MANEUVER AS A RESPONSE TO TECHNOLOGICAL INNOVATION: SHERMAN'S GEORGIA CAMPAIGN OF 1864

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(ABSTRACT)

With the advent of the rifled musket onto Civil War battlefields, the ability of a soldier on the defense to kill his attacking enemy rose dramatically. The former standard weapon had been the smoothbore musket. Such smoothbores had a maximum effective range of seventy-five meters. The new standard weapon, the rifled musket, had an effective range of 300 meters. Defenders, armed with this new weapon, could put attacking enemy soldiers under killing fire at a far greater range that ever before possible. Using the rifled muskets, defenders exacted punishing tolls before attackers closed within bayonet range for the close combat that furnished the cornerstone of contemporary tactical planning.

As they made their tactical plans, commanders in the American Civil War seemed to ignore this deadly technological innovation and Lee, Bragg, Burnside, Hood, Pope, and Jackson make a list of the worst offenders. They continued frontal assaults, assaults that brought their men directly under fire from the rifled musket. Bloody Civil War battles offer a litany of failed assaults: Manassas, Shiloh, Malvern Hill, Antietam, Fredericksburg, Gettysburg, and Cold Harbor.

Where frontal assaults succeeded, the costs in soldiers' lives was staggering. As casualties mounted astronomically, Civil War commanders must have realized that something was wrong on the battlefield. Yet, these commanders, with one important exception, rarely varied their battlefield tactics.

Only one commander gave evidence of understanding the deadly message of the rifled musket, and the failure of Civil War tactics to silence or mute that message, Maj. Gen. William T. Sherman. This thesis examines that understanding and provides Sherman's rationale for changing contemporary battlefield maneuvers. Sherman came to the conclusion that the tactics of the day could not defeat a defense armed with rifled muskets, so he changed the battlefield rules. In doing so, he defeated a determined and aggressive foe, inflicted more casualties on his enemy than his forces sustained, split the Deep South asunder, and hastened the end of the Civil War.

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Without Dr. James I. Robertson, Jr., my journey through the world of academic history would never have come to be. I understand and sincerely appreciate his efforts on my behalf. Dr. Peter Wallenstein has taught me far more than how to turn a phrase and in doing so has shown me that the meaning of words is far more important than the words' meaning. Dr. David Lux gave me the gift of "turning the problem on its head", which has lighted more vistas than he will ever imagine. Each in his own way has shown me that courage and loyalty can be found in places other than on the battlefield, and for that knowledge, I am far more grateful than for all the history they attempted to teach me.

None of my work would have meaning without Jean, and my acknowledgement of her care, help, and love is made with the promise that I one day will fully return her gifts.

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CHAPTER I

TACTICS, THE LAST "HURRAH!"

"If we can induce the enemy to attack us it is to our advantage"[1]

"When the American Civil War began, neither North nor South was prepared for the great struggle that was to take place." This phrase is a basic premise of Civil war writers and instructors. During the War, commanders on both sides used tactics that they had been taught at West Point. They learned that attackers were to march shoulder to shoulder, and straight at their enemies. This procedure filled the military tactical texts of the time: *Rifle and Light*

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[1] General William T. Sherman, in U.S. War Dept. (comp.), *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies* (Washington, 1880-1901), Ser. I, Vol. XXXVIII, Pt. 4, 351. Cited hereafter as *Official Records*; unless otherwise stated, all references are to Ser. I.

Infantry Tactics,[2] *U.S. Infantry Tactics,*[3] and *The Military Dictionary.*[4] While at the "Point," cadets who became commanders in the Civil War also learned how to make sweeping envelopments and how to fight from an interior position a la Napoleon. Yet such grand tactics did not matter once the combatants were joined on the battlefield.

The generals had accepted the traditional beliefs that attackers were to march to within fifty to seventy-five yards of the defenders, fire a volley with the musket, and then charge the enemy works, all the while shouting "Hurrah!" The soldier's principle weapon then became the bayonet, attached to the firing end of their muskets. Once engaged in close combat, attackers and defenders bayonetted, butt-stroked, or clubbed each other until one side broke and ran.

Such tactics were very linear in nature, since the military texts of the day required soldiers to line up shoulder to shoulder or one directly behind the other. Consequently, a soldier fired at the soldier directly across from him. If his enemy was not killed or disabled by this volley, attackers and defenders resorted to the bayonet.

These military arrangements and maneuvers, which here will be termed "Hurrah!" tactics, were fundamental in warfare when the armies of the North and South first clashed at Manassas. They originated with Gustavus Adolphus in the 1600s. To make better use of the firepower of the musket, Adolphus modified a

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[2] William J. Hardee, *Rifle and Light Infantry Tactics* (Philadelphia, 1855).

[3] *U.S. Infantry Tactics* (Philadelphia, 1861).

[4] Henry L. Scott, *The Military Dictionary* (New York, 1855; reprinted 1968).

tactical system the Dutch had been using.[5] The older tactics had called for solid squares of pikemen to march forward supported by masses of archers also in dense squares. With Adolf's new maneuvers, the battalion, five ranks deep with as many as 150 men abreast, would move slowly forward. The soldiers were to maintain their alignment by staying shoulder to shoulder. At a point less than 100 yards from the enemy, the opposing musketeers began to fire at one another. The battle was over when one side fled. Gustavus Adolphus's system therefore spread the battleline out laterally to gain the firepower the musket could deliver.[6]

When the Civil War began, Americans employed "Hurrah!" tactics that had proved successful on the battlefield for over 200 years. Although the maneuvers of Civil War soldiers had varied little in the centuries since Adolphus, the principal weapon of the infantry had changed dramatically. In the age of Adolphus, the musket had a range of fifty yards. That range had increased only slightly to seventy-five yards by the time of America's war with Mexico.

In the first half of the nineteenth century, the smoothbore musket had undergone a number of evolutionary changes to increase its effectiveness and simplify its use. All of these changes were relatively inconsequential when compared to the alteration that took place in 1848. In that year the smoothbore musket evolved into a rifled musket with almost five times the range of its predecessor. This incredible change should have had as decisive an effect on

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[5] Archer Jones, *The Art of War in the Western World* (Urbana, 1987), 221.

[6] Ibid., 248.

battlefield tactics as the atomic weapon had on global strategy. Yet it did not. The evolution of the musket and its effect on the battlefield will be addressed in Chapter Two and Appendix One.

"Hurrah" tactics depended on the effect of shock action to gain their success. Shock action and shock effect are terms often used by military historians but rarely defined.[7] The more shock action the attacker could apply on a critical part of the battlefield, the more likely his attack was to be successful. The only way to obtain more shock action was to mass more men where the shock effect was necessary. A set of detailed and sometimes complicated formations was necessary to get soldiers to that portion of the battlefield that their commanders considered critical.

To understand how Civil War commanders thought mass and shock action could lead to success on the battlefield, it is necessary to describe briefly Civil War formations, their strengths and weaknesses. As shown in Figures 1[8] and 2,[9] three basic formations existed: the column, the line and the rush. The primary formation used by Civil War commanders to make their attacks was the line.

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[7] This writer could not find a definition in any of the standard Civil War texts or in any of the current reference sources listed in the bibliography. Liddel Hart uses the term "psychological dislocation" to describe the condition of a commander who has been mentally overcome by the confusion and noise of combat. The psychologically dislocated commander can no longer function effectively as a decision-maker. Shock action and the resulting shock effect are the result of the "psychological dislocation" of the infantryman in battle. The primary difference between the infantryman and his commander is that, while the latter's psychological dislocation is brought on by confusion, the former's is caused by terror. That terror is manifested first by the inability to return fire, next by an overwhelming compulsion to seek shelter, and finally by individual soldiers and units fleeing the battle or surrendering. Therefore, shock action is defined as that sequence of events precipitated by the attacker that induces disabling terror in the defender. Shock effect is defined as the result of shock action, i.e., the defenders' loss of unit cohesiveness, individual soldiers' inability to return fire, and the eventual surrender or flight of the defenders.

[8] Paddy Griffith, *Battle Tactics of the Civil War* (New Haven, 1989), 151.

[9] Ibid., 156.

Since it was the line formation upon which "Hurrah!" tactics were based, that formation needs to explained in more detail.

John I. Mahon, author of one of the most precise articles on Civil War tactics, stated that the line was the "typical assault formation, if any can be said to have been typical. This was a succession of lines, containing two ranks each, with a prescribed distance of thirty-two inches separating ranks."[10]

These lines were of differing lengths depending on the size of the unit making the assault. Using the standards supplied by Mahon, a company would be approximately twenty-seven yards long. A regiment of ten companies with a three-yard interval between companies would occupy a frontage of 300 yards. The normal brigade of four regiments in line formation covered almost 1,300 yards. Divisions did not normally attack in line, but usually employed a column of lines to make their assaults. Therefore, when a division attacked, it did so on a frontage almost three-quarters of a mile wide.[11]

Distances between the lines varied from 50 to 300 yards, with 150 yards being the most common spacing. It should be noted that this type of formation was almost identical to that used by Napoleon earlier in the century.[12] The idea behind this elaborate line formation was that defenders would be struck by repetitive waves of fire and shock action, with each wave weakening the defending side until it was overwhelmed. What had worked so well for Gustavus

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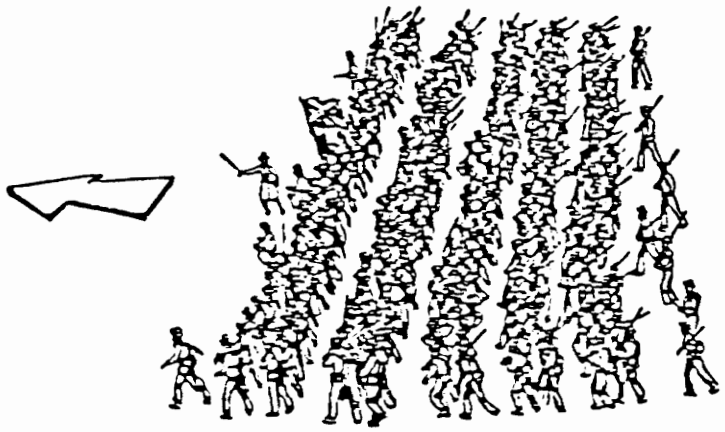
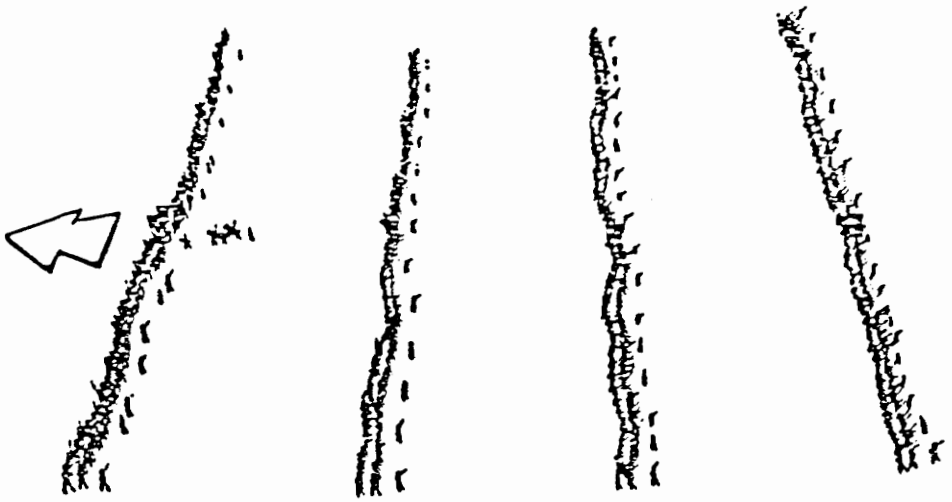
[10] John J. Mahon, "Civil War Infantry Assault Tactics," in *Military Analysis of the Civil War*, ed., Editors of *Military Affairs* (Millwood, N.Y., 1977), 259.

[11] Ibid., 260.

[12] Ibid.



Regiment In Massed Column



Brigade Attack In Successive Lines

Figure 1. SCHEMATIC OF COLUMN AND LINE FORMATIONS

Adolphus in the 1600's, for the "Little General" in the 1800's, and for American soldiers and their commanders in the Mexican War, would lead to dismal failure in the 1861- 1865 conflict.

The other standard formation used in attacks was the column. It can best be described as the line formation turned perpendicular to the defenders. This formation lessened the frontage a unit occupied and correspondingly increased its depth. The column was rarely employed because it lacked the capability to return the defenders' fire effectively. Only those men on the outside of the formation could deliver volleys. Any strength gained by the increased penetrating power of the formation's depth was more than neutralized by its loss of firepower. Not only were the men on the outside of the formation exposed to the defenders' fire; their comrades, who could not fire back, because they were in the midst of the formation, were also struck by the penetrating firepower of the defense.[13]

The rush, Figure 2, was used more often than the column, particularly in the 1864 Georgia campaign on which this thesis focuses. A formation invented by soldiers in the midst of battle, the rush was a tactic devised more from necessity than from tradition. The rush started as a standard line formation. When the terrain became too broken, or when the defenders' fire drove the attackers to cover, the soldiers themselves made the decision to use the rush. These rushes were never so neatly organized as depicted in Figure 2, but the drawing serves as a starting point in understanding the rush.

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[13] Ibid., 261.

Soldiers grouped, took cover, and fired irregularly. As one group shot at the defenders, it drew the defenders' attention and fire. After firing, the first group took cover and another group of attackers fired and subsequently drew the defenders' attention. Meanwhile, the soldiers in the first group could maneuver to the next piece of cover from which to fire. The process of fire and maneuver would start again.

Figure 2 gives the impression of units "leap-frogging" forward in a fluid harmony under the direction of a higher commander. On the battlefield, in reality, little such harmony existed. When soldiers began to use the rush, the battlefield began to to lose much of the linear rigidity associated with the standard formations of the period, the line and column. The writings of the period do not furnish any evidence that the rush was command-directed or that it was guided by an overall authority once underway.

