the Atlantic, May 10, 1888, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

77. Returns for U.S. Ports, 1800-1916, NA, Microcopy M-617.

No further orders having been received regarding the five youths scheduled to be sent to Carlisle, Colonel Langdon on June 4 notified General Schofield that to guard them required a detail of at least five men from his two understrength batteries. In addition, he was responsible for two forts.[78]

Replying on June 20, General Schofield directed Langdon to send the five Indians, "under suitable care, to Carlisle." He would then place his battalion in summer camp at Huntsville, Alabama.[79]

On June 21 the five youths and their guards left Fort Pickens for Pensacola, where they entrained. They were taken to Mount Vernon Barracks, whose commander would be responsible for seeing that they reached Captain Pratt's school. Two weeks later, on July 6, Colonel Langdon's battalion boarded cars of the Louisville & Nashville Railroad and were transported to Huntsville.[80]

D. Captain Price as Supervisory Engineer

1. Captain Hoxie's Last Months on the Gulf Coast

a. Congress Makes an Appropriation for Fiscal Year 1889

It was the autumn of 1888 before Congress again made an appropriation for the "Protection, Preservation, and Repair" of coastal fortifications. On September 26 the Department notified its superintendenting engineers that President Cleveland, four days before, had approved an act making $100,000 available for that purpose. They would submit as soon as possible estimates of funds necessary for

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78. Langdon to CO, Div. of the Atlantic, June 4, 1888, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

79. Schofield to Langdon, June 20, 1888, NA, Ltrs. Recd., AGO, 1881-1889, Microcopy M-689.

80. Returns for U.S. Posts, 1800-1916, NA, Microcopy M-617; Returns for Regular Army Artillery Regiments, June 1821-January 1901, NA, Microcopy M-729.

"ordinary expenses" for the defenses under their charge for fiscal year 1889. They would also detail what projects for preservation and repair should be funded immediately at these works. Such projects should be given a priority.[81]

b. Hoxie Outlines a Program

Captain Hoxie was absent from his office. When three weeks passed and no reply to the circular of September 26 was received, the Department telegraphed, "The Chief of Engineers directs that you send in immediately the estimates for preservation and repair."[82]

Hoxie, who was in Asheville, North Carolina, wired the Department that one allotment was needed for "ordinary expenses." For repairs of immediate urgency he required $800. A letter of justification would follow.[83]

In his letter, Hoxie explained that Forts Pickens and Barrancas were in charge of Colonel Langdon and Fort McRee was in ruins. Langdon, during the past 24 months, had employed the Apache prisoners and his troops in the "ordinary care" of these works. There had been no fort keeper since 1884, so no allotment for "ordinary expenses" was justified.

There were, however, two special projects which should be undertaken at Fort Pickens. Of first priority, and requiring an allotment of $300, was the stoppage of leaks into the Southeast Bastion magazine. This would necessitate taking down and rebuilding some of the

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81. Sears to Hoxie, Sept. 26, 1888, NA, RG 77, Ltrs. Sent, Chief Engineer.

82. Sears to Hoxie, Oct. 19, 1888, NA, RG 77, Ltrs. Sent, Chief Engineer.

83. Hoxie to Chief Engineer, Oct. 22, 1888, NA, RG 77, Ltrs. Recd., Chief Engineer.

masonry. Fifteen hundred dollars were needed to complete the platform of the 15-inch Rodman position on the Southwest Bastion. The latter project could not be classified as "absolutely necessary for preservation" of the fort.

Two projects at Fort Barrancas required $500.[84]

c. Department Makes Its Allotments

On November 8 Brig. Gen. Thomas L. Casey, who had succeeded General Duane as Chief Engineer on his June 30 retirement, made the allotments. Because of his servicewide responsibilities, General Casey could only budget $450 for the Pensacola forts, $300 of which would be used for repair of the Pickens magazine.[85]

2. Captain Price Repairs the Southeast Bastion Magazine

Captain Hoxie did not get an opportunity to carry out this program. On January 17, 1889, he was replaced as superintending engineer for the Defenses of Pensacola and various River and Harbor Improvements, etc., in Georgia, Alabama, and Florida by Capt. Philip M. Price. Born in Pennsylvania, Price had graduated from the U.S. Military Academy as No. 4 in the Class of 1869. Commissioned a 2d lieutenant in the 2d Artillery, Price was ordered to Fort Riley, Kansas. He served on the western frontier until December 1870, when he returned to West Point as an Assistant Professor of Mathematics. Transferred to the Corps of Engineers, Price spent two years, 1872-74, with the Engineer Battalion at Willetts Point, New York. Price, from June 1874 until March 1875, was in the west, as an assistant engineer for exploration of the Territory West of the 100th Meridian. His next assignment, which continued until December 1880, was surveying the Northern Lakes and the Mississippi

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84. Hoxie to Casey, Oct. 22, 1888, NA, RG 77, Ltrs. Recd., Chief Engineer.

85. Casey to Hoxie, Nov. 8, 1888, NA, RG 77, Ltrs. Sent, Chief Engineer.

River. Price, from 1881 to November 1883, was an assistant to Maj. George E. Gillespie for the Northern District of New Jersey. The next three years found him, now a captain, again at Willetts Point, commanding an Engineer Company. He returned to West Point in January 1886 as instructor in Practical Military Engineering. Price was there on January 4, 1889, when orders arrived transferring him to Montgomery, Alabama, as Captain Hoxie's replacement.[86]

The Department in January 1889 informed Captain Price that with money again allotted for preservation and repair of coastal fortifications, the superintending engineers were to resume submitting monthly reports of operations.[87]

It was late April before Price solicited proposals for repair of the Southeast Bastion magazine. No bids were received. Price accordingly took advantage of Paragraph 620, Army Regulations 1889. This provided that under certain contingencies construction could be done by day labor and the materials purchased in the open market, "provided the public exigency requires immediate delivery."[88] His action was approved by the Secretary of War. Price then proceeded to secure the materials and hire masons and laborers.[89] Workmen began by clearing the terreplein immediately above the magazine. All imperfect bricks were removed. In July 1889 this portion of the terreplein was covered with a "coating of pure cement mortar, which stopped the greater part of the leakage." One leak, in the angle between the inside wall of the southeast curtain and the front of the magazine, continued to seep. To stop this

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86. Cullum, Biographical Register, Vol. III, pp. 128-9.

87. Sears to Price, Jan. 10, 1889, NA, RG 77, Ltrs. Sent, Chief Engineer.

88. Sears to Price, Jan. 29, 1889, and Price to Casey, May 20, 1889, NA, RG 77, Ltrs. Sent & Recd., Chief Engineer.

89. Annual Report, Fort Pickens, Fiscal Year 1889, NA, RG 77, Ltrs. Recd., Chief Engineer.

one, the cement covering was extended to the southeast curtain. Rotten door frames and doors were replaced. Copper fastenings were employed.[90]

Captain Price, in submitting his annual report for fiscal year 1889, noted that the physical condition of the fort, Engineer buildings, and armament was identical to what it had been 12 months before. There, however, had been "a progressive deterioration of the brick work, due to leakage and exposure to weather."[91]

3. Maintenance and Protection in Fiscal Year 1890

a. Appropriation and Allotment

On March 13, 1889, the Department notified its superintending engineers that President Cleveland had signed into law, on March 2, an act appropriating $100,000 for "Protection, Preservation, and Repair of Fortifications." In accordance with procedures, they were to submit two sets of figures--one listing "ordinary expenses," and the other detailing the cost of projects for preservation and repair for fiscal year 1890.[92]

Captain Price, like Captain Hoxie the previous year, failed to call for any money for "ordinary expenses." He, however, asked for $1,000 to combat seepage into the Fort Pickens casemates and $100 for repair of the Southwest Bastion cistern. Chief Engineer Casey approved the requested allotments.[93]

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90. Annual Report, Fort Pickens, Fiscal Year 1890, NA, RG 77, Ltrs. Recd., Chief Engineer.

91. Annual Report, Fort Pickens, Fiscal Year 1889, NA, RG 77, Ltrs. Recd., Chief Engineer.

92. Sears to Price, March 13, 1889, NA, RG 77, Ltrs. Sent, Chief Engineer.

93. Sears to Price, June 25, 1889, NA, RG 77, Ltrs. Sent, Chief Engineer.

b. Repair of the Southwest Bastion Cistern

While perfecting plans to get started on these projects, Captain Price was disturbed to discover that the drawings on file in his office showed neither the drainage system nor cisterns. This created a problem, because he believed the leakage and settling and consequent cracking of the walls of Forts Pickens and Barrancas was caused "mainly" by "a complete stoppage of the drains in many places." If the Department had any drawings of the drainage systems of these forts, he wished copies.[94]

Chief Engineer Casey replied. He informed Price that a search of the Departmental files had failed to turn up any drawings, locating underground drains at the two forts. At Pickens roof surfaces were shown at a few places, and the water reaching them through the terreplein and parapet was led off through horizontal pipes, passing through the scarp or parade wall, and into a ditch or upon the parade.

Captain Newton's plan of 1857 had the word "cistern" written in two places. Other drawings showed the cisterns divided by walls. Sections on other drawings depicted the floors of the cisterns as about 14 inches below the floors of adjoining casemates and the arches about the same distance below those of the casemates. No drawings detailed any pipes or other means of conveying water into the cisterns.

Captain Hoxie, in his semi-annual report made on April 11, 1887, had written that the water supply for Fort Pickens was obtained by rain falling upon the terreplein. It was stored in brick cisterns, having a combined capacity of 143,392 gallons.[95]

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94. Price to Casey, Oct. 30, 1889, NA, RG 77, Ltrs. Recd., Chief Engineer.

95. Casey to Price, Nov. 8, 1889, NA, RG 77, Ltrs. Sent, Chief Engineer.

Proposals for repair of the cistern had been advertised by Captain Price on July 10, 1889. No bids were received, and the work was done by day labor.

After bailing the cistern, the walls and bottom were scrubbed. When they had dried, an examination revealed that the cement used in coating the sides of the cistern had, in many places, separated from the walls. The cement was removed and the joints in the walls behind were seen to be solid. The leakage was found to have occurred through the side walls, near the bottom of the cistern, where the mortar had deteriorated, and numerous loose bricks were pinpointed. All loose mortar was removed, and "a thick coating of pure cement mortar was laid over the whole surface." This treatment, Captain Price reported, had for the time being stopped the seepage.[96]

c. Combating Seepage into the North Curtain Casemates

No bids having been received, the project to stop the seepage through the casemate arches was undertaken by hired labor. The materials were purchased in the open market. Work was begun at the sally port, where the leakage was most critical. Arches were stripped of their covering of sand and brick, to determine the source of the problem. It was discovered that the arches were cracked, and that a settlement of the arches or scarp wall, or both, had caused a separation between the front face of the arch wall and the back of the scarp wall. This movement had torn the sheet lead, which covered the arches, away from the scarp, leaving openings through which water poured. Much of this water ran back between the lead covering and the extrados of the arch, and then through the cracks into the casemate below.

These openings between the arches and the wall were carefully filled by pouring into them liquid cement. Next, the lead sheeting was patched, and carried up and under the top course of brick

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96. Annual Report, Fort Pickens, Fiscal Year 1890, NA, RG 77, Ltrs. Recd., Chief Engineer.

on the scarp wall, which was removed for this purpose, and then replaced. After the repairs were completed, the sand, earth, and brickwork of the barbette tier were replaced, and the debris removed. The five arches repaired in this manner had since shown no signs of leakage.[97]

d. Proposal to Mount Three Rifled 8-inch Guns

On October 25, 1889, the Department called on Captain Price to forward, as soon as practicable, estimates for preparing platforms at Forts Pickens and Barrancas for mounting three 8-inch rifled guns on improved barbette carriages. These estimates were to be accompanied by sketches showing the location and number of the existing platforms to be altered, or the sites on which he proposed to construct them.

As these guns were for target practice by the Barrancas garrison, at least one of the three was to be emplaced on the mainland, if not prohibited by expense. The mounting of two of the guns at Pickens, where there were 18 smoothbore platforms, which required little modification, would not be expensive.

Before submitting estimates, Price was to consult with the post commander to determine the preferred sites.[98]

Chief Engineer Casey on October 30 informed Lt. Gen. John M. Schofield that the two 8-inch rifles to be mounted en barbette at Fort Pickens for target practice would have their carriages arranged for high traverse circles.[99]

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97. Ibid.

98. Sears to Price, Oct. 25, 1889, NA, RG 77, Ltrs. Sent, Chief Engineer.

99. Casey to Schofield, Oct. 30, 1889, NA, RG 77, Ltrs. Sent, Chief Engineer. Upon General Sheridan's death, in August 1888, General Schofield had been promoted to lieutenant general and placed in command of the Army.

Captain Price, like his immediate predecessor, moved slowly. When no figures were received by Christmas, Chief Engineer Casey telegraphed: The estimates "were to be forwarded immediately."[100]

Captain Price had an explanation for the delay. The Chief Engineer's letter of October 25 had found him at Pensacola, overseeing work on the Fort McRee jetties. He had traveled to Fort Barrancas to consult with the commanding officer, as required. There he learned that the post commander--Maj. H.C. Hasbrouck--was in travel status and would not arrive for several weeks. The interim commander was unwilling to assume responsibility for locating the platforms. Price, on his return to the Montgomery office, detailed to his assistant, Lt. C.L. Potter, the task of consulting with Major Hasbrouk, and forwarding the necessary estimates.

Before doing so, Lieutenant Potter was injured and did not attend to the matter. It was then deferred until the return to Pensacola of Mr. J.E. Turtle, who was in charge of the harbor improvement project. This was done because Price's attention was engrossed by a survey of the Coosa River.

Estimates had been received from Turtle on December 14. By this time, Major Hasbrouk had determined that he wished the three platforms located at Fort Barrancas.[101]

e. Captain Price Reports the Fort Useless for Defense Against Modern Warships

On July 8, 1890, Captain Price filed his annual report for fiscal year 1890. He announced that the condition of Forts Pickens,

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100. Sears to Price, Dec. 28, 1889, NA, RG 77, Ltrs. Sent, Chief Engineer.

101. Price to Casey, Dec. 31, 1889, NA, RG 77, Ltrs. Recd., Chief Engineer.

Barrancas, and McRee had "not materially changed from that reported by my predecessor in his annual report" for fiscal year 1886. There had been, however, a "progressive deterioration of the brickwork due to leakage and exposure to the weather." This deterioration, in Price's opinion, had progressed to such an extent, and the "leakage through the casemate arches and walls" of Forts Pickens and Barrancas had become so general that it was "useless to expend any further money in attempting to preserve these forts." To restore them to their original efficiency, it would be necessary to "practically" tear them down and rebuild. But then, they would be of "no value for the defense of the harbor against modern warships."[102]

4. Engineer Department Stops Spending Money for Preservation and Repair

On March 21, 1891, when called on to submit projects on which money should be expended for repair and preservation of the Pensacola forts in fiscal year 1892, Captain Price replied in the same vein. These forts, he informed the Department, were "in so advanced a state of deterioration" that he did not deem it advisable to expend any more funds on their repair and preservation. Although Forts Pickens and Barrancas, unlike Fort McRee, were extant, the brick and mortar of which the casemates were built had "deteriorated." Unequal settlement of the walls had occurred to "such an extent" that there was much leakage, and the walls were "badly cracked in many places."[103]

No funds were allotted for Fort Pickens in fiscal year 1891, and no work was done by the Corps of Engineers on that defense

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102. Annual Report, Fort Pickens, Fiscal Year 1890, NA, RG 77, Ltrs. Recd., Chief Engineer.

