

CHAPTER ONE

INTRODUCTION

Cultural Resource Management

Cultural Resource Management (CRM) is devoted to protection of archaeological and historic properties and the mitigation of impact by land alteration projects such as reservoirs, highways, urban sprawl, and other forms of development (Parker and Johnson 1986). Vandals, relic hunters, and archaeologists that fail to report their findings also threaten archaeological and historic artifacts.

Often times CRM is a subsidiary responsibility for an agency with a primary function of management of another resource (e.g., military operations, forestry, and the natural environment). Even if an agency's primary focus is CRM, budgetary and time constraints often hinder management goals. Like many natural resources, cultural resources are nonrenewable. Without proper conservation of these resources, the "future of the past looks bleak" (McGimsey and Davis 1988, 27).

Private landowners, and city, county, state, and federal governments have a responsibility to preserve the *resource base*.

Resource base means the totality of information sources that can be used to understand past human activities. This base includes not only cultural remains such as artifacts, structures, features, activity areas, and so forth, but any parts of the natural and cultural environments that were either used or modified by people in the past or which can aid in understanding the basic relationship between people and the environment in the past. Another element of the resource exists at the level of spatial relationships – between materials at a site, among sites, and between sites and aspects of the natural environment.

McGimsey and Davis, *The Management of Archaeological Resources*, 27

With the resource base preserved as a whole and with all interrelationships intact, new insights into past peoples can be discovered.

Purpose

The primary goal of this study is to produce a predictive probability model for locating Union Civil War fortification sites constructed during the siege on Petersburg. If the model is successful in highlighting areas of archaeological sensitivity, the procedures used to produce this model have potential to be utilized in other arenas of archaeological exploration. Secondly, this research will add to the resource base concerning Civil War fortifications around Petersburg. Underlying interrelationships between these fortifications and the natural and social environment in which they are placed will be revealed.

The Siege on Petersburg, Virginia

Situated on the southern bank of the Appomattox River and 23 miles south of Richmond, Virginia, sits Petersburg, one of the most significant cities to the southern cause during the American Civil War (Figure 1.1). With a population of 18,000, it was the main source of supply for the Confederate Capital (i.e., Richmond) and the Army of Northern Virginia. Five railroads converged at Petersburg, which fed the constant demand for war supplies and other necessities from Confederate armies in the north.

Figure 1.1. Location of Petersburg, Virginia

During the summer of 1862, the southern expanse of Petersburg was fortified by the Confederate army in hopes of protecting the city from Union invaders. A huge semi-circle of massive earthen breastworks¹ ten miles long began east of the city on the Appomattox River and ended on the river west of the city (Figure 1.2). Generally referred to as the “Dimmock Line”, after Captain Charles H. Dimmock, this extensive line required an army of formidable size to man (Cullen, 1981). The Appomattox River provided the sole protection for the northern approach to Petersburg.

Figure 1.2. Section of the Dimmock Line

¹ The terms breastworks, earthworks, or just works and entrenchment will be used interchangeably to refer generally to any form of earthen defense constructed by the Union or Confederate armies.

An engineering marvel, these formidable earthworks prevented the Union army from simply walking into Petersburg and taking control of the lightly manned city. In front of these breastworks yawned ditches six to eight feet deep and fifteen feet wide, and a few yards out in front of the ditches were felled trees with the branches interlaced [abattis²]. For a half-mile or so the ground beyond the slashing was open so it could be swept by fire from the fortifications.

J. P. Cullen, *The Siege of Petersburg*, 9

To isolate Richmond, General Ulysses S. Grant, commander and chief of the armies of the United States needed to cut the railroads that supplied it. Grant decided to move his forces across the James River and attack Petersburg before General Robert E. Lee, commanding officer of the Army of Northern Virginia, could move into position to properly defend it. “With the capture of that railroad center [Petersburg] Lee would be besieged in Richmond with most of his supply lines cut and the end of the war would then be a mere question of time, as Lee himself recognized” (Cullen 1981, 7).