Commanders who had fought in campaigns against Indians before the Civil War could not help but notice the similarity in the way the Indians fought and in the rush. Consequently, the rush was sometimes named the Indian rush or Indian-style fighting.

The fact that the rush tactic never made the tactical textbooks of the era does not diminish its reality on the battlefield. Far more prevalent in the fighting that took place in the Civil War's western and southern campaigns, this tactic accompanied Sherman and his men as they fought their way into Georgia from

Tennessee.[14] In fact, Sherman went so far as to describe his campaign in Georgia as "a big Indian War."[15]

The practice of charging with "Hurrahs!" had proven to be overwhelming to the unsophisticated Mexican army of the 1840's. Most of the officers who were to become major commanders in the Civil War--such as Lee, Grant, Jackson, the Johnstons, Bragg, McClellan, Burnside, and Hooker--had seen these tactics successfully employed from the Rio Grande to the Halls of Montezuma (Mexico City). It is interesting to note that William T. Sherman, the focal point on this thesis, saw no service in the Mexican War.[16]

Civil War commanders virtually ignored the technological innovation and the deadliness of the rifled musket when they were the attackers. Yet the destructive fire of the rifled musket became a primary consideration when Civil War soldiers were on the defense. In the first stages of the conflict, the contending armies had stood in opposing lines, shoulder to shoulder, in the open and fired away at each other until one side broke. The Battle of First Manassas provided excellent examples of this "standup like a man and take it" tactic, such as Jackson's defense of the Confederate left atop Henry House Hill.

As army sizes increased, it became common for both sides to seek cover behind stone walls or even rail fences. This change to the use of defensive protection may have started as an attempt to get inexperienced Civil War soldiers into a formation resembling a straight line using an expedient method, i. e., their

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[14] Griffith, *Battle Tactics of the Civil War*, 154; Mahon, *Military Analysis of the Civil War*, 160.

[15] Rachel Sherman Thorndike (ed.), *The Sherman Letters* (New York, 1894), 236.

[16] William T. Sherman, *Memoirs of General William T. Sherman* (New York, 1875), I, 94.

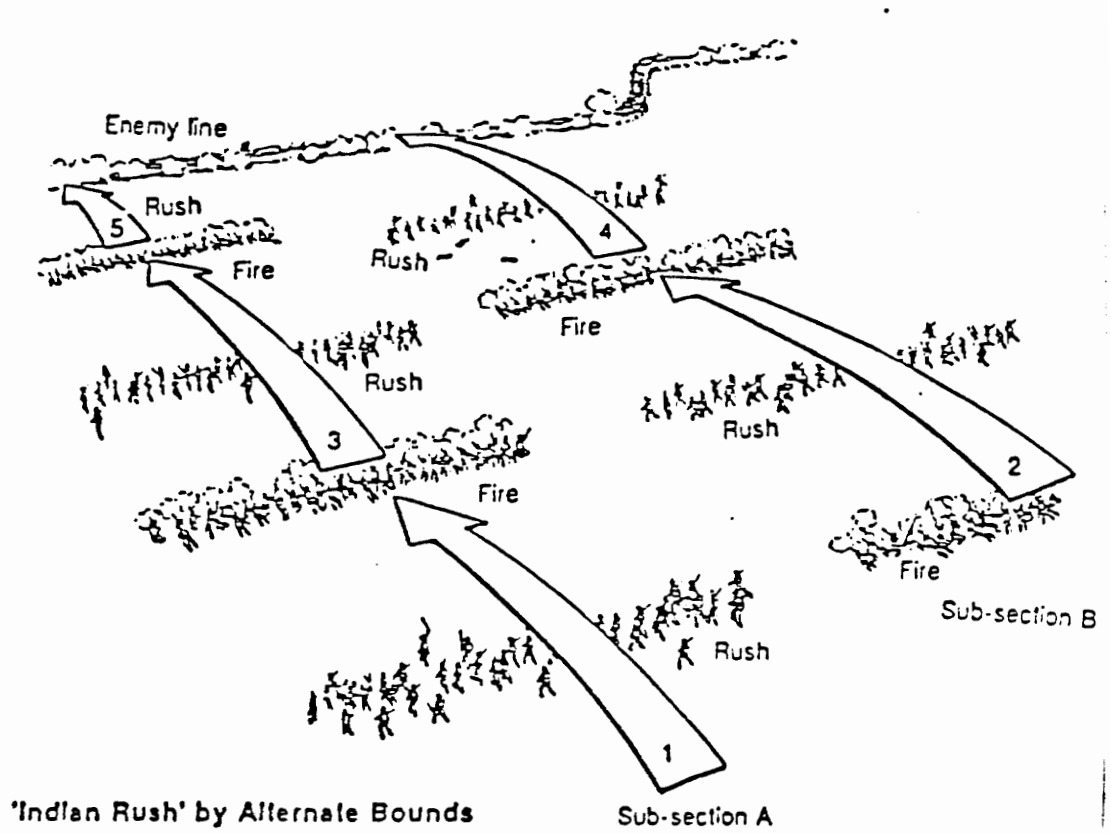

Figure 2. SCHEMATIC OF RUSH FORMATIONS

officers ordered the soldiers to line up using whatever happened to be the straightest thing on the battlefield, whether it be a road, tree-line, stonewall, or rail fence. Once behind a wall or even the dubious protection of a rail fence, the value of these terrain features as defensive cover from hostile fire became obvious to both soldiers and their officers.

No matter what the reason, seeking cover for soldiers on the defense rapidly became habit. When such cover was not available, soldiers rapidly began to construct their own cover in the form of earthen entrenchments. By the time of Sherman's Georgia campaign, the construction of defensive works had been raised to the level of a science. Figure 3[17] shows a standard defensive position during the Georgia campaign. To add to its effectiveness, the defense invariably was constructed along available high-ground. Elevation, no matter how slight, gave the defenders increased observation and a better field of fire. In addition, the uphill climb by attackers over the cleared ground (glacis), slowed them down and increased the amount of time that they were under fire.

Sherman encountered the type of defenses shown in Figure 3 continuously during the Georgia campaign. He gave a vivid description of this type of defensive formation in the handwritten notes he prepared for his reminiscences.

> . . . but the enemy's position was naturally very strong and everywhere covered by entrenchments as dangerous to assault as a permanent fort. We also covered our lines of battle by similar works, and even our skirmishers learned to cover their bodies by the simplest and best forms of defensive works, such [as] logs piled in the form of a simple Lunette and covered on the outside with earth thrown up at night.
>
> Both the enemy and ourselves used the same form of general trench, varied according to the nature of the ground, viz: trees and bushes were

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[17] Griffith, *Battle Tactics of the Civil War*, 128.

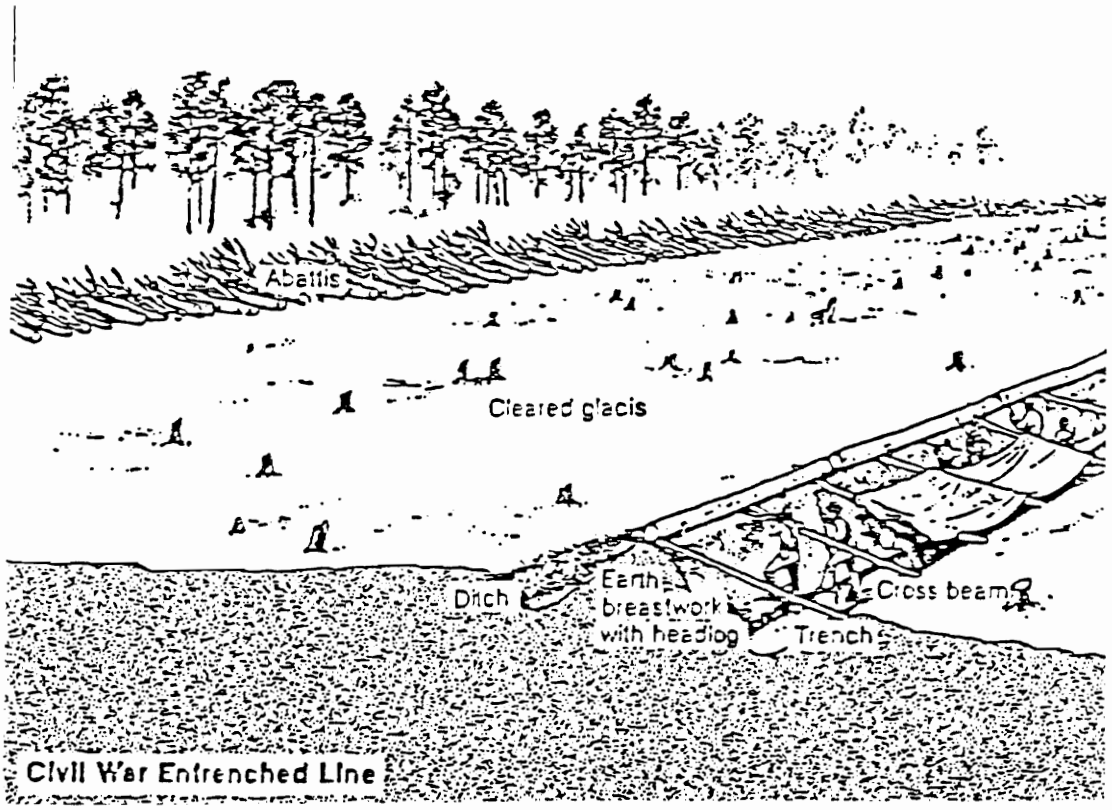

Figure 3. THE STANDARD DEFENSIVE FORMATION

> cut away for a hundred yards or more in front, serving as a abatis, or entanglement; the parapet varied in height from 4 to 6 feet high, the dirt taken from a ditch outside. And this parapet was surmounted by a head log, generally the trunk of a tree from 12 to 20 inches at the cut, lying along the interior crest of the parapet, and resting on notches cut in other trunks, which extended back, forming an inclined frame in case the "head log" should be knocked by a cannon shot. The men of both armies became very skillful in the construction of these works, because each man realized their value and importance to himself, and it required no orders for their construction. As soon as a regiment or brigade gained a position, within an easy distance for a sally [an attack from the enemy], they would set to work with a will, and would construct a parapet in single night.[18]

This type of defensive earthwork was not new. Engineered works or entrenchments were part of the engineering curriculum at West Point. Virtually every major commander in the Civil War had been taught how to construct them. Yet their continued use clearly departed from the older "stand up and take it" type of tactics employed at First Manassas. Soldiers understood the worth of good defensive positions in protecting themselves from attackers' fire. As Sherman phrased it, "it required no orders for their construction." However, the defensive position, per se, did not pile up attackers on the battlefield. The rifled musket did.

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[18] Sherman's handwritten notes for his *Memoirs*, William T. Sherman Collection, Library of Congress.

CHAPTER II

THE DEADLY RIFLED MUSKET

"The Enfield Musket [rifled musket] is the best musket I ever saw. I will bet I can kill a Yank every time [at] 300 yards."[19]

In 1848 French Capt. Claude Minie introduced an evolutionary change to the standard infantry weapon which was the smoothbore musket and its ammunition, the round musket ball. Minie's development seems so simple when compared to the technological advances of modern weapons; but what the French captain had done was startling for his day. He put a point on one end of what had up to that time been a round bullet. In the other end, he added a cone. These changes increased the lethal effects of the musket by giving it almost five times

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[19] Wink Baxter to Thomas Gresham, undated letter, Gresham Collection, Virginia Polytechnic Institute and State University.

the range of its predecessor and a far greater ability to penetrate its target. Before Minie, an infantryman was safe from musket fire on the battlefield to almost within rock-throwing range of his enemy. Minie's innovation put an end to that.

If a Johnny Reb or Billy Yank could be seen on the Civil War battlefield, he could be hit. One soldier serving with the Confederate Army of Tennessee wrote a friend back home: "Yesterday we tried [a rifled musket] against a Sharps rifle and it beat it both in range and accuracy. The distance being 1200 yards. A day or two ago three of us shot at a buoy [at a range of] 900 yards. My ball [rifled musket round] grazed it and the other two did not miss it [by] more than six inches. The buoy was not larger than my leg. Don't you think that is good."[20]

The battle report of Brig. Gen. Alpheus Baker lends credence to the rifled musket's effectiveness during actual combat. Baker commanded a Confederate brigade in the May 27, 1864, battle at New Hope Church, Georgia. Afterwards he stated: "Immediately after the repulse the enemy opened a heavy and destructive fire upon the left of my line, held by the Thirty-seventh Alabama Regiment [apparently armed with smoothbore muskets], Lieutenant Colonel Greene. With heroic fortitude did these men for an hour and a half sustain this fire, returning it deliberately with Austrian rifles, with which they endeavored without effect to silence the enemy batteries. I sent to their relief the Fifty-fourth Alabama Regiment, and a small detachment armed with Enfield Rifles [rifled muskets], whose greater range disturbed the aim of the enemy's guns and greatly

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[20] Ibid.

diminished the effect of their fire. The Thirty-eight Georgia Regiment, also armed with Enfield Rifles, afterward gallantly came up, and at length the battery was silenced and driven off."[21]

The standard infantry weapon of Minie's day was a smoothbore musket, virtually little more than a pipe with a trigger and a firing mechanism attached to a shoulder stock. The infantryman loaded his weapon by pouring gunpowder down the musket's barrel, tamping the gunpowder down with a long rod, and then adding a small, packed wad of cloth to hold in the powder. Next he added the musket ball, a one-ounce round sphere also tamped down with the long rod. This eighteen-step process[22] took over thirty seconds to accomplish.

