A Public History Project Atblakeley Historic Park, Alabama

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A PUBLIC HISTORY PROJECT AT
BLAKELEY HISTORIC PARK, ALABAMA

by

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B.S. University of Texas at Arlington, 1968

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Arts
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ABSTRACT

The public history project described herein was performed at Blakeley Historic Park, Alabama. The project included the preparation of survey maps depicting the location, size and directional orientation of Confederate and Union earthworks, which were used during the siege and battle of Fort Blakely in April 1865. The project also included historical research and documentation of findings relative to the design, construction and use of the Confederate fortifications at Blakeley Park. This research attempts to answer the questions; who ordered or directed the earthworks to be built, who designed them and supervised their construction, when were they built, and who provided the labor for their construction? Recommendations are made for the acquisition potential of earthworks found that were outside of present park boundaries. In addition, recommendations are made for preservation of existing earthworks within the park. The historical essay on the Confederate fortifications advances the argument that the design and construction effort was beset with shortages of engineers needed for design and supervision, shortages of labor needed for construction, and a shortage of troops to man the fortifications.

Because this project combined modern day Global Positioning System surveying and Geographic Information System mapping technology with historical research methodology, collaboration with faculty experts in the College of Engineering and Computer Science was essential.
ACKNOWLEDGMENTS

I owe a large debt of gratitude to many individuals who ventured outside the boundaries of their job descriptions to assist me with this public history project. Dr. Tarig Ali of the University of Central Florida Engineering Technology Department gave me expert advice on surveying techniques, recommended the best mapping software to use, and also provided me with an industry point of contact to assist me in the selection of surveying equipment. Mr. Dave Hart, president of GPServ Inc., loaned me a handheld Global Positioning System receiver, trained me in its operation and provided the software I needed to collect and process the Global Positioning System survey data. Jim Robeson, also of GPServ Inc., guided me through the technicalities of mapping software. Park Rangers Tim Gilchrist, James Johnson and Thomas Harms provided invaluable assistance that enabled me to find and map Civil War earthworks hidden deep in the south Alabama woods. In addition, they performed general babysitting chores that kept me safe and comfortable for the six-week period that I spent exploring the 3800-acre Blakeley Historic Park. Property owner Joe Wilson graciously allowed me to examine and map the portion of Confederate redoubt no. 2 that was located on his property. Park Director JoAnn Flirt, Ranger Gray Crawford and administrative assistant Joyce Walker provided me with fully equipped office space, catered to my every request, and went out of their way to make me feel welcome at the park.

To all of these I offer my sincerest thanks.
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CHAPTER 1: INTRODUCTION

Six hours after General Robert E. Lee formally surrendered the Army of Northern Virginia to Union commander General Ulysses S. Grant at Appomattox, Virginia, the last major battle of the Civil War was fought at Fort Blakely¹, Alabama, ten miles northeast of Mobile on the bluffs overlooking the Tensaw River. On April 9, 1865, after an eight-day siege, 16,000 Union troops under Major General Frederick Steele overran the Confederate fortifications defended by 2,700 Confederates under Brigadier General St. John R. Liddell.

The fall of Fort Blakely had been preceded by the capture of Spanish Fort, five miles to the south, on April 8th. With the loss of these two riverfront forts, which protected Confederate water batteries on the western shore of the Apalachee River, the water approaches to the city of Mobile were no longer defensible. Consequently, the Confederate commander of the District of the Gulf, Major General Dabney H. Maury, ordered the military evacuation of Mobile, and the mayor of the city surrendered Mobile to the Union Army. Formal surrender of the Confederate Department of the Mississippi, Alabama and Southeast Louisiana, by Lieutenant General Richard Taylor followed on May 5, 1865.

¹ I employ the Civil War era spelling of “Blakely” when referring to the historic town site, fort, or river, and the present-day spelling, “Blakeley” when referring to the State Park.
**Background**

Historic Blakeley State Park, opened in 1981, now encompasses 3,800 acres surrounding the site of the historic town of Blakely and including most of the Civil War battlefield. The major feature of the battlefield is the two-mile long arc of Confederate rifle pits that connect nine earthen redoubts (forts), which are spaced along the defensive line. Also remaining are large portions of the opposing Union rifle pits, artillery emplacements, and saps (zig zag trenches used during siege operations to advance entrenchments closer to enemy lines). Although park land was originally acquired to preserve and protect the historic features, the primary public attractions today are the campgrounds, nature trails and a boardwalk along the waterfront.

A small part of the battlefield, adjacent to Confederate redoubt no. 4 and the 115th Massachusetts Battery, has been restored by clearing of the forest cover and placement of railroad ties to shore earthen walls and gun embrasures within the fort. This location along the battle line is the only place where the opposing Confederate and Union lines are clearly visible to each other, and for this reason it is very popular with Civil War re-enactor groups. The remainder of the battlefield is now heavily forested, which limits one's line-of-sight and obscures Confederate and Union positions from one another. The park maintains a hiking trail that follows the line of Confederate earthworks for a major portion of its length. This hiking trail is currently the only means of visitor access to the battlefield except for
dirt roads that provide vehicle access to the cleared area around Confederate
redoubt no. 4. Park management would like to further restore the battlefield and
improve visitor access and viewing along the entire battle line, but lack of funding
is a major obstacle. These remaining earthworks, both Union and Confederate,
are the focus of this public history project.

Project Description

This public history thesis project has two parts, the first part consisting of
the creation of work products that will be used by Blakeley Historic Park to support
ongoing restoration and interpretive projects. The second part consists of
preparing a historical essay that addresses the impediments faced by the
Confederate Army in the design, construction and effective use of their
fortifications at Fort Blakely.

Part One: Earthworks Mapping and Historical Research

Park Director JoAnn Flirt and I agreed to the objectives of this project during an
August 2008 meeting. We were in agreement that the project should result in a
benefit to the park, should be consistent with my interests as a public historian,
and should conform to the University's requirements for a Master's Thesis public
history project. A project meeting all these criteria was formulated, and three
primary objectives were outlined, each related to a specific work product as
follows:
• Produce an accurate geo-location map of existing Civil War earthworks to aid park management's planning and execution of future restoration and/or preservation projects and to establish the start of a Geographic Information System mapping database that encompasses the park’s historical resources.

• Create detailed sketches/drawings depicting the geometry of the Confederate redoubts as well as that of Union artillery emplacements to aid in the restoration and/or interpretation of the individual works.

• Create a research file or database of information related to the design and construction of the Confederate and Union earthworks to support future park restoration and interpretation projects and to support the preparation of visitor brochures presenting historical information relative to the park’s Civil War fortifications.

Objective No. One

The precise location of the existing earthworks at Blakeley Park had not been established using present-day technology and surveying techniques. The Union forces accomplished a reasonably thorough mapping of the Blakeley fortifications after the battle, but this map, shown in Figure 1, depicts the fortifications as they existed in 1865, and probably does not represent the present-day status due to the one-hundred forty years of erosion by the elements as well as the destructive effects of farming and logging operations associated with the private and commercial ownership of the land prior to the 1980s. In addition, the digging of relic hunters and “restoration” by later day Civil War re-enactors may
have disturbed or destroyed original features of the earthworks. In any case, the 1865 map provides no usable geo-location information. Modern day topographical maps created by the U.S. Geological Survey include the needed geo-location references, but even these maps are based on 1940 survey data. In addition, the U.S. Geological Survey mapping was incomplete and it lacks detail of the individual works.  

Figure 1. Union Map of Blakeley Fortifications, 1865

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2 Telephone interview with Bob Kimmel, U.S. Geological Survey, February 12, 2009, relative to the original date of the USGS topographical map titled "Hurricane, Alabama."
Creation of a new map of the Civil War earthworks using survey equipment having Global Positioning System accuracy and the maintenance of the map in a Geographic Information System software application could be extremely useful to the staff of Blakeley Historic Park. For example, the mapping database could be used to plan future improvements for increased public access to the earthworks by constructing new roads and trails. For those portions of the earthworks that are being damaged by erosion, the mapping database can be used to prioritize preservation and restoration efforts and to more effectively manage the historical assets of the park.

The creation of a mapping database for the park's Civil War earthworks could also be the first step in a plan to develop and use a Geographic Information System application to document and manage all of the park's resources both natural and historical. Park Director JoAnn Flirt, already has such a plan and intends to acquire the Global Positioning System survey equipment along with the computer hardware and Geographic Information System software needed to develop an in-house park capability for developing and maintaining a resource mapping database. This type of database could be used by park staff to document and manage the different types of habitats within the park including the pine forests, hardwood forests, waterways, grasslands, swamps and coastal wetlands. The database could be used to identify and prioritize areas needing controlled burns to reduce underbrush, areas that could be logged to provide revenue, and to record locations of endangered animal species and exotic plant species. Lastly the
mapping database could be used to create highly accurate maps of park resources for use by park visitors as well as by the staff.

**Objective No. Two**

The creation of detailed maps or sketches of individual redoubts and artillery batteries within the park will be used as reference data by park staff to support restoration and interpretive projects related to the earthworks. As previously mentioned, only two of the individual works have been restored; Confederate redoubt no. 4 and the 115th Massachusetts Battery. The detailed survey maps will establish the geometry and directional orientation of each work. In some cases, it may be possible to determine original outlines and characteristics of particular geometric features using fortification design manuals in use by the engineering officers at the time of the Civil War. Comparison of the present-day geometry with historical maps and first-hand descriptions can be used to identify those modifications or additions that will be needed for restoration to the original design. As a parallel task, the park director requested that my investigations into the design of the individual works address the relevance of engineering calculations and sketches contained in the journal of Lt. Maurice Garland, a Confederate engineer assigned to Fort Blakely. She believed that this primary source data might contain details pertinent to the original design of the nine Confederate redoubts. I planned to compare my detailed maps of the individual redoubts with the sketches in the Garland journal to establish any correlation between the two.
In many cases, increased public access to secluded individual works can only be achieved by construction of new access roads which is usually a costly endeavor. However, it may be economically feasible in some cases to construct a replica of a fort at an easily accessible location, and in such cases as this, the detailed maps of the individual works can be used to create exact replicas. This approach has the added advantage that the original work, which many historians and enthusiasts consider to be "hallowed ground" that should not be disturbed, does not get subjected to the wear and tear of increased foot traffic nor to the shovel and bulldozer of the restoration crew.

**Objective No. Three**

A third objective of the project was to provide historical information related to the design, construction and use of the Confederate and Union earthworks that would support future park restoration and interpretation projects. The research would also include any information that could be gleaned with respect to the demonstrated effectiveness (or lack of effectiveness) of the works during the siege and battle. The questions that this research attempted to answer are:

- Why were Blakeley's defensive fortifications constructed?
- Who initiated the construction of Confederate fortifications at Blakeley?
- Who designed them?
- Who built the Confederate/Union fortifications and when?
- What were the significant features of the Confederate/Union fortifications?
- Was the design simple or did it incorporate more sophisticated features?
Did design of earthworks evolved over the course of the war?

How did their design relate to the lay of the land and to the presence or absence of vegetation?

How were obstructions used to increase the effectiveness of the defensive fortifications?

- Have the fortifications and entrenchments been adequately stabilized or is there risk of significant natural erosion or damage by animal/human traffic?

I also compare and contrast the defensive fortifications of the Confederates with the siege works constructed by the Union. For example, the historical record indicates the earthworks of the Confederates were constructed and strengthened over a period of seven or eight months, while those of the Union were designed and built in only seven or eight days. I examined evidence that the earthworks constructed at Blakely represented the state-of-the art in military field fortifications at the time they were constructed. The historical evidence revealed that; 1) the earthworks were designed by experienced engineers who had designed some of the most successful fortifications of the four-year conflict, 2) the earthworks incorporated features that were the result of four-years of design evolution, and 3) the Confederates made extensive use of emerging technology by incorporating a network of land mines into their design, as well as incorporation of mechanical innovations related to movement of artillery pieces in and out of firing position. Research also indicated that the Confederate defenders incorporated a fatal flaw into their defensive works and employed tactics that enabled the attacking Union Army to overrun their lines after a short but intense battle.
Part Two: Historical Essay

For the second part of the thesis report, I focused on historical research related to the design, construction and use of the Confederate earthworks at Blakely. I examined the details of how the Confederate efforts to improve the defenses of Mobile, including the design and construction of the eastern shore fortifications at Spanish Fort and at Blakely, were enormous engineering projects that were beset with shortages of all kinds, but particularly with shortages of engineering officers, construction laborers, and in the end a shortage of soldiers to man the works. I argue that by extraordinary efforts the Confederates overcame the shortages of engineers and laborers, but that the shortage of soldiers proved insurmountable and predestined their defeat at Fort Blakely.
CHAPTER 2: LITERATURE REVIEW

Primary Union Sources

History of the Campaign of Mobile

Any serious study of the Mobile campaign should begin with C. C. Andrews' *History of the Campaign of Mobile* first published in 1867 and still in print today. Andrews focused on the Federal land campaign against Mobile in which he was a participant, commanding one of four Union Army divisions at the siege of Fort Blakely in April of 1865. Andrew's book is unusual in this respect because most monographs dealing with the Mobile campaign concentrate on the dramatic naval battle of Mobile Bay that occurred in August of 1864, and pay scant attention to the army operations on the eastern shore of Mobile Bay in the spring of 1865. The focus of my thesis project is the earthen fortifications used by the respective armies at Fort Blakely, therefore, I will not address in detail the defensive works constructed around the city of Mobile proper or the fortifications at Spanish Fort, which were located five miles south of Fort Blakely.

Andrews' account is surprisingly balanced between North and South with details of Confederate operations most likely obtained through his post war associations with Confederate commanders since few after-battle reports were filed by southern officers, most having been either captured as prisoners of war or otherwise occupied by their hasty retreat from Mobile after the fall of Fort Blakely. Andrews' work is valuable because it provides an accurate chronology of the
military operations as well as a reliable identification of the military units, both North and South, which participated in the operations. Andrews also stressed the importance of the engineering operations associated with design and construction of Mobile’s defenses which spanned a period of approximately three years and included three separate lines of fortifications around the city, each one designed by a different chief engineer. ³

The principal forts protecting the main entrance into Mobile Bay were Fort Morgan on the east side of the entrance and Fort Gaines on the west side. Days after the Union fleet successfully ran past Fort Morgan on the 5th of August 1864, both forts surrendered to Union forces following artillery bombardments. Although the Union fleet gained control of Mobile Bay, the city proper was protected from naval attack by underwater obstructions and torpedoes (called mines today) placed in the main ship channel, and also by artillery batteries placed strategically along the channel. Southern blockade-runners, however, could still use a roundabout water approach to reach the city wharfs. This approach involved negotiating a narrow channel through obstructions and torpedoes in rivers that emptied into the northeast corner of upper Mobile Bay. The complicated path wound through parts of the Blakely, Apalachee, Tensaw, Raft, Spanish and Mobile Rivers as shown in Figure 2. Protecting this approach were two primary river batteries; battery Tracy on the western bank of the Apalachee, and battery Huger

one thousand yards downstream at the head of Blakely Island, which separated
the Blakely and Apalachee rivers.

Figure 2. Eastern Shore Water Route to Mobile

Due east of the river batteries, the eastern shore of the Apalachee River
consisted of low wetlands and marshes that comprised part of the Bay Minette
swamp. Upstream or north of the swampy area there was high ground on the
eastern shore of the Apalachee at the town of Blakely, about three and one-half
miles distant from the river batteries. Downstream of the swamplike area there was high ground on the eastern shore at the site of an old Spanish Fort, about one and one-half miles distant from the river batteries. The Confederates constructed fairly extensive field fortifications at both of these locations, each site consisting of a long semi-circle of rifle pits connecting redoubts or batteries that housed artillery totaling about forty guns at each location, the defensive line being two and one-half miles long at Blakely and two miles long at Spanish Fort. Andrews' description of the fortifications at Blakely and Spanish Fort is quite detailed and is oft repeated in the historical literature. 4

Andrews provided a concise critique of the tactics employed by both sides at Blakely, rendering both commendation and criticism for those deserving of either. He praised the Confederate defenders for manifesting "much energy and spirit during the siege, often making bold sallies in the night, and disturbing the besiegers." Andrews observed that Confederate morale was high; even when they knew an assault was coming, they were confident they would repulse it. He also has praise for the Union soldiers for the hard work they performed, digging night and day with little rest, laying down several miles of entrenchments and approaches, which "will long remain as proof of the labor that was done." 5

Andrews noted a couple of Confederate tactical mistakes that contributed to the success of the Union assault. The Confederates employed advanced rifle pits that were too far advanced from their main line of entrenchments, causing a problem for the Confederates when the final Union assault was launched. This

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4 Ibid., see 48-49, 122.
5 Ibid., 223-226.
flaw in the Confederate tactics will be examined further in Chapter Four. Andrews also observed that the Confederates never mounted the parapets of their breastworks when closely attacked, as required by the standard rules for defending fortifications.\(^6\)

Union and Confederate commanding officers did not escape Andrews' critical eye. He faults the Confederate commander at Mobile for not withdrawing the Blakely garrison as soon as Spanish Fort fell, because the federal troops at Spanish Fort immediately became available for duty at Blakely, giving the Union troops a potential eight-to-one advantage over the Confederates - impossible odds to overcome. He also faults the Union commander for not investing the entire Confederate line. The southern end of the Confederate line (at redoubt no. 9) was at the edge of a bluff overlooking the Bay Minette swamp which Union commanders deemed impassable. The Confederates, however, had constructed a road or footpath across the swamp that connected Blakely with Spanish Fort, and actually received 1000 reinforcements that had evacuated Spanish Fort via this footpath (General Maury did not let them remain at Blakely, however, and sent them to Mobile by steamer). The Union commanders had not followed the first rule of siege operations - deny the enemy all ingress and egress. Andrews states that the swamp was narrow and could easily have been bridged, leaving no excuse for not investing the entire Confederate garrison. Andrews' criticisms are insightful

\(^6\) Ibid., 224.
and are unmatched in the historical literature due, undoubtedly, to the fact they are based on his personal experience and eyewitness observations. 7

Official Records of the War

Also indispensable in the study of the Mobile campaign is The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies. This source contains the reports of over ninety Union commanders and officers that participated in the operations against Spanish Fort and Fort Blakely during the period March 17 through April 12, 1865. Especially informative are the reports of the Union commander at Blakely, Major General Frederick Steele, and his four division commanders. Not only do they provide details of the siege operations and of the final assault on April 9, they also offer much information regarding the construction of the Union artillery batteries, rifle pits and approaches.8

Federal engineering operations at Blakely began with an examination or reconnoitering of the Confederate fortifications by the Union Chief Engineer, Brigadier General Comstock, who provided his recommendations to General Steele. Steele reported that the Confederate works were strong, about two miles in extent, composed of redoubts constructed of earth and timber, with ditches in front, which redoubts were connected by continuous rifle pits, with salients and stockade work, making a continuous line from the enemy's left, on Tensaw River, to his right, which rested on impassable swamp and thicket.