William F. Smith’s XVIII Corps was first to move upon Petersburg from the fight at Cold Harbor. Smith’s XVIII Corps was below normal strength so a small division of colored troops commanded by General Edward W. Hinks was assigned bringing the number of Union troops to about 15,000. Intelligence relayed to Smith on June 15, 1864 stated that the entrenchments around Petersburg were as strong as they looked but were seriously undermanned. Confederate General P. G. T. Beauregard only had about 2,200 men in front of Petersburg. Beauregard had requested reinforcements, but none would arrive until late that night. As darkness approached, Smith attacked and took control of Confederate Battery 5 and line³ for more than a mile south. Although two more divisions arrived to reinforce Smith’s troops, he made no attempt to take Petersburg. To Beauregard’s advantage, Smith’s only intention was to defend what he had captured. The Union army should have taken Petersburg that night because by the next morning the Confederate army had been reinforced. By June 17th the Confederate Army of Northern Virginia would have 50,000 troops to man the trenches, as opposed to about 90,000 Federals from the Army of the Potomac.

² A barricade of felled trees, with branches interlaced and pointed toward the enemy.

³ Lines connect strengthened positions such as forts and batteries. These lines present a front towards the enemy and are used to cover the extent between these strengthened positions.

It became obvious that Lee's forces had no intention of advancing from their fortifications to fight, and it was equally evident that any assault on these entrenchments would be nothing less than mass murder (Cullen 1981). Therefore, in June of 1864 a nine and a half-month siege on Petersburg began. "Almost every hill and rise of ground was capped with a fort and artillery batteries, along both the Union and Confederate lines, and in some places the lines lay less than 400 feet apart" (Cullen 1981, 17).

Earthen Civil War Fortifications

Form and Function

Today, there are few visible artifacts that call one's attention to the 1864-65 siege at Petersburg. The once barren, crater-filled landscape (Figure 1.3) has been replaced by shopping malls, parking lots, and subdivisions. What little remains of this battle-torn scene is within Petersburg National Battlefield. This National Battlefield was established in 1926 by Congress to commemorate the campaign, siege, and defense of Petersburg during the Civil War. Therefore, it should come as no surprise that within its boundaries many well preserved fortifications still exist.

Figure 1.3. Federal line near Fort Morton (National Archive # 4a39636r)

Lendy (1862) defined fortification as any barrier used to resist with an advantage the attack of a greater force. Fortifications are classified as being either natural or artificial in form. A natural fortification could be a chain of mountains, a forbidding marsh, or a large river, while an artificial fortification would be any barrier constructed by man. Artificial fortifications can be further subdivided into two categories: permanent and field fortifications. "As the name implies, permanent works are intended to stand for ages, as those that surround arsenals, and frontier places; while field fortifications are constructed for a brief period in time, to occupy or defend a position, or to protect a city or a bridge" (Lendy 1862, 122). These works (i.e., artificial fortifications) are commonly made from perishable materials such as earth and wood (Figure 1.4).