103. Price to Casey, March 21, 1891, NA, RG 77, Ltrs. Recd., Chief Engineer.

during the year.[104] This situation continued through fiscal year 1892. When he made his annual report on July 1, Captain Price informed the Department that no work has been done at Fort Pickens during the past 12 months, nor had there been any change in the armament.[105]

On August 6, 1892, Captain Price notified the Department that he had on deposit with the Assistant Treasurer of the United States in New York City a balance of 40 cents from the allotment for "Preservation and Repair of Fortifications" under the act of August 18, 1890. As no work was contemplated on the Pensacola defenses in fiscal year 1893, he had no use for this sum.[106]

Chief Engineer Casey agreed with Captain Price that, because of the deterioration of the brick and mortar, it would be a mistake to spend money for the reconstruction of defenses which would be of no service as modern fortifications. Price would deposit the 40 cents with the Treasurer, notifying the Department of his action.[107] Price accordingly deposited the balance as directed on August 19.[108]

On April 12, 1893, Captain Price answered the Department's circular letter of two days before, calling for estimates of funds needed for "Preservation and Repair" of fortifications in fiscal year

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104. Annual report, Fort Pickens, Fiscal Year 1891, NA, RG 77, Ltrs. Recd., Chief Engineer.

105. Annual Report, Fort Pickens, Fiscal Year 1892, NA, RG 77, Ltrs. Recd., Chief Engineer.

106. Price to Casey, Aug. 6, 1892, NA, RG 77, Ltrs. Recd., Chief Engineer.

107. Knight to Price, Aug. 11, 1892, NA, RG 77, Ltrs. Sent, Chief Engineer. Capt. John G.D. Knight was assigned to duty in the Chief Engineer's Office.

108. Price to Casey, Aug. 19, 1892, NA, RG 77, Ltrs. Recd., Chief Engineer.

1894. Once again, as he had on previous occasions, he notified the Chief Engineer that the Pensacola Bay defenses were in "such condition that I do not think it advisable to expend any more money on their repair or preservation."

The Board of Engineers for Fortifications, which had inspected the works the previous week, had seemingly agreed with him.[109]

When he made his annual report for fiscal year 1893, Captain Price noted that "no work had been done" at Fort Pickens during the last 12 months, and no allotment is recommended for "its repair and preservation during the next fiscal year." This action was in accordance with General Orders No. 8, May 27, 1884, Headquarters, Corps of Engineers,

> prohibiting the expenditure of money "upon the repair of slopes or revetments of any portion of the fortifications, the dimensions of which may be subjected to extensive modifications corresponding to the penetration of modern artillery."[110]

5. Construction of a Mining Casemate

a. Board Designates a Casemate

On January 19, 1893, the Board of Engineers for Fortifications recommended to the Department as a component of the Endicott System, the construction of six mining casemates--two on Hog Island, Portland Harbor, Maine; one on Lovells Island, Boston Harbor; another on the new tract recently purchased opposite Fort Washington, Maryland; and one each for the defenses of Pensacola and Mobile Bays.

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109. Price to Casey, April 12, 1893, NA, RG 77, Ltrs. Recd., Chief Engineer.

110. Annual Report, Fort Pickens, Fiscal Year 1893, NA, RG 77, Ltrs. Recd., Chief Engineer.

The exact sites for the Pensacola and Mobile casemates would be selected by the Board on its forthcoming inspection of the two Gulf Coast harbors.[111]

Three months passed before the Department, on April 17, called on the Board, on its return from the Gulf Coast, to designate the "exact locations" for the Pensacola and Mobile mining casemates. The Board recommended that the Pensacola casemate be in "Casemate No. 86 of Bastion A of Fort Pickens."[112]

b. Price's Plans are Reviewed, Modified, and Approved

On May 3 the Department conveyed this information to Captain Price, along with plans showing the submarine mine defense of Pensacola Bay, as proposed by the Board in May 1876, and details of a mining casemate and cable gallery. General details regarding mining casemates and cable galleries could be found in the manual for submarine mining, referred to in Circular No. 10, Series of 1886.

The approved cover for a mining casemate was established at "a minimum . . . of 50 feet of sand for projectiles descending at an angle of 10 degrees, or less." This equivalent could be obtained by a concrete arch of 10 feet covered by 30 feet of sand, or by their equivalent thickness in masonry.

Captain Price would utilize this information in preparation of working drawings and estimates for construction of the Fort Pickens casemate and its cable gallery.[113]

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111. Abbot to Casey, Feb. 27, 1893, NA, RG 77, Ltrs. Recd., Chief Engineer. Col. Henry Abbot was president of the Board of Engineers. In addition to Abbot, the Board at this time included: Col. Cyrus B. Comstock, and Lt. Cols. Henry M. Robert and G.L. Gillespie.

112. Abbot to Casey, April 29, 1893, NA, RG 77, Ltrs. Recd., Chief Engineer.

113. Casey to Price, May 3, 1893, NA, RG 77, Ltrs. Sent, Chief Engineer.

On August 8 Captain Price forwarded to the Chief Engineer the plans and sections he had prepared, detailing two arrangements for a mining casemate and cable gallery. The cost of plan A was estimated at $16,950.79 and of Plan B at $19,597.11. These figures included cost of a covered cable gallery of the approved size from the casemate through the ditch to the northwest angle of the fort, a distance of 322 feet, and for an open gallery from there to the shoreline, in the direction of Fort McRee, a distance of 2,148 feet. The immediate cost of the project, Price wrote, could be considerably reduced by omitting construction of the open section of the cable gallery. He knew of no compelling reason why the cables could not be laid in a trench, excavated through the sand, without any concrete construction. If his suggestion were approved, the cost of each plan would be reduced by $5,409.60.

The cost of excavating the trench was placed at $3,528.80, but as the sand was being continually shifted by the winds, Captain Price recommended against digging the trench until the cables were ready for laying.

As the front face of the mining casemate would not be exposed to fire of ships from the Gulf, no provision had been made in Plan No. 1 for protecting that face by the minimum cover required by the instructions.

Plan No. 2 had been submitted as an alternative, in event greater protection from fire of ships, which had fought their way into the harbor, was deemed desirable.[114]

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114. Price to Casey, Aug. 8, 1893, NA, RG 77, Ltrs. Recd., Chief Engineer.

The Board, on reviewing the drawings, recommended approval of Plan No. 1. To avoid exposing the cables to accidental injury from crossfires, the gallery must be positioned to reach the bay in the vicinity of the wharf. The Board agreed that construction of the trench could be deferred or omitted, as there would be no difficulty in bedding the cables in the sand when laid.[115]

On August 23 Chief Engineer Casey approved Plan No. 1, subject to these modifications: (a) that the cable gallery reach the water near the wharf; and (b) the construction of the trench be omitted. To underwrite the project, there had been allotted $8,012,39 from the appropriations for "Torpedoes for Harbor Defense."[116]

Captain Price in late October requested authority to construct the casemate by hired labor, with the purchase of materials on the open market, because this "method" would be the "most economical and advantageous to the Government."[117]

On October 31, 1893, Chief Engineer Casey approved this course of action, provided the necessary materials were "purchased in accordance with existing law; open market purchases only being allowed in case of an emergency of time, or in excpetional cases . . . when proposals have been invited and no bids have been received."[118]

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115. Abbot to Casey, Aug. 23, 1893, NA, RG 77, Ltrs. Recd., Chief Engineer.

116. Knight to Price, Aug. 23, 1893, NA, RG 77, Ltrs. Sent, Chief Engineer.

117. Price to Casey, Oct. 27, 1893, NA, RG 77, Ltrs. Recd., Chief Engineer.

118. Knight to Price, Oct. 31, 1893, NA, RG 77, Ltrs. Sent, Chief Engineer.

c. Price Seeks Guidance as to the Depth of the Foundations

After construction started Assistant Engineer Turtle investigated the fabric. Outside the fort, he found that he could get a hook under the foundation of the scarp wall. This established the thickness of the footings as two feet two inches. On the inside the same depth did not reach the foot of the foundation. This did not matter, however, because it was below anything that they would position.

The abutments of the arches of the passageways were found to have no bond or connection with the scarp or rear walls. They had seemingly been built after those walls, or, if not, they had not been carried up at the came time. Captain Price found it very "singular" that 8 inches of sand had been left between the foundations of the abutments and the steps of the scarp wall. These abutment foundations had been placed on sand that had been filled in, and accordingly they were unsecure. Settlement of these walls, he theorized, had "probably caused the cracking of the walls throughout the Fort."

The bottom of the mining casemate foundations, he continued, should "go to the level of the bottom of the concrete floor of the cable gallery," which was 8½ feet below the foundations of the rear wall and the abutments of the passageway arches. By reference to the drawings, the Chief Engineer would see that "our foundation" will have to go under the abutment foundations. This could be done by ramming. To accomplish this, Price would first have to excavate under the center of the passageway. This would expose the outer ends of the abutments, under which a "good system of shoring will be placed." Next, the excavation would be carried on until it became necessary to put under more props. The boxing for the walls would be carried up with and ahead of the concrete. The shoring, 6 by 6s on end, would not be removed.

As the rear wall of the scarp constituted the rear of the casemate, it would be necessary to put under the rear walls, and for a width equal to the width of the casemate, including its side walls, a concrete foundation.

There had been at one time, Price reported, a drainage ditch from the moat discharging into the bay. It was now closed, and consequently water stood much higher in the moat than the bay.

If the proposed method of arranging the foundations of the mining casemate were approved, the work would be done, thereby increasing the cost of the project.[119]

The Department did not believe it necessary for the bottom of the mining casemate foundations to descend to the level of the bottom of the concrete floor of the cable gallery. They only should go below the top of the concrete floor of the casemate itself, a distance equal to the thickness of the casemate wall footings.[120]

d. Captain Mahan Replaces Price as Superintending Engineer

In the late winter of 1894, before construction of the casemate was completed, Captain Price was transferred. His new assignment was Engineer Secretary of the Lighthouse Board. His replacement was Capt. Frederick A. Mahan.

A New Yorker, Mahan had graduated from the U.S. Military Academy as No. 11 in the Class of 1867, and was commissioned a 2d lieutenant in the Corps of Engineers. Mahan's first assignment, after leaving West Point, was with the Engineer Battalion at Willetts Point, New York, where he was posted from September 1867 until July 1869. From October 1869 until August 1872, he was at the Military Academy, first, as Assistant Professor of Engineering and then as Assistant Instructor of

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119. Price to Casey, Jan. 31, 1894, NA, RG 77, Ltrs. Recd., Chief Engineer.

120. Knight to Price, Feb. 3, 1894, NA, RG 77, Ltrs. Sent, Chief Engineer.

Practical Engineering. He was assistant engineer for Improvement of the Ohio River from September to December 1872, and from August to September 1873 he was in charge of surveying the Youghiogheny River. Mahan was at Fort Pulaski, Georgia, as an assistant engineer, from December 1873 to August 1874, when he returned to the Ohio Valley, as assistant engineer for Improvement of the Ohio River. From October 1883 until June 1884, he was on official duty in Europe. On arrival back in the United States, Mahan, now a captain, returned to Willetts Point as commander of one of the Engineer Companies. From August 1884 to May 1885, he was in Washington as assistant to the Engineer Commissioner for the District of Columbia. Mahan's next assignment was as assistant to Colonel Gillespie. Captain Mahan was with the Lighthouse Board from 1890 until March 1, 1894, when he was ordered to relieve Captain Price on the Gulf Coast.[121]

e. Changes to the Cable Gallery

Captain Mahan was soon confronted by a problem which he had to refer to the Department. The plans called for the cable gallery to be 1 foot 2 inches below the bay's mean low water. When work was commenced, it was found that water stood in the fort's ditch (moat) at depths varying from 12 to 18 inches above the "plane of 'M.L.W.' in the bay," depending on the rainfall. It was believed that if the ditch were drained, the water level in it would conform to that of the bay. The old drainage ditch was pinpointed. When reopened, there was a good flow of water out of the ditch (moat). Although the drain had been opened for almost two months, the water in the ditch was still a foot above "M.L.W." in the bay.

The section of the Northeast Bastion in which the mining casemate was established had no counterscarp. But at a distance of about 120 feet from the scarp, there was an embankment intended as a

121. Cullum, Biographical Register, Vol. IV, pp. 167, 186.

mask for the lower part of the scarp. Between this embankment and the scarp, the water surface was about 1 foot above "M.L.W." of the bay. Near the bayshore was a second embankment formed by the surf and the winds. Between these embankments, the water surface was about 1 foot 4 inches above "M.L.W."

Captain Mahan suggested that the mining gallery be raised, so that its floor would be at the level of "M.L.W." in the bay, instead of 1 foot 2 inches below it. If left as it were, it would be impracticable to send a man into the gallery to effect repairs, as there would be insufficient room for his head between the surface of the water and the highest part of the gallery. In addition, there were no pumps at Pensacola with which to lower the water in the trench to a depth sufficient to construct the cable gallery in its present position.[122]

Chief Engineer Casey approved Mahan's proposal to raise the cable gallery 1 foot 2 inches.[123]

To prevent the sand, which was to cover the cable gallery, from drifting with the wind, Captain Mahan requested and received permission to cover the gallery with a few inches of clay. The 32 cubic yards of needed clay were "gathered here and there on the glacis of the fort, in such a way as to do no injury to the glacis, and at a distance of at least 100 feet from any part of the counterscarp wall."[124]

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122. Mahan to Casey, April 27, 1894, NA, RG 77, Ltrs. Recd., Chief Engineer.

123. Knight to Mahan, May 1, 1894, NA, RG 77, Ltrs. Sent, Chief Engineer.

124. Mahan to Casey, May 31, 1894, NA, RG 77, Ltrs. Recd., and Knight to Mahan, June 4, 1894, NA, RG 77, Ltrs. Sent, Chief Engineer.

f. Captain Mahan Completes the Mining Casemate

The crew had been turned to by Assistant Engineer Turtle uncovering the old casemates on December 18, 1893. The excavation and receiving of materials were completed by January 31, and pouring of concrete commenced. By mid-April the concrete work of the casemate, except the floor and the entrance was finished, and the filling between the new and old walls begun. Next, the workmen restored the earthen fill and breast-height wall over Casemates Nos. 86 and 87. This was completed on June 4. Meanwhile, excavation for the cable gallery was started. The placing of concrete in the gallery commenced on May 8, and completed on June 22. The cable gallery was covered and sodded as fast as it was built, and it was finished June 23. A few laborers were kept busy piling lumber and policing the grounds until June 30, 1894, when they were paid off.[125]

As built, the mining casemate was 11 feet 1 inch by 21 feet, with an arched roof 10 feet high at the center; the walls and roof were of concrete 4 feet thick, and the floor one foot. The entrance through Casemate No. 86 from the old gallery was 3 feet by 7 feet 5 inches, arched, with walls of 3-foot concrete. The cable gallery was 2 feet 5 inches by 3 feet 5 inches, arched, with walls and floors of concrete 1-foot thick.[126]

In fiscal year 1895 the Corps of Engineers spent $50 for repair and maintenance of Fort Pickens. This money was used for hire of workmen to resod the exterior slope of the parapet above the mining casemate, which had been badly eroded by heavy rains during the winter of 1894-95.[127]

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125. Annual Report, Fort Pickens, Fiscal Year 1894, NA, RG 77, Ltrs. Recd., Chief Engineer.