7 Ibid., 224-225.
The obstructions placed in front of the Confederate main line were also quite impressive as Steele reported that,

There were two continuous lines of abatis around the works, and at some points three. Outside of these were rifle pits for sharpshooters...The timber was slashed in front of the works for about 1,000 yards, and the character of the ground such as to require the construction of approaches.

At the time of their initial observations, Comstock and Steele could not see the hidden trip lines made from telegraph wire, and the buried land mines (called subterra shells) that also formed part of the obstructions in front of the Confederate main line of works. 9

The first order of business was the selection of artillery sites, which was accomplished by engineering officers, Captain A. H. Burnham and Captain E. H Newton on staff to General Steele. Construction of these batteries and the Union first line of entrenchments began immediately, with improvements and advancements being accomplished continuously up until the final assault on April 9th. Each of the four division commanders commended the bravery of their troops during the final assault, but much of their highest praise was reserved for the industry and hard labor expended by their troops in working around the clock to advance their entrenchments while under fire of the Confederate sharpshooters and artillery. Typical was the report of Brigadier General John P. Hawkins, whose three brigades of U. S. Colored Troops held the extreme right of the Union line, "From the 2d to the 9th instant the troops were busy night and day making approaches toward the place, all this time under a heavy fire from the fort and from the gun-boats of the enemy." This labor was especially hard on Hawkins' troops

because they had not had time to recover from the debilitating effects of their ten-day march to Blakely, "The march was a severe one on the men, being attended with constant labor, making corduroy roads to get the wagons through the almost impassable swamps." Although Hawkins had two regiments of engineer troops, he had no engineering officers assigned to his division and had to depend on Captain Newton of General Steele's staff to provide technical direction on the construction of his entrenchments and artillery batteries.  

Brigadier General C. C. Andrews' division was positioned just to the left of Hawkins, and he too, was impressed with the work of his troops, stating in his report that "the two brigades of my division have dug 5571 yards (in excess of 3 miles) of rifle-pits and approaches in the seven days preceding the assault." The division of Brigadier General James C. Veatch was positioned to the left of Andrews at Blakely, and like Andrews' division, was part of the Thirteenth Army Corps whose chief engineer, Lieutenant Colonel John C. Palfrey, reported that construction of Veatch's entrenchments at Blakely were directed by Captain W. J. Edwards, assistant engineer of the division. Palfrey's report also provides details of factors that impeded construction of the Federals' earthworks; they lacked a "sufficient number of trained and experienced assistant engineers" placing a severe burden on the few they had and greatly delaying the work. They had no "sapper troops" which referred to regiments of "miners and sappers" that were dedicated to construction of approaches to the enemy's works, meaning that Veatch's combat troops had to perform these exhausting duties, which drained

their energy and was "highly injurious to the army." Also impeding the work, according to Palfrey, was the want of any systematic method for "procuring, issuing and accounting for siege tools and material." ¹¹

The division of Brigadier General Kenner Garrard occupied the far left of the Union line where the swampy creek bottoms prevented the establishment and advancement of conventional siege lines. Some advanced skirmishers were able to entrench in small rifle pits within 600 yards of the Confederate line, but these were on low ground that was commanded by Confederate artillery. Most of Garrard's troops had to advance about 1000 yards through the swampy creek bottoms during the final assault on the 9th. Their success may have been due to the fact that old men and young boys with little or no training manned the Confederate line at this point. The relatively low casualty numbers of Garrard's and Veatch's divisions provides evidence of the weaker resistance provided by the green Alabama recruits that occupied the Confederate line from redoubt no. 5 to redoubt no. 9. On the final assault, these two Union divisions sustained only forty percent of the Union casualties although they attacked roughly fifty-six percent (five-ninths) of the Confederate line. In comparison, the Confederate line from redoubt no. 1 to no. 4 was manned by veteran Missouri and Mississippi troops. Here the combined divisions of General Andrews and General Hawkins sustained sixty percent of the Union casualties even though they attacked only forty-four percent (four-ninths) of the Confederate fortifications. ¹²

¹² Ibid., 101-102.
In spite of the success of Garrard's division, General Andrews criticized him in his post-war book for not bridging the Bay Minette swamp on his extreme left in order to completely occupy all land approaches to the Confederate position. Surprisingly, Garrard's troops also captured the Fort Blakely commander, Brigadier General St. John R. Liddell, at this position on the extreme southern end of the Confederate line. One would think that a commander would choose a central location from which to direct the operations of his army or at least seek protection behind his strongest troops. As it turned out, Liddell had moved his quarters near redoubt no. 9 on the morning of April 9th because he was concerned that the muddy tracks through the swamp, left by the garrison from Spanish Fort the night before, could be used by the enemy to lead them to a point behind the Confederate line. He move his quarters to the southern end of the line so he could better direct efforts to seal up this unforeseen hole in their defensive fortifications.13

Accounts of the siege and battle of Fort Blakely are moderately abundant in the letters, diaries and post-war reminiscences of individual Union soldiers. A few of these are preserved in the Civil War manuscript archives at The Museum of Mobile, most of which make mention of the underground torpedoes that the Confederates placed in front of their works, sometimes producing horrible maiming of the attackers. One Union soldier, John H. Gregory, related in a letter that his

fellow soldiers were so incensed by this practice they "took no prisoners but killed every soul of them." Another letter writer named Edward reported his unit took similar action when, during the final assault, the Confederate defenders raised white flags to stop the Union fire only to resume firing when the attackers got closer. Edward also reported that when the regiments of U. S. Colored Troops on the right of the Union line overtook the Confederate works, "it was hard work to keep them from killing the prisoners, they would not take any themselves." 14

Elias Moore of the 114th Ohio Volunteer Infantry, wrote to his mother with a vivid account of the final assault at Blakely, which letter also contained detailed descriptions of the obstructions the Confederates had placed in front of their main line of fortifications,

We had to travel over a distance of about four hundred yards, across a deep hollow. This space had been covered by a dense growth of pine, which had been felled with the tops pointing towards us, and the limbs cut and sharpened. This was very difficult to pass over. Within fifty yards of their works they had constructed a thick brush fence, limbs sharpened and pointing outward. Inside of this was a line of inclined pickets planted in the ground and about breast high, these were also sharpened. There were openings left at certain spaces, and along the paths through these, they had torpedoes planted. About four feet in front of the ditch surrounding the main works they had a wire stretched about ankle high, which sent many a soldier on his head into the ditch.

Moore also related the fate of the Confederate soldiers as their defensive line collapsed, and how the Confederates that faced the U.S. Colored Troops ran to nearby white Union troops for protection, but many "were bayonetted or shot." He also repeated stories he had heard about how "the negroes bayonetted and clubbed the rebels in their possession in Mobile." Most gruesome, however, were the graphic descriptions Moore gave of the injuries sustained by Union soldiers

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who had the misfortune of stepping on one of the Confederates' underground
torpedoes. Moore's feelings about these injuries were undoubtedly shared by
many,

"This kind of warfare is nothing short of cold blooded murder. I would like to see the fiend
who ordered them put in the ground, hung, shot, or burnt. There is no death too severe, no
torture sufficient to retaliate for the murder of our brave boys."\(^{15}\)

**Primary Confederate Sources**

**The Official Records and Letters and Telegrams Sent**

Although amply endowed with Union reports, the *Official Records* does not
contain any post-battle reports from Confederate commanders who participated in
the siege and battle of Blakely. What it does contain, however, are reports and
letters from Confederate commanders and engineering officers, written in the
preceding months, which provide a detailed and informative timeline of the design
and construction of Confederate fortifications at Blakely. Supplementing these
sources are engineering and command correspondence preserved in "Letters and
Telegrams Sent by the Engineer Bureau of the Confederate War Department,
1861-1864," part of Record Group 109 at the National Archives. From these
sources, the time sequence of events relative to the construction and use of
Confederate fortifications at Blakely can be formulated as presented in Appendix A
herein. This historical timeline documents the basic facts and events that surround
the development and use of Fort Blakely during the closing months of the Civil

\(^{15}\) Elias Moore, Fort Blakely, Alabama to mother, 10 April 1865, “The 114th Ohio Volunteers”
makeover/347/id126.htm.
War. The historical research that formed the basis for the Fort Blakely timeline of Appendix A also formed the research foundation for the historical essay presented in Chapter Five.

**Liddell's Record**

The published post-war writings of the Fort Blakely commander, Brigadier General St. John R. Liddell, are contained in a commented collection of his writings entitled *Liddell's Record*. Liddell's account of the siege and battle of Fort Blakely was written in 1867, only two years after the event, and is notable mainly for its extreme brevity, comprising barely two pages. He stated that the number of his troops was completely inadequate to defend his works successfully against the Union attackers, but that if he had been allowed to retain the evacuated Spanish Fort garrison, which General Maury ordered to Mobile, he could have repulsed the Union assault. Liddell does not blame General Maury for his defeat, however, but commends Maury for doing everything possible with the resources that he had. Liddell's reluctance to provide the details of a humiliating defeat is understandable, yet his leadership of the Confederate forces at Blakely is often lauded and seldom criticized. The editor of *Liddell's Record*, for example, commends Liddell's active involvement in directing naval support for his troops at Blakely, which by all accounts was highly effective. ¹⁶

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General Dabney Maury’s Account of the Defense of Mobile

Written in 1871 as a delayed report to former-President Jefferson Davis, and published in 1877 in The Southern Historical Society Papers, Major General Maury’s account of the defense of Spanish Fort and of Fort Blakely is fairly detailed but provides no new information with the exception of his revelation that the Union ironclad Tecumseh was probably sunk by its own torpedo while trying to run past the guns of Fort Morgan on August 5, 1864. At the time of its sinking, there was much discussion and argument over whether Tecumseh had been sunk by an underwater torpedo or by artillery fire from Fort Morgan. The Confederates had left a narrow channel, close to shore, free of torpedoes so that blockade-runners could pass by Fort Morgan, believing that no enemy ship could withstand the artillery fire from the fort at almost point-blank range. Some said that Tecumseh sank so fast it could not possibly have been due to artillery fire, which penetrates a ship above the water line resulting in a slower sinking rate or even no sinking at all. Others argued that there were no torpedoes in the part of the shipping channel the Tecumseh occupied; therefore it had to have been sunk by cannon fire. Maury reveals that the Tecumseh itself was outfitted with a torpedo affixed to a twenty-foot long wooden spar attached to its bow with the intention to ram the torpedo into the Confederate ironclad Tennessee, which was its most formidable adversary. According to Maury, when artillery fire from Fort Morgan
broke the torpedo loose from its spar, it passed underneath the ship, contacting the ship’s hull with devastating results causing the ship to sink almost instantly. 17

Maury’s published remarks are also valuable because he documented the extensive use of emerging technology in the defense of Mobile. Maury claims that a total of twelve Union ships, including the *Tecumseh*, were sunk by torpedoes in Mobile Bay, a fact which demonstrated to the navies of the world that the much-herald “ironclad” ship design had serious vulnerabilities and that almost any harbor or waterway could be protected from invasion by an enemy naval force by using underwater torpedoes. He also described other innovative devices used at Spanish Fort and Fort Blakely including one-half inch thick iron screens or plates used to plug the embrasures or openings through which artillery was fired. The innovation was the device that enabled the armor-plate to be raised or lowered quickly when needed, offering the gun crews much needed protection from rifle fire while they serviced and reloaded their artillery pieces. Another innovation was credited to Colonel William E. Burnett of Texas (killed at Spanish Fort while he and Maury were inspecting the lines) who had devised a much-simplified mechanism by which the heaviest cannon could be run into battery using only one hand.

Maury documents the use of "Beauregard screens" which were a type of wooden embrasure used by sharpshooters in rifle pits. Devised by General Beauregard, they were secured in place with sand bags and were deemed much superior to

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head logs, so much so that Maury claimed, "the demand for them was soon
greater than I could supply." 18

**Accounts By Confederate Soldiers**

Accounts of the siege and battle of Fort Blakely by Confederate soldiers are
not quite as numerous as those of Union soldiers; however, some first-hand
accounts from Missouri soldiers are quoted in Phil Gottschalk's *In Deadly Earnest:*
*The Missouri Brigade.* The Missourians occupied the left-center of the Confederate
line beginning with redoubt no. 3 and extending past redoubt no. 4, and their
accounts deal primarily with the fighting in and around these two forts. Lieutenant
O. F. Guthrie paid tribute to the design and construction of the Confederate
fortifications, describing redoubt no. 4 as "the best works we ever fought behind
with nice head logs and a battery on each flank." Second Lieutenant E. W. Tarrant
was an artillerist whose unit manned guns in redoubt nos. 1 and 2 (which were
defended by Mississippi infantry regiments), and he described events that
transpired when the U. S. Colored Troops overran those two forts. He saw one
Confederate officer "shot down" and another soldier "clubbed to the ground" after
surrendering. The officers of the Colored Troops regained control, however, and
"there were no other outrages." 19

Lieutenant Alden McClellan, another artillerist at Blakely, recorded his
experiences in a *Confederate Veteran* magazine article. At the time of the final

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18 Ibid., 12.
19 Phil Gottschalk, *In Deadly Earnest: The History of the First Missouri Brigade, CSA* (Columbia,
Union assault on April 9th, McClellan was assisting with a surgery in the hospital, however, as soon as he finished he tried to escape to the waterfront but was captured and taken prisoner. His article is mainly a description of his experiences as a prisoner, first taken to Mobile then transferred to the federal prison at Ship Island, Mississippi, eventually taken to New Orleans and then finally to Vicksburg where he was paroled. His worst experiences of hardship and abuse occurred while imprisoned at Ship Island, which became especially harsh upon the announcement of President Lincoln's assassination. 20

The atrocities committed by the black Union troops against the Confederate soldiers at Blakely were reported by both Union and Confederate eyewitnesses and were inflicted in retribution for like atrocities reported to have been committed by Confederates against black Union troops and their white officers during the last two years of the war. Confederates viewed black Union soldiers, most of whom were ex-slaves, as traitors to the South who had turned on their southern “benefactors”. Southerners also believed that northern leaders were attempting to foment slave insurrections in the South by their use of black troops, which resulted in an increased loathing toward the Yankee officers who led black soldiers into battle. The most infamous and widely reported incident of the Civil War occurred at Fort Pillow, Tennessee in April of 1864 when Confederate troops under General Nathan Bedford Forrest killed a large number of U. S. Colored Troops and some of their white officers after eyewitnesses said they had surrendered. One year later at Fort Blakely, “Remember Fort Pillow” became the rallying cry of the black troops

as they charged the Confederate fortifications, and like the Confederates at Fort Pillow, the gave no quarter to the enemy. 21

Secondary Sources

As previously mentioned, many of the secondary sources dealing with Mobile concentrate on the Naval battle of 1864 providing little information on the eastern shore battles of 1865. A notable exception is Confederate Mobile by Arthur W. Bergeron, Jr. This work is a comprehensive account based largely on primary sources, and it provides a balanced narrative encompassing land operations, naval operations, the role played by engineers, the command strategy of sides, as well as the interaction between the Confederate military and the local population. If one had to choose a single work with which to become familiar with Mobile military operations during the Civil War, this would be the one to choose. Other works dealing with both army and navy operations at Mobile, such as Mobile Bay and the Mobile Campaign by Chester G. Hearn, simply do not measure up to Bergeron's high standard of historical research. For example, Hearn attributes the design of Spanish Fort and Fort Blakely to Mobile Chief Engineer Danville Leadbetter. This seems unlikely, since General Leadbetter left Mobile in October of 1863 to become Beauregard's Chief Engineer at Chattanooga, and the plans for fortifications at Blakely and Spanish Fort were begun only after the Union fleet took control of Mobile Bay in August of 1864. Even though Leadbetter had

withdrawn from active service at some point, possibly due to health reasons, and was living in Mobile in August 1864, he is never mentioned in any of the Engineering reports originating in Mobile between August 1864 and the end of the war. When the Union fleet began forming off the Alabama coast in June 1864, the Engineer Bureau did not know Leadbetter’s whereabouts, but after learning from Lt. Col. Viktor von Sheliha that he was living in Mobile, the Bureau telegraphed Leadbetter in August 1864 asking him to assist General Maury in any way that he could. No evidence could be found that he provided such assistance.22

Technical Sources

A Treatise on Field Fortifications

During the Civil War the majority of field fortifications were constructed in accordance with a design manual authored by a West Point engineering professor, Colonel Dennis Hart Mahan. Entitled A Treatise on Field Fortifications, Containing Instructions on the Method of Laying Out, Constructing, Defending, and Attacking Intrenchments, with the General Outlines, the manual was comprehensive in its coverage and included many illustrations. This manual, which is still published in reprint editions, provides insight into why Civil War earthworks were designed the way they were and how their weakness were exploited by the enemy. Mahan’s manual primarily addressed field fortifications, made of earth and timber and

constructed in the field by soldiers or unskilled laborers, as opposed to permanent fortifications made of brick, stone and mortar and constructed by skilled laborers. Also differing in design and purpose, according to Mahan, were the earthworks constructed by entrenched defenders versus those constructed by attacking or besieging forces. These differences are examined further in Chapter Four.\textsuperscript{23}

\textit{Field Armies and Fortifications in the Civil War}

\textit{Field Armies and Fortifications in the Civil War: The Eastern Campaigns, 1861-1864} by Earl J. Hess provides an excellent description of the tactical use and design of Civil War field fortifications based on the author's examination of hundreds of Civil War fortifications over a period of many years. Although the author focuses specifically on fortifications used in the Eastern campaigns from 1861 to 1864, his coverage of fieldworks in general is quite comprehensive explaining in detail how design features evolved over the course of the war and how the Civil War gave birth to innovations in the design and tactical use of fieldworks. For anyone planning personal examination of Civil War earthworks, Hess's book is highly recommended. General topics covered include: who initiated construction of fieldworks, who designed them, who constructed them, the theory, the design and the doctrine of fieldworks and how these changed during the course of the Civil War, the role played by the Engineering Corps of both sides, the influence of Dennis H. Mahan on the design and doctrine of Civil War

\textsuperscript{23} Dennis Hart Mahan, \textit{A Treatise on Field Fortification, Containing Instructions on the Laying Out, Constructing, Defending, and Attacking Intrenchments, with the General Outlines Also of the Arrangement, the Attack and Defence of Permanent Fortifications} (New York: J. Wiley, 1861; reprint Hardpress Publishing, 2007), 1, 46, 152.
fieldworks, the design and use of underground torpedoes, and an extensive
glossary of fortification terminology.  