When the infantryman fired his weapon, the expanding gases of the exploding gunfire forced the musket ball out of the barrel. It is at this point that the problem with the accuracy of the smoothbore musket began. As the musket ball left the barrel, whatever side of the barrel it touched last gave it a spin in that direction. Much like a curve ball, the musket ball's spin imparted a distinct direction of flight. But, unlike the well-practiced curve ball, the direction of flight could not be predicted.

Various Civil War authors hold different opinions on the effective range of the smoothbore musket. One oft-quoted source, Jack Coggins, contends that the smoothbore was not very effective after 50 yards.[23] Paddy Griffith stated that the

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[21] *Official Records*, XXXVIII, Pt. 3, 846.

[22] Griffith, *Battle Tactics of the Civil War*, 85.

[23] Jack Coggins, *Arms and Equipment of the Civil War* (New York, 1983), 38.

musket in the hands of trained troops was deadly at 200 yards.[24] Other sources give ranges that vary, but the majority agree with Coggins, who did his own research with British Army smoothbore muskets. Coggins's work showed that at fifty yards the smoothbore could put most of its shots into an eighteen-inch diameter circle, but at 100 yards the eighteen-inch circle widened to three or four feet. Statistically, that meant a man-sized target presenting a two-foot wide exposure at chest height would be missed by every second round fired at him. The accuracy dropped off in geometric proportion as the range to the target increased. When Coggins fired at a target 11.5 feet high and six feet wide, he could not get one in ten rounds to hit it. As shown in Figure 4[25] an attacking soldier 200 yards from a defender equipped with a smoothbore musket was safe except from the occasional stray round. Such was not the case if that defender was armed with a rifled musket.

Minie removed the curve-ball effect by putting a point on one end of the conical shaped bullet. This innovation of Minie's evolved into the famous "minnie ball" of the Civil War. When Minie's bullet was combined with a musket that had a rifled barrel, the two fused for a deadly combination. The "minnie ball" was loaded in a similar manner to the musket ball except no cloth wadding was necessary. The conical bullet was tamped directly onto the powder. This slightly changed the loading drill, and it became a simplified seventeen-step

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[24] Griffith, *Battle Tactics*, 146.

[25] Ibid., 38.

process.[26] This change in loading procedure reduced the loading time for a weapon from thirty to twenty-five seconds.

When a soldier fired the rifled musket, the force of gases from the exploding gunpowder expanded the soft lead cone at the base of the "minnie ball." The lead of the cone was forced into the spiral grooves --the rifling--of the musket. As the bullet began its trip out of the barrel, the lead in the rifled grooves gave the bullet a rapid spin on its long axis. It exited the rifled musket's barrel and literally screwed itself through the air. The bullet did the same thing when it encountered the soft tissues of the human body. The lateral spin made it a far more lethal projectile than the spinning musket ball, which occasionally caromed off its target.[27]

Muskets are just so much decoration unless the soldiers who fire them can be taught to bring them to bear on an intended target. Accurate marksmanship becomes more pronounced when that target is deliberately disrupting the infantryman's aim by firing back. Coggins provided the standard answer to the question of individual marksmanship. His research showed that a trained soldier armed with a British Enfield, a rifled musket, could hit a man-sized target

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[26] Griffith, *Battle Tactics of Civil War*, 85.

[27] Dr. Samuel David Gross, a U. S. Army surgeon in the Civil War, wrote a surgical and field hospital guide that clearly indicated the lethal effects of the rifled musket round. Writing on the subject of gunshot wounds, he explained that "the most formidable wounds of the kind are made by conical rifle and musket balls." He then specified that the former was far more deadly than the latter. "The old round ball is a much less fatal weapon than the conical, which seldom becomes flattened, and which has been known to pass through the bodies of two men and lodge in that of a third some distance off." Surgeon Gross further explained that the bone in a limb hit by a musket ball was likely to be a simple fracture that could be treated with removal of the ball and splinting of the limb. But, the bone in a limb hit with a conical round normally shattered requiring the limb to be amputated. *A Manual of Military Surgery: or Hints on the Emergencies of Field, Camp, and Hospital Practice* (Philadelphia, 1861), 62.

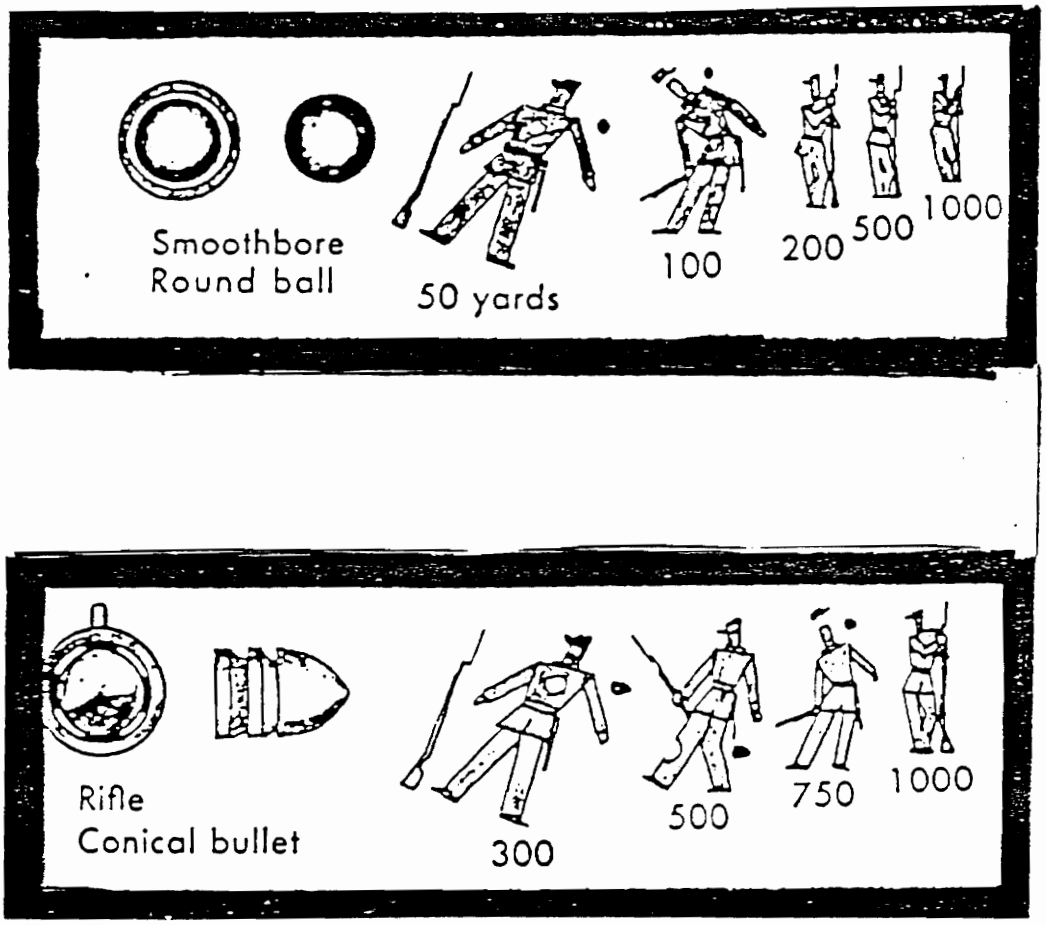

Figure 4. RANGE COMPARISONS

approximately 50 percent of the time at a distance of 500 yards. The operative word in Coggins' statement is "trained."

Both Coggins and Griffith pointed out that Civil War soldiers were rarely trained in marksmanship and that their ability to hit single targets on the battlefield was woefully inadequate. It seems that there was almost no time devoted to actual range practice. In addition, a search of ammunition requests and daily activities of soldiers indicates that no ammunition was allocated to marksmanship practice. Therefore, many recruits went into battle without having fired a single practice round.[28]

To the modern soldier this practice might seem ludicrous, but conservation of ammunition and public assets seems to have been a fundamental consideration among Civil War commanders. These are the same people who refused to accept the repeating rifle because they thought that it would lead to wasted ammunition. There is no room for doubt as to why pounds of lead were expended for each casualty. The irony of this situation is that the misguided attempts to save money by not "wasting" ammunition in target practice caused a great deal of waste on the battlefield.[29]

Although marksmanship practice with live ammunition rarely occurred in the Civil War, there was no lack of drill with the rifled musket. Live ammunition was not used because it was considered wasteful, but dry firing through the seventeen steps of loading and firing the rifled musket was common practice.

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[28] Coggins, *Arms and Equipment of the Civil War*, 39; Griffith, *Battle Tactics of the Civil War*, 86.

[29] Coggins, *Arms and Equipment of the Civil War*, 39.

Civil War soldiers repeated the drill until the movements became rote. Two reasons existed for this repetitive drill. First, weapons familiarity would turn the soldier into an automatic machine during the actual conflict of battle. Nothing could be more embarrassing to a soldier or detrimental to his health than to forget how to load his weapon in the heat of battle. Yet for all the drill, the inevitable happened: soldiers in the midst of battle misloaded their weapons.

Too often a soldier would load his weapon incorrectly, "fire it," and then load it again on top of the round and powder in the barrel. The end result of such mistakes was that the weapon either failed to fire or exploded when it did. The classic example of such behavior can be found in a study done after the battle of Gettysburg. Of 27,574 muskets collected after the battle, 24,000 were found to be loaded. Of that 24,000, half contained two or more charges. Six thousand were loaded with from three to ten rounds. One was supposedly found containing 23 loads, one on top of the other.[30]

It is at this point that the second reason for so much drill comes into play. To overcome the soldier's lack of marksmanship training and his tendency to misload his weapon, Civil War commanders used the time-honored technique of volley fire. The rifle drill taught to soldiers ended with the musket being "fired"

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[30] Fred Albert Shannon, *The Organization of the Union Army, 1861-1865* (Gloucester, Mass., 1965), 138. Shannon quoted a reliable army officer and T. T. S. Laidley's article in a January, 1865, issue of *United States Service Magazine*. With a suspicion born in VPI&SU's historiography seminars and nourished in various graduate courses at Virginia Tech, it seems virtually impossible to this writer that exactly 18,000 rifles had more than one charge in them. It seems equally difficult to conceive of twenty-three full rounds being found in the bore of one musket since the rounds are well over an inch and a half in length. After round number fifteen, the owner of the weapon would have experienced a great deal of difficulty in forcing his ram rod down the musket's barrel. While the Shannon-cum-Laidley's figures are suspicious, they can be put to some use to give an approximation of how many soldiers were not able to fire on their enemy because of misfires. Of the 158,000 soldiers at Gettysburg, 18,000 had weapons that misfired. These figures represent 11 percent of the soldiers on the field.

in unison at a designated target. Borrowed from the time of Gustavus Adolphus, volley fire was a successful technique that overcame poor marksmanship. Volley fire could be commanded at the company level with its 27-yard frontage or at the regimental level with its 300-yard frontage. Volley fire could be accomplished by having both ranks in a line of men fire at once or in a "repeating" style with the front rank firing followed by the back rank. Either way, it had an undeniably unpleasant effect on the enemy.

On the offensive, the attacker had only one opportunity to volley fire. That came when the unit was preparing to make its charge in the last fifty to seventy-five yards. On the defense however, soldiers could volley-fire numerous times. It took almost five minutes for the attackers to cross the killing ground in the 350-yard effective-range of the rifled musket. As illustrated by Col. Benjamin F. Scribner's account of his brigade's "repeating" style of defensive volley fire at the battle of Chickamauga, the defense had a great deal of advantage. "The second line closed up to the first and at the opportune moment the first line fired; then the second, which caused the enemy to fall back in haste and disorder, leaving the ground strewn with their dead and wounded. Three times the enemy made attempts to drive us from our position but were as often repulsed."[31]

The account of a soldier serving in the First Tennessee Regiment during the Georgia campaign gives an even more telling view of the effectiveness of volley fire. Recounting the battle that took place near New Hope Church, Georgia,

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[31] *Official Records*, XXX, Pt. 1, 287.

W. J. Worsham gives a view of volley fire from the Confederate side of the battleline.

> Cleburne had good breast works, with head logs, [behind] which the men lay quietly, waiting. As the enemy advanced, Cleburne held his fire and, but for the Confederate flags floating above the head logs, there was nothing to show that the ditches were not deserted. The enemy advanced slowly and with a firm step, expecting Confederate guns to open on them every moment. Yet when they were within a few yards of Cleburne's ditches everything seemed as still as death. No one, none but God, ever knew the fearful emotion of their souls, and with what trepidation of heart they now advanced. They could not but have known and doubtless felt that there was a Confederate gun (which was a fact), pointing with deadly aim at each and every man. Was this bravery? Then the Spartans must be laid on the shelf. Now they are only a few feet from the ditches, when there rang out from the stillness the command of Cleburne, "Now, men fire!". Like a flash of blinding lightning, with a peal of deafening thunder, there went up from under the head logs of Cleburne's works a volley that did its deadly work. But few who composed that front line returned. That volley laid down upon the ground more than one thousand men.[32]

The mighty rifled musket proved to be awesome on Civil War battlefields, especially when fired by volley fire.

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[32] W. J. Worsham, *The Old Nineteenth Tennessee Regiment* (Knoxville, 1902), 118.

CHAPTER III

A MODEL FOR DESTRUCTION

"My pen is unable to describe the scene of carnage that ensued in the next two hours. All that was necessary was to load and shoot."[33]

Chapters One and Two have shown that an evolutionary process was occurring in both battlefield tactics and the standard weapon of the infantry. On the battlefield that change was exemplified in maneuvers that yielded longer, thinner lines of attackers. In the soldiers' weapon the difference was noted by a musket that was only slightly more easy to load than its predecessor, but yielded five-fold increase in range. These two changes, taken separately, were not that

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[33] Sam R. Watkins, a soldier in the 1st Tennessee Regiment, describing the effects of the rifled musket defense on "Hurrah!" tactics at the battle of Kennesaw Mountain. *"Co. Aytch," Maury Grays, First Tennessee Regiment, or a Side Show of the Big Show* (Nashville, 1882), 158.

remarkable; they were simply attempts to make existing systems better. Yet their combination on the Civil War battlefield produced a revolutionary result.