126. Ibid.

127. Annual Report, Fort Pickens, Fiscal Year 1895, NA, RG 77, Ltrs. Recd., Chief Engineer.

The Structural History of Fort Pickens for the years from July 1, 1895, until it was deactivated in 1947 is detailed in my study titled, Historic Structure Report and Resources Study: Pensacola Harbor Defense Project, 1890-1947, published by the Denver Service Center, in 1982.

APPENDIXES

APPENDIX A
GLOSSARY

applicateur. Workman engaged in applying asphaltum to roof surfaces of arches.

architrave. Beam or lowest division of entablature, which extends from column to column. The term is also applied to the moulded frame around door or window.

archivolt. Mouldings on face of arch, following its contour.

arrondisment. (French: arrondssement) Rounding (noun).

askew arch. Segment arch which springs from oblique piers, and twists gracefully in its length to seat its weight fully upon the skewbacks.

ballister. Small pillar or column supporting handrail or coping. Series of such is called a balustrade.

baluster. See ballister.

banquette. Raised way, or foot bank, running along inside of parapet, on which riflemen stand to fire on enemy.

barbette. Platform in fortification on which guns are mounted to fire over parapet.

barrack. Large building for lodging of soldiers; barracks (plural): building or buildings for that purpose.

barrel vault. Brick semicircular arched covering of greater length than breadth.

bastion. Work projecting outward from main enclosure of fort, consisting of two faces and two flanks, and so constructed that it is able to defend by flanking fire the adjacent curtain or wall which extends from one bastion to another.

bastion towers. Section of the bastion enclosing the spiral stairway.

batten. Narrow strip of wood or scantling used in various ways: to rest upon piazza joists and provide additional support for flooring.

batter. Backward slope of retaining wall.

battery. Any place where cannon or mortar are mounted for attack or defense.

bead. Narrow rounded moulding or protecting band at masonry corners.

belt. Strip or band.

breakwater. Counterscarp (moat) wall, seawall built to exhaust force of waves.

breast-height wall. Interior slope of parapet, against which the garrison lean in firing.

breastwork. A defense work of moderate height, hastily thrown up, of earth or other materials.

brick facing. The outer or exposed portion of brick wall.

caballero. (Spanish) Sort of fortification, or part of fortification.

carriage. Wheeled stand or movable support of gun.

casemate. Bombproof chamber, in which cannon may be placed to be fired through embrasures in its front.

cistern. Receptacle for storing water; reservoir.

coal rig. Coal storehouse and apparatus for depositing coal in bunkers of vessel.

cofferdam. Water tight structure of pilings, used in engineering for excluding water from area excavated, so that foundations may be built dry.

communication arch. Arched opening that pierces casmate pier and gives access to adjoining casemate. These openings are near the rear of gun room or casemate, away from the arc described by traverse of gun carriage, which impeded progress through main and larger connecting casemate arches.

contrabands. Escaped black slaves, termed "contraband of war."

coping. Highest or covering course of masonry in wall, often with sloping edges to carry off water.

cobel. Projecting brick, generally used for support of element above, although occasionally for ornamentation.

cordon. Coping of scarp wall, which projects a few inches beyond face of wall.

cornice. Horizontal projection which crowns or finishes the work to which it is affixed.

counterscarp. Exterior slope of ditch or moat opposite the scarp; moat wall: see scarp.

curtain. That part of rampart and parapet which extends between two bastions or gates.

dentil. Tooth-like cube in cornice.

elliptical. Arch, the rise of which follows oval curve above the long horizontal axis of an ellipse.

embrasure. Opening in a fort wall from which to fire guns.

embrasure cheek. Vertical side or jam of an embrasure.

embrasure iron. Iron protecting frame about outer opening of embrasure.

embrasure shutters. Iron shutters to close embrasure.

emplacement. Position of guns within fortification.

enrockment. Protective layer of loose stone to prevent undermining of counterscarp foundation.

entablature. Upper part of the architecture, comprising architrave, frieze, and cornice.

facade. Face or elevation of building.

fascine. Bundle of sticks or fagots bound together and used for fortifying ditches, building earthworks, etc.

filter closets. Opening in casemate pier where was placed apparatus to filter water conducted from terreplein to casemate cisterns.

flagging. Pavement of flagstones; sometimes used to denote a single flagstone.

flagstone. Large flat paving stone.

front. Designation of a side of the polygonal figure; curtain. The sides of the polygon are numbered, the angles (or bastions) lettered.

gabion. Large cylindrical bottomless basket filled with earth and used in building earthworks.

girder. Main beam in a floor.

gorge. Entrance into a bastion; usually synonymous with rear.

grillage. Arrangement of sleepers and crossbeams forming a foundation in loose or marshy soil.

groin. Curved arris (sharp edge) formed by the insection of vaulting surfaces.

grudgeon. Pin, wedge or pivot placed at the end of a shaft to prevent pulley from slipping.

gun circles. See traverse arc.

hot shot furnace. Furnace in which round shot was heated. Apparatus within the oven delivered the red hot balls to artillerists who by means of tongs conveyed them to muzzle loading cannon. These missiles could set a wooden vessel on fire, or wreak havoc in a magazine. They were capable of skipping upon water several times and still retaining enough heat to start a blaze.

howitzer. Short, light, large bore cannon, in which the hollow projectile could be placed by hand.

jamb. Upright side of a doorway, window, or fireplace.

joist. Horizontal timber to which boards of floor or laths of ceiling are fastened.

linstock. Pointed, forked staff, shod with iron at the foot, to hold lighted match for firing cannon.

lintel (lintle). Horizontal member spanning an opening and carrying superincumbent weight by means of its strength in resisting crosswise fracture.

loopholes. Narrow aperture for observation or defense.

lunette. Detached bastion.

magazine. Building or room in which powder and explosives are kept in a fortification or ship.

magistral. Line from which the positions of various units of the fortification are determined.

mitred. Joined on a slanting line at the corners.

moat. Deep ditch around a fort, frequently containing water.

mortised. Joined (as timbers) by putting a projecting part into a hole made to fit.

pan-coupe. Cant-wise slope of wall or skirt on parapet below mouth of gun to deflect shell fire.

parade. Courtyard or enclosure in fortification where troops are drilled.

parapet. Wall crowning curtain to protect soldiers from enemy fire.

pediment. Triangular piece over the entablature, which fills in and supports the sloping roof.

permanent buildings. Those buildings on Santa Rosa Island designed as integral units of the fortification or for the use of its garrison.

piazza. Veranda.

pier. Mass of detached masonry, distinct from a column, from which an arch springs.

pilaster. Rectangular column or pillar, inserted partly in or attached to a wall.

pintle. Pivot about which the chassis of the gun carriage swings.

pintle stone. Stone in which pintle is set.

plinth. Lowest square member at the base of a column; projecting face at the base of a wall.

postern. Entrance (usually subterranean) beneath the parapet and through the rampart of a fortification. Term that engineers sometimes used as synonymous with sally port or entrance.

primage. Small sum of money paid to a shipowner in addition to payment for carrying goods, as for the care of the goods.

purlin. Horizontal beam in a roof resting on the principal rafters and supporting the common rafters and roof covering.

quarters. Lodging.

quoin. Term applied to corner stone at angle of building; hence, the angle itself. Also: support at breech of cannon.

rampart. Broad embankment round a place, upon which the parapet is raised.

ravelin. Detached work with two embankments which made a salient angle. It is raised before the curtain on the counterscarp of the fortification.

recess. Niche or hollow in the wall.

reference. Established level or elevation; engineers used the mean low water level as elevation (or reference) zero, and made their computations of height upon that basis. A point five feet below low water level was at reference minus five feet; ten feet above low water was similarly designated as a reference ten feet.

revetment. Facing of wood, stone, or any other material, to sustain an embankment when it receives a slope steeper than the natural slope; also a retaining wall.

riser. Upright part of a step.

rusticated. With reference to stonework, made with grooved joints or roughened surface.

salient. Projection.

sally port. Gate in fortification, through which besieged troops might rush forth. See postern.

scarp. Slope of the protecting ditch or moat which touches the wall or parapet; inner slope of the protecting ditch at the foot of the parapet, nearly perpendicular.

segmental arch. Arch, the curve of which forms less than half a circle. This type of low arch the engineers usually referred to as "flat"; technically speaking, the soffit of a flat or straight arch is on the same level with its skewbacks--it is horizontal.

semi-circular arch. Arch, the curve of which forms a half circle. Sometimes called round arch.

shoal. Shallows about Santa Rosa Island.

skewback. In masonry, a stone block, steel plate, or the like having a sloping face against which an end of the arch rests.

soffit. Ceiling or under surface.

subsidence. Sinking or settling.

surbase. Moulding around the top of a pedestal or where the wall of a masonry building rests on its foundation; interior; moulding or chair rail along the top of a wainscot or baseboard.

temporary buildings. Structures on Santa Rosa Island erected for use of the workmen, and to be demolished as the permanent units replaced their utility.

terreplein. Main upper level of a rampart, where guns, shielded by a parapet, are mounted; roof of the fort.

tiebeam. Beam which acts as a tie in connecting the lower ends of rafters.

transom. Piece of wood or iron connecting the checks of some gun carriages.

traverse arc. Arc of part of a circle described by movement of gun carriage about the pintle or center point; the stone support and iron track upon which the gun carriage rolls to turn the gun right or left. By traversing the arc, the gun thus commands a horizontal range of about ninety degrees. Traverse arcs were laid in casemates and terreplein fronts.

traverse circles. The complete circle described by movement of gun carriage about the pintle or center point; the stone support and iron track upon which the gun carriage rolls to turn the gun right or left. By traversing the circle, the gun thus commands a horizontal range of three hundred sixty degrees. Traverse circles were laid on the bastion terreplein, Cf. traverse arc.

traverse iron. Iron track embedded in the traverse stone, and forming an arc upon which the wheels of the gun carriage roll.

traverse magazine. Magazine built athwart the terreplein.

tremie. Caisson-like device for laying concrete under water.

traverse stone. Granite stone cut in the form of a small segment of a circle, so that with its mates it comprised the traverse arch.

triangular arch. So-called arch, the sides of which are straight and meet in a peak.

Venetian blind. Window shade or blind made of horizontal slats of wood or cords, turnable so as to admit or exclude light and air.

vault. Arched roof.

voussoirs. Truncated, wedge-shaped blocks forming an arch.

wainscot. Paneled wooden lining on walls.

water table. Projecting course of masonry or moulding to throw water away from a wall.

zero level. Mean low water level; see reference.

APPENDIX B

General Bernard's Estimate of the Cost of Construction of Fort at Santa Rosa Point, January 1830

Estimate of the

Earth

Balance of excavation

Parade. (1st)

To establish the parade on a level 7 feet above high-tide.....

North-front.

To establish the ground of casemates 8 feet above high-tide.....

To make room for main-walls, beneath the natural-ground.....

East-front

To establish the ground of casemates 8 feet above high-tide.....

To make room for main-walls, beneath the natural-ground.....

To establish the ground of galleries 8 feet above natural-ground.....

South-front.

To establish the ground of casemates 8 feet above high-tide.....

To make room for the main-walls, beneath the natural-ground

Amounts.....

15.399-64 cubs at $0-16 each.....$2.463-94.

This sum is apportioned between the three fronts in the ratio of 4, 6, 8 respectively, which allots to North-front $758-[illegible]

" East-front.....1.137-18.

" South-front.....568-64.

North-front. (2d)

The ditch.....

To make room for counterscarp-walls, beneath natural-ground.....

East-front.

The ditch.....

To make room for counterscarp-walls, beneath natural-ground.....

South-front.

The ditch.....

To make room for counterscarp-walls, beneath natural-ground

Amounts.....

Fort at St. Rosa-Point

Work.

with embankment.

Excavation. cys.	Excavation. cys.	Embankment. cys.	Embankment. cys.
1.940-00	1.940-00	10.671-00	10.671-00
1.119-50		1.291-25.	
3.287-44		.....	
4.406-94	4.406-94	1.291-25	1.291-25.
517-00		138-60.	
5.399-00			
230-00		114-84.	
6.146-60	6.146-60	253-44	253-44.
374-00		827-90	
2.532-10		——	
2.906-10	2.906-10	827-90	827-90
	15.399-64 cys.		13.043-59 cys.

1st Nta. The surplus 2.356-05 cys. of excavation shall be employed for other items of embankment.

11.458-40 cys.		The rampart to the level of plate-form	14.113-97 cys.	
525-66		Breast-work	1.720-16.	
11.984-06	11.984-06		15.834-13	15.834-13.
12.666-66		The rampart to the level of plate-form	14.644-74	
1.412-33		Breast-work	4.447-33	
14.078-99	14.078-99		19.092-07	19.092-07
12.796-00		The rampart to the level of plate-form	14.113-97.	
525-00.		Breast-work	1.720-16.	
13.321-00	13.321-00		15.834-13	15.834-13
	39.384-05 cys.			50.560-33 cys.

Carried-over .....

Brought-over .....

39.384-05 c.yds at $0-20 each $7.876-80

This sum is apportioned between the three fronts, respectively in the ratio of 12, 14, 13, which allots to North-front 2.623-64.

" East-front 2.827-58.

" South-front 2.625-58.

(3d)

North-front

Embankment of covert-way and glacis

Terre-plein ..... cen.

Banquette ..... jee

Traverses .....

Glacis .....

East-front

Terre-plein ill

" " Banquette ..... cos

Traverses ..... seo

Glacis .....

South-front.

Terre-plein .....

" " Banquette .....

Traverses .....

Glacis .....

Amounts .....

154.725-74 c.yards at $0-18 each, transported in cart $27.850-63

The sum is apportioned between the three fronts respectively in the ratios of 3, 9, 3, which allots to North-front $5.570-13

East-front 16.710-37

South-front 5.570-13

Summing up the individuals amounts shown in the three

	Excavation. c.y.	Embankment. c.y.
	39.384-05	50.760-33
2d M.to The surplus of embankment will be		11.376-28
from which is to be deducted as already paid, (1st M.to):		2.356-05
to remains to be paid for		9.020-23

9.020-25 c.y. at 50-25 each £ 2.255-06

" This sum to be apportioned between the three fronts respectively, in the ratio of 4; 5, 3, which allots to ..... North-front } 51-68
East-front ... 930-60
South-front 563-78

	c.y.	c.y.
	2.537-05	
	250-75	
	343-65	
	28.259-55	
	31.386-00	31.386-00
	9.832-62	
	1.164-50	
	618-57	
	80.652-60	
	92.268-29	92.268-29
	2.290-00	
	250-75	
	343-65	
	28.187-05	
	31.071-45	31.071-45
		c.y. 154.725-74

Remark ..... The earth necessary for embankment will be obtained by levelling the ground in advance of the fort to a horizontal plane 6 feet above high-tide or 8' above low-tide.

Foregoing items 1st, 2d, 3d, the following results will be obtained: .....

Earth.

North-front.

From the 1st Item		£ 758-12	
" 2d "		2.683-64	
" 2d "		751-68	
" 3d "		5.570-13	
Amounts for Earth-Work		9.903-57	£ 9.903-57

Masonry.