CHAPTER 3: PROJECT METHODOLOGY

Step-By-Step Process

The creation of accurate geo-location maps of the existing earthworks at Blakeley Historic Park was a three-step process. The first step was the accumulation of Global Positioning System survey files using a handheld receiver to collect the survey data. The handheld receiver that I used was a Trimble GeoXT model that incorporated a micro-processor using a Windows operating system and TerraSync data-logging software. It produced survey data having an advertised geodetic accuracy ranging from one to three feet when using the real-time differential correction capability. Survey files were created by walking along a line of earthworks while capturing survey coordinates at the principal points needed to define the shape or outline of the earthwork. Although the density of the forest cover, as well as the current position of Global Positioning System satellites, can affect the accuracy of the readings, there are techniques, such as the averaging of several readings taken in the same location, which can compensate for this problem. In my case, I chose to program the handheld receiver to collect data only under conditions of guaranteed accuracy. This ensured that all survey data collected was within the advertised one-to-three foot accuracy. The disadvantage of this approach was that I was often unable to collect survey data, either due to heavy forest cover or due to less-than-optimum satellite positioning.
The second step of the process is to have the Global Positioning System survey data "post-processed" using special Global Positioning System software or by using the post-processing services offered by the U.S. Geological Survey office. The processing provides corrections to errors induced by satellite positioning, clocking issues, and atmospheric effects. I was able to by-pass this step by programming the Global Positioning System receiver to collect data only when the Wide Area Augmentation Satellite was in view. This system uses strategically located ground stations to identify and correct the differential errors real-time thus eliminating the need for post-processing.

The third step was to combine the recorded mapping data with an existing digital map of the area using a Geographic Information System software application, such as ArcView or ArcGis. Digital maps that have been created using standard geodetic reference datums are readily available from several federal, state and commercial sources. These can be topographical maps as shown in Figure 3, or even digital orthophoto quadrangle maps as shown in Figure 4. Both types are available from the U.S. Geological Survey website. The digital orthophoto quadrangle maps are created using the process of orthorectification, which removes most of the feature displacements and scale variations caused by terrain relief and sensor position. The result combines the image characteristics of a photograph with the geometric qualities of a map.

Once I combined the Global Positioning System mapping data on a digital map using the ArcView 3.3 software application, I then used the drawing functions of the software to add symbols, graphics, text, a scale legend, and a North
Figure 3. Sample Topographical Map

Figure 4. Sample Digital Orthophoto Quadrangle Map
indicator to the map. The end product was saved as an ArcView layout and as a JPEG file and printed as a hard copy also. The entire process of creating the map, from capturing the Global Positioning System coordinate data to plotting the final map was accomplished using procedures and mapping software recommended by Dr. Tarig Ali of the UCF Engineering Technology Department, and using the frequent technical advice given by Mr. David Holt and Mr. James Robeson, both of GPServ Inc.

**Challenges**

While working on this project, I encountered several problems that were, for the most part, unanticipated. The first of these had to do with the difficulties of achieving access to the earthworks that I was attempting to map. The terrain at Blakeley Park is very hilly with hilltops separated by deep ravines and flowing creeks, and in some cases by swampy lowlands. Initially I had easy going because I surveyed the Confederate line of fortifications from redoubt no. 4 to redoubt no. 9, which anchors the southern end of the Confederate earthworks. For these earthworks, the park maintains a walking trail along the parapet of the breastworks and there are boardwalks across the creeks and lowlands, and even wooden steps where the inclines are steep. Occasionally one has to step over a dead tree that has fallen across the path, but that is the most serious obstacle one encounters. Gaining access to Union earthworks, however, is a completely different proposition in most instances. The lone exception is the Union lines immediately opposite Confederate redoubt no. 4, where the land between the
opposing lines has been cleared and is maintained in that state. Elsewhere, the Union earthworks are located either in heavily forested areas or in areas that have been logged recently (within the last five years). One would think that earthworks located in recently logged areas would be easiest to find, but I found this not to be the case. Logging operations remove most of the forest cover resulting in an extremely thick growth of underbrush and briars, which impedes searching on foot and also obscures the trenches from view. A third effect of logging is the flattening of the rifle trenches by the logging vehicle traffic, which further reduces their visual profile. Because of the difficulty in accessing the Union earthworks, I was able to find and map only a very small portion of them. In order to find them in most cases required being guided to them by a park ranger who had actually seen them before, and even then it sometimes took hours to find them. Once found, their mapping was also difficult due to the density of vegetation.

A second problem that I encountered was one associated with Global Positioning System satellite positions in the sky and how that affected my ability to collect accurate survey data. I found that satellite positioning was most favorable early in the morning and that it deteriorated as the day progressed. This problem was made worse by the forest cover and the hilly terrain to the extent that I could only collect survey data in the morning hours if I was in forest cover, and even then, if I was on the side of a hill that blocked line-of-sight to one or more satellites, I could not collect accurate survey data. Only in a few cases was I able to collect survey data in the afternoon, usually when there was little or no forest cover.

When the satellites were more nearly directly overhead their signal easily
penetrated the forest cover. However, when located nearer the horizon, their signal was blocked by the increased thickness of the forest cover due to the shallow penetration angle of the signal.

A third challenge had to do with the merging of my survey data with a purchased digital orthophoto quadrangle map. I chose to purchase a digital orthophoto quadrangle map from an online digital map supplier because the map was based on more accurate and more recent aerial photography and at a less expensive price than that of comparable maps available from Alabama State agencies. Accompanying the digital orthophoto quadrangle maps were text files (called "world" files) that contain information used by GIS mapping software to align the photographic map with the appropriate geodetic reference datum. In my case, one of the "world" files provided with the map had an error in it that prevented the proper alignment of the map with my survey data. It took me several days to figure out the problem and to correct it so that everything was in alignment. If I had purchased my maps from say, Baldwin County, Alabama at ten times the price I paid, I might have received "world" files that had been created with more care and therefore free of errors.

I have summarized the most serious of the problems encountered; however, there were many smaller challenges that impacted my day-to-day progress. Readers contemplating a similar project may be interested in more details, so I have included a copy of my daily journal, as Appendix B, in the hope that it might be helpful.
CHAPTER 4: PROJECT FINDINGS

My examination of the Blakeley earthworks at confirmed that the designs of these field fortifications conformed to guidelines published in Dennis Mahan's design manual. Also established was the fact that the Confederate advanced rifle pits, in some cases, were over three hundred yards from the Confederate main line - a fact reported in some of the first hand accounts of the battle as having contributed to the Confederate defeat. The mapping project also produced evidence that resolved uncertainties related to the exact location of Confederate redoubt no. 3 and whether or not it is located on park owned property. In addition, I was able to establish how the sketches in the journal of Confederate engineer Lt. Maurice Garland were related to the design of the fortifications at Blakely. Finally, I was able to examine earthworks at many different locations within the park and to observe how their condition is being affected by the elements and also by various activities within the park.

Mapping Results

An overview of the mapping I performed is shown in Figure 5, and copies of all the maps that I created and provided to Blakeley Park are attached in Appendix C. Once I had created a map in the ArcView mapping application, I was easily able to measure distances on the map or distances between visible features. I used this capability of the software to establish the extent of both the Confederate and
Figure 5. Overview of Blakeley Mapping
the Union earthworks. The crescent shaped Confederate line of nine redoubts connected by rifle pits was 3,500 yards (2 miles) long from its northern end on a bluff overlooking the Tensaw River to its southern end anchored on a bluff at the edge of the Bay Minette swamp. Even though I was unable to locate and map redoubt no. 1, I used historical mapping information to establish its approximate location. The initial Union line (1st parallel) extended for 6,300 yards (3.6 miles) from its northern end to its southern end at the Bluff Battery. I located and mapped these extreme northern and southern ends of the Union line, which were 2.6 miles apart measured as the crow flies.

The overview map in Figure 5 clearly shows that Confederate redoubt no. 3 is not located on park property. There are actually two remaining vestiges of redoubt no. 3. The northern portion is located on a vacant residential lot, which was so grown over with brush that it, too, was difficult to map. The southern portion of redoubt no. 3 that remains is a small redan located on a 50 acre privately owned parcel of land adjoining park property. Park Ranger Thomas Harms and I found it one afternoon, but I was unable to map it due to poor satellite positioning and the forest cover. According to the marked boundary line (trees with a swatch of blue painted on the trunk) the redan was not on park property, but it was close enough that it would be worth having a surveyor check its location against the recorded boundary lines. The property owner might also be willing to sell or donate to the park the small parcel containing the redan.

One of the redans of Confederate redoubt no. 2 is also preserved on property owned by Mr. Joe Wilson, who graciously allowed me to examine it and
to collect mapping data. Whether anything still exists of redoubt no. 1 remains a mystery. There is a house on the bluff just north of redoubt no. 2 where it is said that redoubt no. 1 was located, but local tradition holds that it was destroyed by the clearing and leveling of the lot prior to building the house. Mrs. Trueblood, the owner of the house, denied my request to examine remains of earthworks on her property, however, her son had told me earlier that the property contained remains of some rifle pits, and also that a soldier and a cannon were buried on the property, the location of which had been revealed to him by Mr. Trueblood, his stepfather, just before he died. My examination of historic maps of the battlefield leads me to believe that most of redoubt no. 1, or at least a significant portion of it was located north of the Trueblood property. I have indicated this area by a dashed box on the map shown in Figure 5.

**Union Siege lines**

When the Union forces arrived in front of Fort Blakely on April 2, 1865, the Confederate artillery fire was quite effective, forcing Union commanders to commence siege operations instead of launching an outright attack. Siege tactics involved first surrounding the enemy’s works to prevent all entering and exiting, and then establishing a line of rifle trenches, called the first parallel, directly opposite the enemy works. Mahan's design manual recommended digging of the first parallel about 600 yards from the enemy's line, and supporting this line with artillery batteries spaced at strategic locations. Excavation of the trenches was usually performed under the cover of darkness since it was done well within range
of the enemy's artillery. When trenches of the first parallel were completed, new trenches were begun in the direction of the enemy, and when these trenches, called saps, had been advanced by 100 to 300 yards, a second parallel was begun starting from the ends of the saps. In this manner a whole series of parallels could be constructed, until troops were as close as sixty yards from the enemy's line, and from this point an attack could be launched if so desired. In the case of the siege of Blakely, three parallels were constructed by the Union troops, and the final attack was launched from the third parallel, which was 300 yards from the Confederate line at its closest point and about 700 yards from the Confederate line at its most distant point. 25

My mapping of the Union rifle trenches was admittedly spotty and consequently did not reveal a true picture of the Union's extensive network of trenches. The U.S. Geological Survey department mapped the Union trenches located on the northeast part of the battlefield in 1940, and this map provides the best illustration of the Union siege lines. A portion of the 1940 U.S. Geological Survey map is shown in Figure 6, and one can clearly see the three separate parallels and the connecting saps that were used to advance the parallels. Also noteworthy is the fact that the first parallel was about one thousand yards from the Confederate line and not six hundred yards as Mahan recommended. The reason for this was that the artillery fire from the northern end of the Confederate line was augmented very effectively by fire from the Confederate gunboats that sat at the head of the Raft River and lobbed their shells into the Union lines about one mile

25 Mahan, 146-150.
distant. Even the third parallel at the northern end of the line was no closer than 700 yards from the Confederate line, giving the U. S. Colored Troops that manned this part of the Union line a lot of ground to cover during the final attack on April 9th.

Figure 6. Union Siege Lines

Also noteworthy on the U.S. Geological Survey map is the lack of Confederate earthworks that are shown at the north end of the battlefield compared to the somewhat detailed mapping of the Union earthworks. To compensate for this lack, I have drawn in Figure 6 the approximate location of the Confederate line by combining my limited mapping data in this area with information contained on the 1865 and the 1940 historical maps. Mapping of the Confederate earthworks in 1940 was probably hampered by circumstances similar
to those that hampered me - that is the residential nature of the local area with
multiple landowners who are reluctant to grant access for various reasons. The
Union trenches, in contrast, probably lay on undeveloped land that afforded easy
access.

**Union and Confederate Field Fortification Design Differences**

The Union trenches and artillery batteries conformed to the basic designs
proposed by Dennis Mahan as did the Confederate fortifications; however, there
were differences in the earthworks constructed by the two opposing forces. The
Union rifle pits generally took the design illustrated in Figure 7. A trench was
excavated and the earth was thrown up in front of the trench so the soldier
occupying the trench was partially submerged below ground level and partially
protected by the mound of earth in front of the trench. The Union soldiers
themselves constructed these rifle pits in a matter of hours, whereas the more
substantial Confederate earthworks were constructed over a period of weeks and
months using mostly slave labor plus the forced labor of captured U.S. Colored
Troops. 26

The Confederate breastworks generally took the design that is also
illustrated in Figure 7, consisting of a ditch in front and a mound of earth that was
raised using the soil excavated from the ditch. Beginning in mid-1863 both sides
began placing head logs atop the parapet of their works with slots made in them or
below them for soldiers to fire their rifles through. It was found that these head logs

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26 Mahan, 46, 152.
provided superior protection compared to earth alone. As quoted in a previous chapter, a Missouri soldier who helped defend Confederate redoubt no. 4 stated that the fortifications at Blakely "were the best works we ever fought behind with nice head logs and a battery on each flank." The walls of the Confederate redoubts were built higher than those of the connecting breastworks to provide added protection to the gun crews operating within the redoubts. In these cases, a ledge on the interior wall had to be constructed for the riflemen to stand on as illustrated in Figure 8. There was a practical limit to how high these walls could be
built, however, due to the fact they were constructed using only pick and shovel. Mahan recommends the height of the parapet of field fortifications be at least eight feet high but no more than twelve feet since that was the upper limit of the height that earth could be thrown by a man. The exterior ditch, according to Mahan, should be six to twelve feet deep and at least twenty feet wide.  

Artillery Batteries and Redoubts

Illustration by Dwight K. Johnson

Figure 8. Redoubt and Battery Design

Union Brigadier General C.C. Andrews reported the depth of the Confederate ditches at Fort Blakely to be only four to five feet. This fairly shallow depth probably was due to the layer of hard clay that lies below the sandy loam topsoil at Blakeley. Evidence suggests that the topsoil was especially thin on the northern end of the battlefield. One Union General ordered more picks for use by his troops saying the ground was hard and that "the shovel is a poor instrument

27 Hess, 312; Gottschalk, 521; Mahan, 19, 22.
without a greater number of picks to assist it." The Confederate engineers also reported construction of a "sunken" battery at redoubt no. 1, which was the northern-most Confederate redoubt. Sunken batteries were constructed in circumstances where the exterior ditch could not provide sufficient earth for the walls, so the required earth was taken from inside the work making the interior floor below ground level. 28

**Design of Confederate Redoubts**

The Confederate redoubts were designed as multiple "redans", the majority of them being triple redans. The redan was a simple fort design consisting of two faces joined at one end to form a salient angle of no less than sixty degrees. The fort was open at the rear since it was designed to protect an object or a location in its rear from which direction no attack was anticipated. Embrasures for cannon were usually constructed in the faces of the redan, and a fort consisting of multiple redans was considered much superior to one comprised of only a single redan. The reason for this can be easily illustrated by looking at the map of Confederate redoubt no. 5 as shown in Figure 9. First consider only the center redan of the redoubt, and it can be seen that the field of fire from cannon located in each face results in a coverage pattern that leaves an unprotected avenue of approach for the enemy located directly in front of the salient angle. The most effective way to correct this deficiency was to construct adjacent redans that provided coverage of

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Figure 9. Single Redan Field-of-Fire - Redoubt No. 5

the unprotected zone as shown in Figure 10. Thus, multiple redans were mutually supporting with each protecting the "dead" zone in the other's field of fire. Also noteworthy in the construction of redoubt no. 5, was the use of "traverses" to protect the gun crews from enfilading fire. Traverses were parapets thrown up at right angles to the main line of fortification to protect the occupants from enfilading fire (enemy fire from the side), and they provide added evidence of the evolutionary nature of fortification design as the war progressed. Traverses were
not used at the beginning of the war, but evidence indicates that they were first
used in the fall of 1861 and became commonplace by mid-1863. 29

Illustration by Dwight K. Johnson

**Figure 10. Field-of-Fire for Adjacent Redans - Redoubt No. 5**

**Confederate Design Flaws**

Several first hand accounts of the final attack at Fort Blakely provide
surprising evidence that Confederate tactics making use of their advanced rifle pits
were flawed and contributed to their defeat. The Confederates had constructed

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29 Hess, 44, 294.
two lines of advanced rifle pits; the first line well over 200 yards in advance of their main line, and a second line of pits that was over 300 yards in advance of the main line. These advanced rifle pits can be clearly seen in the map of the battlefield between Confederate redoubt no. 4 and the Union third parallel near the 115th Massachusetts battery. The map shown in Figure 11 indicates that some of the Confederate advanced rifle pits were 340 yards in advance of the main line. This figure also shows some Union advanced rifle pits and a Union sap, which was started near the 115th Massachusetts Battery and had been advanced about 100 yards toward the Confederate line. Each rifle pit was a crescent shaped trench with a mound of dirt in front and each could accommodate a maximum of about six riflemen. The purpose of the advanced rifle pits of the Confederates was to impede the advance of the Union lines, but the placement of these soldiers so far in front of the main line proved to be a serious error when the final Union attack came. 30