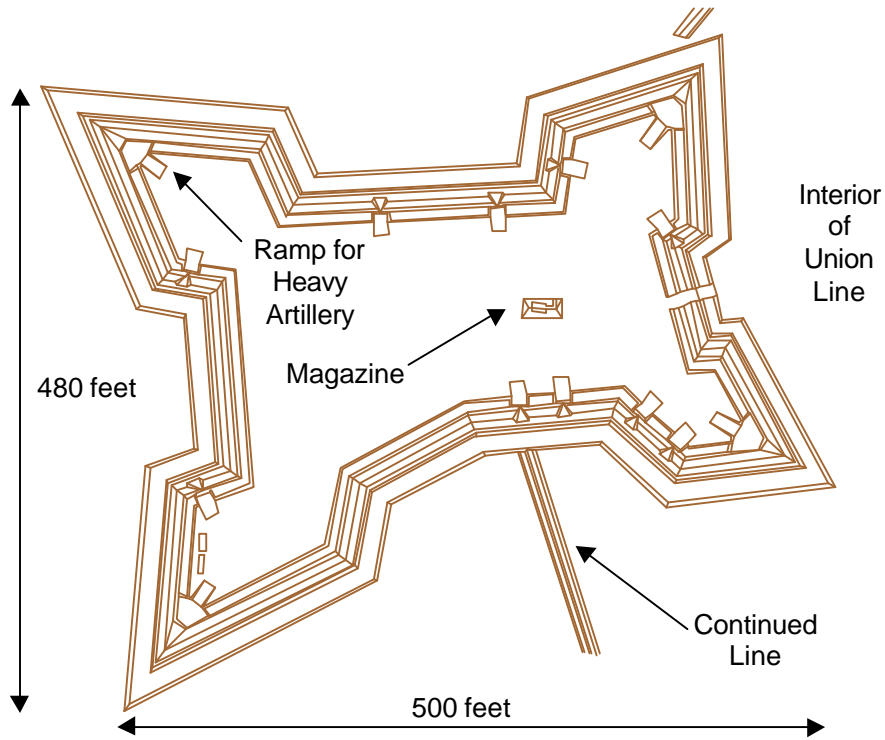


Figure 1.4. Aerial view of Union Fort Fisher (digitized engineer's drawing)

Field fortifications were constructed as defensive positions and also to assist troops in fighting with an advantage. Mahan (1852, 2) noted that fortifications "...should shelter them [troops] from the enemy's fire; be an obstacle in themselves to the enemy's progress; and afford the assailed the means of using their weapons with effect." To satisfy these requirements fortifications usually consist of a *parapet* and a *ditch* (Figure 1.5). The parapet or covering mass, blocks the enemy's artillery, enables the assailed to use their weapons with effect, and presents an obstacle to the enemy's progress. The ditch not only furnishes earth for the parapet, but also serves as an obstacle which the enemy must overcome before reaching the assailed. Dimensions vary from location to location, but in general the ditch was no less than six feet deep and twelve feet wide (Mahan 1852). The parapet also varied considerably, depending on the soil type of the area, time and means of construction, and artillery being used by the enemy. In general, the covering mass no less than eight feet tall and approximately 14 feet thick (Mahan 1852).

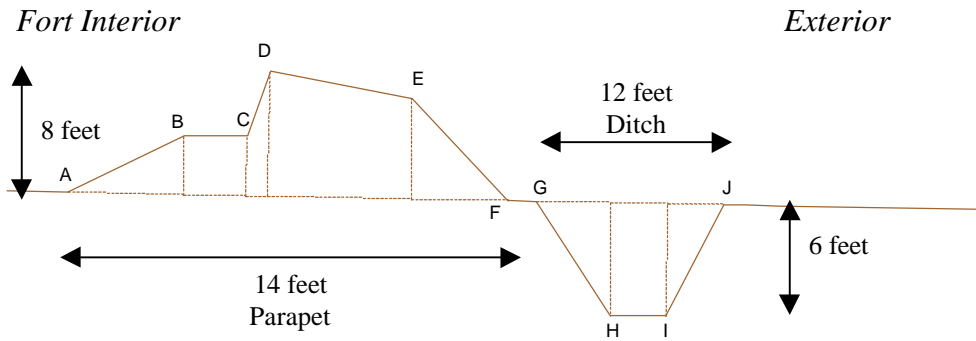


Figure 1.5. General profile of an entrenched field fortification
 A B C D E F = Parapet, G H I J = Ditch

For the purpose of this thesis the term “fortification” will be generalized to include both Civil War forts and batteries. Unlike the Civil War fort, a battery is usually open in the back, that is, in the direction opposite the enemy (Figure 1.6). The battery often contains a collection of several guns, and like the fort, is used to strengthen a position. The general profile illustrated in Figure 1.5 also applies to a battery.