Extension of the faces of the Sea-fronts	247-90 cubic	at £ 7-275	2.094-47	
Scarp-wall	3.653-79	"	25.126-32	
Piers up to Spring of arches	1.303-18	"	9.480-64	
Ditto for the gallaries &c &c				
Partition-walls, inside front-walls, walls supporting the Breast-work & Stairs	1.237-61	"	9.003-61	
Counterscarp-wall	747-95	"	5.441-34	
Walls supporting the Breast-work	94-79	"	689-60	
Walls supporting the Traverses	15-12	"	110-00	
Mines				
Gallery at each end of the Counterscarp walls	994 L.	at £ 1.661-61		
[illegible]	[illegible]	[illegible]		
Abutment of the Bridge, walls supporting the piles	49-24	"	358-22	
Amounts of wall-masonry			£ 53.965-81	£ 53.965-81
Arches of Caponnieres	1.764-55	at £ 8-995	£ 15.340-70	
Arches of the gallery at each end of the covert-way &c	74-41	at £ 8-4	656-81	
Amounts of arches in masonry			£ 15995-51	£ 15.995-51
Roofing of Caponnieres, 9 inches thick	1.654-81 sq. yards	at £ 2-50	£ 4.136-28	
Coping of the Scarp	479-00 running feet	at £ 1-00	479-00	
Coping of a face of Bastion, Breast-work	510-00 lineal feet	at £ 0-50	255-00	
Stairs' Steps	96	at £ 3-00	296-00	
Fire-places and flues	6	at £ 30-00	180-00	
Embrasures	14	at £ 30-00	420-00	
Loop-holes	18	at £ 10-00	180-00	
Amounts of roofing, coping &c			£ 5.946-28	£ 5.946-28
Amounts of Masonry Work				£ 75.907-60

East front			South front		
	$ 1.137-18			$ 568-64	
	2.827-58			2.625-58	
	939-60			563-78	
	16.710-37			5.570-13	
	21.614-73	$ 21.614-73		9.328-13	$ 9.328-13
3		4	5	6	7
c. yard			c. yard		
			287-90 at $ 7-275	$ 2.094-47	
43-[illegible] at $ 7-275	43.965-95		3.453-79	25.126-32	
97-54	2.164-89		1.303-18	9.480-64	
90-54	6.478-68				
04-88	4.400-50		1.237-61	9.003-61	
82-02	15.874-20		747-95	5.441-34	
88-06	2.095-64		94-79	689-60	
30-24	220-00		15-12	110-00	
50-06 at $ 8-8	3.080-53				
			228-40 at $ 7-275	1.66[illegible]-61	
	$ 78.280-39	$ 78.280-39		$ 53.607-69	$ 53.607-59
536-00	$ 2.954-62		1.732-90	$ 15.238-26	
			74-41 at $ 8-8	654-81	
	$ 2.954-62	$ 2.954-62		$ 15.893-07	$ 15.893-07
sq. yard			sq. yard		
906-38 at $ 2-50	2.265-95		1.654-51 at $ 2-50	4.136-28	
run. feet			run. feet		
694-00 at $ 1-00	694-00		479-00 at $ 1-00	479-00	
			510-00 at $ 0-50	255-00	
			74 at $ 4-00	296-00	
			7 at $ 30-00	210-00	
8 at $ 30	240-00		17 at $ 30-00	510-00	
			18 at $ 10-00	180-00	
	$ 3.199-95	$ 3.199-95		$ 6.066-28	$ 6.066-28
		$ 84.434-96			$ 75.566-94

Carpentry

North-front

Plate form under foundation of Scarp	5.037-00 sq feet at $0-105	$ 528-89		9.7
" " of counterscarp	2.362-50	246.06		6.8
		$ 774-95	$ 774-95	
Flooring of magazines and quarters	5.734-50 sq feet at $0-14	$ 802-83	802-83	8
Ceiling of magazines	2.379-00 sq feet at $0-10	$ 237-90	237-90	1.2
Centering of arches		880-00	880-00	
Doors and windows		$ 743-80	743-80	
Bridge		$ 290-04	290-04	
Amounts of Carpentry			$ 3.729-52	

Summ

	Earth-Work.	Masonry.
North-Front — Front-line 132 ys	$ 9.503-57	$ 75.907-60
East-Front — ditto 190	21.614-73	84.434-96
South-Front — ditto 132	9.328-13	75.566-94
Two Sea-Fronts (original estimate) Each Front-line 155 P		
Furnaces 16 (ditto)		
Unforeseen expenses (ditto)		
	$ 40.446-43	$ 235.909-50
		$ 286.274-64

Remark. The cost of cisterns is not literally inclu ded
estimates of the extreme half-bastions of the s
present estimate of the altered-plane with the

arpentry

	East-front			South-front		
	sq feet 9.708-00 at $0-105	$ 1.019-34		sq feet 5.037-00 at $0-105	$ 528-89	
	6.867-00	721-04		2.362-50 "	246-06	
95		$ 1.740-38	$ 1.740-38		$ 774-95	$ 774-95
83.	sq feet 800-00 at $0-14	$ 112-00	112-00	sq feet 5.734-50 at $0-14	$ 802-83	802-83
90	1.320-00 at $0-10	$ 132-00	132-00	sq feet 2.379-00 at $0-10	$ 237-90	237-90
00		$ 693-33	693-33		$ 880-00	880-00
80		$ 222-00	222-00		$ 593-80	593-80
04						
52			$ 2.899-71			$ 3.289-48

Summary.

y.	Carpentry	Sundry	Amounts for each front	
	$ 3.729-52		$ 89.140-69	
6	2.899-71		108.949-40	$ 286.274-6
4	3.289-48		88.184-55	
			77.308-46	155.480-8
			78.172-34	
		$ 4.800-00		23.544-5
		18.744-56		
	$ 9.918-71	$ 23.544-56		

Total amount of the estimate of the Fort projected at St. Rosa-point $ 465.300-0

...ded in this estimate, because the expense relating, in the original estimate, to the ...he sea-fronts has not been disengaged; and it has been, however, carried into the ... the necessary modifications: this will make up for the cost of cisterns.

Estimate of the

Earth-
Balance of excavation —

Excavation for the general plat-form-foundation .....
Embankment to raise the facade and ground-floor of casemates 1-84 above
Embankment on the casemates to form the upper battery.

Amount of Earth-Work 3.234-39 cubic yards at $0-25 a cubic yard .....

Masonry

General plat-form-foundation .....
Scarp-Wall .....
Piers of arches, openings being deducted .....
Walls supporting the upper plat-form .....
Stairs, the tapers included, ...

——— Amount of wall-masonry.

Arches of the casemates and piers-openings on the faces and
Arches of the casemates and stairs on the gorge, postern ....

——— Amount of arches-m

Roofing of casemates, 4 inches thick .....
Coping of the breast-work .....
Stairs' Steps .....
Fire-places and flues .....
Embrasures .....
Furnaces .....

——— Amount of roofing, co

Amount of Masonry-Work .....

Carpen

Flooring on the faces and wings .... the joists one foot squa
.... of ..... ditto ..... the double floor, 6 inch
each floor
Flooring on the gorge, magazines, quarters .....
Centering of arches .....

Fort at Foster's Bank.

Work.

with embankment.

	Excavation.		Embankment.	
	c. yards 5.010-00			
the level of low-tide			c. yards 9.737-28	
			3.497-11	
			c. yards 13.234-39	
				$ 3.308-60
	c. yards 3.896-66	at $ 6-90 a cubic yard	$ 26.886-95	
	7.057-12	at $ 7-30	51.516-98	
	1.469-90	ditto	10.730-27	
	548-21	ditto	4.001-93	
	228-88	at $ 8-80	2.014-14	
			$ 95.150-27	$ 95.150-27
wings	c. yards 2.203-31	at $ 8-80	$ 19.389-13	
	625-57	ditto	5.505-02	
asonry			$ 24.894-15	24.894-15
	sq. yards 2.458-13	at $ 2-50	$ 6.145-33	
	sq. feet 5.075-00	at $ 0-50	2.537-50	
197		at $ 4-00	788-00	
24		at $ 30-00	720-00	
84		at $ 30-00	2520-00	
10		at $ 300-00	3.000-00	
ning, &c			$ 15.710-83	15.710-83
				$ 135.755-25
ry.				
timber, laying, labour	running yards 1.178-00	at $ 0-81 a running yard	$ 954-18	
thick, ditto, inches thick	sq. yards 2.879-54	at $ 1-44	4.146-54	
	sq. feet 10.694-00	at $ 0-14	1.497-16	
			2.000-00	
		Carried over	$ 8.597-88	

One Sally-door .....
Magazine doors .....
Casemate doors .....
Windows .....

——— Amount of carpentry .....

Summary.

Earth-Work .....
Masonry .....
Carpentry .....
Unforeseen expenses, 10 p.
——Total amount of the estimate of the fort

Recapitulation.

The fort at St. Rosa[illegible]
The fort at Foster's Bank[illegible]
—— The defence of the entrance of Pensacola-bay w

All which is respectfully

Brought over			$ 8.597-88	
			150-00	
	4	at $ 20	80-00	
	25	at $ 10	250-00	
	88	at $ 4	352-00	
			$ 9.429-88	$ 9.429-88

	$ 3.308.60
	135.755.25.
	9.429-88
cost	14.869.27
jected at Sutter's bank	$ 163.343-00

all cost	$ 665.300.
cost	163.343.
ecost	$ 628.643.

submitted.

Washington City, January 1830

Bernard
Brig.r Gen.l

Member of the Board of Engin
for fortification.

three January 8. 1830 ?

APPENDIX C

Captain Chase's Estimate of Funds Needed for Operations at Fort Pickens in 1835 and Table Illustrating Breakdown of Monies Spent on Fort as of September 30, 1833

Comparative Statement in which is exhibited the Original Estimate for the Construction of Fort Pickens, Pensacola, the actual Cost of the Works on the 31st August 1834, and amount required to Complete them, in comparison of the heads in which & whereon the Estimate is framed, with such remarks as will show the necessity of exceeding the Original Estimate in the Construction of the Works.

Original Estimate			Actual Cost on the 31st August 1834, embracing amount of Estimate necessary to complete the Works			Amount of Excess of Original Estimate over Actual Cost of Completion			Amount of the Excess of actual cost over Original Estimate, together with the amount of Work executed & Stores procured in Original Estimate			Remarks.
Particle designation	Quantity	Cost Dollars	Particle designation	Quantity	Cost Dollars	Quantity	Cost Dollars		Quantity	Cost Dollars		
Brick Pavement	48.166 S.C.Yds	376,165 37	"	48.600 C.Yds	417.123 81	"	"		434 Yards	40.958 44		The original Estimate was too low, it did not make allowance for Breakage of Bricks, and ingress of Sand & Cement. The excess per cubic Yard is 44 Cts
Embankments & Excavations	254.272 C.Yds	44889 30	"	278.541 C.Yds	95.225 71	"	"		24,469 C.Yds	50.336 00		The original Estimate was entirely inadequate to perform the work. The great distance from which a large portion of the Sand was hauled, and the consequent labour to clean away after being placed were not considered in the original Estimate. The work has been performed at the lowest possible rate, and the prices are exceeded by circumstances over which we had no control.
Carpenting including Grillages	"	9911 77	"	"	10307 07	"	"		"	395 30		
Stone Work	"	10,789 "	"	"	19.337 99	"	"		"	8548 99		Several items not estimated for in Original Estimate, and other items entirely too low, the Stones were obtained from new work on the lowest terms.
Furnaces	"	4800 "	"	"	"	"	4800 "		"	"		
Contingencies	"	18,744 56	"	"	30.978 40	"	"		"	12.233 84		Many items in original Estimate exceed what the provision for.
Total amount Original Estimate	"	465 300 00										
			Private Pavement at	5478 Sq Yds	5341 05	"	"		5478 Sq Yds	5341 05		not provided for in Original Estimate. Paving Gun Rooms, Store Rooms, Magazines
Amt Cost Construction		653,333 58	Each Work and Soldering	"	13.863 11	"	"		"	13,863 11		do Covering Roof of Barracks.
Amt of Original Estimate		465 300 00	Engineers Quarters	1	4274 30	"	"		1	4274 30		do accommodation of Officers employed in Construction of works.
Excess of Cost		Dollars 188.033 58	Assistant Engineers Quarters	1	1337 082	"	"		1	1337 082		do
			Office & Office Furniture	Furniture	892 37	"	"		1	892 37		do Transaction of Business relating to Works, used as Store Rooms
			Wharves & Boat House	"	4695 12	"	"		3	4695 12		do For Landing Materials for the use of the Garrison afterwards
			Horses & Forage	"	649 "	"	"		"	649 "		do Sundry Service of the Engineers Dept.
			Boats & Apparel	Furniture	1256 382	"	"		"	1256 382		do Generals Service of the works whilst under Construction
			Sundry Tools Machinery &c	"	1846 80	"	"		"	1846 80		do various application
			Medicines & Medical Stores	"	414 95	"	"		"	414 95		do Service of Engineers Dept.
			Extra Materials	"	460 92	"	"		"	460 92		do Lumber for Supporting & Strengthening walls of Magazine
			Shells	49.618 Shells	12,704 50	"	"		49.618 Shells	12,704 50		do Covering Glacis Parades Roads &c
			Clay Tiles	18000 C Yds	27.250 "	"	"		18000 C Yds	27.250 "		do Covering Glacis & Parapets
			Extra Work upon Arches	"	2828 50	"	"		"	2828 50		do Repairing Walls, White washing &c &c
			Iron Traverse Circles	63 Sets	567 "	"	"		63 Sets	567 "		do Gun Carriages
			Above Flooring	Slates	3 80	"	"		3	80 "		do Kitchens Officers & Soldiers Quarters
			Flag Staff	"	1 50	"	"		1	50 "		do Fort.
			Repairing Leaden Cornice	"	98 days 98	"	"		98 days	98 "		do Privies & Sentinels Quarters
			Chimney Pots	Pots	13 65	"	"		13	65 "		do Fire-places of Quarters & Barracks.
			Extra Labour	Cement	650 Casks 1966 50	"	"		650 Casks	1966 50		do Sundry application
			Total amount of Works		653333 58	"	4800 "			192,833 58		deduct $4800 from 192.833.58 leaves Balance $188.033.58 Excess of Cost over Original Estimate

Note. It is believed that on careful examination of the heads of construction, with regard to the prices thereof, no unnecessary expence has been incurred, and that the prices for materials, workmanship & Contingencies are as low as could be procured.

In the Construction of the Works, no expence has been incurred in ornamental Workmanship. The object has been to render the work as permanent as possible, and it is believed that that object has been accomplished.

Wm. H. Chase

Wm. H. Chase
Pensacola Sept 13. 1834

[No. 1.]

Statement exhibiting the amount of Funds expended on account of Fort Pickens in Pensacola Harbour to the 30th of September 1833; the objects upon which it was expended, viz: Materials, Workmanship, and Contingencies; their Nature, Extent and Cost, set forth in detail; and the parts of the Work, respectively to the construction of which they were applied: Also, the same particulars in relation to the expenditure to the 31st of August 1834, of the sums available for the service of the 4th quarter of the year 1833 and the year 1834, comprising the residue of the Appropriation of the year 1833, and the Appropriation of the year 1834; And the same particulars with respect to the probable disposition of the residue of the Appropriation of the year 1834, remaining unexpended on the 31st of August 1834.