Figure 11. Advanced Rifle Pits

The ground immediately in front of the Confederate line was filled with obstructions designed to slow an attacker so that he could more easily be picked off by rifle fire. The obstructions included at least two lines of abatis, tripwires made from telegraph lines and "sub-terra shells" or land mines as they are called today. When the final Union attack was launched, Confederates in the advanced rifle pits had to beat a hasty retreat, but they, too, were slowed by the obstructions and effectively shielded the attackers from the fire of the main line as the attacking soldiers entered the obstructions. The Confederates in the main line held their fire until their retreating comrades were safely inside the works, and by that time the attackers were upon them. Colonel F.W. Moore of the 83rd Ohio reported that his men were "close in the footsteps" of the sprinting Confederates. The attacking federals also had the advantage of superior numbers and with the added advantage of being shielded by the retreating Confederates they quickly overran the Confederate line. Placement of the advanced rifle pits say only 50 yards in front of the main line would have allowed Confederate riflemen to pour deadly fire into the attackers just as they were reaching the most difficult abatis. 31

**Examination of a Confederate Engineer’s Journal**

At the request of Park Director JoAnn Flirt, part of my project was to examine the journal of Lieutenant Maurice Garland, an engineer assigned to Fort Blakely, with the object of determining what part he played in the design and construction of the Confederate fortifications. Since the park had only a partial

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copy of the journal, I obtained a complete copy from the Alabama Department of Archives and History and submitted it to examination. I found that the vast majority of the engineering notes and sketches contained in the journal were notes copied almost verbatim from Dennis Mahan’s design manual on field fortifications. One page in the journal, however, does contain small drawings of thirteen redoubts labeled alphabetically as "A", "B", "C", etc. Of the thirteen redoubts only one of them is a redan as used at Blakely. Nine of them are square or rectangular shaped redoubts and three are lunettes. Because of the quantity of these redoubts, their shape, and their alphabetical labeling, they are certainly and definitely not related to the Blakely fortifications. It is very likely that Lieutenant Garland was working on the fortifications of the city of Mobile before he was assigned to Blakely, since the sketches in his journal are more representative of the redoubts used there. 32

In addition to a copy of Lt. Garland's journal, the Alabama Department of Archives and History also provided me with copies of two hand-written orders that pertained to Lt. Garland. The acting adjutant general at Mobile signed the first order, and it is dated April 2, 1865. The order directs Lt. Garland to proceed to Blakely on the steamer Natchez and to report to Lt. E.A. Ford, engineer in charge at Blakely, for duty. Since Lt. Garland arrived at Blakely on or about the same day that the Union Army arrived, it is doubtful that he was significantly involved in the design and construction of the Blakely fortifications. However, the second order reveals that Lt. Garland did probably get involved with putting some of the finishing touches on the Blakely fortifications. Colonel Samuel H. Lockett, engineer in

32 Maurice H. Garland, Maurice H. Garland Papers, Alabama Department of Archives and History, Montgomery, Alabama, Box SPR563.
command at Mobile, signed this second order which was dated April 7, 1865 - only
two days before the final Union assault. The order is addressed to Lt. E.A. Ford,
engineer in charge at Blakely, and reads as follows:

Lieutenant, I wish you to have made by Lt. Garland's squad of Engineer Troops and any
other rough carpenters you can get from Gen. Liddell a large number of chevaux-de-frise.
thus- (hand drawn sketch) To be used on right & left flank of Blakely line and at Huger &
Tracy.

Chevaux-de-frise was a commonly used obstruction, dating from medieval times,
that was placed in front of fortified works. An example is shown in the period
photograph of Figure 12.

**Conditional Evaluation of Blakely Earthworks**

The present condition of the Civil War earthworks at Blakeley Historic Park
is generally very good. I observed only a few areas where traffic or erosion has
resulted in accelerated decline. The walking trail atop the parapet of the
Confederate earthworks shows advancing erosion in places where it is steeply
sloped, as where it descends into or out of deep ravines. One easily accessible
location where this is occurring is the walking trail leaving redoubt no. 4 toward
redoubt no. 5 as it descends into the ravine that separates the two redoubts. The
clearing of the forest cover around and between redoubt no. 4 and the 115th
Massachusetts Battery has improved visitor enjoyment of the earthworks, but it
has also accelerated erosion due to the elements and due to human and
equestrian traffic, in and on the forts. In order to impede further erosion of the
forts, high priority should be given to stopping the equestrian traffic completely and
Figure 12. Chevaux-de-Frise

to growing a grass cover on the slopes of the earthworks. Some of the slopes have already eroded to the extent that they are almost vertical as shown in the photograph of Figure 13. In these cases soil will have to be added to lessen the slope and to enable grass to grow.

The Union trenches at Blakeley Historic Park are quite extensive but also they are more isolated and less accessible to the public than are the Confederate
earthworks, a fact which has served to preserve them very well. There is a significant long-term threat to these trenches, however, caused by the infrequent but periodic logging operations, which occur in the park as a means to raise revenue. As previously described, the Union trenches were less substantial to begin with than were the Confederate breastworks, and over time their height and depth has decreased to the point they now offer little impediment to a logging truck. Whereas the mound of earth in front of a Union trench may have originally been three feet high, today that height may average only one and one-half feet or less, and similar dimensions apply to the depth of the trench. In places where logging vehicles had repeatedly crossed the Union trench, I observed it to be

![Figure 13. Redoubt Soil Erosion](Photograph Courtesy of Blakeley Historic Park)
barely discernable - the mound having been reduced in height to about four inches or so. To minimize this type of damage, it would be highly desirable to map the exact location of the remaining trenches so that routes for logging equipment and vehicles can be established beforehand to avoid crossing the trenches as much as possible. As suggested by the park rangers at Blakeley, the optimum time to perform the mapping would be immediately after a controlled burn, usually performed in the January-February time period, when undergrowth has been removed and accessibility is at its maximum.
Efforts to Strengthen Mobile’s Defenses Were Defined by Shortages

The last months of the Civil War brought severe shortages throughout the South; shortages of staple goods, shortages of basic necessities, shortages of cash and the most serious shortage of all - a shortage of men willing to continue the fight for the lost cause of the Confederacy. In Mobile, Alabama, civilians and soldiers alike had spent four years designing and constructing Mobile’s defenses. Incredibly, by 1865 the city proper was protected by three separate lines of fortifications that guarded enemy approaches by land. Water approaches to the city were protected by extensive obstructions including underwater pilings and explosive torpedoes, and by both shore-based and water-based artillery batteries. The extensive fortifications guarding land approaches from the west were considered impregnable, so the Union Army moved to seize and control the heights overlooking the rivers that emptied into eastern Mobile Bay. Control of these heights was crucial because they guarded the water route that led to the city of Mobile itself.

Confederate fortifications at Spanish Fort fell to the Union Army on April 8, 1865, leaving the defense of Mobile hanging by a slim thread. That slender thread was Fort Blakely located five miles north of Spanish Fort on the bluffs overlooking the Tensaw River. The key to Mobile lay in the eastern shore rivers whose banks housed the powerful artillery batteries named Tracy and Huger that were designed
to annihilate any ships of the enemy's fleet that dared to negotiate past the obstructions and underwater torpedoes which impeded entry into the rivers from Mobile Bay. While Confederate fortifications at Spanish Fort were designed to guard batteries Tracy and Huger from land-based artillery attack, the Blakely fortifications guarded the heights commanding the Apalachee-Tensaw water route to Mobile that was used for supply communication with the batteries. Whoever controlled the heights overlooking the river at Blakely could prevent water traffic on the Apalachee and Tensaw Rivers, and thus the artillery garrisons at Tracy and Huger could be denied re-supply of food and ammunition.

Fort Blakely was located on the bluffs of the eastern shore at the head of the Apalachee River where it diverged from the Tensaw River. The Confederates labored in the design and construction of fortifications at Blakely for seven months, making use of the Confederacy's best engineers and the latest in technological advances in weaponry and field fortification design. All the labor and the expense and the expertise were insufficient, however, as Confederate efforts at Blakely ultimately fell victim to the South's most serious shortage. In fact, throughout the four-year build-up of Mobile's defenses, chief engineers and army commanders had been plagued with shortages of both men and supplies, and by August of 1864, when the Federal fleet took control of Mobile Bay, the shortages that would most affect the construction and effective use of the fortifications at Blakely, were the shortages of engineers and of laborers, and in the end the shortage of soldiers willing to make the supreme sacrifice for the Confederacy. All the expense, all the hard labor and all the technical expertise that was expended on Fort Blakely
proved inadequate to overcome the shortage of troops and the even more critical shortage of time. The Confederacy had run out of time, and the hard fought Union victory at Blakely, which produced a humiliating defeat for the Confederates, proved to be inconsequential, as the war had essentially ended hours before the final battle, with the surrender of Robert E. Lee and his Army of Northern Virginia to Union forces.

**Shortage of Engineers**

Lt. Colonel Viktor Von Sheliha assumed duties as Chief Engineer at Mobile in the fall of 1863 having served as an assistant engineer at Mobile since March of that year. Realizing the immensity of the task before him, Sheliha almost immediately began efforts to increase his staff. He successfully enlisted the help, on a temporary basis, of three officers who had the needed engineering skills but who were permanently assigned to other departments. These officers became indispensable to Sheliha, and he requested in February 1864 that their temporary detail to his department be made indefinite - a request that was granted by the Secretary of War in the following month. One of these officers, Colonel John H. Gindrat, would, in September 1864, be assigned responsibility for all eastern shore defenses, which included the construction of fortifications at Blakely and at Spanish Fort.  

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Sheliha’s attempts to bolster his staff received a boost in February and March of 1864 when the commander of the Confederate Engineer Bureau, Major General Jeremy F. Gilmer, was ordered to inspect the defenses of Mobile. Although Gilmer approved of the work that Sheliha had performed, he saw that there remained much to be done before the defenses of Mobile could be considered complete. Gilmer telegraphed the Bureau’s assistant Chief Engineer, Lt. Colonel A.L. Rives, with instructions to order to Mobile an engineer officer from Charleston who was familiar with heavy artillery and siege operations. Rives adroitly threw this request back in Gilmer’s lap, replying with a suggestion that Gilmer telegraph General Leadbetter to see if he had an officer that could be spared. Not to be put off so easily, Gilmer fired another telegram to Rives stating that the need for engineers at Mobile was urgent, and he wanted at least three engineering officers ordered to that point without delay. Rives quickly appealed to the Secretary of War arguing that it was impossible to comply with Gilmer’s request without transferring officers engaged in service of equal or greater importance. However, Rives proposed an alternative solution – he requested the return to the Engineer Bureau of two officers previously transferred to Brigadier General Rains for torpedo duty, whom Rives believed could be spared because they were "not fully occupied by the discharge of the duties to which they have been assigned by General Rains." This proposal resulted in these two officers
being assigned to Sheliha at Mobile, and one of them, Lieutenant E.A. Ford, was eventually put in charge of the construction of fortifications at Blakely. 34

Apparently encouraged by General Gilmer's efforts to provide Mobile with more engineering officers, Sheliha requested Bureau approval in April 1864 to form a third company of engineers to support the work at Mobile. Sheliha may have also been emboldened by a highly laudatory Inspector General's report issued April 13, 1864. The Inspector General had soaring praise for the fortifications Sheliha had designed; praise which he expressed with unrestrained accolades, "They evince a scientific proficiency in engineering unsurpassed, if equaled, by anything on this continent, and are themselves the most eloquent evidence of the educated skill of the engineer in charge, Lt. Col. Von Sheliha." 35

This high praise, however, was insufficiently persuasive as Sheliha's request for a third Engineer Company was given the bureaucratic run-around treatment. Gilmer's assistant, Colonel A.L. Rives replied to Sheliha that regulations allowed only one Engineer Company for every Division or one company for every 12 regiments in cases where there was no Divisional organization. Rives suggested that General Polk's command had not filled its quota of engineer companies, and it might be possible for General Leonidas Polk to form an engineer company and then assign it to duty in Mobile. Rives further suggested that Sheliha seek the approval and cooperation of his own Departmental Chief Engineer, Lt. Col. Samuel H. Lockett - a tactful reminder for Sheliha to work within

his own chain of command. Sheliha perhaps felt justified in by-passing Lockett with many of his requests since Sheliha had an earlier date-of-rank than Lockett and thus technically out ranked him. 36

Many of Sheliha’s numerous requests were denied, but he was a capable administrator and manager, and he often found ways, through his persistence and his resourcefulness, to get what he needed. Even so, the record is filled with disapprovals of his requests. For example; in February 1864 the Engineer Bureau denied his request for more shovels, in April the Secretary of War denied his request for an increase in the contract labor rate that he could offer planters willing to lease out slaves, in August the Surgeon General denied his request for stocks of tin in the possession of the medical purveyor at Mobile, also in August, General Gilmer denied his request to have a torpedo boat transferred from Savannah to Mobile. Even in instances when Sheliha had the force of Army regulations on his side he sometimes was refused. An example of this occurred in May 1864 when Sheliha wrote the Engineer Bureau urging that certain expenses for slave hospitals and quarters and also certain transportation expenses should be jointly paid his department and the Quarter Master department, as required by regulations. Colonel Rives replied to Sheliha denying his request on the grounds that it was "the prevailing custom…that each Dept. should pay its own expenses in such matters…" and also "on account…of the delays (and) inconveniences (and) possibly disputes which would result." Perhaps the Engineer Bureau grew weary

of Sheliha's incessant requests for almost everything imaginable and used any reasonable excuse to escape having to expend their valuable time trying to satisfy them.  

Sheliha soon received engineering assistance from a source that he had not anticipated, and under circumstances that he probably would have preferred to avoid. By the summer of 1864 with the Federal fleet sitting off the coast of Alabama, he was under tremendous pressure to rush to completion the defenses of Mobile, but his efforts were proving futile due to shortages of men and material and Sheliha became increasingly frustrated by the lack of response to his pleas for assistance, even to the point of requesting reassignment, which like many of his other requests was denied. Then the unthinkable happened - the Federal fleet of seventeen ships under Admiral Farragut ran past Fort Morgan on August 5th 1864 with the loss of only a single ship and took control of Mobile Bay. Even though it was General Maury who had ordered Sheliha to leave part of the ship channel open for blockade runners, it was Sheliha who took most of the criticism for the failure of his underwater torpedoes to stop Farragut's fleet. Because of the tremendous pressure on Sheliha, General Maury was concerned about his state of mind and received approval to have the Departmental Chief Engineer, Samuel H. Lockett, temporarily assigned to command the engineering efforts at Mobile, even though Lockett first had to be promoted to Colonel so that he would outrank Sheliha. Lockett's engineering reputation had been established in-part at

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Vicksburg where he had designed the Confederate defensive fortifications that were used to successfully repel two determined attacks of Union forces under General U. S. Grant. By the last week of August 1864 Lockett had taken command of Mobile's defenses and reported in a letter to his wife that Sheliha had taken "quite ill" and was not expected to return to work any time soon. Undoubtedly the months of arduous and stressful labor exacerbated by snowballing frustrations had taken their toll on his health. Sheliha, amazingly, recuperated quickly and was back to work by mid-September, as indicated by his name re-appearing on official correspondence by that date. 38

Labor Shortages

The most pervasive, by far, of all the shortages experienced by the engineers at Mobile was the shortage of labor. The construction of fortifications was extremely labor intensive. The excavation and piling of thousands and thousands of cubic yards of earth and the cutting of hundreds of acres of timber was accomplished using nothing but picks, shovels, axes and hard labor. Although the shortage of unskilled labor was the biggest problem, there were shortages of skilled labor also. The manufacture and assembly of ordnance fuses, underwater torpedoes, sub-terra shells, as well as artillery platforms, mechanisms and embrasure screens required a substantial work force of skilled and semi-skilled labor.

By the fall of 1864, engineering work on Mobile’s defenses had been organized into five divisions responsible for overseeing; 1) city entrenchments, 2) water batteries and obstructions protecting the bay approaches to the city, 3) water batteries, obstructions and eastern shore fortifications protecting the river approaches to Mobile, 4) placement of torpedoes in water approaches, and 5) Mechanics and Workshops. Of course it was the last division of mechanics and workshops that employed most of the skilled laborers, but the other divisions also required skilled labor to some extent. For example, the vast quantity of underwater torpedoes to be placed in the waterways required that this operation be conducted around the clock without stop. The laying of torpedoes at night necessitated the use of a calcium light (later called a "limelight") that produced a white, extremely bright beam of light capable of illuminating a one and one-half mile long expanse of water. A rod of calcium oxide formed the filament of the light, which was made to incandesce by heating it to high temperature using a hydrogen-oxygen fueled torch. Because of the inherent dangers of using pressurized containers of hydrogen and oxygen gases, operation of the calcium light as well as the handling of the explosive torpedoes were necessarily supervised by trained and skilled technicians. 39

As early as April 1864, Sheliha complained to the Engineer Bureau that he was experiencing a critical shortage of skilled mechanics and technicians because the conscription agents of the Bureau of Conscription were forcing them into the Confederate Army at an alarming rate. Initially the Engineer Bureau responded

with a typical bureaucratic runaround suggesting that the most effective way to deal with this problem was for Sheliha to gain "the assistance and cooperation of his commanding general," but eventually the Bureau realized the problem was affecting engineering operations everywhere and they solicited the Secretary of War's assistance in instructing the Bureau of Conscription to refrain from conscripting individuals that the Engineer Bureau considered indispensable.  

Although the skilled mechanics and technicians were essential to the engineering effort at Mobile, hired or impressed slaves performed most of the actual work of construction, which was enormous in its magnitude. At one point In September 1864 after the Union fleet was in Mobile Bay, Colonel Lockett reported that 4,500 laborers were then employed in the construction of Mobile's defenses. Even this level of the work force was considered minimally adequate, but it was not sustained for more than a month or two because of the 60-day limit on impressed labor that required return of slaves to their owners after the time limit had expired. By November Sheliha was reporting unsatisfactory progress due to shortage of hands. In March of 1865 when the Confederates knew that a Union attack was imminent, they worked frantically to complete the work on the defenses, but Lockett reported that his black labor force had dwindled to 1,000 workers of which less than half were hired or impressed slaves, the majority being captured prisoners from the U.S. Colored Troops.  