Connecting the strengthened positions of forts and batteries are lines. These lines present a front towards the enemy and are used to cover the extent between strengthened positions (Figure 1.6). There are two classes of line - Continued Lines, and Lines with Intervals (Mahan 1852). Continued lines present no openings through which the enemy might penetrate except the ordinary outlets. Lines with intervals consist of detached works, which are enclosed partly, or throughout their perimeters, arranged, in defensive relations with each other; presenting wide intervals between them defended only by fire.

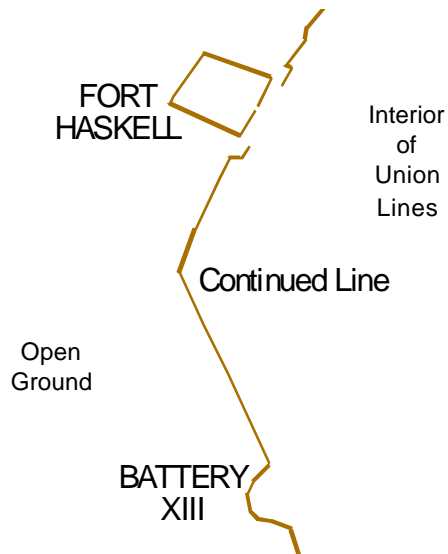


Figure 1.6. Fort Haskell, Battery XIII, and the continued line connecting them

Many other earthen defenses, such as parallels, covered ways, and rifle pits, are also constructed during a siege. However, this study will concentrate only on the main lines of both armies, that is fortifications and the lines connecting them.

Development of American Entrenchment Theory

In the early and mid-nineteenth century American tactical and strategic thought followed the French lead (Hagerman, 1967). Like the French, the American approach placed large emphasis on the frontal assault. Rejected was the Napoleonic belief in strategic and tactical mobility, pursuing victory through flexibility in strategic and tactical maneuver. The Swiss military theorist, Antonine Henri Jomini supported this transition in many of his writings. Jomini believed that strategic maneuver, particularly battlefield flanking maneuvers, were difficult to execute and could not be relied upon unless under ideal conditions (Hagerman, 1967). Therefore, Jomini advocated the use of mass movement over maneuver.

Although Jomini stressed the supremacy of the frontal assault, he also promoted the tactical defense, which was treated with a respect only slightly below the offensive in priority (Hagerman, 1967). However, it was Francois Gay de Vernon who was credited with promoting tactical defense and fathering formal doctrine on the offense and defense of field fortifications. Vernon was a professor of fortification and the art of war at the Ecole Polytechnique, a military school established by Napoleon. During this time period the only major adjustment to fortification doctrine was to accommodate advances (i.e., increased range and firepower) of new weapons. “Gay de Vernon is significant to this

story rather for his relation of the use of field fortification to general tactical doctrine, that is, for setting forth when and to what extent field fortifications were to be used (Hagerman 1967, 200).”

Vernon’s *Treatise on War and Fortification* was translated and used as a textbook at the United States Military Academy in 1817. In the 1830’s discontent with this doctrine from a new generation of American military thinkers once again brought about change. Hagerman (1967, 201) stated, “...in response to American conditions and then with the added influence of technological change, they formalized a tactical system suitable for an American army by modifying the tenets of existing tactical doctrine.” The most significant of these new thinkers was Dennis Hart Mahan (Hagerman 1967). Mahan was dissatisfied with the prevailing standards, which he believed to be acceptable for the organized and professional European armies, but not for the civilian army of the United States, which was held together by a small professional nucleus.

Mahan graduated first in his class from West Point in 1824. He was assigned to the corps of engineers and then immediately appointed to the faculty of the Military Academy. Four years were spent in France as a student and observer before assuming his teaching duties at West Point. In 1832 he was promoted to the position of professor of military civil engineering and of the science of war, a position he held until his death in 1870. Also at this time (i.e., 1832) field fortification was added to the curriculum, giving Mahan an excellent opportunity to present his tactical ideas. Although Mahan’s military beliefs were steeped in French thought, he rejected the French reliance on offensive assault tactics. As mentioned previously, United States troops were inadequately trained, disciplined, and experienced thus making such tactics unrealistic. U.S. troops were volunteers, valuable members of society, and voters; thus they should not be callously sacrificed in use of a massed frontal assaults (Mahan 1852). Mahan advocated an active defense in which entrenchments enabled the assailed to meet the enemy with success, first by compelling him to advance with disadvantage of position, and then taking the offense and driving him back at the point of bayonet (Mahan 1852).