Amount due ~~remaining in the hands of~~ the Agent on the 30th of September 1834		Amount remaining in the Treasury undrawn on the 30th of September 1833		Amount of Appropriation of the year 1834		Amount available for 18 and the		the 4th quarter of year 18		Amount remaining in the hands of the Agent on the 31 of August 1834		Amount in the Treasury undrawn on the 18 of		Amount available for the Fourth Quarter of 18	
						Balance available		45.451	89						
						Sale of Brick		9	36						
						Balance of Cash		9.382	97						
						Error Cash		12	50						
Dollars 197	61	5649	50	40.000	00	Available Dollars		45826	66	Dollars 99	58			Dollars. 99.	58.

Nature of Materials, Workmanship and Contingencies, referring generally to expenditures prior to the 30 of September 18 & to the expenditure to the 31 of Aug 1834 of the sums available for the service of the year 1834 and the probable expenditure of the balance of the Appropriation of 1834	Applicable to expenditures prior to 30th of September 1834				Applicable to the available to the		Applicable to expenditure to 31 of August 1834 of the sums 4th quarter of 1833 and the year 1834.			Applicable to the probable expenditure of the balance of the appropriation of 1834 unexpended of the parts of the work to the 31st of Aug 1834		
	Extent.	Cost. Dollars.	Cents	Designation of the parts of the Work to the Construction of which the objects embraced by the expenditures were respectively applied.	Extent.	Dollars.	Cost. Dollars.	Cents	Designation of the parts of the Work to the Construction of which the objects embraced by the expenditures were respectively applied.	Extent.	Cost. Dollars.	Cents	DESIGNATION.
Brick Masonry.	47400 Cub. Yds	75.871	70	Scarps, Counterscarps, Casemate, Revetement	"	"	"	"		"	"	"	
Bricks	"	"	"	Casemate, Stairs, Chimnies, Bridges, Parapets &c	"	"	"	"		"	"	"	
Lime	20.430.448	186.162	10	do do do	396.000	"	3567	60	Parapets, Bridges &c	"	"	"	
Cement	23.507 Casks	45.870	42	do do do	354 Casks	"	834	70	do do	"	"	"	
Quarter in Chalk	1242 Casks	4.239	98	Foundation, Roofs arches & repairing walls	650 Casks	"	1991	50	do do repairing walls &c	"	"	"	
Sheet Lead	140.310 feet	2598	72	do Scarps & counter Scarps	"	"	"	"		"	"	"	
Stones	258.411 lbs	10.714	56	[illegible]	12.233 lbs	"	971	43	covering Roofs Casemate & lining Int. Magazine	"	"	"	
	"	[illegible]	[illegible]	[illegible]	"	"	2493	76	Gateway, Angles & traverse	"	"	"	
Brick Pavement	2404 Sq. Yds	1631	20	Casemate	"	"	"	"		"	"	"	
Solder, Soldering &c	"	1801	46	Roofs arches.	"	"	341	91	Roofs of Casemate	"	"	"	
Carpentry	"	7424	14	Engineer Dr. Office Wharves	"	"	2029	01	Officers & Soldiers Quarters	"	"	"	
Blacksmithing	"	139	03	Casemate, Quarters	"	"	"	"		"	"	"	
Slate	"	592	37	Eng. Arr. Office, Wharves.	"	"	"	"		"	"	"	
Plastering	"	66	97	do Officers &c.	"	"	252	35		"	"	"	
Excavations	207.262 C Yds	"	"	Foundation, Ditches, Sawn Hills	"	"	"	"		"	"	"	
Embankments	207.262 do	72.635	56	Glacis, Parade, Rampart, Casemate	69.598 C Yds	"	22.349	15	Glacis & Parapets	"	"	"	
Clay & Sods	15000 C Yds	12.750	"	Covering Glacis & Rampart	"	"	"	"		"	"	"	
Shells	32,142 Bls	8335	50	do do do Parade & Terreplein	15.476 Bls	"	3869	"	Covering Glacis & Terreplein	"	"	"	
Lumber of various kinds	"	1184	39	Eng. Dr. Office, Wharves.	"	"	486	97	Officers & Soldiers Quarters	"	"	"	
Shingles	23.850	88	55	do do	"	"	"	"		"	"	"	
Piles & Beams	136	280	"	Wharves	"	"	"	"		"	"	"	
Laths	6500	32	50	Office &c.	"	"	"	"		"	"	"	
Spikes, Nails &c	"	257	81	do Eng. Dr. Wharves	"	"	36	51	Officers & Soldiers Quarters	"	"	"	
Glass & Putty	"	38	46	Office Eng Drs.	"	"	110	--	do	"	"	"	
Panels	7	171	23	do do	"	"	252	07	do	"	"	"	
Posts	258	108	50	do do	"	"	"	"		"	"	"	
Bolts, Hinges, Latches, Locks, Screws	"	62	18	do do Wharves	"	"	261	33	do	"	"	"	
Iron Bolts	3891 lbs	93	33	Wharves.	768 lbs	"	139	24	Wharf	"	"	"	
Sash weights & Cord	"	7	75	Eng. Drs.	"	"	"	"		"	"	"	
Iron Buckles	48	12	"	do	"	"	"	"		"	"	"	
Padlock & Staples	3	1	75	do	"	"	"	50	Quarters	"	"	"	
Tin	"	14	25	do	"	"	"	"		"	"	"	
Iron	"	53	33	do Wharf	"	"	1	05	Wharf	"	"	"	
Copper	8593 lbs	2652	09	Wharf	"	"	135	12	Hinges, Bolts &c of Magazine door	"	"	"	
Bermudas Grass	6 Bls	3	"	Glacis & Rampart	"	"	3	"	Embankments	"	"	"	
Clover Seed	6 lbs	3	"	do	"	"	"	"		"	"	"	
Brass Bed screws	4	2	"	Instruments	"	"	"	"		"	"	"	
Iron Chest	1	42	"	Eng. Service	"	"	"	"		"	"	"	
Wheelbarrows	2	15	"	do	"	"	"	"		"	"	"	
		5	"	do	"	"	"	"		"	"	"	
		3	"	do	"	"	"	"		"	"	"	
		71	"	Engineer Quarters	"	"	1	50	Eng. Dr.	"	"	"	

APPENDIX D

Major Tower's Armament Report for Fort Pickens of September 30, 1861

List of Guns. Mortars. Howitzers. Rifled Guns, Carriages, Chassis, Pintles &c on hand at Fort Pickens Florida Sept. 30. 1861
Also of Guns mounted in Casemate & Barbett & traverses ready to receive guns —

Description	Guns	Carriages	Chassis	Pintles	Mounted Barbett	Mounted Barbett	Mounted Col. May	Mounted Siletz	Mounted exclusive of Fort	Not Mounted	Casemate Traverses Ready	Barbett Traverses Ready	Remarks
Sea Coast Mortars 13 in	1	bed & Platform							1				
do do do 12 in	1	do & do							1				
do do do 10 in	10	8 beds	12 Platforms					8	5	2			
Siege Mortars 10 in	11	7 beds				3		2	1	5			Some of the barbett traverses have been covered with Sand bo traverses —
Columbiads 10 in	10	11	11			5	1		4				
do 8 in	6	6x	6x		6								
Sea Coast Howitzers 8 in	24	22	22			4			4	16			
42 pdr Guns	2	2x	2x		2								
32 do do	62	33x 20	22x 20		5x	18				39			x This mark indicates Casemate Carriages & Chassis
24 do do	59	23	27			6				53			
18 do do	6	6	6			4				2			
12 do do	14	15	15			8				6			
42 do Rams Rifle	11	7	7	4 Pintles	7	2			2				* The 30 pdrs & 12 pdr Parrotts rifled cannon have been loaned to the Navy —
30 do Parrotts do	1	1 Siege	Wheels		1				1				
12 do " "	2	2 Field	Carriages		2				2				
24 do 7 Casemate Howitzers	28	28	28		24					4			
12 pdr Field do	4	4	0										
12 " Mountain do	4	4	0										
6 do Field guns	6	4	1										
	262				44	50	1	5	21	127			

There are 28 Casemate Platforms ready & 62 Barbett Platforms ready on the Bastion. Brigade Platforms on the Curtain - 5 Platforms on the Curtain - Land Face ready

There are 28 Casemate Carriages & Chassis and Traverses ready & 62 Barbett Carriages & Chassis and Traverses ready on the Bastion. Brigade Platforms on the Curtain - 5 Platforms on the Curtain - Land Face ready

Casemate Traverses ready 28
Barbett Traverses ready 62

L. B. Tower
Major - Engineers

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"Map showing the situation of the Fort San Carlos de Barrancas with about one mile of its surrounding country at Pensacola Harbor, scale 400 feet to 1 inch."

"Plan and Section of a Relieving Arch, showing the curved wall, between piers constructed in place of timber supports, and of a detail showing the bonding into the pier of said wall."

"Plan No. 1, Fort Barrancas, Aug. 16, 1821."

"Plan of Fort San Carlos de Barrancas, Scale 25 feet to 1 inch."

"Plans, Sections and Elevations of Fort Barrancas as projected by the Board of Engrs. in 1841."

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Plate I

"Plan of a Fort projected at Santa Rosa Point, Florida, 1829," Washington, D.C., January 8, 1830, drawn by Maj. William Poussin.

Courtesy National Archives, RG 77, Drawer 78, Sheet 72-B

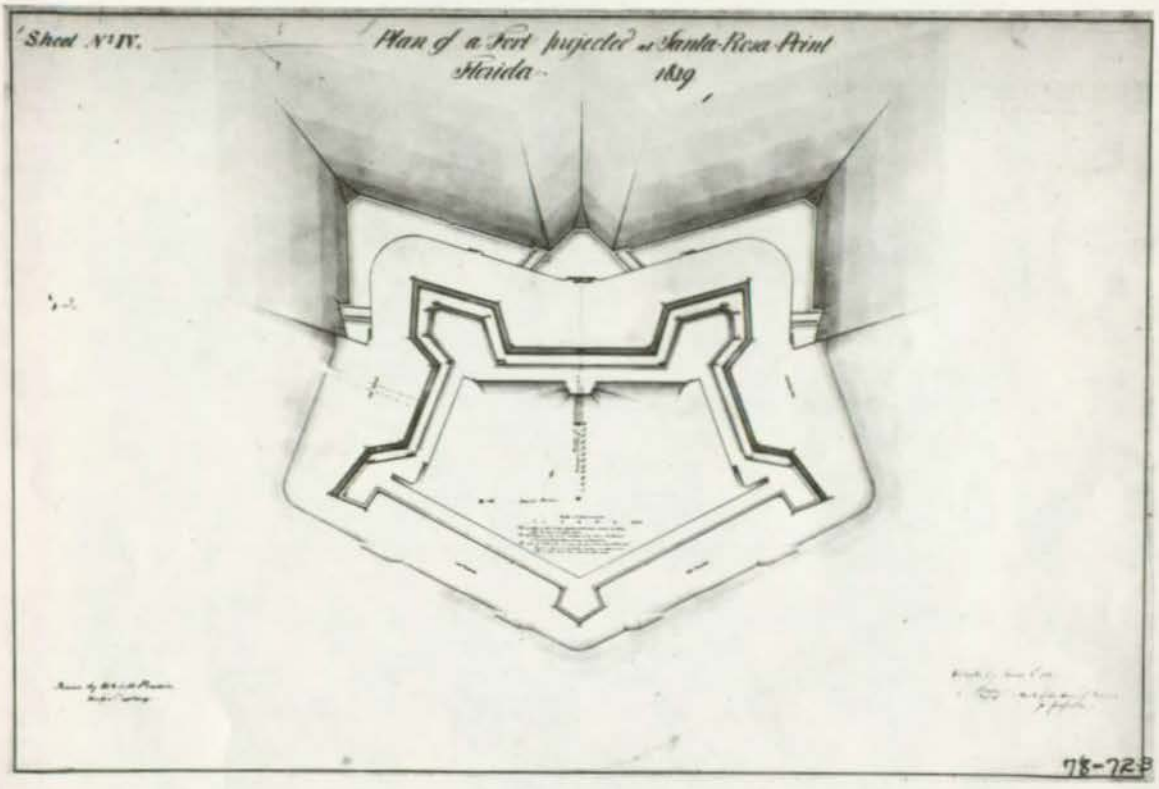


Plate II

"Plan of the Fort at Santa Rosa Point, Florida. Exhibiting the progress of the work up to the 30th September, 1831. Drawn by Lieut. George E. Chase. Act. Assit. Engineer."

Courtesy National Archives, RG 77, Drawer 78, Sheet 10

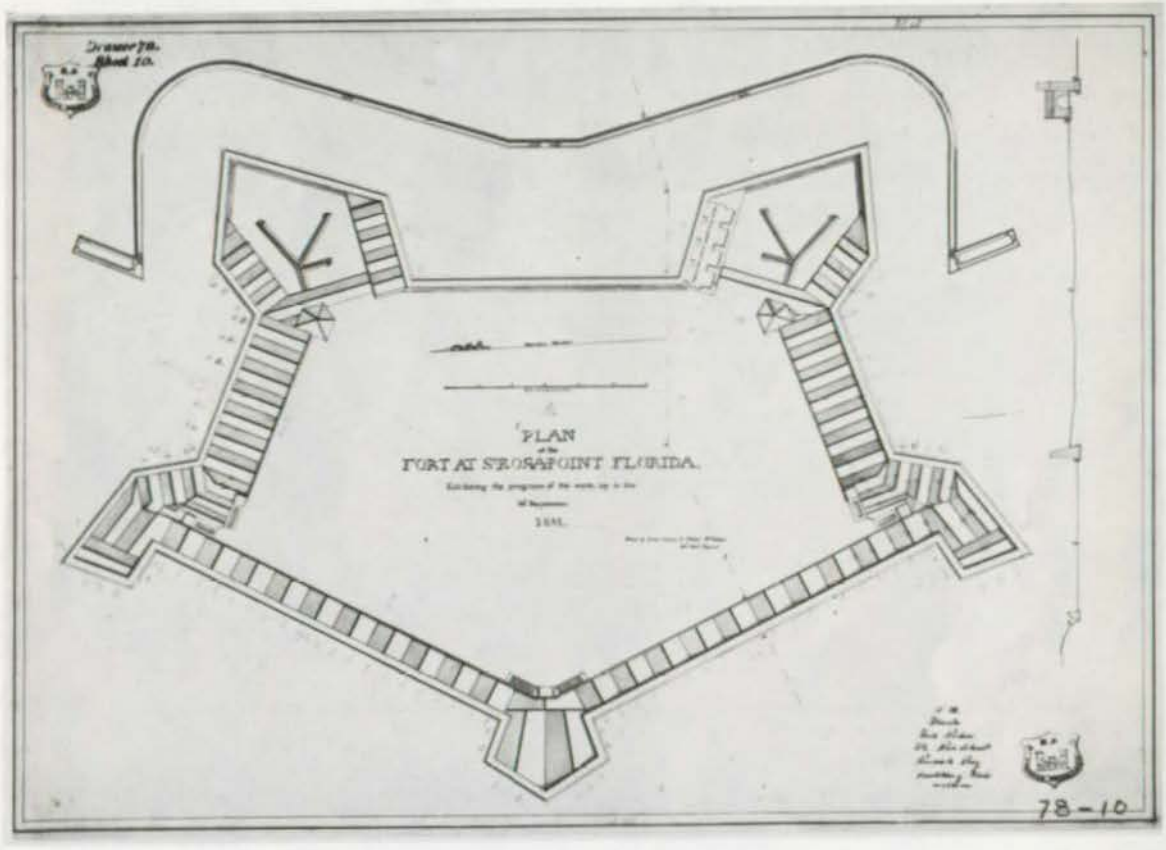


Plate III

"Sketch of the Fort under construction on Santa Rosa Island, Pensacola, Exhibiting its condition on the 30th of September 1832," Capt. W.H. Chase.