Hiring agents for the engineers continually attempted to hire slaves on longer-term contracts, but the terms allowed by regulation were insufficient to

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induce planters to hire out laborers in significant quantities. Consequently, most military commanders in the South were forced to resort to impressments of slaves in order procure labor. This system had proven largely ineffective and was extremely unpopular with slave owners due to the low rates of compensation, the disruption it caused to their planting and harvesting operations, the lack of care provided to their slaves in some cases, and the tendency of military commanders to violate the 60-day limit on impressments. 42

In Mobile, Sheliha’s predecessor, Brigadier General Danville Leadbetter, had operated under a system of impressment that relied heavily upon the cooperation of the Alabama governor. Military officers in Mobile would present requisitions for labor to the governor who, in turn, would order the impressment of the needed slaves, which impressments had to be in compliance with the impressment laws of the state. Throughout the South, gubernatorial cooperation in this type of system steadily declined due mainly to its unpopularity and the consequent negative impact on the re-election of the participating state executives. The system proved incapable of supplying Leadbetter's need for labor. For example, in March 1863 he requested 5,000 workers and less than half that many were provided. By May Leadbetter's work force had declined to only 750 laborers, and in June he had to suspend construction at Fort Gaines due to lack of workers even though he had tried to hire workers for two dollars per day plus subsistence, terms considerably better than the standard twenty dollars per month impressment compensation. In July 1863 Governor Shorter of Alabama lost his bid

for re-election with his opponents reminding the electorate that Shorter had been responsible for impressing between eight and ten thousand of their slaves earlier in the year. 43

In addition to his responsibility for the procurement of the labor that he needed, Chief Engineer Leadbetter also strove to provide the food, clothing, shelter and medical care needed by his work force. To maintain their health he ordered that each worker receive one and one-half food rations daily, which was fifty percent more than given to Confederate soldiers. He even issued daily tobacco rations at one point, but discontinued the practice when planters objected to his deducting the cost of the tobacco from their payments. He allowed sick workers to be excused from work only after examination by a physician or medical officer. He struggled to provide adequate clothing for the workers, requesting a detail of soldiers to manufacture shoes for them on one occasion. He rented warehouses and converted them to living quarters, but was only marginally successful at maintaining sanitary conditions when they became overcrowded. He was able to avoid serious outbreaks of bacterial disease, however, by acting quickly to treat waste with large quantities of lime and by opening new warehouses. Still, he was not able to avoid an outbreak of smallpox in the black quarters early in October 1863. Leadbetter immediately ordered the vaccination of the entire labor force and was in the process of establishing quarantine quarters.

43 Lash, 210-1, 213, 215.
when he was transferred to a new assignment, leaving his successor to deal with
the crisis. 44

Leadbetter's replacement as Chief Engineer at Mobile, Lt. Col. Viktor Von
Sheliha, worked diligently to improve the defenses of Mobile, but his efforts
suffered from chronic labor shortages also. When the commander of the
Confederate Engineer Bureau, Major General Jeremy Gilmer, inspected Mobile’s
defenses in February and March of 1864, he recommended improvements which
would require a labor force of 6,000 to implement according to Sheliha's estimates.
But Sheliha raised a mere 1,414 hands during the month of March forcing him to
send hiring agents into Mississippi and Louisiana, but with little success.
Beginning in late March 1863, Confederate military commanders had been
authorized by law to impress slave labor using military authority only and requiring
no involvement of the state governors. Sheliha, however, continued to hound
Governor Watts of Alabama well into August 1864 to provide more laborers to
Mobile. Finally Governor Watts complained to General Maury at Mobile stating,

the State of Alabama declined to make impressments after Congress gave the
Confederate authorities the right to make them…Yet your chief engineer in Mobile does not
seem to understand the relation to which the State of Alabama stands to the Confederate
authorities; he seems to think that the Governor of Alabama is only a high sheriff to
execute the laws of Congress…But as the Confederate authorities have made the orders
for impressments, I do not think it right to mix the State authority with the Confederate…[it]
would produce inextricable confusion. 45

The Inspector General who inspected Mobile’s military operations in April
1864 had high praise for the engineering work that Sheliha had accomplished, but

44 Lash, 213-7.
45 James L. Nichols, "Confederate Engineers and the Defense of Mobile," The Alabama Review; A
780.
he deplored the shortage of labor that was delaying the completion of the work, stating, "The impressed labor is being hourly returned to the planters, and no sufficient means has yet been provided to supply it." As a partial solution, General Maury had organized a white labor force composed of soldiers sentenced to hard labor by court martial, but this small force could supply only a fraction of the needed labor. When Sheliha's hiring agents were unable to hire the needed labor, Sheliha petitioned the Secretary of War for approval to offer increased contract terms, however, this request was denied with the oft-repeated advice that "recourse should be made to impressments." General Maury may have been somewhat reluctant to impose large-scale impressments on the local population due to the fact that he also depended on the local population to provide recruits for his thin infantry regiments and he did not want to risk creating animosity among potential recruits. 46

The military situation in Mobile changed drastically in early August 1864, when the Federal fleet entered Mobile Bay. The design and construction of Mobiles defenses had been focused on withstanding direct attack on the city by army forces with secondary considerations given to defending against naval attack. Now attention had to be focused on the immediate naval attack as well as a possible supporting land attack from the direction of Pensacola. This last possibility dictated the need for construction of eastern shore fortifications at Spanish Fort and at the town site of Blakely to protect Confederate shore batteries.

on the Apalachee River that prevented enemy ship access to Mobile through the eastern rivers. The urgent requirement for a large increase in workers needed at Spanish Fort and at Blakely forced General Maury to exercise his powers of impressment, and his efforts were largely successful, being aided by the fact that the crop harvest was over, or soon to be over, and planters were more willing to hire out their slaves. The result was a total engineering labor force increase to 4500 hands by September 3rd, as described previously. Just three weeks prior to this date, Sheliha had reported that construction was delayed by "an entirely inadequate working force." 47

The Mobile labor force received an unexpected boost in late September when Major General Nathan Bedford Forrest took almost nine hundred prisoners belonging to regiments of the U. S. Colored Troops, and these troops were put to work on the Mobile defenses. The policy of the Confederate government with regard to captured U.S. Colored Troops was to return those who were former slaves to their owners, but to leave the fate of captured free Blacks to the discretion of the commanding officer. However, in October of 1864 the Confederate Government finally agreed to accord prisoner of war status to captured free blacks, making it illegal to use them as slave labor. It is unknown as to what proportion the captured soldiers at Mobile were former slaves or free blacks, but regardless of their status, it appears that General Maury violated stated Confederate policy since he neither returned them to their owners, nor gave them

prisoner of war rights. This conclusion results from documented reports that more than 800 of these captured soldiers were still in the Mobile labor force in January and March of 1865. Perhaps Maury felt justified in his actions because the prisoners had been taken prior to the October agreement, and possibly did not fall under its terms. In his post-war writings, General Richard Taylor claimed that all these laborers were ex-slaves whose owners “could not be reached.” Taylor further explained that the primary reason for using these captured U. S. Colored troops as forced laborers was the concern that they have “healthy employment” rather than for the “value of their work.” Even though President Abraham Lincoln had issued a General Order in July of 1863 that included provisions for putting Confederate prisoners to hard labor, in reprisal for enslavement of black Union prisoners by the Confederates, these provisions were never enforced and Confederates continued to use captured black soldiers for forced labor throughout the war. 48

During the months of September and October 1864, Sheliha and Lockett reported outstanding progress of the work on city defenses and at Spanish Fort and at Blakely in their weekly and monthly status reports. This progress was a direct result of the increased labor force made available by General Maury’s all-out effort to impress as many workers as possible. On September 4th, Lockett reported that three redoubts at Spanish Fort were in various stages of completion

and that the wharf at Blakely had been repaired, which was an indication that the work there was increasing. Lockett also mentions that work was being continued on a bridge and military road between Spanish Fort and Blakely. Two weeks later Colonel John H. Gindrat, who had been placed in charge of all engineering operation on the Eastern shore, reported that the bridge portion of this road across Bay Minette was almost ready for crossing. 49

It seems improbable that the engineers were actually bridging Bay Minette - a water expanse of more than a mile. What seems more likely is that they bridged the Bay Minette swamp that lay west of Bay Minette proper, since this route for a road would connect Spanish Fort with Blakely, whereas a bridge across Bay Minette itself would connect areas outside the Spanish Fort defenses with the areas laying east of Blakely and outside its defensive fortifications. Brigadier General St. John R. Liddell, Confederate commander of troops on the Eastern Shore, took credit for ordering the construction of this five-mile long causeway and road, by which a thousand troops escaped to Fort Blakely after evacuating Spanish Fort on the night of 8 April 1865. Liddell's claim is supported by the fact that he had arrived in Mobile two to three weeks previous (on August 17) to the first mention of the bridge in the status report of September 4. 50

In Lt. Col. Sheliha's progress report for the month of September 1864, he reports that a six-gun battery "with front and rear parapets" at Blakely had been completed to the point that it was ready for installation of its guns. At today's Blakeley Historic Park there is no battery meeting this description. It is possible

that it could be the battery that Sheliha later refers to as the "water battery." The 1865 map of the Blakely fortifications show an enclosed (with front and rear parapets) battery located very near the river bank some distance north of the Blakely town site. If this battery still exists, it is outside of Blakeley Park property on a privately owned fifty-acre tract, which fronts the Tensaw River. 51

As part of his progress report, Sheliha also included a lengthy paragraph justifying the need for fortifications at Spanish Fort and at Blakely. Apparently, the wisdom of expending precious and dwindling resources to construct these fortifications had been called into question. With respect to the Blakely fortifications, Sheliha argued that,

The importance of a strong foothold at Blakely consists less in establishing a second line of defenses of the water approaches to Mobile than in preventing the enemy from establishing a battery at a point from which he could easily interrupt our communication by Spanish, Raft and Tensas River with Batteries Huger and Tracy.

Sheliha further stated his intentions to construct a fortified line of five redoubts at Blakely with each end anchored on the river. The design of a five-redoubt line was later expanded to consist of nine redoubts, or else the "five" in the text was a transcription error that should have been "nine". In either case, this description by Sheliha of the Blakely fortification design is the first recorded and provides some evidence that Sheliha was most probably the designer of these fortifications. 52

For the month of October Sheliha and Lockett reported that the Blakely work force was employed in the clearing of timber in front of and behind the planned line of redoubts, and also in the loading of barges with earth and sod for use at batteries Tracy and Huger. Also reported was that work on the water battery

had been suspended by order of General Maury and that the lumber and gun platforms contained therein were sent to Spanish Fort. Apparently General Maury saw as superfluous the placement of a water battery in a fortification designed to oppose an attack by land.  

Sheliha reported little progress at Blakely during November and by mid-November he reported unsatisfactory progress on city entrenchments due to scarcity of workers. The scarcity of workers was probably due to the expiration of 60-day impressments that had commenced in late August and early September. Late November also brought hard rain and freezing weather, which further slowed the work. The inclement weather reported by Sheliha may have been extremely hard on the labor force, especially at remote locations such as Spanish Fort and Blakely where living quarters were probably tents or impromptu shelters at best, and there are indications that tents were in short supply. In January 1863, an engineer officer at Fort Gaines telegraphed a request to General Leadbetter, then Chief Engineer at Mobile, "Send me twenty tents for Negroes by first boat."

Leadbetter's terse reply was, "No tents to be had." Such rugged living conditions could explain why at least two slave owners filed claims with the engineer office for the value of slaves who had died while employed on Mobile's defenses. One owner stated in his claim that two of his women slaves had died of "neglect and exposure" while thus employed.  

The month of December brought an improvement in the progress reported for construction at Blakely. By mid December Sheliha reported that one redoubt at Blakely had been completed and a second redoubt was near completion. In addition, the clearing of timber behind the line of redoubts had been extended on the southern end of the line all the way to the road that was under construction between Blakely and Spanish Fort. On the 25th of December, Sheliha reported completion of three redoubts with a fourth to be completed soon. Fifty yards of rifle pits had been dug and the clearing of land continued. December also brought an increase in the urgency for the completion of Mobile’s defenses. Departmental headquarters alerted General Maury that the Federals were planning a movement against Mobile with a force of at least 20,000 men. Headquarters urged Maury to hasten the completion of his defensive works "with all possible vigor." As an indication of the urgency felt by the Confederate command, General Maury was instructed, for the very first time, to employ his soldiers in the completion of the works if necessary. As a matter of policy the Confederate Army did not use soldiers to construct earthworks when avoidable, believing it be destructive to morale, however, the seriousness of the situation dictated extraordinary measures be taken.\(^{55}\)

There is no evidence, however, that General Maury resorted to the use of his soldiers to complete Mobile’s fortifications. The workforce seemed to have stabilized somewhat and the engineering reports for January, February and March of 1865 no longer made mention of lack of progress due to labor shortages. There

are two factors that most likely account for this development. The first being that slave labor during the winter months, between the fall harvest and the spring planting season, was much easier to hire than at other times of the year, and the second factor being the presence of the 800 plus black Union prisoners who were being used as slave labor. Mobile's engineering labor force in March 1865 numbered about 1,000 hands with an additional 400 black laborers employed by other departments. Based on the outstanding construction progress reported by Sheliha and Lockett during the first three months of 1865, it can be concluded with reasonable certainty that the size of the workforce was fairly stable during this time period and that it was considered adequate by the commanding engineers. 56

With regard to the captured U. S. Colored Troops, one might think that they would be extremely reluctant laborers, but Colonel Lockett's report for March 1865 contained some interesting data. He reported that out of 889 privately owned slaves in the workforce, 263 of them were absent without leave which represented a 30 percent desertion rate. For the publicly owned slaves (captured prisoners) he reported only 29 out of 825 were absent, representing a much lower 4 percent absentee rate. The large difference between the two groups was possibly due to the presence of armed guards for the prisoners and not for the slaves, or it could have to do with the proximity of the homes of the slaves compared to the more distant ones of the prisoners, or it might be explained by the eagerness of the planters to have their slaves present for the spring plowing and planting. General Richard Taylor related a conversation that he had with one of these captured black

soldiers who was working on Mobile’s defenses. The laborer stated that the workers were given plenty of good food and furthermore, that, if given guns, they would help defend the earthworks they had built stating, “We would rather fight for our own white folks than for strangers.” 57

**Shortage of Soldiers**

Although the Confederates at Mobile were able to solve their labor shortage problems just in the nick of time, they were not quite as successful at providing a minimally adequate infantry force. The decision to defend Mobile with a garrison of only 4500 infantry soldiers was made at the highest levels of the Confederate command structure and resulted in a predictable outcome. During the time that Major General Dabney Maury was commander at Mobile, beginning in May 1863, the size of his garrison had varied considerably because he was often called upon to provide regiments and brigades to commanders with more pressing needs. During times when Mobile was not being seriously threatened, Maury dutifully complied with these requests because he understood the importance of mutual support between the various Confederate commands. When Mobile was threatened by an obvious massing of Union troops in late 1864 and early 1865, Maury’s pleas for more troops fell on mostly deaf ears. He was at last provided with the remnants of Major General Samuel French’s Division, commanded by Brigadier General Francis Cockrell and consisting of three brigades whose ranks had been decimated by their participation in General John B. Hood’s disastrous


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Tennessee campaign in the fall of 1864. This help was welcomed as it provided an additional 3,000 troops, but the increase proved woefully inadequate.  

The pitiful state of General Maury's garrison at Mobile was evident in his request for more troops dated November 10, 1864 in which he states that two months of sickness in the ranks had left him with only 700 effective Army troops with which to defend Mobile against land attack. He requested the War Department furnish him with 4,000 to 5,000 veteran troops from states other than Alabama. Such preference was probably based on his experience that the Alabama troops were prone to make frequent and unapproved visits home with many never returning. Another month would pass before Union plans to launch an attack against Mobile became apparent, but Maury's request nevertheless received endorsement from Department Commander Lieutenant General Richard Taylor. The Secretary of War would not be swayed, however, replying to Maury "Reinforcements cannot...be spared for the doubtful contingency of an unreported attack." This rebuff prompted Maury to issue an urgent plea to the governor of Alabama for state troops to be sent to Mobile as soon as possible. Not to leave any stone unturned, Maury also wrote to the governor of Mississippi asking if he might be able to send Mississippi troops to Mobile.  

In December, Department Commander Richard Taylor put the weight of his authority behind General Maury, sending his own urgent plea to the Governor of Alabama, begging him for troops. Taylor stated that the current forces under his

Departmental command were inadequate for the successful defense of Mobile explaining that the only possible source of additional troops was the Alabama State Militia. In January 1865, General P. G. T. Beauregard, writing from Mobile, warned Confederate President Jefferson Davis that General Taylor's Department could not possibly defend successfully the states of Mississippi and Alabama with his current forces and recommended that General Kirby Smith be compelled to re-enforce Taylor or, alternately, be ordered to attack Saint Louis or New Orleans to divert Union forces away from Mobile. Davis tried on several occasions to persuade Smith to bring all or part of his army east of the Mississippi, but Smith was unwilling to risk capture of his troops by attempting to ferry them across the Union controlled Mississippi River. Davis's inability to reinforce the Mobile garrison left the city at the mercy of the advancing Federals. 60

By March 1865 Maury had been reinforced with French's Division and he reported 9,029 effective troops in Mobile consisting of approximately 4,000 infantry, 3,000 artillerymen and 2,000 cavalry. This is the force that he had available to defend against the Union attack of April 1865. When it became apparent that the Union attack was focused on the Eastern shore fortifications at Spanish Fort and at Blakely, Maury sent his entire infantry force across the bay to defend these forts, leaving the city defenses manned by 3,000 artillerymen and dismounted cavalry. The eastern shore fortifications were under the command of Brigadier General St. John R. Liddell who remained at Fort Blakely with 2,700

troops, and he assigned command of Spanish Fort to Brigadier General Randall L. Gibson who commanded 1,800 troops at that location.  

Maury's report of March 10, 1865 contained a detailed accounting of all troops assigned to his command, and this accounting contained some revealing information. As mentioned previously, Maury reported over 9,000 effective troops, but he also reported over 12,000 troops present - meaning that he had 3,000 troops considered incapable of performing their duties for various reasons. The most alarming figures that Maury provided, however, reveal the extent of absenteeism (or desertion) within the Confederate ranks. While he reported over 12,000 troops present, he reports his total aggregate of assigned troops, present and absent, to be well over 28,000 meaning that he had over 16,000 troops absent and unaccounted for. These figures indicated an overall absentee percentage of over fifty seven percent of assigned troops. Maury's figures for Randall Gibson's brigade of Louisianans indicated an absentee percentage of seventy-five percent and that of several other infantry brigades exceeded seventy percent. Many of these absentees were assuredly deserters, but at least some of them could have been unconfirmed casualties or men taken prisoner who were missing and were still being carried on the rolls, but even so, the absentee figures were extremely high and foretold the approaching end for the struggling Confederacy.  