To make use of the striking power of the musket, the line of attacking infantry had to be lengthened.[34] It no longer made sense to send infantry forward in a compact mass, because the soldiers in the midst of the mass could not effectively return fire. Adolphus had discovered that the answer was to spread out the line, lengthwise, opposed to the defense. Because of improvements made in the ease of loading weapons, plus a good deal of common sense, Napoleon had made the line even thinner and longer.[35] Napoleon's tactics had been applied with a great deal of success in America's war with Mexico, where a line of American soldiers two ranks deep had overwhelmed the Mexican defenders.

As the line lengthened across the battlefield to give it more firepower to the front, it lost two very important characteristics: a great deal of the penetrating power associated with a mass formation and, more importantly, the ability to absorb fire from the defenders. Commanders on Civil War battlefields were caught in a deadly paradox. When they attacked, they had to have a shock effect on the defenders to be successful. To get that shock effect, the attacking commanders had to thin their lines to allow their men to volley fire. But the evolutionary change of the range of the musket meant that attacking commanders could not get their thin attacking line in shock effect range of the defenders.

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[34] Michael Roberts, *Essays in Swedish History* (Minneapolis, 1967), 196.

[35] Jones, *The Art of War in the Western World*, 349.

Simply stated, the attackers were killed faster than the thin-line tactics of their commanders could bring them to bear.

It now made no difference how well men were led, or if they thought their cause was just and that they had God on their side. As long as the soldiers in the defensive position being attacked were armed with rifled muskets, the attackers were virtually doomed to failure by simple mathematical inevitability.

In the list of forty major Civil War battles shown in Table One, only ten were clear tactical victories for the attacker.[36] These victories were won on the battlefield during the battle when the attacker forced the defender from his position. The list of victories does not include battles where either the attacker or defender left the battlefield at a later date and their opponent claimed victory. For instance, Antietam is often claimed as a victory for the Northern attackers. But in Table One, it is shown as a victory for the defenders because the South was not forced from the battlefield during the battle.

Of the ten victories that are shown in Table One, all were won through sheer inequity in the ratio of attackers to defenders, or to a mistake made in the tactical formation of the defense. The battle of Nashville is an example of the first type. At Nashville the North outnumbered the South, 60,000 to 22,000. The Southern defenders were defeated when the Northern attackers bent back the Southern flanks and got in the Confederate rear.

The fighting at Chattanooga is illustrative of a battle where the defenders lost because their commanders made grave errors. The Confederate commander

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[36] These battles that had combined casualties of over 1,000 men.

at Chattanooga, Braxton Bragg, deployed his defending forces in two halves. One half was posted at the bottom of Missionary Ridge, and the other half was at the top. In addition, the defensive positions at the top of the ridge were along the crest of the ridge and were unable to fire down the ridge's long slopes. Since they were at the crest of the ridge and unable to see over its edge, the position allowed the defenders only a 25-yard field of fire.

Had the defensive position been placed farther down the ridge, the defenders would have been able to make effective use of their rifled muskets' 350-yard range. The defenders at the base of the ridge were forced from their positions by the attacking Federals. The two forces became intermixed as the Confederates raced for the safety of the trenches at the top of the ridge with the attacking Federals in close pursuit. The Southern soldiers at the top of the ridge could not fire for fear of hitting their own men and were overwhelmed when the confused mass of Confederates and Federals came into view.

Gaines's Mill is the only battle in the Civil War where the offense has been reputed to have been able to overcome the defense by using "Hurrah!" tactics, but even it is questionable. At a critical moment during the battle, Union cavalry charged through the Federal line and disrupted what up to that time had been a solid defense. Confederate soldiers were able to take advantage of the rupture and gain victory.[37]

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[37] Herman Hattaway and Archer Jones, *How the North Won, a Military History of the Civil War* (Urbana, 1983), 196.

The results of these battles and the casualty figures they produced leads to the irrefutable conclusion that the attacker who used "Hurrah!" tactics to attempt to defeat the rifled musket defense was doomed.

As Appendix One shows, it took only two rounds from a defending file of infantry to strike the opposing file of attackers to bring the attack to a grinding halt. Civil War marksmanship was atrocious; but as the ranks of the defenders became deeper, rounds fired at the attacker rose in a proportion that could overcome bad marksmanship. In other words, the certainty of a defender's round striking home on a attacker rose directly in proportion to the number of rounds the defenders fired.

TABLE ONE: MAJOR CIVIL WAR BATTLES AND THEIR RESULTS

BATTLE	*ATTACKER WINS*	*DEFENDER WINS*
Atlanta		X
Antietam		X
Arkansas Post		X
Bentonville		X
Cedar Mountain		X
Champions Hill	X	
Chancellorsville	X	
Chattanooga	X	
Chickamauga		X
Chickasaw Bayou		X
Cold Harbor		X
Cornith		X
Dalton		X
Ezra Church		X
Fair Oaks	X	
Fort Donaldson	X	
Franklin		X
Fredericksburg		X
Gaines Mill	X	
Gettysburg		X
Kennesaw Mountain		X
Malvern Hill		X
First Manassas		X
Second Manassas		X
Mechanicsville		X
Mine Run		X
Murfreesboro		X
Nashville	X	
New Hope Church		X
Oak Grove	X	
Pea Ridge		X
Perryville	X	
Resaca		X
Savage Station		X
Shilo		X
South Mountain		X
Spotsylvania		X
White Oak Swamp		X
Wilsons Creek	X	
Wilderness Creek		X

The battle of Kennesaw Mountain during Sherman's Georgia campaign tells the story for all such attacks, where brave men using "Hurrah!" tactics were doomed by the rifle musket defense. Fenwick Y. Hedley, an adjutant in Sherman's army, recounted the grim spectacle that took place on the mountain side at Kennesaw:

> Early after breakfast three guns gave the signal for the advance, and our assaulting columns dashed from under cover. The enemies' batteries opened with grape and canister, and over their heads the Union gunners poured answering volleys.
>
> On went the blue lines at a keen run, passing through the rifle pits of our skirmishers. Still on they pressed at a rapid pace, firing scarcely a shot, reserving all their energies for the supreme effort. They ran over the rifle pits of the enemies' skirmishers without a thought of the fleeing occupants. Their goal was five hundred yards further on. And then, from the light red line of earth came a storm of lead which, united [with] the volleys of the artillery on either flank, bore down countless scores. At each pace of their magnificent advance men dropped mangled or dead. None stopped to see who had fallen--neither looking to the right or left they instinctively sought one another's side, closing up the gaps and continuously shortening the line but resolutely pressing on. The only instinct left was that of destruction.
>
> And now they come across abatis in front of the enemies' position reaching up the steep ascent of the foothill of Kennesaw Mountain. The men tore through, climbed over and under the entangling treetops and the twisted vines as best they could. It was slow and painful work. From front and flanks came a fire of musketry, tenfold fiercer than before and every missile that artillery could throw. Our lines were irretrievably crushed, and men sought such shelter as the ground afforded. Afterward they fell back and occupied the enemies' late skirmish line.
>
> Other assaults were made and all failed."[38]

Stand-up linear tactics started to die when rifled muskets and conical bullets were introduced to warfare. It would take the 1916 debacle of the Somme with its one-day casualty figure of 60,000 to make commanders understand that courage and men's soft skin were no match for a weapon that could kill them

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[38] F. Y. Hedley, *Marching Through Georgia: Pen-Pictures of Every-Day Life* (Chicago, 1890), 125.

faster than they could mass to charge. When the incredible casualty figures of World War I killed off "Hurrah!" tactics, the replacement was tactics proven successful by Sherman in his Georgia campaign.

CHAPTER IV

PLANS AND PROBLEMS

"General Sherman is a trump and makes things move."[39]

The trust, confidence, and friendship Generals William T. Sherman and U. S. Grant had for each other is a well-established fact. Because they had confidence in each other at both a professional and a personal level, they could be separated by hundreds of miles and not question each other's activities. This attribute was incredibly important when competition for limited personnel assets began to affect the type of tactics that Sherman could employ in his campaign. It was also vitally necessary when Sherman began to disobey his orders from Grant. Grant's and Sherman's friendship was based on hard times, military

[39] *Official Records*, XVII, Pt. 2, 441.

victories and defeats, and ugly rumors. It is necessary to understand that friendship to understand why Sherman was able to do the things he did.

In March, 1864, U. S. Grant, journeyed to Washington to become General-in-Chief of the Federal armies. On the 18th of that month,[40] his trusted friend and subordinate, William T. Sherman, replaced Grant as commander of the Military Division of the Mississippi. This realignment allowed a plan to be set in motion that would mean the end of the Confederacy.

By today's terms, Sherman would be a classic Type "A" personality. Constantly in motion, he always seemed to be lost in thought. That overactive mind failed him in the early months of the Civil War. Faced with more responsibility than he could handle, Sherman apparently suffered a nervous breakdown. His commander, General Henry Halleck, ordered him home. Sherman's health, Halleck stated, "was somewhat shaken by long and severe labor[,] and his nervous system was somewhat shaken by continuous excitement and responsibility."[41]

Less than three weeks later, Sherman returned to his duties. Halleck voiced concern that Sherman had returned too soon, but welcomed him back. Such support strengthened the relationship between the two generals.[42] Sherman gave his superior no further cause for concern over his health.

In his *Memoirs,* Sherman presented a partial defense of his actions by stating, "I received no orders, no reinforcements, not a single word of

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[40] Ibid., XXXII, Pt. 3, 87.

[41] *Official Records,* LIII, 441.

[42] Ibid., 514.

encouragement or relief."[43] He also wrote that his treatment by the press and the Secretary of War was cruel, "but I saw and felt, and was deeply moved to observe, the manifest belief that there was more or less truth to the rumor that the cares, perplexities, and anxieties of the situation had unbalanced my judgement and mind."[44]

Rumors of insanity continued to haunt Sherman. Whenever he made a mistake, the press was quick to point out that Sherman had once been "ordered home." This problem with the press led to a relationship with the media that was to devil Sherman throughout the Civil War.

Grant had also been the subject of ugly rumors, but his problem was not mental. It was alcohol. Grant would be classified today as a classic alcohol abuser, but he was certainly not an alcoholic who drank constantly. When he was bored or lonely, he turned to alcohol for relief. Grant's alleged excessive use of alcohol, combined with his military mistakes at Belmont and Shiloh, caused the press to use him as it had used Sherman, i. e., as an attention-gaining headline.

After the pressure against him mounted, Grant prepared to resign his commission. Sherman reasoned with him. "I have stood by Grant in his days of sorrow," Sherman wrote his wife in October, 1863. "Not six miles from here [Corinth], he sat in his tent almost weeping at the accumulated charges against

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[43] Sherman, *Memoirs*, I, 205.

[44] Ibid., 214.

him by such villains as Stanton in Ohio, Wade and others. He had made up his mind to leave for good. I begged him and he yielded."[45]

One of Sherman's most famous quotes resulted from this friendship. At Grant's funeral, a reporter asked Sherman why he and Grant had been such good friends. Sherman responded that Grant had stood by him when he was crazy, and he had stood by Grant when he was drunk.

Sherman and Grant had an additional basis for their friendship. They had worked together on one of the most difficult military campaigns of the Civil War, the conquest of Vicksburg. For eight months, they had attempted maneuvers and schemes to force the surrender of the Confederate Gibraltar. All had failed. With each attack, they learned from their mistakes. Their friendship grew stronger at the same time. By the time Vicksburg fell in July, 1863, they had developed a closeness that would become the most devastating offensive general-officer combination the North would produce.

In March, 1864, as Grant was on his way to Washington, Sherman accompanied him to Cincinnati. There the two most powerful men in the Union Army discussed "preparations for the great events then impending."[46] In the parlor of a local boarding house, Grant and Sherman planned the first coordinated strategy between the Eastern and Western theaters. It was a strategy that would end the Confederacy's ability to shift forces back and forth from Virginia to other fronts in the war and meet Federal pressure wherever it

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[45] William T. Sherman, *Home Letters of General Sherman* (New York, 1909), 279.

[46] Sherman, *Memoirs*, II, 26.

increased. For the first time, force would be applied at the same time on both fronts.[47]

On April 4, 1864, Grant sent Sherman the first set of orders for a campaign that literally marched its way into the history books. Grant told his friend: "It is my design, if the enemy keep quiet and allow me to take the initiative in the spring campaign, to work all parts of the army together and somewhat toward a common center."[48] Grant also told Sherman of his plans to take personal command in Virginia against General Robert E. Lee and the Army of Northern Virginia. He then gave his trusted subordinate all the guidance Sherman was going to get for their operation. "You I propose to move against Johnston's Army, break it up, and to get into the enemies country as far as you can, inflicting all the damage you can against their war resources. I do not propose to lay down for you a plan of campaign, but simply to lay down the work it is desirable to have done, and leave you free to execute in your own way."[49]

This communique raised questions in Sherman's mind. The overall order was contradictory. It assigned Sherman two major missions: destroy Johnston's army and damage the war resources of the South. At this point, the trust and confidence Grant and Sherman had for each other came into play. Sherman liberally interpreted his orders and did not specifically obey them. In the ensuing campaign, the Army of Tennessee bent but never broke.

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[47] S. M. Bowman, *Sherman and His Campaigns* (New York, 1865), 168. Copy annotated by Sherman in preparation for re-publication, Northwestern University.

[48] *Official Records*, XXXII, Pt. 3, 245.

[49] Ibid.