The top 10 to 20 percent of each graduating class from West Point was usually assigned to the corps of engineers, and from this came the bulk of key Civil War field commanders above the divisional level (Hagerman 1967). These military engineers were notably influenced by Mahan’s philosophy on entrenchment, since they were previously his pupils. Therefore it is not too far reaching to assume that theory and construction of fortifications outlined in Mahan’s *A Treatise on Field Fortification* was closely emulated in Civil War fortifications constructed around Petersburg.

Major Nathaniel Michler

Campaign and theater commanders of the Civil War had great need for topographic maps, unfortunately there was little accurate information with respect to topography. Essential for tactical and strategic planning, military and Coast Survey topographers collaborated to map pertinent locations. Most military mapping was considered reconnaissance mapping (Theberge 1998). The accuracy of reconnaissance mapping depended solely upon the object for which the survey was undertaken and the time and expense allotted to it (Theberge 1998). During this time period (i.e., Civil War) the principle tools of the topographer were the plane table and alidade, supplemented by the compass and chain.

With the siege warfare at Petersburg came the need for further detailed mapping. Coast Surveyors John W. Donn and Henry Marindin reported to the Petersburg area and commenced mapping for the Army of the Potomac under the direct supervision of Major John E. Weyss. Weyss was the “principal assistant” of Major Nathaniel Michler, who was head of the topographic department for the Army of the Potomac. Michler was an 1848 graduate of West Point Military Academy and headed the topographic department of the Army of the Potomac from September 20, 1863 to July 12, 1865.

On July 9, 1864, Michler became aware of the plan to breach the Confederate lines by means of a large explosion from beneath their defensive works. The initial idea was proposed by members of the 48th Pennsylvania Volunteers in General Robert B. Potter’s division of the IX Corps, many of whom had been coal miners. Four hundred feet directly in front of the Union position stood Elliott’s Salient, which consisted of a battery of four guns with strong defensive lines in the rear. The plan entailed digging a tunnel from Union works underneath the Confederate strong-hold, packing the tunnel with gunpowder, and then detonating the charge to destroy the Confederate position and initiate a surprise attack.

To accomplish this difficult task exact knowledge of the location of the Confederate lines as well as the beginning point for the Union mine was needed. Under the fire of the enemy’s batteries and sharpshooters, Michler’s topographers commenced triangulation of the Petersburg front. This data, and a map furnished by Professor Bache, Superintendent of the United States Coast Survey, were combined to provide a detailed map covering the whole ground occupied by both armies.

In all, the tunnel was approximately 585 feet in length and was packed with 320 kegs of powder. On July 30 at 4:45 am the earth erupted, tearing the Confederate lines apart. The resulting crater was about 30 feet deep, 60 to 80 feet wide, and 170 feet long. This explosion wounded, buried, or killed about 278 Confederates and destroyed two guns. Union troops charged the crater, but milled about instead of charging through. Poor planning and leadership caused the Union charge to fail, and by 9 am a withdrawal was called, but not before 4,400 Union and 1,500 Confederate soldiers were killed, wounded, or missing.

Although the “Battle of the Crater” was unsuccessful for the Army of the Potomac, Michler’s map served as the standard for the campaign, combining Army triangulation work with Coast Survey work (Theberge 1998). Theberge (1998, 11) stated that “... such a map of the whole front on a common datum immensely aided Union artillery.” Michler’s map was more formally known as the “Michler-Weyss maps”. Eight in all, with an original scale of 1:7950 and covering approximately 148 square miles, they depict the Civil War earthen fortifications, abatis, roads, railroads, structures, vegetative cover, and land use of the Petersburg front.