Some who have studied Confederate desertions have placed the average desertion rate at about 13 percent over the course of the war with a surge of desertions occurring during the winter of 1864-65. Confederate desertions are

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hard to quantify because many soldiers would desert when their units passed close to home only to rejoin their regiments at a later date. Others deserted their units far-away from home and re-enlisted in units closer to their families. Some believed that a primary cause of desertions was women who wrote their husbands letters pleading for their return to their families. Especially vulnerable to the desertion impulse were those Confederate soldiers whose home and families were threatened by invading Union armies and also those soldiers whose loved ones were living in destitute circumstances. All of these factors most likely played a part in the high absentee rates reported by General Maury in the spring of 1865. 63

The thin ranks of the troops assigned to General Liddell on the eastern shore also foretold the Union victories at Spanish Fort and at Blakely. It was fairly astonishing that these garrisons held out as long as they did being so decidedly outmanned and outgunned. The Spanish Fort garrison held their ground for two weeks before evacuating the fort under cover of darkness on the 8th of April. Blakely, however, was not so fortunate, holding out for nine days before a determined Union attack overran the fortifications on April 9th with most of the Confederate defenders being taken prisoner. Liddell wrote after the war that his garrison at Blakely was about 2,500 soldiers, which was adequate to man only one-half of the defensive line. He was forced to space the soldiers to cover the entire 3,500 yard length of the fortifications leaving a line that "was nothing more than a good skirmish line, whose fire was entirely too weak." When the majority of the Spanish Fort garrison was evacuated to Blakely during the night of April 8,

Liddell was upset that General Maury did not let them remain at Blakely, but instead ordered them to be taken to Mobile by steamer. Liddell later wrote that had he been allowed to keep the Spanish Fort garrison which probably numbered in the range from 1,200 to 1,500 men, he could have repelled the Union assault of April 9. Although Liddell was generally quick to point out the faults and failures of others and was overly candid when speaking his mind, he did not criticize General Maury or the decisions that he made, writing after the war, "I know that General Maury did all in his power, but it was impossible to hold the defenses with such inadequate forces." 64

**Discussion and Conclusions**

Although Mobile's engineers eventually found the labor necessary for construction of the fortifications at Spanish Fort and at Blakely, Generals Liddell and Gibson both complained that the fortifications were not complete at the time they were occupied by their troops. Surprisingly, part of this incompleteness was intentional. In October 1864 Colonel Lockett had instructed Sheliha to make no provisions for underground bunkers, or "bombproofs" as they were called, either at Spanish Fort or at Blakely. The purpose of the bombproofs was to protect the garrison during heavy artillery bombardments, which usually preceded an infantry attack. The reason for Lockett's order is unclear because he presented different reasons for his decision on different occasions. When he gave the order to Sheliha in October, Lockett stated that he did not believe that the heavy expenditure of

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64 Liddell, 194-6.
labor and resources required for their construction was warranted under the circumstances. He believed the Confederate garrison would be attacked by infantry and field (light) artillery for which conventional earthworks would provide sufficient protection. As it turned out Lockett was completely wrong in this belief, because the Union Forces that were soon to move against Mobile’s eastern shore defenses included large siege trains containing heavy artillery that was used with devastating effect especially at Spanish Fort. 65

In Lockett’s defense, it must be remembered that he had a tremendous amount of work to complete, but time was running out and some compromises had to be made. His frustrations with the situation were apparent in his response to a suggestion from the Engineer Bureau that batteries Tracy and Huger should be relocated to improve their effectiveness.

> there has been too much labor expended on the works as they now stand to admit to any change. I have scrupulously avoided making any material alterations in the works at this point, as this policy has already been pursued almost to a ruinous extent, resulting in great increase of expense and retardation of operations that long since should have been completed. 66

In January 1865 Lockett reported status of the eastern shore defenses to the Engineer Bureau revealing the fact that he had constructed no bombproofs for the garrisons. The reason he offered the Bureau was quite different from the reason he gave Sheliha just three months previous. Lockett justified his actions to the Bureau by saying, "I think past experience in this district indicates very plainly that such temptations to the garrison to leave its post on the parapet are extremely dangerous, or, at least, of doubtful propriety." Lockett did not elaborate on the

"past experience" to which he referred, but his meaning is clear - that the soldiers could not be trusted to man the lines as long as bombproofs were available for their occupation. Although Lockett's assessment might have been accurate, it still makes one wonder why he gave different justifications on these two different occasions. A possible explanation might be that Lockett's reasoning in October 1864, that bombproofs would not be needed for protection against field artillery, had some credibility at the time, but by January the Confederates knew that the Union forces on the move toward Mobile included siege trains with heavy artillery, thus forcing Lockett to formulate a different justification. 67

The fortifications at Spanish Fort and at Blakely were constructed using slave labor and that of captured black prisoners, but Confederate soldiers did not completely escape the pick and shovel. The incomplete state of the works when the Confederate soldiers occupied them dictated their completion by the troops, since all but a few of the slaves had been evacuated to points north of Mobile by that time. The extent of this labor at Blakely is unknown since no detailed report of the siege and battle was issued, however, the report by General Gibson at Spanish Fort indicated that his soldiers worked night and day to the point of exhaustion to complete the works, to extend the lines and to construct the bombproofs that Lockett had not provided. This heroic two-week effort on the part of Gibson's men, while commendable, only served to postpone the inevitable. 68

From today's perspective it seems strange that the Confederate command did not move to reinforce General Maury in Mobile given their unanimous agreement that the defense of Mobile was an important objective and given the great disparity in the size of the Union forces versus that of Maury's command. The Confederate forces numbered 9,000 while the Federals under General Canby totaled about 49,000. The conventional military wisdom of the time was that for a commander to be successful in attacking a fortified position of the enemy, he must have at least a three-to-one numerical advantage over the entrenched enemy. Union commander Canby enjoyed an advantage of almost six-to-one over Maury's forces. Justifying his decision not to reinforce Maury, President Davis wrote to Robert E. Lee the very day that Union forces were preparing to invest Spanish Fort,

1...have considered the garrison there sufficient for its defense against any attack from the Gulf side, the peculiar character of the approaches requiring any force operating from that base to move over a country offering many opportunities for defense, or to make so wide a detour as to expose them to flank attacks, destruction of their trains, necessarily insufficient for a long march, and therefore to probable defeat.

While accepted military doctrine said that defensive fortifications acted as a multiplying factor of three-to-one, Davis' preposterous argument was that the Confederates at Mobile did not even need that advantage, that they could defeat an enemy force almost six times their number in open country due to "the peculiar character of the approaches." Davis's words to Lee are inexplicable. Perhaps Davis was embarrassed or ashamed to admit to Lee that he had been unable to coax Kirby Smith to cross the Mississippi and provide the needed reinforcement.
Unwilling to make that admission, he simply fabricated a reason for not reinforcing the Mobile garrison. 69

In the end, the shortage of soldiers in General Maury’s command was the ultimate reason for their defeat at Spanish Fort and at Blakely. Shortages of engineers and laborers at Mobile, while serious, were problems that were addressed by commanding officers and that were solved to a degree that was perhaps less than desirable but that, nevertheless, was adequate to achieve their minimal objectives. The shortage of soldiers, however, was a nut too hard to crack given the dwindling resources of the South and the fading resolve of the southern people to continue the war. General Maury’s shortage of soldiers at Spanish Fort and at Fort Blakely was arguably a blessing in disguise for the South. Had Maury somehow been given a garrison of soldiers approaching in size that of the Union Forces under General Canby, the fighting at Spanish Fort and at Blakely could have continued for days longer than it did, possibly producing a Confederate victory or at least a standoff. Casualties possibly would have soared, increasing each day until the news of Robert E. Lee’s surrender reached the battlefield. All the added carnage would have been for naught since the reality of the South’s defeat and the futility of continuing hostilities would have been evident to all. The war was over, General Lee had surrendered, and nothing could save the Confederacy at this point. As it was, soldiers lost their lives, but casualties were held to a minimum by the escape of the Spanish Fort garrison and by the quick victory of the Federals at Blakely. Ultimately, Maury’s shortage of soldiers may

have been responsible for sparing the lives of hundreds, perhaps thousands of men, who would be so direly needed in the months and years to come as the country and particularly the South struggled to rebuild and to recover from the devastation that four years of cruel war had wrought.
APPENDIX A: FORT BLAKELEY HISTORICAL TIMELINE
8 February 1862

Report from Major General Braxton Bragg commanding the Department of Alabama and West Florida to the Adjutant-General of the Confederate States Army stating the need for fortifications at Blakely, "A battery is necessary, too at the town of Blakely to prevent a passage around in that direction, by which our communication might be intercepted with Pensacola and Montgomery." No one else apparently saw the need for fortifications at Blakely until Mobile was seriously threatened by presence of the Federal fleet off the entrance into Mobile Bay in July 1864. 70

2 March 1864

Correspondence from A.L. Rives to Gen J.F. Gilmer then at Mobile, stating that he was endeavoring to procure additional engineer officers immediately for duty at Mobile. He added, "The increase of the Corps to meet the requirements of the service is becoming a matter of urgency. 71

13 April 1864

Report of the Inspector General, having inspected the District of Mobile commanded by Major General Dabney Maury, praising the work of the Chief Engineer at Mobile, Lt. Col. Viktor Von Sheliha, and deploiring the shortage of labor that was delaying the completion of the defenses of Mobile, "The impressed labor is being hourly returned to the planters, and no sufficient means has yet been provided to supply it." As a stop-gap measure, General Maury had organized

a white labor force composed of soldiers sentenced to hard-labor by court martial, but this force could only supply a fraction of the needed labor. This was to be a common and oft-repeated complaint of the engineering officers in charge of constructing the defenses of Mobile including those at Spanish Fort and at Blakely on the eastern shore of Mobile Bay. 72

The Inspector General had soaring praise for the Chief Engineer at Mobile and the fortifications he had designed, and Sheliha was indeed a rising star in the Confederate Engineer Bureau, and he achieved international notoriety after the war when he published a treatise on the design and construction of coastal defenses. The brightness of his star was somewhat diminished, however, when the federal fleet brushed aside his defenses with the loss of only a single ship and took control of Mobile Bay in August of 1864. 73

9 Jul 1864

Sheliha reports to Col. A.L. Rives that Union Army is organizing a force of 20,000 men at New Orleans to send to operate against Mobile. Eighteen Union war vessels now off the bar at Mobile with fifteen more expected. Maury has called for 5000 negroes. 74

11 Jul 1864

Sheliha reports to Rives the current state of Mobil's defenses given that a Union attack is imminent. He remind Rives that the defenses are still less than optimum

due to the fact that "My earnest appeals for laborers have met with no success whatever; we have had at no time a working force here adequate to the stupendous work to be done; but for the last three months especially work has been dragging along pitifully slowly for want of hands." He also recognizes the need for fortifications on the eastern shore stating, "Should the enemy approach from Pensacola a work near Blakely for the protection of batteries Huger and Tracy ought to be built at once." 75

5 August 1864

General Maury, commanding the Department of Alabama, Mississippi, and East Louisiana, reports that seventeen Union vessels, fourteen ships and three iron-clads, successfully ran past Fort Morgan and entered Mobile Bay. Major General Jeremy F. Gilmer, commanding the CSA Engineer Bureau, recommends to General Maury that every effort be made to hold Forts Morgan, Gaines and Powell. He directs that "A full supply of labor should be obtained at once by impressment if necessary." He further advises, "It is hoped you can prevent a lodgment on east of bay at Blakely and southward." 76

6 August 1864

Gilmer follows up with more detailed recommendations, "a work of some strength should be built at Blakely, and at points south of that if necessary, to prevent the enemy from effecting a lodgment. Dog River, Blakely, and Apalachee Rivers

should be supplied with torpedoes and other obstructions at the earliest moment possible." Gilmer was familiar with the defenses of Mobile having inspected them in February of 1864. He knew that the only passable water route to Mobile was via the eastern rivers at the northeast corner of the bay and that water batteries Tracy and Huger located on the western riverbanks protected this route. What concerned him was control of the commanding heights on the eastern shore where an enemy lodgment would place the water batteries at risk of direct artillery fire or interference with their supply communication. 77

8 August 1864

General Maury reports that Forts Powell and Gaines guarding entrances to Mobile Bay have surrendered. 78

10 August 1864

Correspondence from General Maury stating that he has ordered Brigadier General St. John R. Liddell, an experienced infantry commander, to Mobile at once. When Liddell arrives on the 17th, Maury places him in command of all Confederate forces on the eastern shore of Mobile Bay.

Correspondence from chief engineer Lt. Col. Sheliha to MG Gilmer, Chief of Engineer Bureau, stating that he planned on constructing a heavy, self-supporting work on the heights that commanded batteries Tracy and Huger, which would command both water and land approaches. Sheliha includes this prophetic

warning, "This work would have to be held at every hazard, else our own guns would be turned against the batteries below." 79

11 August 1864

Correspondence from Lt. Col. Sheliha to Col. John H. Gindrat instructing him to proceed with plans to construct a major work commanding the Blakely River to be located at the site of an old Spanish Fort, which site had been recommended by Col. Gindrat himself. This site was chosen, I believe, because the heights at Blakely town site were too far north to provide effective artillery protection for batteries Tracy and Huger. 80

19 August 1864

Lt. Col. Sheliha sends twenty-two torpedoes from Mobile to be placed in the Blakely River opposite battery Huger leaving a narrow channel to allow small boat communication with the work force at Spanish Fort. 81

23 August 1864

Brigadier General Richard L. Page, commanding Fort Morgan, reports his surrender to Union land forces. All entry points into Mobile Bay and the Bay itself, excepting the northernmost Bay areas, are now under control of the Union Navy. 82

3 September 1864

Letter from Colonel Samuel H. Lockett, chief engineer of the Department of Alabama, Mississippi and East Louisiana, to General Joel Riggs, Assistant Adjutant-General for the State of Alabama, thanking him for making available the services of the Governor's aide-de-camp, Colonel John H. Gindrat. Lockett would soon place Gindrat in charge of all engineering operations on the Eastern Shore, which included the fortifications at Spanish Fort and Blakely, and Lockett himself had recently been assigned temporary command of the engineering operations at Mobile when it became obvious that Lt. Col. Sheliha was becoming overwhelmed with problems. Lockett's engineering reputation had been established in-part at Vicksburg where he had designed the Confederate defensive fortifications that were used to successfully repel two determined attacks of Union forces under General U. S. Grant. He also stated in this letter that the total force then employed in constructing Mobile's defenses was 4500. 83

4 September 1864

Weekly report of engineering operations at Mobile submitted by Lockett included status of work at Spanish Fort and at Blakely. Three redoubts at Spanish Fort were in various stages of completion and the wharf at Blakely had been repaired - an indication that the work there was just getting started. Lockett also mentions

that work is being continued on a bridge and military road between Spanish Fort and Blakely. 84

6 September 1864

Correspondence from Lockett to Gindrat officially placing him in charge of engineering operations on the Eastern Shore, and giving detailed instructions for the placement of obstructions in the Blakely River. 85

16 September 1864

Progress report from Gindrat to Sheliha on Eastern Shore engineering operations, stating that at Blakely a new work had been started near Sibley's brick yard and that the bridge across Bay Minette was nearly ready for crossing. 86

20 September 1864

Lockett instructs Sheliha to strengthen the obstructions in the Blakely and Apalachee Rivers as soon as possible, and to give more attention to the field works at Blakely - paying a visit there at his earliest convenience. 87

5 October 1864

Lockett instructs Sheliha to make no arrangements for construction of bombproofs (underground bunkers) at Spanish Fort or at Blakely. 88

6 October 1864

Lt. Col. Sheliha reports that a six-gun battery with front and rear parapets at Blakely has been completed to the point that it is ready for installation of its guns. During my six weeks at Blakely, I found no battery meeting this description. I believe it to be the battery that Sheliha later refers to as the "water battery." The 1865 map of the Blakely fortifications show an enclosed (with front and rear parapets) battery to be located very near the river bank some distance north of the Blakely town site. If this battery still exists it is outside of Blakeley Park property on what is commonly referred to as the "Mayer fifty acres." Sheliha further states his intentions to construct a fortified line of five redoubts at Blakely with each end anchored on the river. 89

5 October 1864

Lockett reports that the labor force at Blakely has been employed clearing trees and loading barges and flats with sod to be used at Batteries Tracy and Huger. 90

23 October 1864

Sheliha reports that the labor force at Blakely has been employed in clearing the ground for a new line of redoubts and in loading barges with sod to be used at Battery Huger. 91

3 November 1864

Sheliha reports that work on the water battery has been suspended by order of MG Maury, and that the Blakely labor force has been employed clearing land and loading barges with sod. 92

6 November 1864

Sheliha reports Blakely work force employed in loading earth and sod onto barges and in cutting wood for fuel. 93

10 November 1864

MG Maury requests the war department provide him 4,000 to 5,000 veteran infantry because the garrison at Mobile has been greatly reduced by sickness for the past two months leaving only 700 effective troops to man the Mobile land defenses. 94

12 November 1864

Sheliha reports no progress at Blakely, only that fifty impressed laborers had been sent to repair damages on the Mobile and Great Northern Railroad. 95

20 November 1864

Sheliha reports unsatisfactory progress on city entrenchments due to scarcity of workers, lack of transportation and much rain, also reports nothing for Blakely. 96

23 November 1864

MG Maury sent urgent plea to Governor of Alabama to send state troops to Mobile as soon as possible. He also wrote to Governor of Mississippi asking if he might be able to send Mississippi troops to Mobile. ⁹⁷

27 November 1864

Sheliha reported little progress on city entrenchments due to hard rains and severe freezes, and reported nothing for Blakely. ⁹⁸

11 December 1864

Engineers report that workers at Blakely have been working on the redoubt in the rear of the brickyard and also employed in transporting earth and sod to Batteries Huger and Tracy. ⁹⁹

12 December 1864

Department Commander, LG Richard Taylor, sends urgent plea to the Governor of Alabama begging for troops, and stating that the current forces in his Department are inadequate for the successful defense of Mobile, explaining that the only possible source of additional troops is the Alabama State Militia. ¹⁰⁰

18 December 1864

Sheliha reported the battery in the rear of the brickyard at Blakely was completed, and that the battery near the sawmill was completed with the exception of cutting

the embrasures and laying the gun platforms. He also reported that the clearing of land was extended to the road leading to Blakely from Spanish Fort. 101

25 December 1864

A letter from Department headquarters alerting MG Maury that the Federals were planning a movement against Mobile with a force of at least 20,000 men. The letter urges Maury to hasten the completion of his defensive works "with all possible vigor." The headquarters letter instructed Maury to employ his soldiers to complete the works if necessary. Sheliha reports completion of three batteries, soon to be four, at Blakely with the exception of platforms and embrasures. Fifty yards of rifle pits were dug and clearing of land continued. 102

29 December 1864

Letter from MG M. L. Smith, chief engineer of the Military Division of the West, to Col. Lockett, instructing him to complete specific tasks in the construction of the works at Spanish Fort. He also provided detailed instructions for the design and construction of a treadway or narrow footbridge from Spanish Fort across the marsh to the river bank opposite Battery Huger, and ordered that work on this project be started as soon as possible. Smith also instructs that work on the abatis at Spanish Fort and at Blakely be continued "until it becomes impassable under fire." 103

12 January 1864

Lockett provides a detailed report on the status of the Spanish Fort defenses to Colonel A.L. Rives, assistant chief engineer of the Engineer Bureau. In his report he explains that he had decided that no bomb-proofs were to be constructed for the Spanish Fort Garrison. 104

24 January 1865

General G. T. Beauregard warns President Jefferson Davis that LG Richard Taylor's forces are woefully inadequate to successfully defend the states of Mississippi and Alabama from an impending Union invasion. He suggests that the only hope is to order Kirby Smith to either reinforce Taylor or to attack St. Louis or New Orleans. 105

31 January 1865

Lockett reports much progress at Blakely during the month of January. The parapets of all redoubts (Nos. one through nine) had been strengthened, the interior slopes of redoubts 2 and 3 had been revetted (reinforced), flanks and embrasures for all redoubts had been constructed, embrasures of redoubts 6 though 9 had been revetted with hurdle revetments, two gun positions in embrasures had been constructed, had added two guns at the sunken battery, added thirty paces of rifle pits at redoubt no. 1, prepared material for abatis around the entire line, and had cleared trees in front and on flank of redoubt no. 1. 106

5 February 1865

Lockett reports more progress at Blakely; strengthened parapets at redoubts 5 through 8, revetted embrasures of redoubts 2, 7, 8, and 9 with hurdle revetments, added flanks, thirty paces of rifle pits and two guns to redoubt no. 1, cleared trees in front of redoubts 1 through 3, cut roads for interior communications from redoubt 3 to redoubt 9, and constructed causeways where needed.