Sherman's disobedience of his orders should not be overlooked, for it was crucial to the success of his campaign. Grant's idea of "break it up" was based on attrition warfare and "Hurrah!" tactics. Grant would employ those tactics against Lee and take 50,000 casualties in the first six weeks of his Virginia campaign.

Sherman could not afford to take such losses. Hence, he focused his efforts on the second portion of his order from Grant: damaging the war resources of the South. The physical objective Sherman had in mind was Atlanta. Sherman had said earlier in the war, "Atlanta, Atlanta, this whole damned war I've been fighting Atlanta." He now would have the opportunity to destroy the manufacturing center and railroad hub of the deep South. Sherman realized that, to do so, he had to defeat one of the best generals that the Confederacy had. Joseph E. Johnston was well known as a superb defensive tactician.[50] Johnston had spent months in turning northwest Georgia into a vast defensive position.

Compounding Sherman's tactical problem were two ancillary non-tactical issues. The first was the question of personnel; the other, logistics.

Sherman's concern that he would not have enough men to accomplish his mission is a recurring theme in his correspondence. None of his dispatches is more telling than a June 13, 1864, message he sent to General Halleck: "We cannot risk the losses of an assault at this distance from our base."[51] As Sherman's message indicated, he was not going to be able to use standard assault tactics

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[50] General U. S. Grant also maintained a high opinion of Johnston. To a Southern clergyman he later said, "Bishop, when I heard your government had removed Johnston from command, I was as happy as if I had reinforced Sherman with a large army corps." Richmond *Times-Dispatch*, Apr. 26, 1891.

[51] *Official Records*, XXXVIII, Pt. 4, 466.

because he was not getting the kind of support that he needed for them to be successful. Sherman stated in a handwritten note penned later: "I also reckoned that in the natural strength of the country, in the abundance of mountains, streams, and forests he [Johnston] had a fair offset to our numerical superiority, and therefore I endeavored to act with reasonable caution whilst moving in the vigorous offensive."[52]

It is a well-accepted fact that the personnel strength of the North was far greater than that of the South. The usual ratio given is about 4 to 1. Yet the North did not have an endless supply of soldiers leading from Northern doorsteps to the fire-steps of the battlefield.

One of the standard military maxims of Sherman's day was that it took three attackers to overwhelm one defender. The reason for this statistic is obvious from information already presented. Attackers would march in line, shoulder to shoulder, to within fifty yards of a line of defenders; then both sides would fire a volley. If the attackers were hit by the defenders' volley, as was usually the case, the first attacking line would absorb the fire and be struck down; but if the attackers had two or more lines available, they could close on the defenders and overwhelm them. At least that is the way commanders thought.

Johnston had 45,000 men at his disposal when the Georgia campaign began, and that strength rapidly rose to approximately 60,000 Confederates. Sherman, according to the accepted military theory of the day, would need 180,000 men to "move against Joe Johnston's army [and] break it up . . . "

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[52] Sherman Collection, Library of Congress.

Sherman was never able to reach this theoretical strength. He had to be satisfied with approximately 100,000 troops when the campaign began. He would have only 80,000 present for combat, the other 20,000 being necessary for logistic and guard functions.[53]

Sherman had few solutions for his personnel problem. First, he began to strip the military division he commanded of all available personnel. Within the military division that he commanded, there were numerous operations underway. Sherman put them into a defensive posture to conserve personnel and supplies. In doing so, he focused the whole attention of the war in his area on one offensive mission--the one with which he was directly involved. In an April 11, 1864, message to a subordinate in command along the Mississippi, Sherman stated his problem with both men and supplies. "The Mississippi must in the mean time be left on the defensive,"[54] Sherman announced, until he could destroy Atlanta.

How to protect his tenuous supply line back to his bases at Chattanooga and Nashville was another critical problem. Sherman was not going to be able to obtain the required three-to-one advantage in attackers to defenders. To make matters worse, the farther he got into Georgia, the more men he was going to have to detach to protect his ever-lenghtening supply line. He had to use almost 1,500 soldiers to ride trains to protect the supply line just from Nashville to Chattanooga. An additional six regiments and three artillery batteries had to be spread out at critical points along that route to defend it. Sherman complained:

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[53] Sherman, *Memoirs*, II, 23-24.; *Official Records*, XXXVIII, Pt. 4, 274.

[54] *Ibid.*, XXXII, Pt. 3, 326-27.

"I am fully aware that these detachments weaken me in the exact proportions that our enemy has gained strength by picking up his detachments."[55]

The amount of men Sherman had to use to protect his supply line increased the farther he got into enemy territory. In his *Memoirs* he detailed the lengths to which he had to go to insure that his supply line stayed open. "We had however to maintain strong guards and garrisons at each important bridge or trestle--the destruction of which would have necessitated time for rebuilding. For the protection of a bridge, one or two block-houses, two stories high, with a piece of ordnance and a small infantry guard, usually sufficed. The block-house had a small parapet and ditch about it and the roof was made shoot-proof by earth piled on . . . many of these block-houses successfully resisted attacks by both cavalry and artillery."[56]

The last restriction with which Sherman had to contend was the fact that he was not going to receive adequate replacements for his combat losses. In a striking series of messages in May, 1864, with Secretary of War Edwin Stanton, it became clear that Sherman's campaign was not the primary focus of the Federal war effort. The war being fought closer to Washington held Federal authorities' attention.

Stanton informed Sherman that he was going to receive 20,000 state militia rather than the volunteer infantry or U. S. regulars that he had requested. Sherman realized that the poorly trained state militia were the bottom of the

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[55] Sherman Collection, Library of Congress; *Official Records*, XXXVIII, Pt. 1, 61.

[56] Sherman, *Memoirs*, 399.

barrel in infantry forces. Stanton's message was clear that the first-rate replacements available were being sent to Grant in Virginia.

In a telegram sent on May 14, Stanton told Sherman of the hard fighting in Virginia and added: "We are sending forward reinforcements to Grant." Less than a week later, Stanton informed Sherman that veteran re-enforcements to the number of 27,000 had been forwarded to General Grant, their places being taken by new troops from Ohio. It is obvious that Stanton was stripping Union forces away from other theaters of war and sending them to Grant. The fact that he was replacing them with green, untried men indicated that the attrition tactics Grant was employing had gotten Federal forces into a difficult position.[57]

The next message in the series informed Sherman that the promised 20,000 militia would be slow in coming and that only Ohio was prepared to send her share of 5,000 men. By May 22, Sherman's patience was at an end. He informed Stanton that he would personally appeal to the state governors, "asking them to cover our communications while we were in the heart of Georgia."

Sherman, realizing that he was not going to get all the personnel he needed, decided to make do with what he had. The poorly trained and green militia could not be used effectively in the hard fighting that was surely going to take place in Georgia. However, they could be used to free infantry units from garrison and guard duty on Sherman's line of communication. Stanton's last message to

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[57] *Official Records*, XXXVIII, Pt. 4, 173, 261.

Sherman on this subject informed him: "Our army [Grant's Army] has been strongly reinforced."[58]

The wording and impact of Stanton's messages was not lost on Sherman. Sherman's political superior considered the army of Grant to be "our" army, that is, the government's army. The Federal force Sherman was leading into Georgia was "your" army. "Our" army got first choice on re-enforcements, while "your" army had to make do with what was left.

The lack of replacements and Stanton's actions placed Sherman in a difficult position. While the Secretary of War was denying him re-enforcements, President Lincoln was putting Sherman under pressure to take Atlanta for political reasons.

A different outcome for the Civil War might have resulted if Sherman had used the tactics of his superior in Virginia. Had Sherman obeyed his orders to the letter to destroy Joe Johnston's army, the only way he could have done so was to use Grant's attrition warfare. The resulting "Hurrah!" tactics would have led at best to a stalemated battle in north Georgia and at worst to tremendous casualties. Atlanta would not have been taken in time to give Lincoln's re-election campaign the boost it needed for success.[59]

In May, 1864, Lincoln sent Gen. Daniel Sickles to Georgia to obtain Sherman's opinion whether Atlanta could be seized before the November

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[58] Ibid., 294, 331.

[59] Grant acknowledged that the outcome of the Georgia campaign was crucial to the Federal war effort. "Anything that could have prolonged the war a year beyond the time it finally did close, would probably have exhausted the North to such an extent that they might have abandoned the contest and agreed to a separation." U. S. Grant, *Personal Memoirs of U. S. Grant* (Cleveland, 1952), 384.

election. Sickles reported, "if Georgia cannot be defended on its northern frontier it cannot be defended anywhere."[60] Yet he thought that Sherman could take Atlanta.

The fighting, tremendous losses, and lack of victories in Virginia were dragging down Lincoln's reputation. Sherman observed: "A presidential election then agitated the North, Mr. Lincoln representing the national cause and General McClellan had accepted the nomination of the Democratic party, whose platform was that the war was a failure and that it was better to allow the states to go free to establish a separate government, whose corner stone was slavery. Success to our arms at that instant was therefore a political necessity; and it was all-important that something startling in our interest should occur before the election in November."[61]

Sherman expressed his reservations concerning his difficult personnel situation in a June 30, 1864, letter to his wife. Sherman had lost the battle at Kennesaw Mountain just three days earlier. He realized that he could not afford to waste more men in ill-fated "Hurrah!" attacks. "I think we can whip his army in fair battle, but behind the hills and trunks our loss of life and limb on the first assault would reduce us too much; in other words, at this distance from home we cannot afford the terrible losses of such terrible assaults as Grant has made."[62]

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[60] Ibid., 215.

[61] Sherman, *Memoirs*, II, 109-10.

[62] Sherman, *Home Letters*, 300.

Unable to get the men necessary to use the tactics he had been taught, and fully conscious that the political fate of the nation hung in the balance, Sherman resolved to fight a different type of war. "Uncle Billy" was going to let maneuver and spade work do a great deal of his fighting for him.

CHAPTER V

THE MATTER OF MATERIAL

"When we move we will take no tents or baggage, but one change of clothing . . . ; five days bacon, twenty days bread, twenty days salt and sugar and coffee; nothing else but arms and ammunition . . . "[63]

Sherman faced another major non-tactical problem in addition to the problem of personnel. When he assumed command of the Military Division of the Mississippi in mid-March 1864, the logistics situation in the division was in a shambles. Therefore, Sherman had to plan a campaign into Georgia while at the same time attempting to rectify three years of material mismanagement.

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[63] *Official Record*, XXXII, Pt. I, 323.

In his direct and concise way, Sherman simultaneously attacked the problem from both ends. Not only would he garner control of the major means of moving material in his Division, which stretched from the Allegheny Mountains to the Mississippi River, but also he would insure that there was less to move.

Sherman, like most commanders in the Civil War, realized that the key to moving men and material was the railroads. Even though the War was three years old, this vital means of transportation was still in the hands of civilian commercial authorities. Sherman was frustrated to find that in the area for which he was responsible, virtually all of mid-America and the deep South, routine public commerce many times took precedence over urgent military supplies. Consequently, much needed war material piled up at the major logistics depots in Cincinnati and Nashville and was unavailable for the upcoming campaign.

By early April 1864, Sherman had been frustrated for two weeks by the problem of getting supplies to where they were needed. Sherman was ready to take action. Unable to deal with the conflicting and various commercial agencies controlling the railroads, he militarized them. On April 2, Sherman informed the Secretary of War of his difficulties with material management and transportation. He told Stanton that his problem was controlling trains and rolling stock. In that message, Sherman also provided Stanton with a solution: militarize all the railroads in the Military Division of the Mississippi.[64]

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[64] *Official Records*, XXXII, Pt. 3, 220.

Stanton telegraphed Sherman the same day: "You are authorized by the President to take military possession of the railroads within your command to the exclusion of all other business, when in your opinion the service requires such exclusive use."[65] Although there was a hue and cry from the railroad owners, echoed by the press,[66] Sherman remained undeterred.

Having gained control of the primary means of transportation in the area, Sherman moved to insure that this invaluable material asset was correctly controlled. In a message sent April 6, Sherman asked the Quartermaster-General and the Commissary-General of Army to consolidate their material efforts in Sherman's area. These two War Department offices competed for necessary transportation assets. By consolidating their efforts, they could preclude half empty trains and overcrowded warehouses. Sherman's message also asked that one officer be appointed to perform the overall function of managing material in his military division. Sherman's creation of the position of a logistics "czar" set the stage for the modern-day G-4 (Logistics) Officer on a General Staff.

The Quartermaster and Commissary Generals were M.C. Meigs and J. P. Taylor, respectively. Meigs answered for both in a message sent to Sherman the next day. They were in accord with Sherman's radical suggestion and

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[65] Ibid.

[66] Sherman's war with the press is one that he on occasion lost, but this was not one of them as the following statement shows, "What the commanding general does discourage is the maintenance of that class of men who will not pick up a musket and fight, but follow an army to pick up news for sale, speculating upon a species of information dangerous to the army [and] to our cause." *Official Records*, XXXVIII, Pt. 4, 272.

recommended an officer who they thought could do the job. Thus, General Robert Allen became the first true material logistics officer.[67]

Sherman sent Allen a welcome letter shortly after receiving the message from Meigs. In the letter, Sherman appointed Allen to be his chief of logistics and ordered him"to direct the course and accumulation of supplies, the distribution of means of transportation, and all details purely pertaining to your department."[68]

Allen was only part of the answer to Sherman's problem of managing material. Sherman had three armies under his control to make the attack into Georgia. In addition, he had a large cavalry component that was also a contender for supplies. It was customary for the quartermaster and commissary officer of the senior command to handle logistics matters for the other armies and components. Therefore, that duty fell on the senior material officers in the Army of the Cumberland. This customary system left much to be desired in a supply competitive environment. The Army of the Cumberland got first choice, and the other armies shared what was left. Once the campaign began, it became obvious to Sherman that something had to be done to rectify the situation.