Courtesy National Archives, RG 77, Drawer 78, Sheet 11

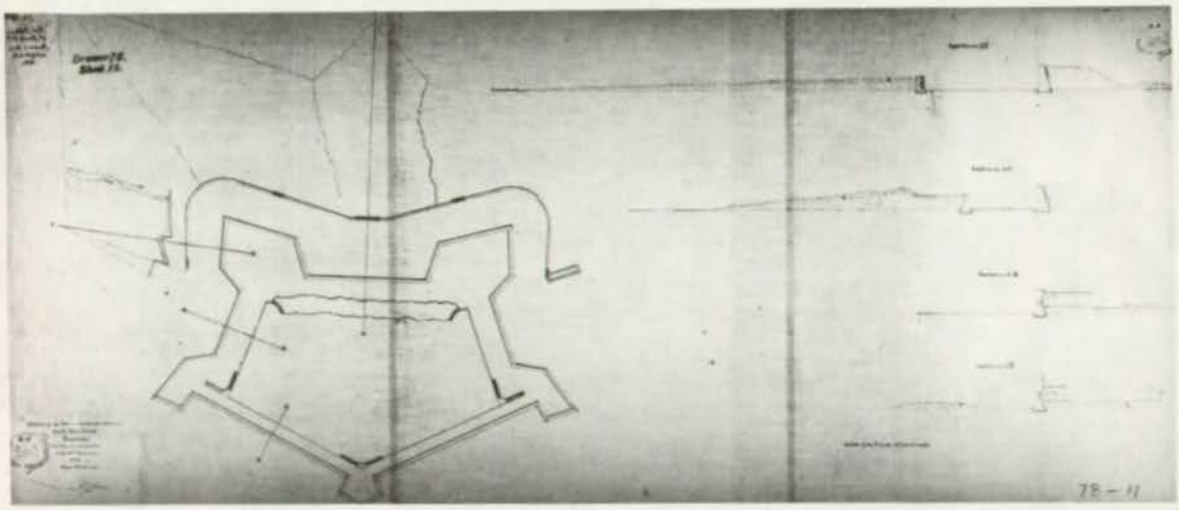


Plate IV

"Sketch of S.W. Bastion of Fort Pickens, Showing an alteration that is to be made in the parapet of the right face south front." Engineer Department, January 24, 1842. Sent with letter of that date to Maj. W.H. Chase at Pensacola.

Courtesy National Archives, RG 77, Drawer 78, Sheet 29

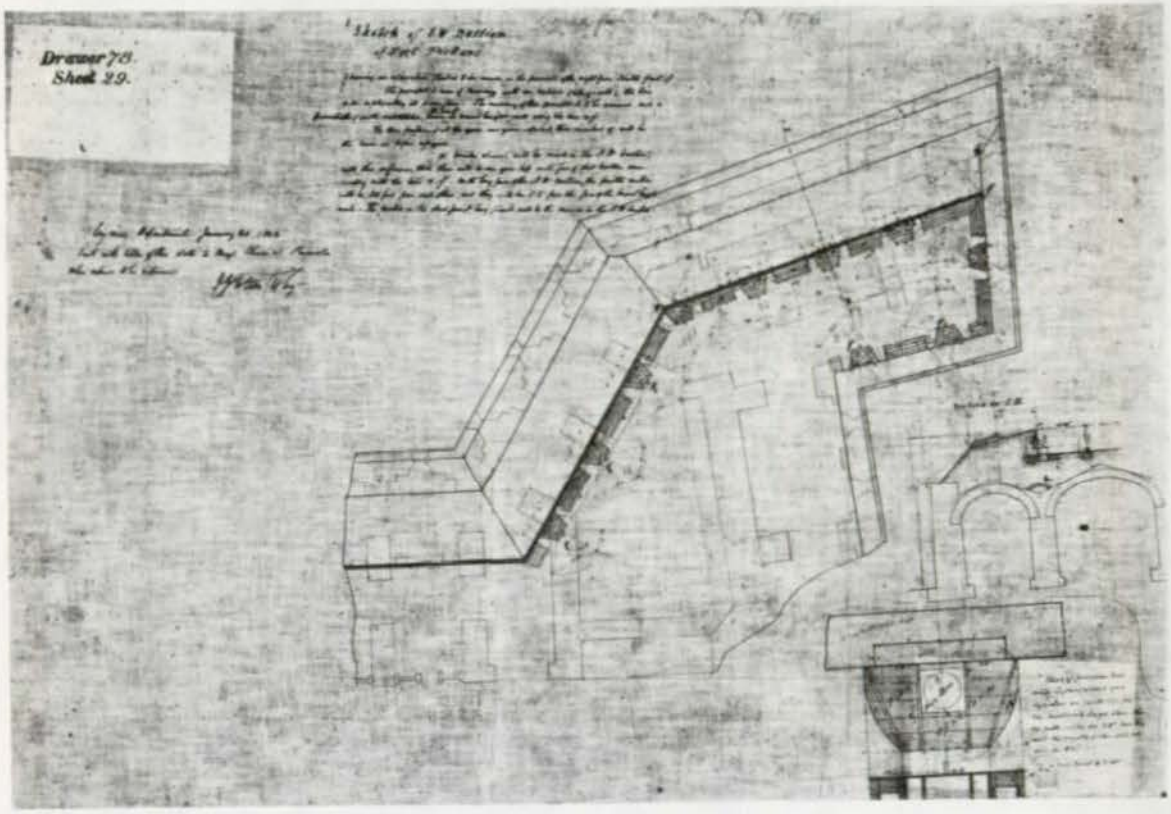


Plate V

"Sketch of the central channel [Tower] Bastion of Fort Pickens, Showing the position of its Barbette guns and the required modification of the parapet." Engineer Department, January 27, 1857.

Courtesy of National Archives, RG 77, Drawer 78, Sheet 43

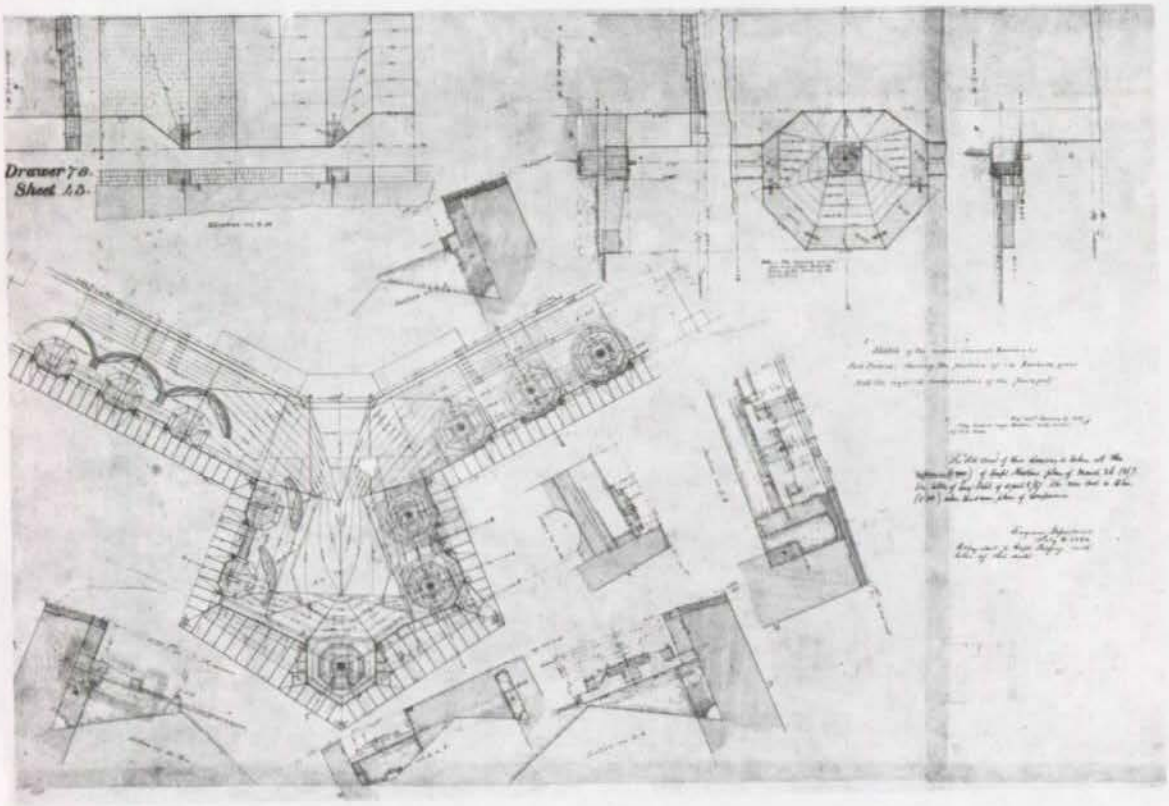


Plate VI

"Fort Pickens, Fla., Showing the positions and strength of the Enemy's Batteries as far as known by actual observation--and also of our own batteries," Fort Pickens, June 10, 1861.

Courtesy of National Archives, RG 77, Drawer 78, Sheet 53

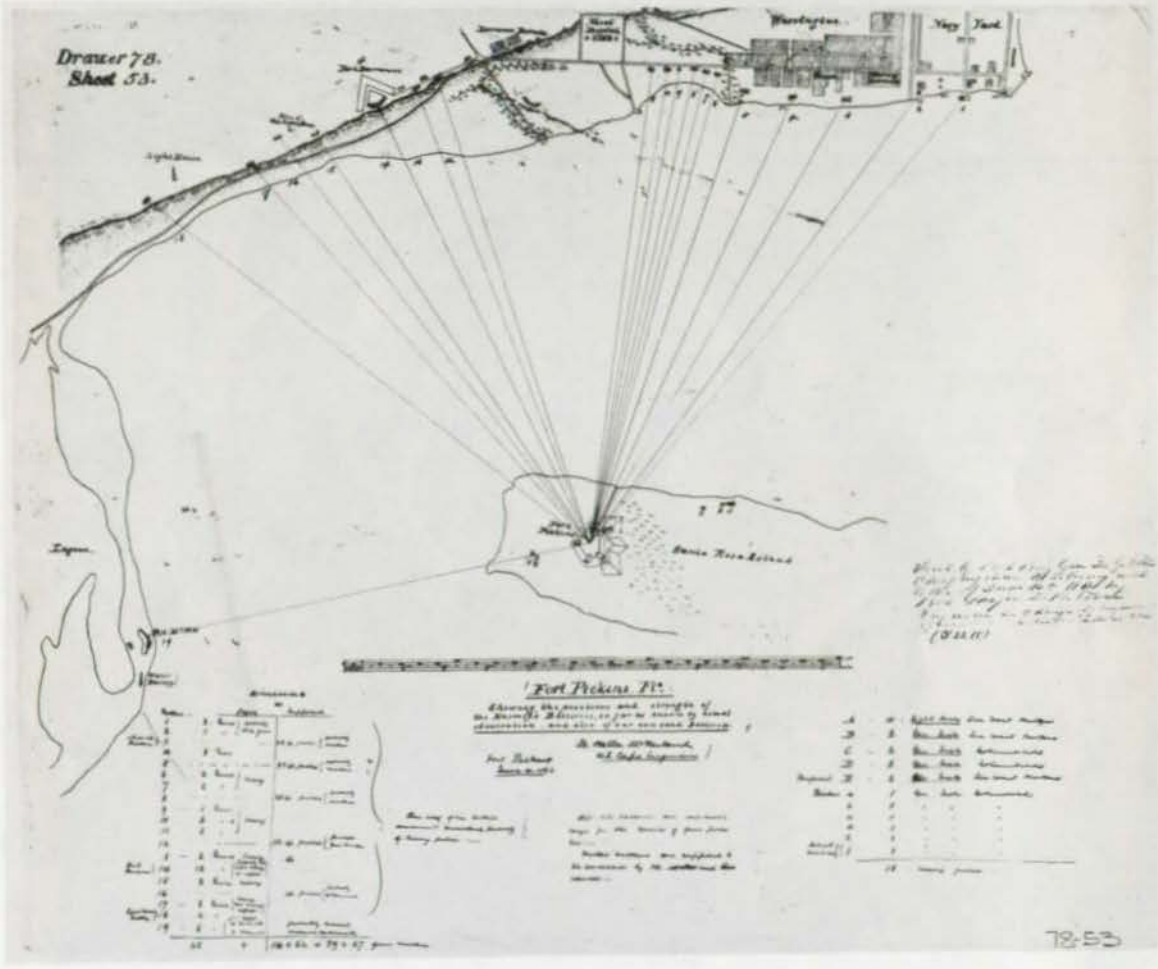


Plate VII

"Fort Pickens, Fla. Exhibiting its Armament--the bearing of the Enemy's Batteries upon its different parts, and the earthwork defenses thrown up as cover against the same--Showing magazines in traverses." Fort Pickens, June 10, 1861.

Courtesy National Archives, RG 77, Drawer 54, Sheet 78

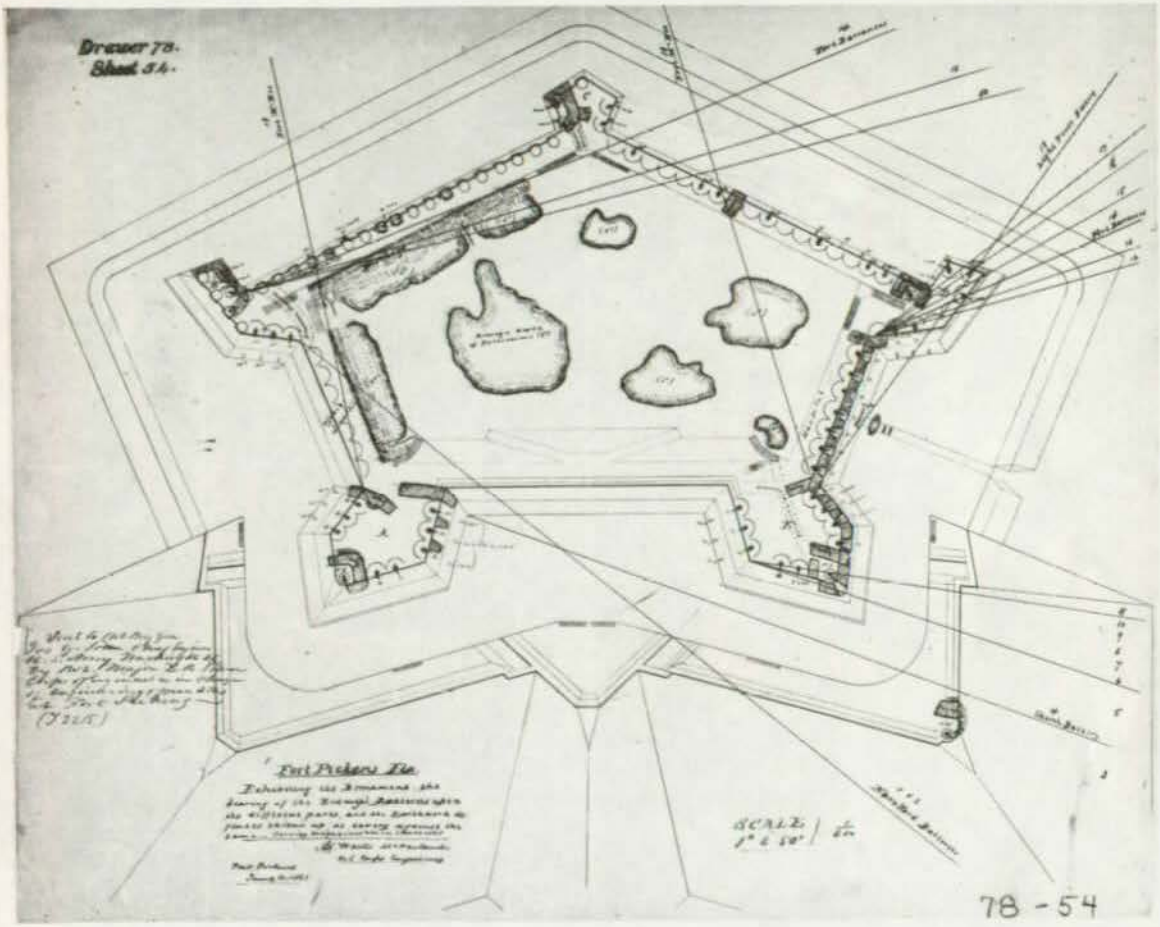


Plate VIII

"Armament of Fort Pickens, December 20th, 1863," by Capt. J.C. Palfrey.