At this point in the *Official Record* the engineering status reports cease. Perhaps the engineering activity became so frantic and hurried, due to intelligence reports of large Union forces moving toward Mobile, that there simply was no time for officers to prepare status reports. ¹⁰⁷

20 March 1865

Confederate Eastern Shore Commander, BG Liddell, reported to MG Maury's chief of staff via dispatch by steamer (the telegraph between Blakely and Mobile was down) that a large Union force is moving northward up the eastern shore toward Spanish Fort and Blakely, and is presently at Magnolia (about 30 miles away). He suggests that whatever troops MG Maury wants to send can be landed at Blakely and marched to Spanish Fort by the Bay Minette road. Liddell adds that the treadway would probably be finished by Wednesday. ¹⁰⁸

22 March 1865

President Jefferson Davis writes General Robert E. Lee that he concurs with General Richard Taylor's views relative to the importance of holding Mobile, but that he does not agree that Mobile needs to be reinforced. 109

24 March 1865

A force under the command of Brigadier-General Randall L. Gibson is sent by BG Liddell to intercept the advancing Union force and hold it under observation. 110

25 March 1865

Union forces initiate a flanking movement to the north toward Blakely. MG Maury takes the field with the remaining forces under his command to join BG Gibson, but due to the continued flanking movement of the Union troops Generals Maury and Liddell are forced to withdraw into the Blakely defenses. General Gibson is ordered to withdraw into the defenses of Spanish Fort. 111

27 March 1865

Gibson reports repeated attacks by Union skirmishers all along his line, but all were repulsed. Gibson also requested more entrenching tools since his lines on his left had not been completed. The enemy had established heavy artillery batteries all along their line. Gibson reported that artillery fire from battery Huger was helping but he did not understand why the gunboats had not opened up on the Union right. By the end of the day he requested another brigade with tools to

assist in the completion of entrenchments on his left since his troops had already been "worn down". \(^{112}\)

28 March 1865

BG Liddell reported his cavalry met that of Union forces moving south from Pollard toward Blakely. Liddell also reported Gibson’s strength at Span. Ft. to be 3400. \(^{113}\)

29 March 1865

BG Liddell orders a scout be sent to Stockton to determine whether the enemy has reached that point. \(^{114}\)

30 March 1865

BG Gibson repeats his request for more entrenching tools. \(^{115}\)

31 March 1865

BG Gibson reported his ammunition would not last the night. He wanted more delivered by morning at the latest. Also reported that the enemy was constructing a heavy siege battery a half mile in rear of his right flank on Bay Minette. Union forces reported north of Blakely about 15 miles distant. \(^{116}\)

1 April 1865

BG Gibson requested reinforcements from MG Maury, stating that he had only 1,700 infantry to oppose the two Union Army Corps that were pressing, night and

day, closer to his main line. In a flurry of messages sent on this date, Maury not only refuses to reinforce Gibson at Spanish Fort, but instructs Liddell to remove one of Gibson's brigades and send it to Blakely. MG Maury is probably peeved at Gibson for sending requests outside of his chain of command and refuses to communicate directly with Gibson, relaying all of his responses through BG Liddell at Blakely. Gibson protested Maury's action arguing that Blakely already had more troops than Spanish Fort, and that he could not possibly hold Spanish Fort with his reduced force. The tone of his last message to MG Maury, sent just before midnight, bordered on impertinence, "Please answer if you have received my last three telegrams relative to this matter. Answer my dispatches." 117

1 April 1865

Union forces approach Blakely, and BG Liddell informs Brigadier General Thomas commanding the green Alabama recruits, "the force of the enemy now in our front is composed principally of negroes, and will not spare any of our men should they gain possession of our works...station your men in the rifle pits, and impress upon their minds the importance of holding their position to the last, and with the determination never to surrender." 118

2 April 1865

Liddell at Blakely reported that Union skirmishers were engaging his left flank. He requested that a gunboat be placed in the mouth of Raft River to protect his left and also requested additional light artillery pieces to reinforce the left part of his

line. Gibson at Spanish Fort reported that the enemy was using 8-inch and 10-inch mortars vigorously but was doing little damage. He again expressed great concern that the heavy battery being constructed on the enemy's far right would do him great damage. He requested that an iron-clad come down and enfilade the Union right flank. He reported that his losses were decreasing every day and that the confidence of his men was increasing. 119

3 April 1865

Gibson at Spanish Fort reported that he had been mortar shelled all night long. He expressed amazement at the amount of digging being performed by the enemy, "He is fast converting his advanced skirmish line into his main line." He asked for picks, for 200 negroes with tools, a supply of wooden embrasures, iron screens and the heavy gun he had previously requested. Later in the day he expressed disappointment that the heavy gun had not come and reduced his request for laborers to 100 negroes with 50 axes and 50 picks. By the end of the day Gibson complains about the delay in receiving thing he has requested, namely the wooden screens, the heavy gun, and the negroes. He further requested a supply of hand-grenades and an 8 or 10 inch mortar as the enemy has provided him with a great supply of shells. 120

4 April 1865

Gibson at Spanish Fort reports he received the 20-lb. Parrot (gun), the negroes and the mortars late at night on the 3rd. He has been forced to extend his left flank

by adding breastworks out to the bay requiring a great expenditure of labor, and states that he may be required to do the same thing on his right. His already thin line is being made thinner by these extensions. He repeated a request for 100 axes. 121

5 April 1865

Liddell at Blakely reports that there has been heavy skirmishing on his front and that the enemy has erected a battery on his left and they are firing from it occasionally. Reports from Gibson at Spanish Fort on this date reflected growing frustration and indications of desperation. He complained that the 30-lb. Parrot had not arrived, "Can't these delays be prevented by increasing transportation?" He complained about the lack of naval support, "I have given up all hope of our naval boats ever finding out where the enemy's right flank is and attacking it." He states that he was once again forced to lengthen his lines even though his small force had been under "unbroken strain for two weeks." In order to make a successful defense, Gibson argued, "I must be supplied with more heavy guns, more mortars, more axes, more negroes." I think Gibson suspected that all of his pleading was in vain because, as he observed in closing that, "The present means of transportation from Mobile are wholly inadequate." 122

6 April 1865

BG Gibson at Spanish Fort reported that the enemy continued to press forward his lines by the usual zig-zags, and repeats a previous request, "I must have the company of sappers and miners, and 200 negroes." 123

7 April 1865

BG Gibson’s requests become more desperate in tone, "I must have the things I have asked for within the last three days, else disaster may happen." 124

8 April 1865

BG Liddell at Blakely reported that enemy lines in front of redoubts 5, 6 and 7 opened a brisk fire at 2:30 a.m. that lasted for one and one-half hours. He returned fire beginning at 8 a.m. and had received brisk return fire. One enemy battery in front of redoubt 7 had thrown shells into Blakely and into the brickyard landing. He had not been successful in silencing this battery. BG Gibson reported that enemy's artillery was much more powerful than his and that enemy's heavy batteries had enfiladed his lines near Battery 4 and the enemy had approached to within 150 yards at that location. He reported that he ceased firing from Battery McDermott because the concentrated fire from the enemy could not be endured, and that Ector's brigade on the left had been broken. By 9 p.m. Gibson reported that he was withdrawing the Spanish Fort garrison via the treadway. The treadway was a narrow elevated boardwalk, about 1,200 yards long, that had been constructed from the left flank over Bayou Minette and across the marsh to the river bank.

opposite Battery Huger. From the end of the treadway the troops were ferried across the river to Battery Huger, and from there by steamboat to Blakely for a brief rest and then to Mobile. When all of these troops could not be taken from Battery Huger before sunrise, it became necessary for about one thousand of them to walk across the swamp to Blakely on foot, else they would be subjected to artillery fire from the Union batteries having line-of-sight contact with Battery Huger.  

9 April 1865

BG Liddell reported that Blakely had been under the constant fire of five batteries dismounting two guns. Liddell also expressed concern that the garrison from Spanish Fort had left a large track through the swamp that could be followed by the enemy to a point behind their lines. The right of the Confederate line was on a bluff overlooking a swamp, and there was about one-quarter mile of unoccupied swamp between the end of the Confederate line and the river, and Liddell knew they were at risk of being attacked by Union troops following the muddy tracks left in the swamp the night before by the evacuating troops from Spanish Fort. He said he would move his quarters to this location (redoubt no. 9) so he could better direct efforts to seal up this unforeseen hole in their defensive line. This explains why he was captured at the far extreme of his line when the final Union assault broke through the Confederate lines.  

Blakeley Daily Journal

Thursday, 16 Oct 2008

Travel from St. Cloud, FL to Point Clear, AL

Friday, 17 Oct 2008

Met with park Director JoAnn Flirt at 10:00 am. We discussed my work schedule and park operating hours. Ms Flirt showed me a vacant office and desk that I could use during my stay.

Ms Flirt also questioned me regarding cost of Global Positioning System equipment including receiver hardware, mapping software and desktop computers. She said that my project would be the start of the park’s long range plan to use Global Positioning System mapping of all the parks historical and natural resources as a management tool. The mapping database would serve as a source of printed maps for use by park visitors and also serve as a location database for; Civil War historic features, Blakeley township historic features, wildlife habitat, endangered species, exotic plant species, pine forests, hardwood forests, wetlands, erosion risk areas, controlled burn areas, roads, trails, power line access cuts, fire lanes, etc.

Ranger Thomas Harms gave me a driving tour of the park boundaries and the various locations of Confederate and Union earthworks. He also showed me the location of the two Confederate redoubts that are located outside the park on privately owned land.

Monday, 20 Oct 2008

Set up a workspace in the park office trailer. Was unsuccessful at making internet connections with my laptop. Cell phone connections at park are very spotty and unreliable.

Walked a portion of the Confederate breastworks (about a mile) and planned how I would map them. The Confederate breastworks north of redoubt # 4 are in woods with heavy undergrowth. May not have adequate accessibility needed for mapping.

In the afternoon I walked the remaining portion (about a mile) of the accessible Confederate earthworks and planned how I would map them. Some of the traverses in redoubts 6 thru 9 are so covered in briars that I cannot get the walking access needed for mapping.
Discussed with ranger Tim Gilchrist the best approach for trying to reach Confederate redoubt # 3 on foot. The line of rifle pits that leads to the redoubt is very overgrown and is interrupted by a pond, which is negotiated by crossing a beaver dam to pick up the line of breastworks on the other side of the pond.

**Tuesday, 21 Oct 3008**

Attended park staff meeting where Ms. Flirt discussed day-to-day operation issues. She also reviewed findings from a recent Alabama state audit of park operations.

Completed Global Positioning System mapping of redoubt no. 4 and some of the Confederate advanced rifle pits in front of redoubt 4. Global Positioning System satellite acquisition was poor in the afternoon, especially in forest cover. I attempted to map redoubt no. 5 and its connecting rifle pits, but abandoned the attempt due to inability to lock-on to the minimum number of satellites. The number of satellites in view seems much better in the morning and begins degrading one or two hours after noon.

I was able to map some of the Confederate advanced rifle pits that were in an open field in front of Redoubt no. 4. Without the forest cover the satellite reception was adequate.

I was told about a disappointed camper who had to leave the park with his wife at 2:00 am in the morning because they were swarmed by mosquitoes and besieged by paranormal activity. His wife had been bitten by mosquitoes so many times that she had to have help walking to the car. The couple was camping in a primitive shelter on the very edge of a swamp (that explains the mosquitoes), and the shelter is located within 100 feet of Confederate redoubt no. 9, which may help explain the paranormal activity.

Requested from Ms. Flirt her permission for me to use the park's AOL account to log on to the internet (using my laptop) should I need to access the UCF library or state archives to do research. Request was denied presumably because I am not a park employee.

**Wednesday, 22 Oct 2008**

Mapped the Confederate Redoubts 5, 6, 7, 8, and 9 as well as the line of connecting rifle pits. Some of the traverses in the forts were 20 to 30 feet long but due to the undergrowth I was able to map only the first 3 to 5 feet of many of them.

In the afternoon, I returned to the open field in front of Redoubt 4 and found some more Confederate advanced rifle pits to map. I also tried to penetrate the thick undergrowth around the line of breastworks that connects Redoubt 4 with Redoubt
3. Starting at the dirt road that runs beside Redoubt 4, the first hurdle was a huge bush on the edge of the road at the start of the breastworks. While trying to trample down this bush, I noticed a coiled Eastern Diamondback about 18 inches from my foot so I quickly retreated. The snake was a lot more calm than I was, he never struck, rattled or even moved. So I walked back to the car, got my camera and took his photograph. I thought about try to kill him but my only weapon was my walking stick which was a dry, half rotten pine limb, so I knew that it would break on the first blow and may not deliver a lethal strike.

Thursday, 23 Oct 2008

I stayed at the cottage this morning to see if I could get the DSL internet connected. The real estate company that rented the cottage promised that it had internet service but it still has not been activated. I was able to get a phone company technician to come out and get it hooked up.

In the afternoon I tried to locate some of the Confederate batteries and rifle pits that are shown on some of the old maps. I could not locate them today but one of the rangers may be able to help me find them still. The satellite coverage was again bad in forest cover so I would not have been able to map them had I found them. It also started raining and I was forced to stop for the day. Ranger Tim Gilchrist is the most knowledgeable on the earthworks since he has been at the park for 17 years. He is going on vacation and will not be able to help me for about a week, so he drove me to different places in the park and showed me trails and other avenues of access to some of the Confederate and Union earthworks. I don't
I have much confidence that I will be able to find them since one's line of sight in the forest only extends about 30 feet.

Friday, 24 Oct 2008

Stayed at the cottage today since the woods at the Park are wet from the hard rains we had yesterday and last night. I downloaded software off the Microsoft website that will enable me to transfer the mapping data I have collected from the Global Positioning System receiver to my desktop computer.

Monday, 27 Oct 2008

Began mapping the main Union breastworks from which the final attack was launched. Starting at the Massachusetts Battery I mapped breastworks on the Union right until they ended at the edge of a gorge. I did the same for the breastworks on the Union left. They too stopped at the edge of a gorge. I mapped the Massachusetts battery fortification itself and also the saps that started at the fort and ran toward the Confederate line for about 100 yards.

In the afternoon, I attempted to get landowner permission to examine Redoubts #1 and #2 which are located on private property. Landowner for redoubt #2 was not home and his gate had a padlock on it. Since he only has a small camper on the property it appears he just uses it for weekend camping. Redoubt #1 landowner also was not present but I talked to her son who gave me her phone number. My conversation with the son led me to believe that all that remains of redoubt #1 is some of the surrounding rifle trenches, the redoubt itself was probably leveled to make a flat area for the house which sits high on a bluff overlooking the Blakeley River. When I talked to the land owner by phone later in the evening, she would not give me permission to examine her rifle pits.

I also walked part of the Union lines located in the woods opposite Confederate redoubt #7. The lines appeared intricate, and zig zaggy which will make them harder to map.

Tuesday, 28 Oct 2008

Searched on foot for more of the main Union trenches but was unable to locate them. Ranger Thomas took me in his pickup to show me where the Union trench crosses the main Park road. They indeed were Union trenches, but I do not believe they were the lines that were used to launch the final attack because they are 1200 to 1500 yards from the Confederate line. The old maps show a Union line maybe 600 to 800 yards from the Confederate line, but we could not find where this closer line crosses the park road.
We decided to try to walk the Union lines from the left of the Massachusetts battery, which ended at a gorge. Ranger Thomas and I descended the gorge, crossed a creek by walking across a fallen pine tree and picked up the Union trench after ascending the other side of the gorge. We followed the union trench about a mile through heavy woods and briars, and finally emerged on the park road (where ranger James Johnson had been honking his truck’s horn periodically so we could find our way better), but the trench ended about 30 yards short of the road which explains why we could not find where it crossed. Unfortunately, I was unable to get any mapping data due to the heavy forest coverage and the lousy afternoon satellite coverage. I will try to map at least a portion of this line tomorrow morning when the satellite coverage is better.