In a mid-June message to Allen, Sherman laid out the logistic problems of his army of almost 100,000 men. Those problems were accentuated by having only the Atlanta and Chattanooga railroad supply line back to Chattanooga. Sherman told Allen to find a quartermaster capable of consolidating all material

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[67] *Official Records*, XXXII, Pt. 3, 280.

[68] Ibid., 301.

requests from the three competing armies that were at that time deep into Georgia. The officer would be a member of Sherman's staff. Henceforth, supplies would be distributed on an equitable basis.[69]

With his transportation system under control and Allen coordinating logistics matters in the Military Division of the Mississippi, Sherman attempted to lessen the burden on the supply and transportation system. In a series of orders issued on April 10 - 11, 1864, Sherman told his subordinate commanders that they and their men must travel light for the upcoming Georgia campaign. His *Memoirs* provide some of the details of these "travel light" orders. His men were to shed themselves of all "incumbrances." He also ordered that, "officers and men were to carry on their persons food and clothing enough for five days. To each regiment was allowed but one wagon and one ambulance, and to the officers of each company, one pack horse or mule. Tents were forbidden to all save the sick and wounded, and one tent was allowed to each regiment to use as an office. . . . I set the example and slept under a fly tent."[70]

Sherman still faced the problem of the single main supply route that would connect him to his supply base at Chattanooga. In a letter to his brother, U. S. Senator John Sherman, he laid out his concerns for maintaining this tenuous supply line. He then explained that, "at any point an enterprising enemy with axes and spades [can] make across our path formidable works, whilst his sharpshooters, spies, and scouts, in the guise of peaceable farmers, can hang

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[69] *Official Records*, XXXVIII, Pt. 4, 515.

[70] Sherman, *Memoirs*, II, 15, 22.

around us and kill our wagonmen, messengers, and couriers." He also voiced his concern in a letter to his wife. Written on June 30, the letter pointed out Sherman's concerns on a number of issues and then stated, "I have only one source of supply."[71]

Sherman's understanding of the necessity of the railroad to the success of his Georgia campaign was explained at length in the final chapter of his *Memoirs*. He wrote that "the Atlanta Campaign would simply have been impossible without the use of the railroad from Louisville to Nashville--one hundred eighty-five miles--from Nashville to Chattanooga--one hundred fifty-one miles--and from Chattanooga to Atlanta--one hundred thirty-seven miles. Every mile of this 'single track' was so delicate that one man in a minute could have broken or moved a rail . . . ."[72]

The railroad's importance as a transportation means cannot be overstated. This importance was critical not only from the point of what it did, but also from what it prevented--the clogging of North Georgia's roads with 36,800 wagons. Sherman explained the railroad's necessity by writing:

> Our trains from Nashville forward were operated under military rules, and ran about ten miles an hour in gangs of four trains of ten cars each. Four such groups of trains daily made one hundred sixty cars, of ten tons each, carrying sixteen hundred tons, which exceeded the absolute necessity of the army, and allowed for the accidents that were common and inevitable. [The need for the services of logistics officer, like Allen, to control this logistics nightmare are abundantly clear.] But, as I have recorded, that single stem of railroad, four hundred and seventy miles long, supplied an army of one hundred thousand men and thirty-five thousand animals for one hundred and ninety-six days, viz, from May 1 to November 12, 1864.

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[71] Thorndike, *Sherman Letters*, 236; Sherman, *Home Letters*, 300.

[72] Sherman, *Memoirs*, II, 398.

> To have delivered that amount of food and forage by ordinary wagons would have required thirty-six thousand eight hundred wagons of six mules each, allowing each wagon to have hauled two tons twenty miles a day, a simple impossibility in roads such as existed in that region of country. I reiterate that the Atlanta Campaign was an impossibility without these railroads; and only then because we had the men and means to maintain and defend them, in addition to what were necessary to overcome the enemy.[73]

Sherman ensured that the rail line was both defended, and maintained. Trains carried the necessary personnel and tools to repairs any breaks. During the campaign, the numerous railroad bridges in North Georgia were targets for Confederate attacks, but Sherman's engineers could rebuild them almost as fast as they could be wrecked. The standard restoration period was a day.

Sherman's engineer officer, Colonel W. W. Wright, put forth an engineering effort that proved phenomenal. Confederates broke an eight-mile section of the railroad from Big Shanty to Acworth; they burned every tie and bent each of the rails. Sherman recorded that "the estimate of repairs called for thirty-five thousand ties and six miles of iron. Ten thousand men were distributed along the break to replace the ties, and to prepare the road-bed, while the regular repair-party, under Colonel W. W. Wright, come down from Chattanooga with iron, spikes, etc., and in about seven days the road was alright again."[74]

Sherman's massive engineering efforts confused and frustrated the Confederates to such a degree that the following story was commonly heard in the Federal camps. Two Rebels were observing the advancing Federals from the safety of the heights of Kennesaw Mountain. One said to the other: "Well the

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[73] Sherman, *Memoirs*, II, 399.

[74] Ibid., 151.

Yanks will have to git up and git now, for I heard General Johnston himself say that General Wheeler [commander of Confederate cavalry] had blown up *the tunnel* near Dalton and that the Yankees would have to retreat, because they could git no rations."

"Oh, hell!" said a listener, "don't you know that old Sherman carries a *duplicate* tunnel along."[75]

Even though Sherman had his rail line and logistics situation under control, he still faced the biggest challenge of the Campaign, to break-up Joe Johnston's army and get to Atlanta without being destroyed in the process.

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[75] Ibid.

CHAPTER VI

BOOTS AND SPADES IN THE ATTACK

"Sherman didn't fight f'ar"[76]

Military historians have differing opinions regarding William T. Sherman and his 1864 Georgia campaign. Some writers, such as Russel Weigley, are of the opinion that the campaign had a marginal effect on the outcome of the war and relegate it to the status of a giant raid. At the opposite end of the opinion scale is Liddel Hart who whote that it was brilliant, that it shortened the war, and that Sherman was a genius.[77] Although historians disagree over Sherman's ability and

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[76] From an interview with a Rebel prisoner of war conducted by one of Sherman's staff officers. F. Y. Hedley, *Marching through Georgia*, 112.

[77] For a complete analysis, see R. F. Weigley, *American Way of War* (New York, 1973); R. E. Dupuy and T. N. Dupuy, *Encyclopedia of Military History from 3500 B. C. to the Present* (New York, 1986); Archer Jones, *The Art of War in the Western World* (Urbana, 1987); B. H. L. Hart, "Foreword" to William T. Sherman, *Memoirs of General William T. Sherman* (Urbana, 1957); and B. H. L. Hart, *Sherman* (New York, 1958).

the importance of his operation in Georgia, they are in consensus that something unique in the history of warfare occurred in the 128 days from the beginning of the campaign in early May 1864, to the fall of Atlanta on September 2, 1864.

That uniqueness exists in reduced casualties figures for the attacking Federals, innovative engineering techniques, advanced intelligence planning, and, more importantly, final results.[78]

In inflicting this defeat on the Confederates, Sherman had to face odds that were not in his favor. He fought against a capable and well-supplied enemy, an enemy who was fighting over ground that he had had months to prepare. The campaign took place on the best defensive terrain Georgia had to offer. Further, Sherman was tied to a tenuous line of supply that was subject to be cut at his opponent's will. Yet he was successful.

Sherman's campaign has been thoroughly studied. "Maneuver" is usually given as the key ingredient to why Sherman succeeded. However, it is only a portion of the answer. Historians have generally overlooked the other part because it seems so obvious. Sherman forced his men, as will be shown, to use the spade to entrench offensively.

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[78] "Not that Sherman's maneuvers were bloodless but he reduced the loss of life to a minimum." Hedley, *March*, 130, The railroad was never more than four days behind the advancing Federal army. Sherman's engineers were able to rebuild the Chattahoochee River Bridge, 780 feet long and 98 feet high, in four days. Edwin Hagerman, *The American Civil War and the Origins of Modern Warfare* (Bloomington, 1988), 280, and picture caption fronting 79. Before Sherman attacked Georgia, he made a detailed analysis of the state's economic and population base. He did not expend his limited resources on targets of minimal economic or manufacturing value. His men were used to destroy those businesses whose loss would hurt the South's war effort the most. "I had obtained not only the U. S. Census Tables of 1860, but [also] a compilation made by the Comptroller of the State of Georgia for the purpose of taxation, containing in considerable detail the 'population and statistics' of every county in Georgia." Sherman Collection, Library of Congress.

The General's rationale for using maneuver, i. e., the boot leather of the infantry, and the spade to defeat the Army of Tennessee, destroy Atlanta, and subsequently split the deep South asunder, has not been examined. As has been shown, the "Hurrah!" tactics of the era were not successful in defeating a defense armed with rifled muskets. Sherman understood that. The reason for Sherman's use of the boot and spade seems rather commonplace in 1990, but in 1864 that use was not widespread. Simply stated, Sherman had made the connection between the effectiveness of the rifled musket and the failure of "Hurrah!" tactics to overcome that effectiveness. Not only had "Uncle Billy" made that connection, but he also was astute enough to develop a solution. Sherman never wrote: "I used maneuver and offensive entrenching to defeat the rifled musket." Yet the evidence makes that conclusion irrefutable.

Sherman may never have written that he had made the connection between entrenched lines defended with the rifled musket and the dismal failure of "Hurrah!" tactics, but some of his officers did. In a September 10, 1864, report, submitted only nine days after the fall of Atlanta, Maj. Gen. William B. Hazen wrote that there was a connection between the high casualties of "Hurrah!" tactics and the deadliness of the new musket. He indicated that there needed to be a change from stand-up frontal assaults, "since the accurate shooting rifle has replaced the random firing musket, since troops now when in position protect their persons by shelters against bullets, and since they can no longer be scared from the line [the entrenched defensive line], but see safety in maintaining it." Another one of Sherman's officers stated the deadly connection even more

bluntly. Maj. Gen. O. O. Howard reported: "My experience is that a line of works thoroughly constructed, with the front well covered with abatis and other entanglements, well manned with infantry, whether our own or that of the enemy, cannot be carried by direct assault."[79]

Sherman developed his predilection for the shovel midway in the Civil War. In late December, 1862, he had led a disastrous attack against the Confederate defenses at Vicksburg. Sherman had an attacking force of 30,000 to employ against 6,000 defending Rebels at Haynes' Bluff. Owing to a number of factors, primarily terrain and the defenders' rifled muskets, Sherman's men were defeated.[80] After this failure, Sherman changed his tactics when on the offensive. He had watched the piteous spectacle of his men attempting to dig with their hands for a measure of protection from the fire of the defending Confederates. In his report of the battle in his *Memoirs,* he wrote: "Meanwhile the Sixth Missouri Infantry had crossed the bayou . . . but could not ascend the steep bank. The men . . . actually scooped out with their hands, caves in the bank, which sheltered them, against the fire of the enemy, who, right over their heads, held their muskets outside the parapet vertically, and fired down. So critical was the position, that we could not recall the men till after dark and then only one at a time."[81]

Five months later, during the first major attack on the fortified defenses at Vicksburg, Sherman applied the lesson learned at Haynes' Bluff to save his men's

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[79] *Official Records,*XXXVIII, Pt. 3, 763; XXXVIII, Pt. 1, 199.

[80] Hart, *Sherman,* 157-66; Sherman, *Memoirs,* 285-96.

[81] Sherman, *Memoirs,* I, 292.

lives. The attack at Vicksburg was as dismal a failure as had been the one at Haynes' Bluff. Sherman's men, however, were able to give themselves a measure of protection, because in addition to rifles, they were equipped with shovels. Sherman wrote that "the Rebel parapets were strongly manned and the enemy fought hard and well. My loss was pretty heavy . . . and several . . . regiments were pretty badly cut up. We, however, held the ground up to the ditch till night, and then drew back only a short distance, and began to counter-trench. . . . our parapet was within less than fifty yards of the Rebel ditch."[82]

In a letter to his wife at about the same time, he elaborated on his reason for turning to the shovel on the offense. "The men were making roads and ditches to enable me to get close to the enemy's parapet without crossing within full view and fatal effect [from the the Confederates'] well prepared forts and trenches."[83] Sherman's offensive entrenching efforts became a portion of the basis for his later success.

Sherman's campaigns after Vicksburg contained numerous instances of spade work. The November 23, 1863, attack on the Confederate right at Missionary ridge involves offensive entrenching. Captain S. H. M. Byers wrote: "Spades were handed to many of us--we did not ask what for, we knew too well." Byers' statement gives weight to the conclusion that the shovel was a standard piece of equipment for the attack. Byers continued: "In half an hour we were up the opposite bank, creeping through the thickets, a shovel in one hand, a rifle in

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[82] Ibid., 325.

[83] Sherman, *Home Letters*, 262.

the other. Day light came, but it found us two thousand strong, intrenched in rifle-pits a mile in length."[84]

One of the officers who served with Sherman in the Georgia campaign gave another account of the use of offensive entrenching: "The men were as expert in the use of the spade and the ax as with the rifle, and two hours work made a fair protection."[85] Maj. Gen. James B. McPherson, upon whom Sherman relied to make a majority of the flanking movements in the campaign, had also made the connection between Sherman's desire for offensive spade work and battlefield success. In a July 4, 1864, report, McPherson wrote that he had "directed Dodge to strengthen his skirmish line, so as to make it almost equivalent to a line of battle, especially over rough ground . . . ."[86]

While the accounts of his officers and men give a great deal of credence to the proposition that Sherman used the shovel to defeat the rifled musket, Sherman's own words are far more telling. Accounts of offensive entrenching such as the one used in Chapter One are common in Sherman's writing.[87] The foregoing instances of which Sherman wrote were all during the war.

Far stronger evidence for Sherman's rationale to use the shovel as a part of the solution to defeat the rifled musket emerged in his later years. After he had had time to reflect on what he had done during the war, both his successes

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[84] S. H. M. Byers, "Sherman's Attack at Tunnel Hill," *Battles and Leaders of the Civil War*, III (New York, 1887-88), 12-13.