Courtesy National Archives, RG 77, Drawer 78, Sheet 55

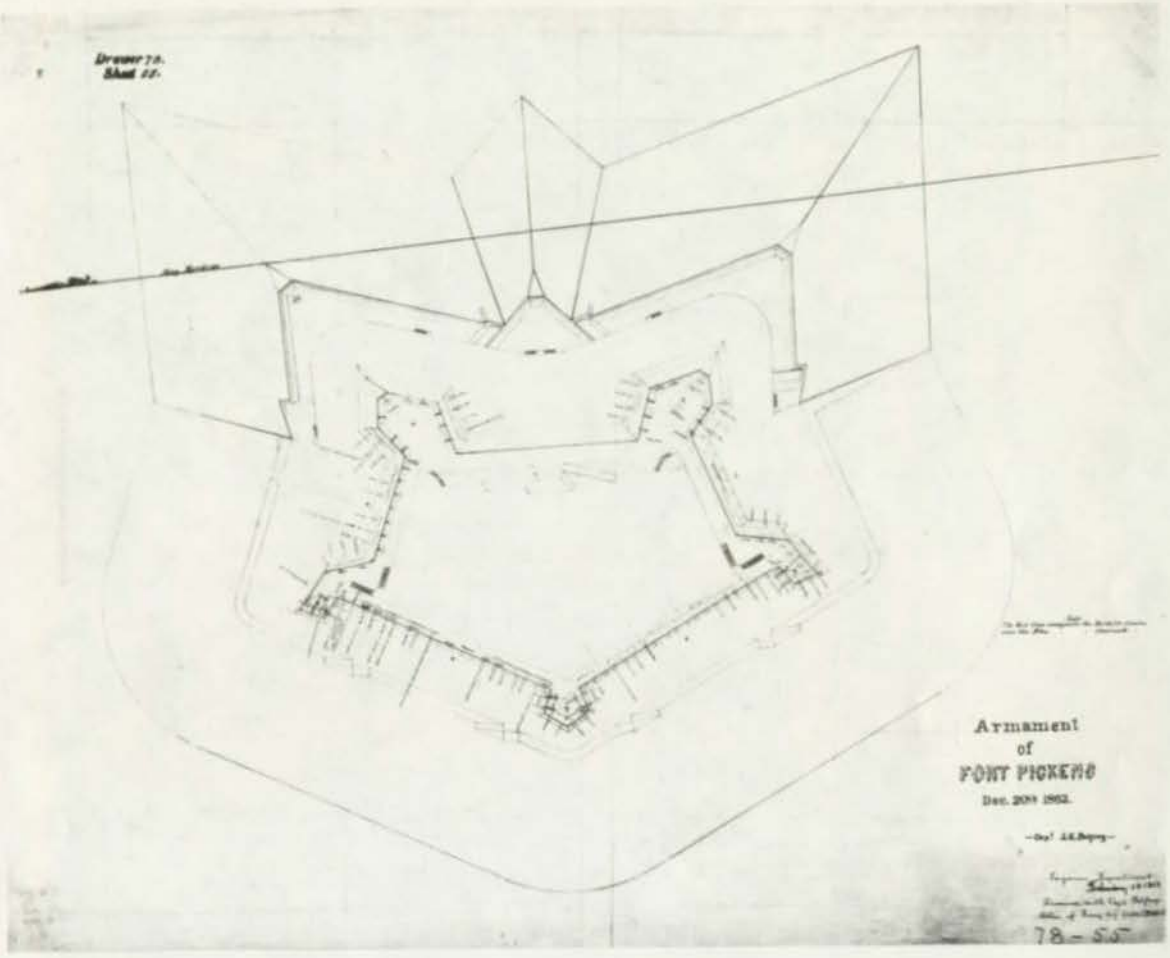


Plate IX

"Fort Pickens, Plans and Section of 15-inch Gun Platform in Central Channel [Tower] Bastion," Engineer Department, July 19, 1864.

Courtesy National Archives, RG 77, Drawer 76, Sheet 57

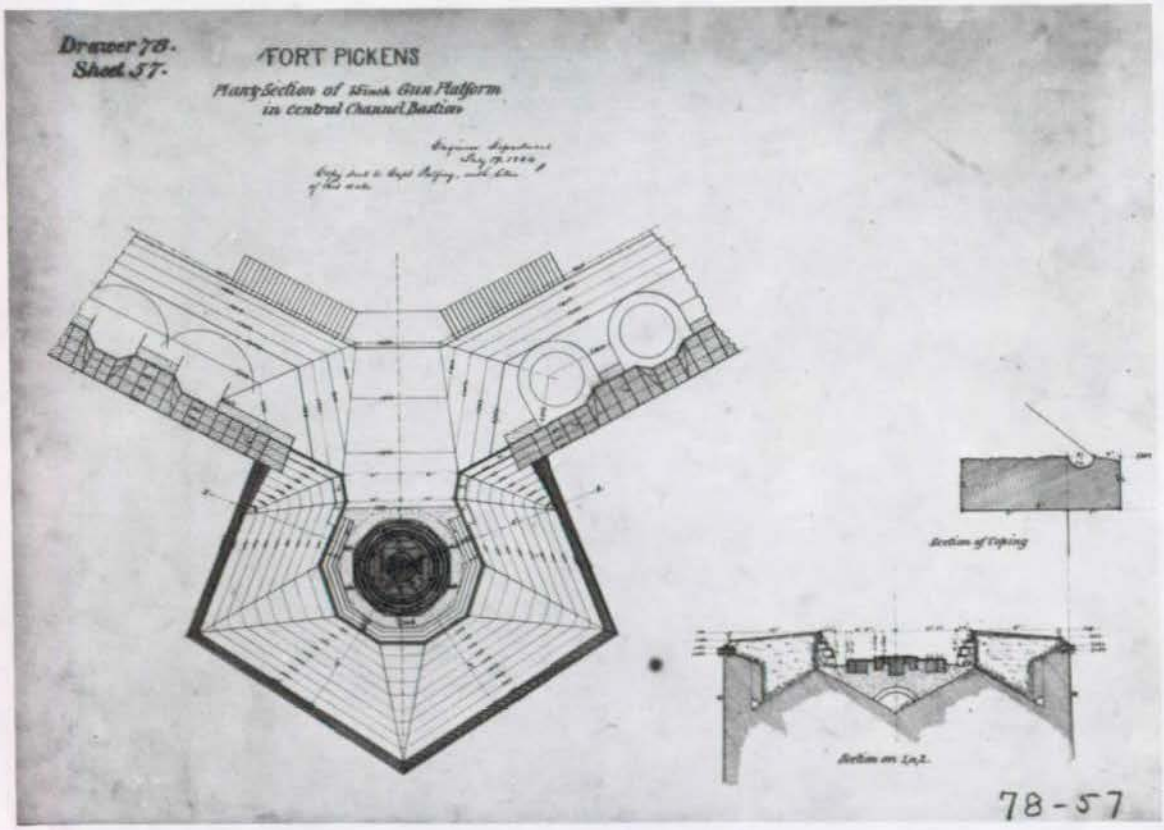


Plate X

"Fort Pickens, Details of Southwest Bastion, Showing 15-inch Gun Platform and Parapet," Engineer Department, January 6, 1868.

Courtesy National Archives, RG 77, Drawer 78, Sheet 59

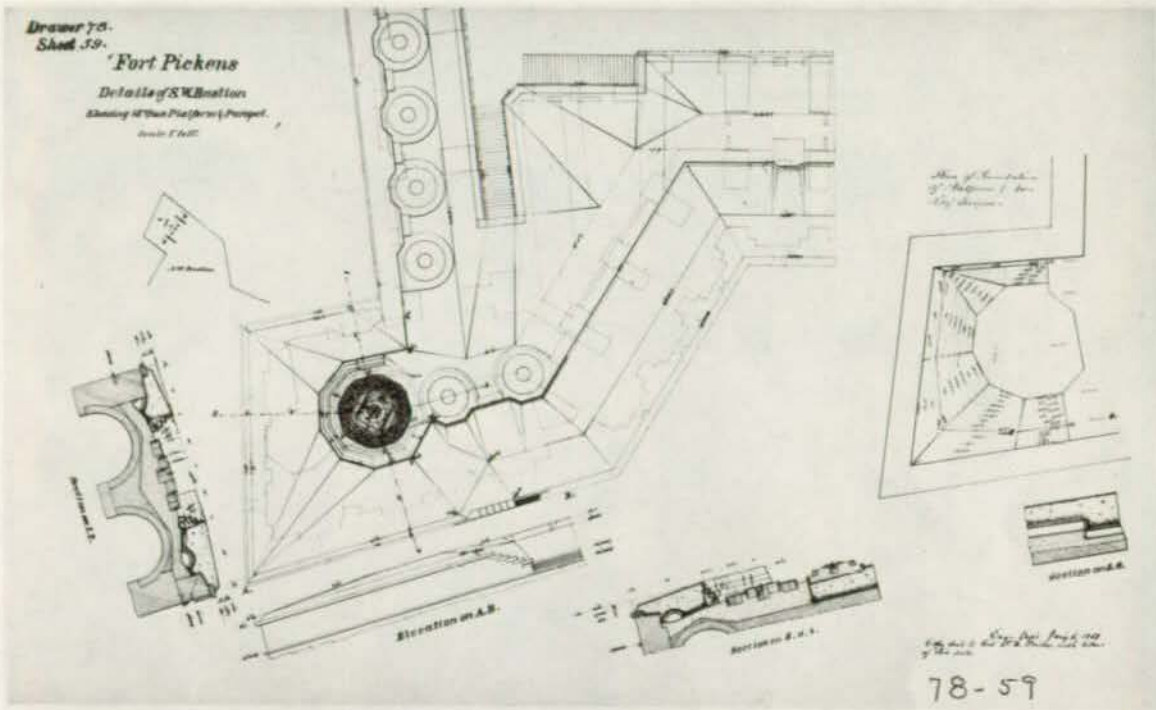


Plate XI

"Fort Pickens, Horizontal Section through Embrasures." Surveyed under the direction of Bvt. Col. F.E. Prime, U.S. Engineers, January 12, 1869.

Courtesy National Archives, RG 77, Drawer 78, Sheet 63

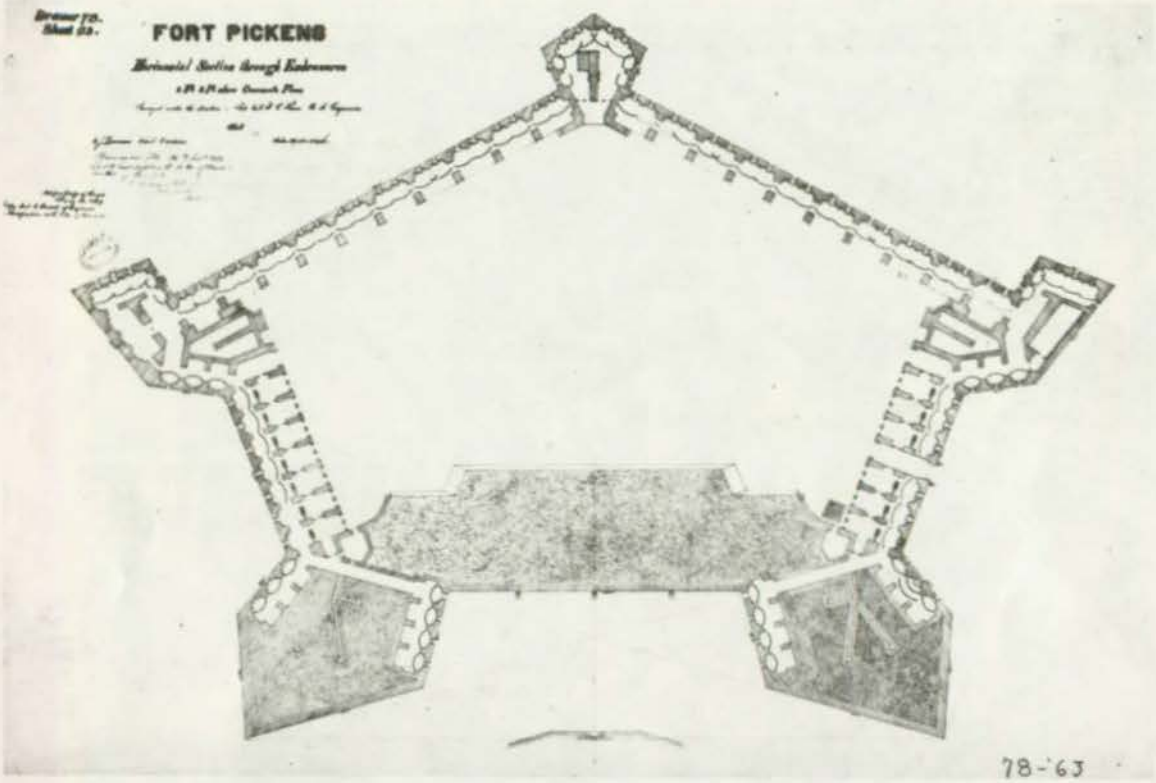


Plate XII

"Plan and Sections of Bastion 'A' [Northeast] Bastion, Fort Pickens, Showing the proposed arrangements for a mining casemate and cable gallery," July 14, 1893.