I also wandered through the brush and power line cuts trying to pick up the main Union line on the other side of the road with no success.

**Wednesday, 29 Oct 2008**

Walked across the fallen pine tree again to map the union lines on the other side of the creek. The satellite coverage was better than the previous afternoon but steadily degraded as I went deeper into the woods. I had reception from 8 satellites when I crossed the creek, but after going a couple of hundred yards into the woods I could only lock on to 4 of them, and it took about 5 minutes of waiting at each waypoint before the solution was accurate enough to log a map point. At that rate it would have taken all day to map the Union trenches plus I had other concerns that caused me to abort the mapping of this part of the lines. I was close to the eastern park boundary and I could hear a pack of deer hunting dogs barking and yelping and getting closer to me with each passing minute, so I suspected that some illegal deer hunting might be taking place and I had no desire to confront poachers with guns and dogs. I was also concerned that if the satellite coverage continued to degrade I would not be able to use the Global Positioning System receiver to navigate my way out of the woods and back to the fallen pine tree across the creek.

I found where the main Union trench opposite Confederate redoubt # 7 crossed a park nature trail and was able to map it for several hundred yards in one direction before it ended at a creek bottom which looked to be absolutely impenetrable. I will have to find the creek on a map and see if I can find where the trench picks up on the other side. Tomorrow morning I will also map the Union lines on the opposite side of the nature trail, which should be challenging since a quick look at them revealed what appeared to be a maize of interconnecting trenches and zig zags. They are in the woods but the undergrowth looks passable.
Thursday, 30 Oct 2008

I mapped the rest of the Union trenches opposite Confederate redoubt #7. They were not as complex as I first thought but they had me going in circles until I realized that I was mapping some of them for the second time.

I also mapped the Union trenches that cross the main park road about 1200 to 1500 yards from the Confederate line. In one direction the trenches are in the woods and I mapped them until the underbrush became very thick. In the other direction the land has been cleared but it has over two years growth of underbrush and briars, which is almost impassable. The park rangers told me the area is scheduled for a controlled burn in January and they invited me back after the burn to finish the mapping. I mapped about 50 feet of the trench and gave up because the briars were so thick.

Friday, 31 Oct 2008

Took my son and grandson to the park today so I did not get much mapping accomplished.

Monday, 3 Nov 2008

I found where the main Union line crossed the park road. I mapped them northward for about 50 yards until it stopped at a creek gorge. Southward I mapped them for only 50 feet because the briars were so thick. I picked them up again where the trench crossed a power line cut, but could only map them for about 100 feet on either side of the cut.

In the afternoon ranger Thomas and I tried to find Confederate redoubt #3 by following the trench line from Redoubt 4 through the woods until it stopped at creek bottom. We crossed the creek bottom by walking across a 200 ft long beaver dam. I told ranger Thomas I was not going back across the beaver dam again and I would rather be air lifted out via helicopter. We found what appeared to be a portion of redoubt #3 and it was just off of park property according to the boundary markers (trees with blue paint on them). I tried to map it but could not get enough satellites in view. I was able to map the Confederate trenches from redoubt 4 to near the beaver dam and past the beaver dam for about 150 yards. By the time we found redoubt 3 the satellite positioning was too unfavorable to collect mapping data.

Since I did not want to re-cross the beaver dam, Thomas took me through the swamp below the dam, which was just as unpleasant if not more so. I discovered that waterproof boots are not that waterproof when you're wading in knee high swamp water.
Tuesday, 4 Nov 2008

I arrived at the park late since all the rangers were in a staff meeting until after 11:00 am. I found an excellent aerial photo that shows the area where we found Redoubt 3 yesterday. It appears that access is much easier from the North if we can get property owner approval for access. Ranger Tim took Thomas and I to the north side of the park via public roads and showed us earthworks that he knew the location of. He showed us an earthwork right on one of the main roads that he believes is redoubt 2 or redoubt 3. It is about 100 yards from the earthwork Thomas and I found yesterday, which we believed was redoubt 3. He also showed us the northern end of the union line, which is on park property. I tried to map a length of the trenches but satellite coverage was too poor.

Next Tim took us to the south side of the park and showed us the Union "Bluff Battery". I was surprised to discover that it was actually two batteries side by side. The larger one had six embrasures and the smaller one had two embrasures, so it appears they could have mounted eight guns total. I was able to map both batteries.

Wednesday, 5 Nov 2008

On Tuesday ranger James had cleared a path through the brush with his tractor blade to give me easier access to Union trenches and batteries on the left end of the union line. I mapped these earthworks this morning and found they were quite extensive. These works are about 1000 to 1200 yards from the Confederate line and included some of the primary Union artillery batteries.

In the afternoon I drove to Confederate redoubt #2 and was lucky to catch the property owner on the premises. He allowed me to map the redoubt, which appeared to include a well preserved redan which, according to the old maps had a smaller redan on each side of the main center redan. Parts of the redoubt extended past his property line on each side of the redan, which I was unable to map. The property owner is a Civil war enthusiast and an amateur historian. His profession is sign making and he expressed a desire to design and build some interpretive signs for the park, which he would donate. I told him that I would inform the park director of his generous offer which I did later in the afternoon. Ms. Flirt seemed excited and eager to take him up on his offer. The park has no interpretive signage in the park related to its Civil war history. Almost all of the existing interpretive signs are related to the parks diverse natural history plus a few that deal with the history of the Blakeley township.

He also told me that he was leasing property adjacent to the park property where ranger Thomas and I had found what we believed to be redoubt 3 on Monday. He told me that I could access the property he leased and map any earthworks that
are there. He also warned that rattlesnakes were numerous in that particular area based on his past experience.

**Thursday, 6 Nov 2008**

In the morning I mapped what Ranger Tim believes is Redoubt 3 which is on a residential lot off of Cloverleaf Landing road. It appears that only one of the redans remains (most of the Confederate redoubts at Blakeley were constructed as triple redans). The redan wall has an opening in it like a road had been graded through it at one time. Now the redan is completely overgrown with trees and underbrush. There was a raised mound in the rear of the redan, which could be the remains of the powder magazine or simply the pile of dirt left when someone graded the opening in the wall. I was able to map only a portion of this mound due to the underbrush. About half of the redan I was able to map by walking the parapet, the rest I mapped by walking the outside perimeter due to the many fallen trees across the parapet. If this was redoubt 3 then what was the redoubt that Thomas and I had found on Monday? It was about 100 yards away from this one which is close enough for it to be a part of the same redoubt.

Back in the park I found and mapped a large Confederate battery located about 300 yards behind redoubt 4. It was deep in the woods and it took me a long time to find it. When I finished mapping it I programmed the handheld Global Positioning System to navigate me back to my car, but unfortunately I ran into an impenetrable wall of underbrush and briars. So I had no alternative but to retrace the circuitous path that had brought me there.

**Friday, 7 Nov 2008**

I have been trying to contact Steve Jones of the Alabama Department of Conservation and Natural Resources to ask if he can provide me with a digital orthophoto base map for the Blakeley Park that I can use to overlay my earthworks mapping data. He returned my call today, but I was not in the office so I will need to send him an email to let him know exactly what I am looking for.

My mapping activities are winding down and I will begin concentrating more on the research aspect of the project. I was able to map some more of the union trenches today that were in the center of the Union line. I wasn't sure exactly how to find them, but I was walking a logging road and discovered that the trenches crossed the road and I was able to map about 100 yards of them.

Blakeley Park has been in the local news the past few days because they lost a lawsuit brought by a local family who had squatted on park land for many years when it was owned by International Paper Co. When the land was donated to the park foundation in 1980, the foundation had the family's house condemned and paid the family $ 80,000 to buy another one, and they were essentially evicted.
from park property. Just this week a judge awarded 3.5 acres of park property to the family. The property is located adjacent to an exclusive residential area where ½ acre lots are probably sold at a pretty good premium. The feeling among the park employees is that this local family is being manipulated by unscrupulous lawyers who see an opportunity to gain title to some valuable land at the park's expense.

Monday, 10 Nov 2008

Ranger Tin was supposed to take me to the north end of the union trenches this morning, but he must have forgotten since he left the park early and is not expected back before noon. The pig trail leading to the trenches is a little rough for my little Toyota so Tim was going to take me in the Park pickup. He could probably take me this afternoon when he returns but satellite positions will not allow me to map in the afternoon in forest cover. I went back to the cottage to work on finding a digital orthophoto basemap.

Received a return email from Steve Jones who made suggestions for state websites where I could look for digital maps. He told me that Baldwin county had some very high resolution digital maps but they are considered by the county to be proprietary and not releasable to organizations or individuals unless a Memorandum of Understanding is executed that guarantees the maps will not be released to anyone else. I will let the park pursue the county maps and I will keep searching the internet for a suitable map, preferably in color and having at least 1 meter resolution.

Tuesday, 11 Nov 2008

Stayed at the cottage today to continue looking for a suitable basemap since the park office is closed due to the holiday, and the park is staffed by a single ranger. I downloaded several maps off the internet but I had difficulty importing some of the formats such as MrSID compression and .img files into ArcView. It took me most of the day figuring out how to overcome this difficulty, but finally was able to import almost every format even though I still did not find a suitable base map that included all of the park property. I downloaded some excellent color digital maps from the Alabama department of agriculture website but they did not include the eastern most areas of the park.

Wednesday, 12 Nov 2008

Spent the morning making overdue phone calls. Called the Redoubt 2 property owner to get names of local residents having ancestors that were members of the US Colored Troops that fought at Blakeley. He could only give me the name of one (Pat Hollis) but said he would call me back with more. He also referred me to
an article in the Mobile Monthly magazine that wrote about one such resident who lives close to the park.

Called an archivist at the Museum of Mobile and made an appointment to examine items in the McMillan collection that deal with Blakeley fortifications. I will pay them a visit next Tuesday and Wednesday if needed.

Called Jim Robeson at GPServ to get clarification on proper procedures and software to use when downloading the Global Positioning System mapping data from the receiver and transferring it to a computer. He walked me thru the process and emailed me a user's guide. He also made some recommendations on where to look for high resolution imagery to use as a base map. He said that Alabama was one of the worst states for trying to get free digital map imagery. In his opinion Alabama state and county governments charge outrages prices for imagery that was collected and processed using our tax dollars and which many states provide for free.

Spent the afternoon surfing the net looking for mapping imagery. I found some 1 meter resolution imagery collected in 2006 that cost $50 for what I need. I also found the exact same imagery for free with the disadvantage that one has to download the entire county and the download time with DSL is 8 hours. I started the free download about 8 pm.

Thursday, 13 Nov 2008

Woke up to discover that my PC had been automatically restarted by Microsoft to incorporate an urgent security update. Of course this interrupted my imagery download so I started it again.

Spent the day reading sources dealing with Blakeley fortifications (Mahan, Andrews, Bergeron and the OR) and trying to download imagery. I started the 3rd attempt at 5 pm. If it doesn't download this time I guess I will fork over the 50 bucks to get what I need.

I also read the Maurice Garland journal that the Alabama Dept of Archives copied for me. According to Ms. Flirt he was one of the engineers that worked on the Blakeley earthworks. I found out that he arrived at Blakeley on the same day that the eight-day siege began so he was not involved in their design or construction. His journal included several pages of engineering notes and sketches which were notes transcribed almost word-for-word from Mahan's treatise on design and construction of field fortifications.

The 3rd attempt to download the large image file of Baldwin County was successful.
Friday, 14 Nov 2008

Spent the day trying to get base map imagery loaded into the ArcView mapping software. The software would not recognize the Baldwin County image even though the image is in a compatible file format. Perhaps the image is too large and exceeds the limits of the program.

I found the same 2006 imagery for sale in much smaller quarter-quadrangle for only $7.50 each so I ordered the 2 maps that will include all of the park property. These maps loaded successfully into ArcView and the 1 meter resolution looks very good. When I load the earthworks mapping data into ArcView however, there is a slight offset between the features visible in the imagery and my mapping data. I estimate the offset to be about 10 to 16 feet. Played with the data and the software for the rest of the day trying unsuccessfully to get everything to line up.

Emailed Jim Robeson at GPServ in Tallahassee for help.

Saturday, 15 Nov 2008

I finally got the mapping data and the imagery in perfect alignment by shifting the image 20 feet northward. I did this by changing image alignment data contained in the world files (text files that come with the image files). I emailed Jim Robeson and told him to ignore the cry for help.

In his return email he said that such manipulations should not be necessary and he suspected that I had a reference datum issue that prevented proper "projection" of the mapping data into the same "projection" used by the image files.

Monday, 17 Nov 2008

Ranger Tim took me to the northern end of the Union trenches where I mapped about 200 yards of them until the underbrush closed in too thick to proceed any further. We drove down a logging road, got out and searched for the continuation of the trenches but could not find them. Tim is very familiar with this area since he marked all the timber for logging in this area about 3 years ago, and he new where the trenches were - but the underbrush was so thick that you could only see about ten feet ahead. We probably walked right past the trenches but simply could not see them.

We drove a little further south down a power line cut and found where the trenches crossed the cut. I was able to penetrate the underbrush on one side of the cut and mapped about 50 to 75 yards of the Union trench line.

In the afternoon, I tutored myself on how to add titles and legends to my maps for printing.
Another email from Jim Robeson suggesting that I reorder the imagery, and specify UTM projection, NAD83 reference datum, and units of meters. This would assure that I would be able to accurately project the mapping data to align with the imagery without having to manipulate the data in the world files.

Tuesday, 18 Nov 2008

Spent morning and afternoon at the Museum of Mobile looking at inventory descriptions of manuscript items in the McMillan collection. This took a little time since the collection has not been fully processed and there are 1377 items in the collection.

I was looking for military correspondence dealing with the Blakeley earthworks. There were many letters between commanders and engineering officers but they were exclusively in the 1862 and 1863 time frame and dealt with the defenses of the city of Mobile. There was no correspondence in the 1864 and 1865 time frames when the Blakeley fortifications were started and completed.

Wednesday, 19 Nov 2008

Downloaded new maps per Jim Robeson's recommendation and loaded them into Arcview. Results were same as before with a 6 meter/20 foot offset between mapped features and the same features on the image map. I am convinced that the image supplier CHARTIFF.com has an error in their world files. I believe they failed to take into account the 6 pixel border they add to the images to make for seamless boundaries when multiple images are combined into one image. The alignment data in their world files is in error by exactly 6 pixels which equates to 6 meters for images having 1 meter per pixel resolution.

I also spent time learning how to add text and graphics to maps in Arcview, which is not very user friendly. Read the user's manual on how to print hard copies and how to print to a file that can be stored electronically and viewed using common PC software.

Thursday, 20 Nov 2008

Spent all day creating maps for the park. I made two summary maps each with a different basemap. One map has 2006 color aerial photography as the base map, and the second uses much older U.S. Geological Survey topographical maps as the base map. Shown on both maps are the features that I mapped. The U.S. Geological Survey topographical maps also have many of the Civil War earthworks mapped, and it interesting to see what I did not map compared to the topo maps and conversely what I mapped that the U.S. Geological Survey did not.
I also created a summary map that included labels for some of the more prominent features of the fortifications. I then created smaller, more detailed maps for Confederate Redoubts 2 thru 9, for the 15th Massachusetts Battery and for the Union "Bluff" Battery.

Friday, 21 Nov 2008

I took my maps to a print shop and had them printed on a color laser printer. I was pleased with the way they looked after printing. I took them to the park and showed them to Ms. Flirt and ranger Thomas, who were pleased also. Ms. Flirt again expressed her desire to develop a mapping capability in-house. Ranger Thomas stated that he would have to receive training on Global Positioning System receiver hardware and GIS software in order to achieve that goal. I volunteered to spend a day with Thomas and walk him thru the process. Ms. Flirt and Thomas seemed pleased with that suggestion.

We set the date for next Tuesday. Starting in the park I will provide training on collecting mapping data using the Global Positioning System receiver, and in the afternoon we will drive to my cottage and I will take him thru the process of transferring the data from the receiver to the PC and exporting the data into the ArcView mapping application along with the image files comprising the basemaps.

Monday, 24 Nov 2008

Seventy percent chance of rain predicted today so I did not go to the park. I reviewed some of my reading material and typed research notes into EndNotes. I am also trying to create a timeline of events for the Blakely earthworks from conception to completion of construction.

Tuesday, 25 Nov 2008

Provided training to ranger Thomas on how to use the Global Positioning System receiver to map physical features of the park. As a training exercise we mapped the main entry road of the park and the roads of the primary park campgrounds.

I also called Dave Holt at GPServ and got some cost estimates for purchase of used Global Positioning System mapping receivers and the data collection field software. I passed these on to Ms. Flirt to follow up on when the park decides to develop an in-house mapping capability. The offer was very reasonable I thought. For 1500 dollars the park could purchase a survey quality receiver with sub-meter accuracy. The same receiver sells new for $4300. The data collection software would be an additional $265.
In the afternoon I took ranger Thomas to my cottage where we could use my
desktop PC to create a map using ArcView and the data we had just collected. On
the map, the road survey data we collected overlayed perfectly with the roads
shown on the aerial imagery.

**Wednesday, 26 Nov 2008 thru 30 Nov 2008**

Celebrated the holidays with family members that arrived from New Orleans.

**Monday, 1 Dec 2008**

Returned to St. Cloud, FL from Point Clear, AL.

**Thursday, 4 Dec 2008**

Returned the handheld Global Positioning System receiver to Dave Holt of
GPServ in Sanford, FL.
APPENDIX C: BLAKELEY MAPS
Blakeley Civil War Earthworks
2008 Survey
Redoubt No. 2 Detail
Redoubt No. 3 Detail
Redoubt No. 5 Detail
Redoubt No. 6 Detail
Redoubt No. 7 Detail
Redoubt No. 8 Detail
Redoubt No. 9 Detail
Union "Bluff" Battery Detail
15th Massachusetts Battery Detail
LIST OF REFERENCES


Confederate States of America. Letters and Telegrams Sent by the Engineer Bureau of the Confederate War Department, 1861-64, Chap. III, vols. 1-5 (College Park, Maryland: National Archives and Records Administration, 1965), Microcopy 628.


Edward (surname unknown), Tombigbee, AL to brother, 22 April 1865. Manuscript Collection 5064, Museum of Mobile, Mobile, AL.


Maurice H. Garland Papers. Alabama Department of Archives and History, Montgomery, AL.