[85] Hedley, *Marching through Georgia*, 113.

[86] *Official Records*, XXXVIII, Pt. 3, 37.

[87] See *Official Records*, XXXVIII, Pt. 3, 37; Sherman, *Memoirs*, Vol. II, 56 and 67; Howe, ed., *Home Letters*, 262; Sherman's handwritten notes, Sherman Collection, Library of Congress.

and his failures, Sherman made plans to publish his memoirs in a revised edition. He reworked Volume I but never finished the changes in Volume II. The annotated edition of Volume I container two striking references to Sherman's enlightened thought on the use of the spade. In a hand-written note after the sentence, "We did not fortify our camps because we had no orders to do so," Sherman added the following in a dark script: " < !!!".

It may be Sherman planned to change the sentence to defend himself against what he in retrospect considered to be naive tactics, or perhaps he was just amazed that the defense in the early part of the war was so different from its final years. Either way, that annotation and the one following it regarding the same battle, Shiloh, provide evidence that Sherman knew entrenching was part of the answer to the rifled musket. On page 247, Sherman, in a dramatic hand as if to emphasize something to himself, underlined: "We had no entrenchments of any sort." He then added a bold "!".

Perhaps Sherman highlighted these two sentences to explain in full why entrenching was not used, or to reflect on how much easier it would have been to stop the Confederates if his men had been utilizing trenches. Perhaps recalling the two wounds that he had received during the battle at Shiloh, he wondered if he would have been unscathed if he and his men had been behind breastworks. In either case, the fact that Sherman singled out these two phrases for special attention requires the reader to give them the respect that they deserve. Sherman had a healthy respect for spadework.[88]

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[88] Sherman Collection, Northwestern University.

A third and equally conclusive piece of evidence is found in another work Sherman annotated for reissue. Colonel S. M. Bowman, one of Sherman's staff officers, wrote *Sherman and His Campaigns* during the war and published it in 1865. Sherman was never satisfied with the book and let his former subordinate know it in no uncertain terms. Bowman offered to let Sherman edit the study when it was re-published. Sherman agreed to do so and then used *Campaigns* to expound on the tactics he had learned fighting the Civil War. Regretfully, the work was never republished; however Sherman's working copy contains a notation in regards to offensive entrenching: "Therefore, the only way in which progress can be made is to leave a part [of the army] entrenched to hold the enemy where he is and move the remainder around by some other road to the rear of the enemy."[89]

Spadework certainly provided Sherman's men with protection from the fire of the rifled musket when they were checked on an attack. Yet it was the use of maneuver, the boot, that gave Sherman his large measure of offensive success. The General used maneuver in a novel fashion. As the map at Figure 5[90] shows, Sherman used a part of his army--a moiety--to hold the enemy in place while he sent another section of his army in search of a soft spot in the enemy's defenses. Usually he chose to advance his men against the Confederate line of supply or their line of retreat to Atlanta. He wrote: "I did that very frequently, at Dalton, at Dallas, and at Kennesaw, but at Atlanta I moved the whole army . . . . The

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[89] S. M. Bowman and R. B. Irwin, *Sherman and His Campaigns* (New York, 1865), 184. Copy annotated by Sherman, Northwestern University.

[90] Dupuy and Dupuy, *Encyclopedia of Military History*, 899. Annotated by the writer.

movement is always a delicate one, for the enemy being united forces a division of his adversary, and should attack one or the other. If acting offensively, he cannot whip either moiety, he is defeated, unless he is merely fighting to gain time. In an article on McPherson I state the principles well enough, viz: to leave a part exposed [unreadable word], inviting an attack by the enemy, aiming to inflict on him a superior loss, while the rest of the army is moving to some exposed and vital object or the line of retreat of the enemy. The whole movement from Chattanooga to Atlanta was composed of different phases of this game."[91]

[91] Ibid.

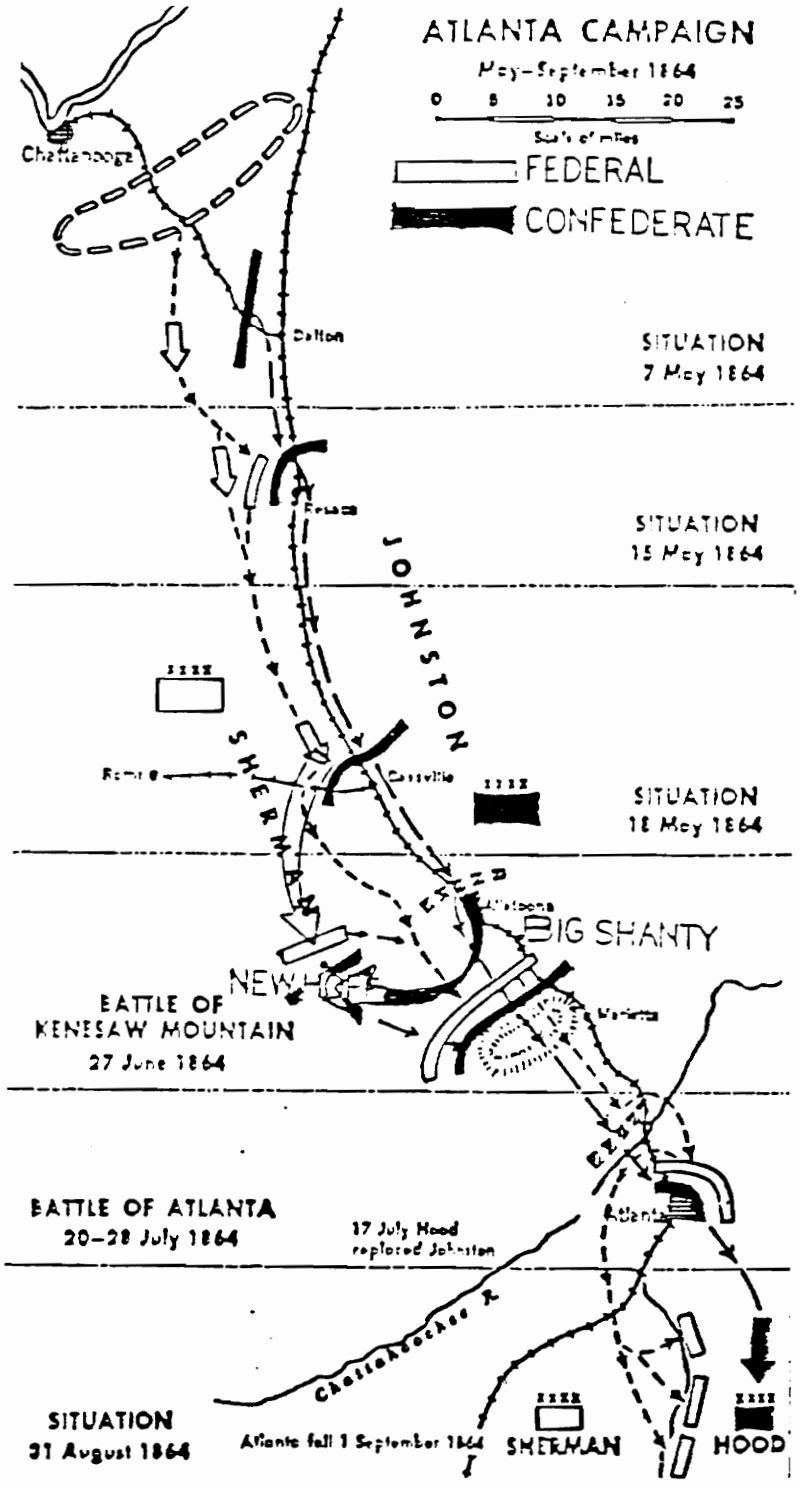

Figure 5. THE ATLANTA CAMPAIGN

CHAPTER VII

WILLIAM T. SHERMAN AND WARFARE BY MANEUVER

"We are now all in motion like a vast hive of bees . . . "[92]

Sherman's use of maneuver was not a tactical expedient he used when he was confronted with a hardened Confederate defense. He began the Georgia campaign with maneuver as a tactical step firmly lodged in his military repertoire. Long before the first Federal soldier left Chattanooga, he planned to use maneuver to defeat the defensive-minded Johnston. In an 10 April, letter to Grant, Sherman wrote "that we are now all to act in a common plan, converging on a common center, looks like enlightened war." Sherman assured Grant that

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[92] *Official Records*, Pt. 4, 299.

he knew that his mission was to "knock Joe Johnston and do as much damage to the resources of the enemy as possible." Sherman announced that, every time Johnston made a stand, he was going to send a portion of the Federal army against Johnston's line of supply, "according to developed facts." Sherman added that "Johnston is at all times to be kept so busy that he cannot in any event, send any part of his command against you . . . . "

Never did Sherman say that he was going to destroy Johnston's army by direct attack employing the "Hurrah!" tactics and attrition that Grant used a month later against Lee. What he stated, although not directly, was that he intended to use maneuver to defeat the Army of Tennessee and accomplish his mission.[93]

Figure 5 shows that Sherman did exactly what he set out to do with one costly exception: the attack at Kennesaw Mountain. Each time his enemy made a stand, Sherman attacked with a portion of his force and sent another part to attack Johnston's line of retreat or line of communication. But, at Kennesaw Mountain, Sherman attacked with his whole army and was soundly defeated.

The first battle of the campaign, at Dalton (see Figure 6),[94] set the stage for the rest of Sherman's actions in Georgia and can be used as an example of the tactics that the General would employ for the rest of the war. Sherman recorded in his *Memoirs* :

> We could plainly see the enemy in the gorge and behind it, and Mill Creek, which formed the gorge, had been dammed up making a sort of

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[93] *Official Records*, XXXII, Pt. 3, 313-14.

[94] Hattaway and Jones, *How the North Won*, 552.

> irregular lake, filling the road, thereby obstructing it, and the enemy's batteries crowned the cliffs on either side. The position was very strong and I knew that a general such as my protagonist (Jos. Johnston), who had been there six months had fortified it to the maximum. Therefore I had no intention to attack the position seriously in front, but depended on McPherson, to capture and hold the railroad to its rear, which would force Johnston to detach largely against him, or rather, as I expected, to evacuate his position at Dalton altogether. My orders to Generals Thomas and Schofield were merely to press strongly at all points in front ready to rush in at the first appearance of 'let go' and if possible to catch our enemy in the confusion of retreat.[95]

Sherman's orders to his subordinates were clear and precise. He told McPherson to take Resaca if possible. If it was not possible, he was to threaten the Confederate rear. "He [Johnston] can't afford to abandon Dalton for he has fixed it up nice for us and he observes we are close at hand waiting for him to quit. He can't afford a detachment strong enough to fight you, as his army will not admit of it. Strengthen your position [a combination of maneuver and the spade], fight anything that comes, and threaten the safety of the railroad at all times."[96]

Sherman's orders to his subordinates who were going to make the attack to hold the Confederates at Dalton were just as clear. To Maj. Gen. John M. Schofield he stated : "I do not want you to encounter field-works but to keep the enemy employed to give McPherson a chance." Later that same day, he sent another message to Schofield to insure that he understood the first directive. "I don't care about you pressing the enemy's works yet." Sherman told him, "Watch all movements closely and risk your command but little."[97] Sherman cautioned

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[95] Sherman, *Memoirs*, Vol. II, 32.

[96] *Official Records*, XXXVIII, Pt. 4, 138.

[97] *Official Records*, XXXVIII, Pt. 4, 98.

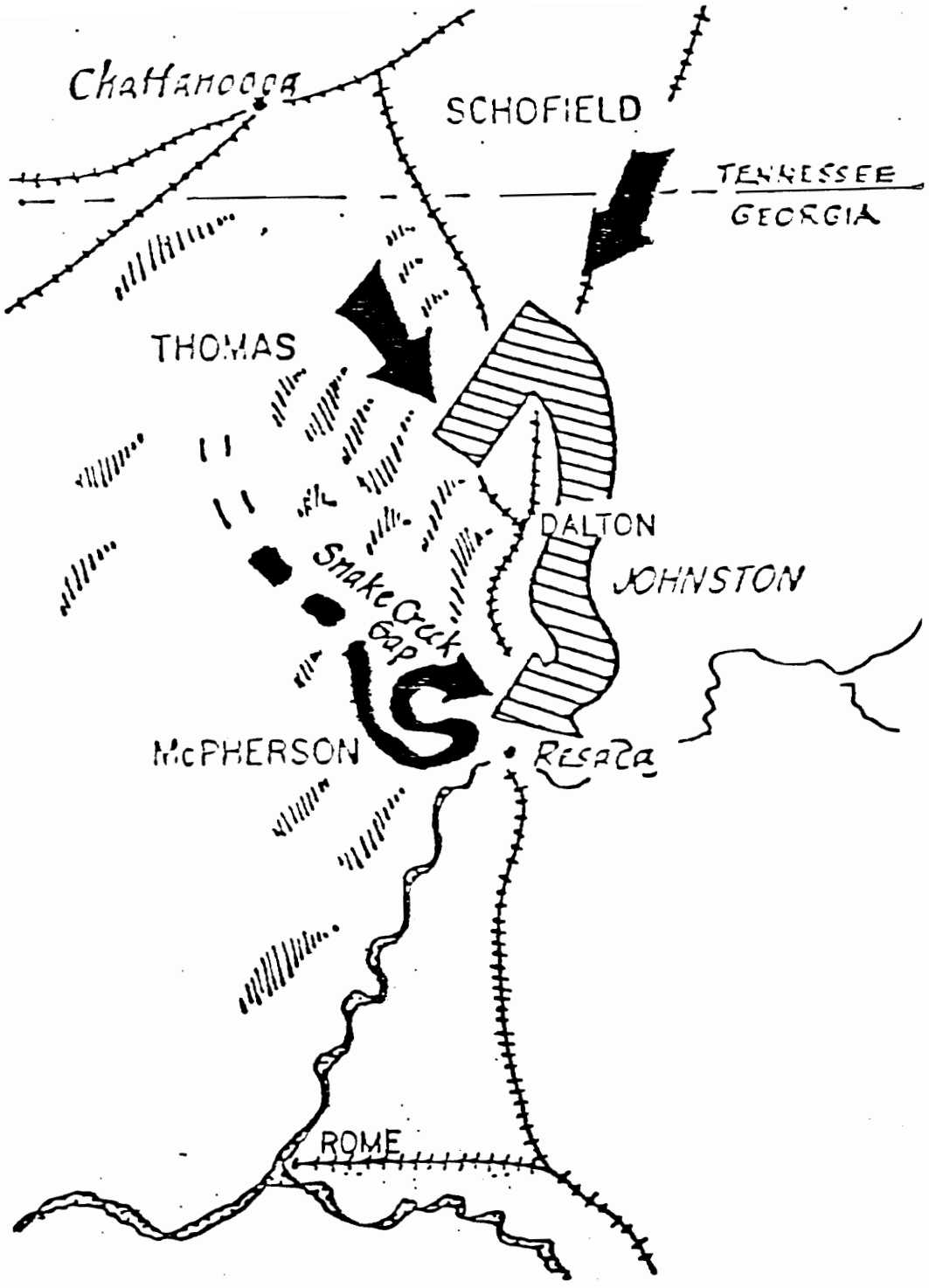

Figure 6. THE USE OF MANEUVER AT DALTON

his other major subordinate, Maj. Gen. George H. Thomas, with the observation: "I think you are satisfied that your troops cannot take Rocky Face Ridge [which protected Dalton], also the attempt to put columns into the jaws of Buzzard Roost would be fatal to us."[98]