Courtesy National Archives, RG 77, Drawer 78, Sheet 73

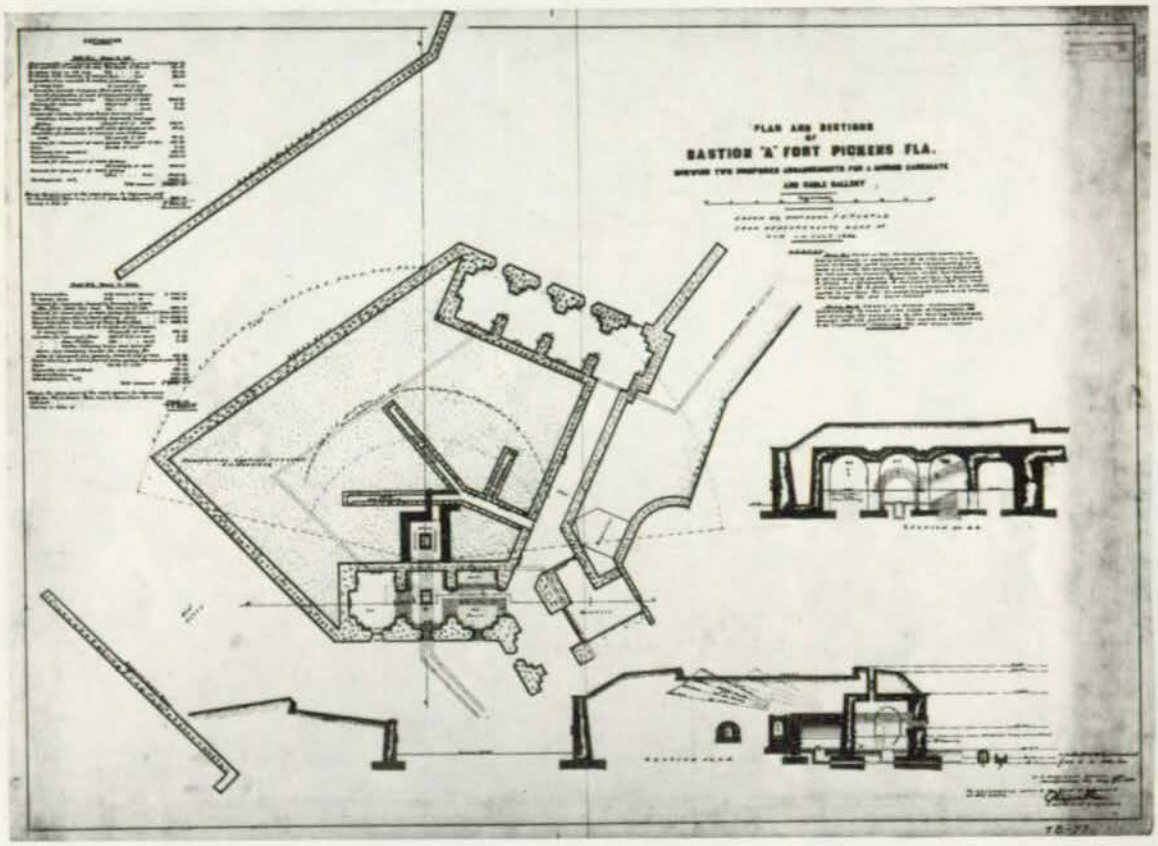


Plate XIII

"Sketch Showing Foundations of Casemates 87 and 88, Fort Pickens, Fla." U.S. Engineer Office, Warrington, Fla., January 25, 1894.

Courtesy National Archives, RG 77, Drawer 78, Sheet 74

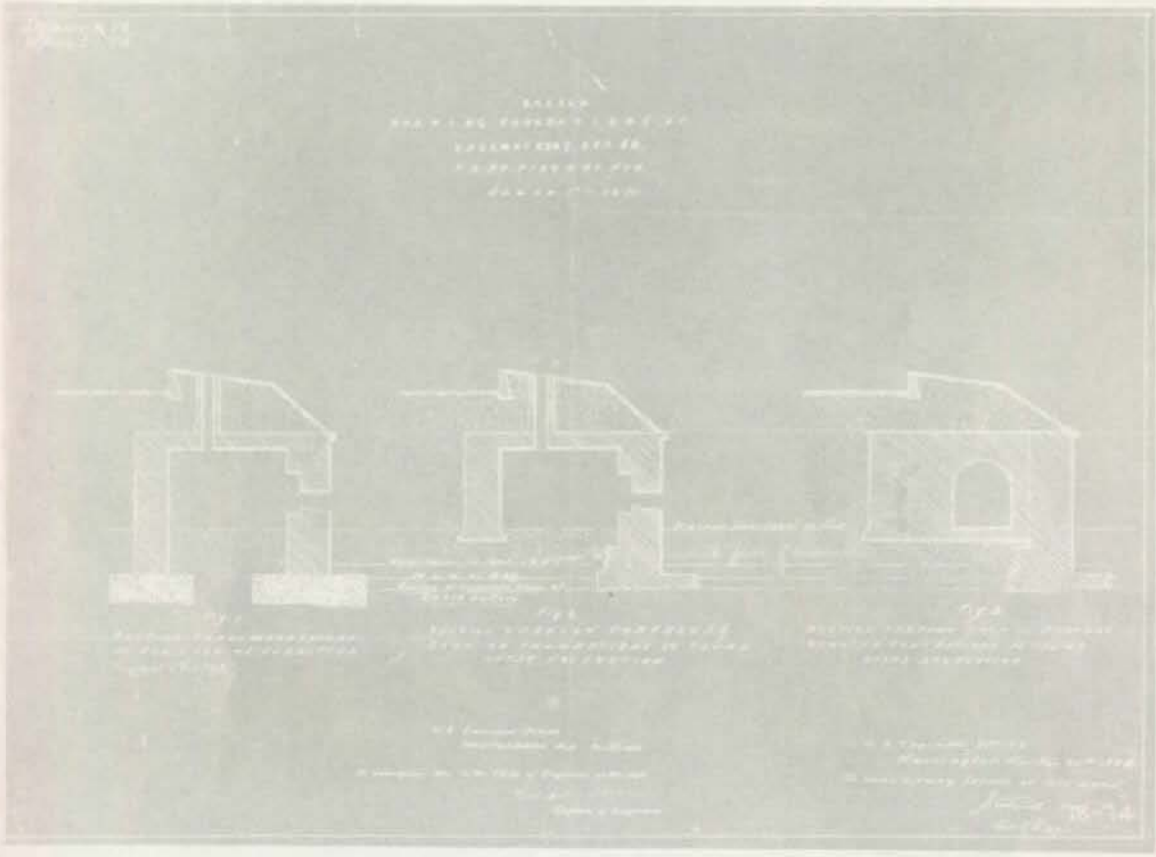


Plate XIV

Fort Pickens in the 1890s. Note casemates, breast-height wall, gun platforms, and terreplein of northwest and southwest channel fronts, the Tower Bastion's 15-inch Rodman gun, and stacks of cannon balls.

Courtesy GUIS

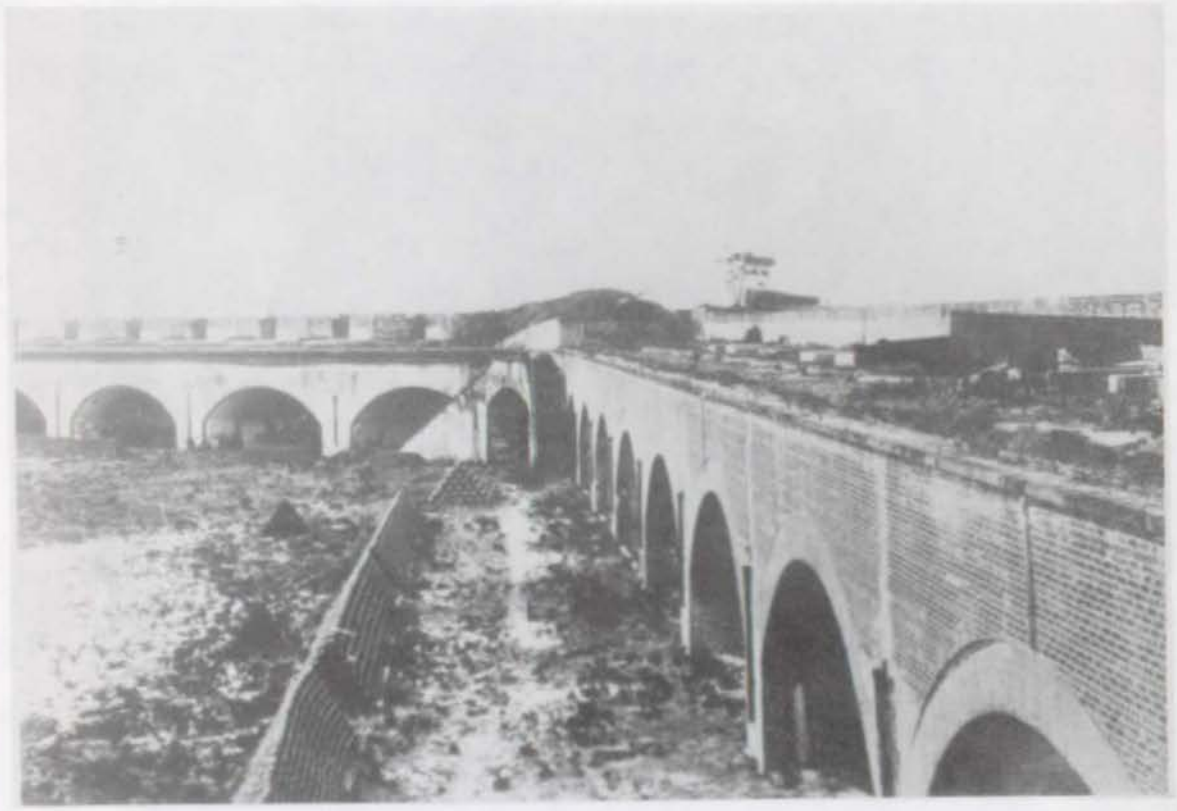
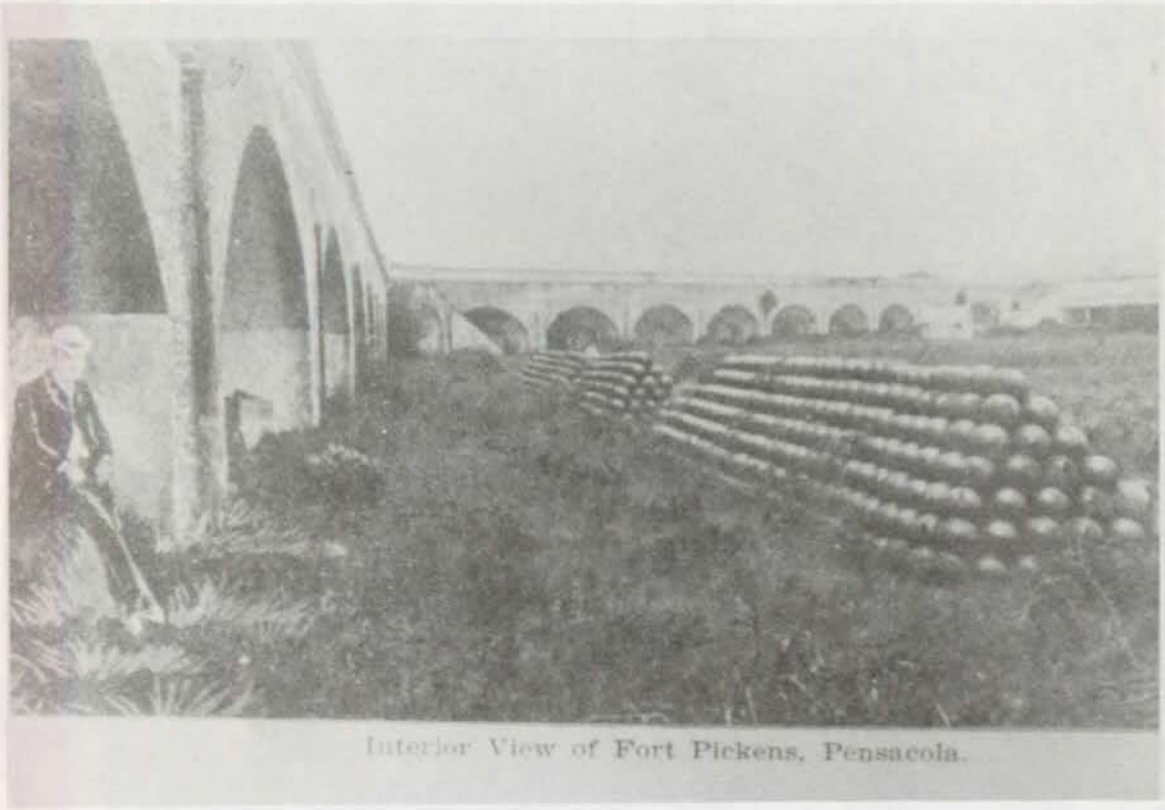


Plate XV

"Interior View of Fort Pickens, Pensacola," 1895. View looking toward casemate arches of north curtain. Note stacks of cannon balls, ramps, and blindage shielding northeast bastion magazine.

Courtesy GUIS

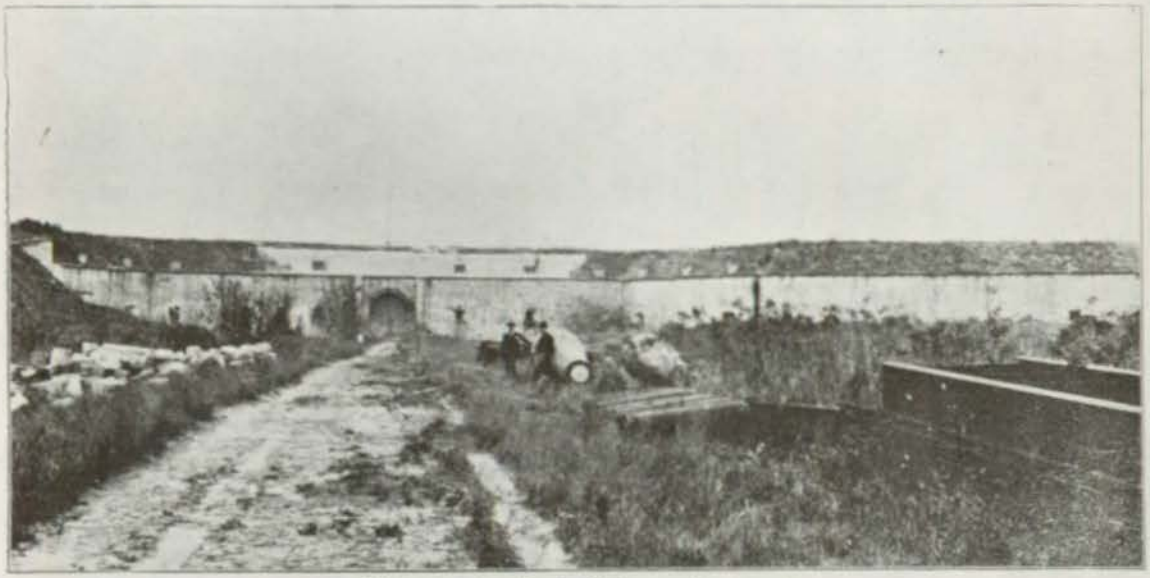


Interior View of Fort Pickens, Pensacola.

Plate XVI

"Entrance to Fort Pickens, Pensacola," 1895. Note sally port, north curtain, northwest bastion, and dismounted 15-inch Rodman shellguns.

Courtesy GUIS



Entrance to Fort Pickens, Pensacola.

Plate XVII

Approach to sally port, North Curtain, and Northwest Bastion, showing damage caused by June 20, 1899, explosion of northwest bastion magazine.

Courtesy National Archives, RG 77, file no. 77-F-78-93-3



Plate XVIII

"Fort Pickens from 1000 feet, October 26, 1918." Aerial photograph of the fort. Note Battery Pensacola, the perimeter of the Fort Pickens scarp and glacis, etc.

Courtesy GUIS



As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Publication services were provided by the graphics staff of the Denver Service Center. NPS 2013