Sherman was successful in out-maneuvering Johnston at Dalton. As shown in Figure 6, the defensive minded Confederate general was forced to desert the well constructed position that his men had taken six months to prepare. When McPherson appeared in the Confederate rear with 25,000 men, Johnston was forced onto the horns of the delimma with which he would be forced to grapple many times while fighting Sherman. Johnston either had to leave his position or have his lines of supply cut back to Atlanta. It might appear that Johnston could have turned Sherman's tactics back on the Federal general, but the force sent to hold Johnston in place, the armies of Thomas and Schofield, was too powerful.[99] If he stayed in place, Johnston would face total destruction from McPherson attacking him from the rear and Thomas and Schofield assulting him from the front. In addition, his only line of retreat would be to the north-east away from the city he was supposed to protect, Atlanta. Joseph Johnston did what he would be forced to do numerous times during the Spring of 1864. He retreated.

The Army of Tennessee moved southward toward Atlanta and occupied established defensive positions at the railroad town of Resaca. The Federal forces

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[98] Ibid., 112.

[99] As stated in the tersely written "Journal of Operations of the Army of Tennessee": "What was to prevent him from detaching 40,000 and striking our communications, holding on at the same time to their works with a force equal to ours? We could not send a force sufficient to beat the force in our rear and at the same time hold [our] present position." *Official Records*, XXXVIII, Pt. 3, 981.

gave them no time to rest. As Sherman reported: "During the 15th, without attempting to assault the fortified works, we pressed all points . . . ."[100] While this "pressing" was taking place, Sherman sent his cavalry around the Confederate left flank to secure a crossing over the river to the south of Resaca. Sherman then had a pontoon bridge laid over the river, "by which we could threaten Calhoun, a station on the railroad, seven miles below Resaca."[101] With the bridge across the river in place and a division of Federal infantry supported by cavalry attempting to cut his line of retreat to Atlanta, Johnston was again forced out of his superb defensive positions (see Map A, Figure 7).

It might seem that if Sherman had been quick enough in moving his forces, he would be able to cut the Confederates off on their line of retreat. There is no doubt that Sherman would have liked to do so but it proved to be impossible for a number of reasons. As indicated, Johnston was the best general the South had when fighting on the defense. He knew when to hold on to a position and when to retreat. The other reason is disclosed in a report Sherman prepared after the Resaca battle. "By the flank movement on Resaca, we have forced Johnston to abandon Dalton, and we are on his flank and rear, but the parallelism of the valleys and mountains does not give us all the advantages of an open country, but I will press him all that is possible."[102]

The Confederates next attempted to set up defensive positions near Cassville (see Map B, Figure 7), but were forced from those entrenchments due

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[100] Sherman, *Memoirs*, Vol I, 35.

[101] Ibid..

[102] *Official Records*, XXXVIII, Pt. 4, 172.

to a blunder on the part of one of the Confederate Corps commanders. Lt. Gen. John B. Hood, commanding almost 25,000 men, was charged with defending the left portion of the Cassville position. Hood received a report that there was an enemy force to his rear and turned his corps out of position to meet the supposed threat. Hood's impromptu and unauthorized maneuver so weakened the Confederate line that it became untenable. By late in the evening of May 20, the Confederates had evacuated Cassville and were on the railroad line marching South.

Johnston's retreat took him to the Allatoona Pass, the strongest defensive position in Georgia and one with which Sherman was very familiar. In his earlier travels in Georgia, Sherman had visited Allatoona and had become very impressed with the defensive characteristics of the Pass. "I therefore knew that the Allatoona pass was very strong, would be hard to force and resolved not even to attempt it, but to turn this position, by moving from Kingston to Marietta via Dallas (see Map A, Figure 8).

The Confederates became aware of what Sherman was trying to do, and Johnston raced his forces westward in an attempt to block the Federals. The two enemies collided at New Hope Church in a battle that was the most savage of the campaign. The Federals had gotten there first and were entrenched when the Confederates attacked. The report of Brig. Gen. R. L. Gibson, commanding a Louisiana brigade, tells it all. "Our loss was very heavy in this assault. In fifteen minutes I lost nearly half of my command in killed and wounded."[103]

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[103] *Official Records*, XXXVIII, Pt. 3, 859.

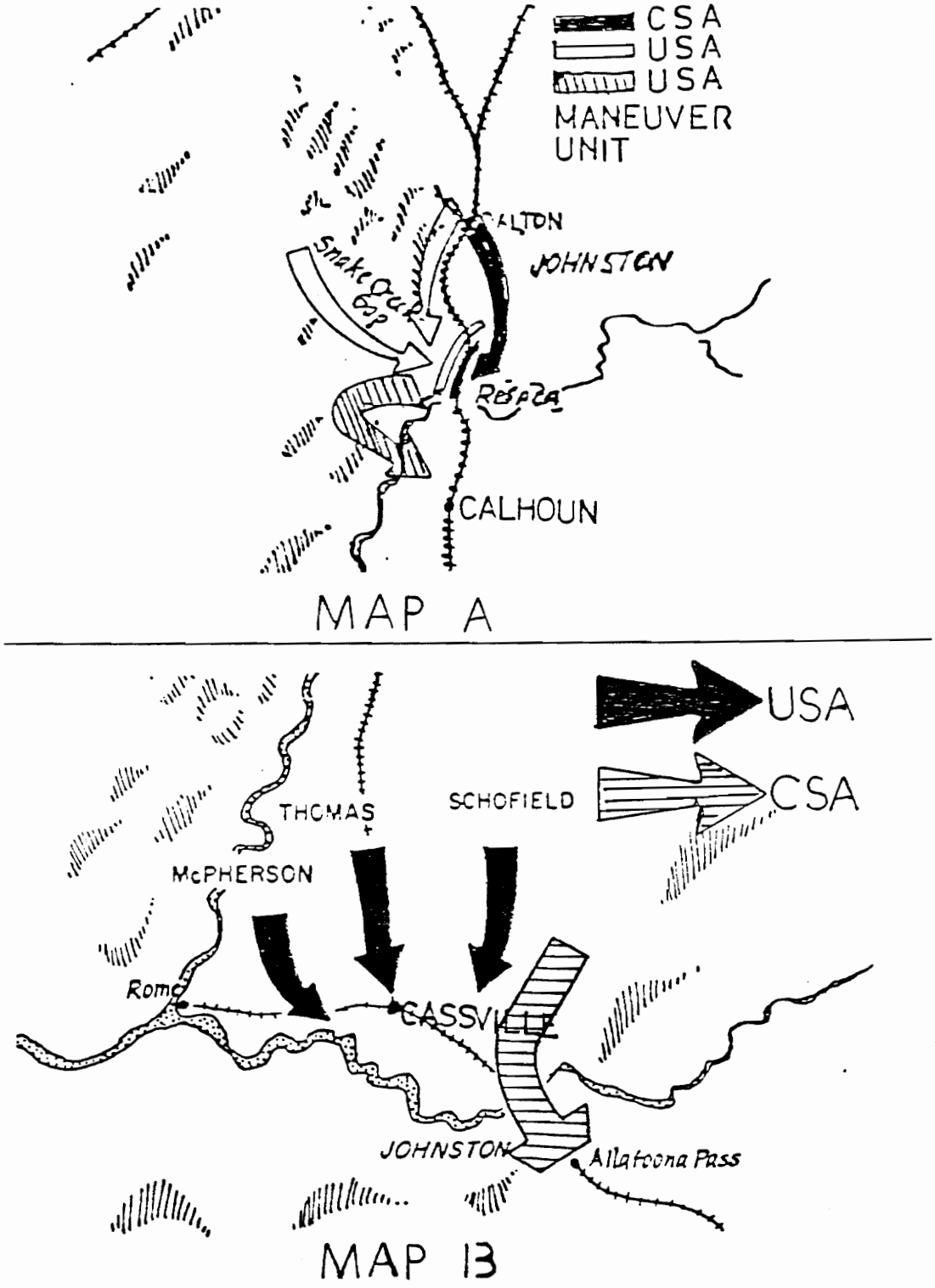

Figure 7. RESACA AND CASSVILLE

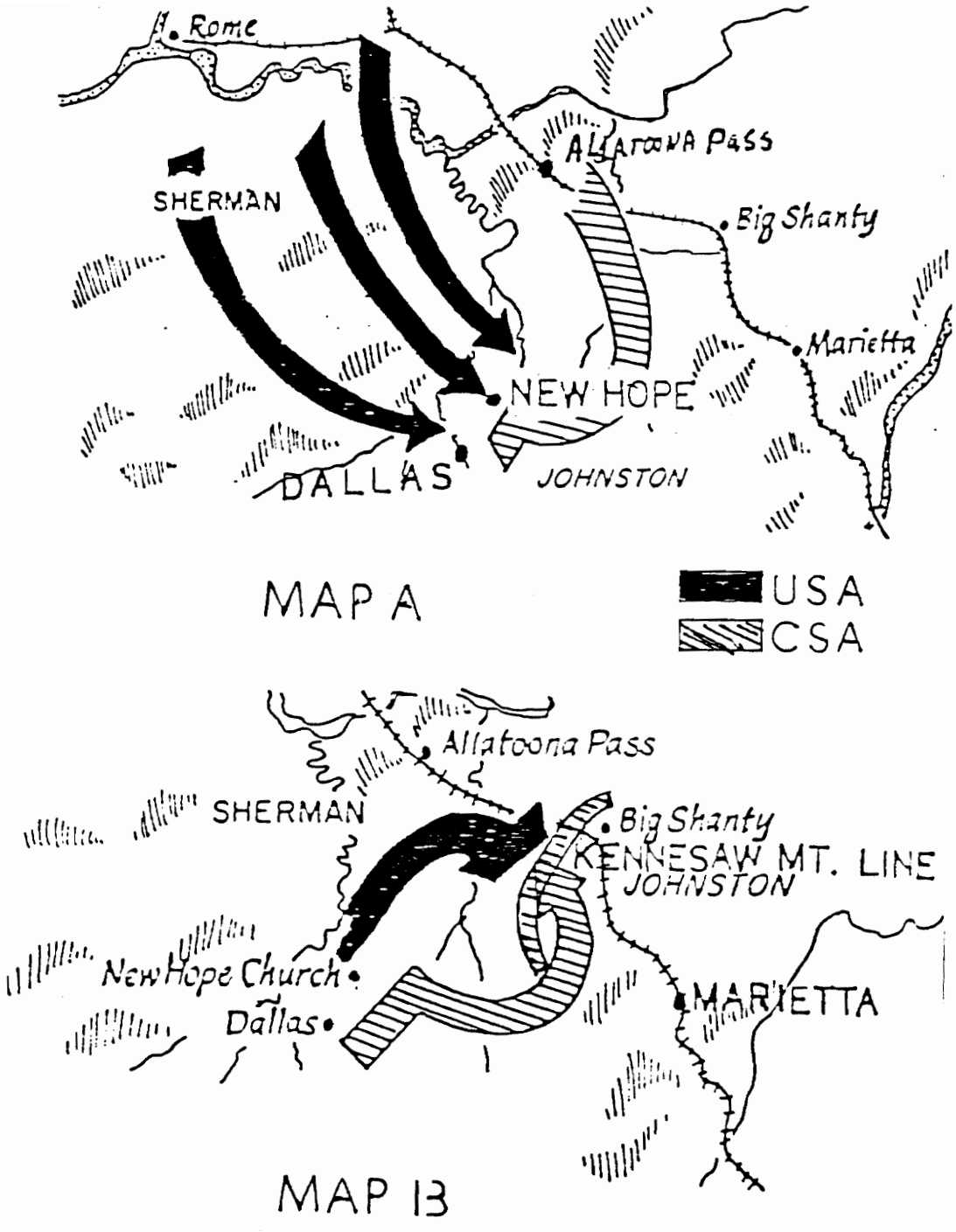

Figure 8. ALLATOONA, NEW HOPE CHURCH, AND KENNESAW MOUNTAIN

To conserve his most limited resource, his men, Sherman broke off the battle and rapidly moved to the east. His maneuver, though, did not take him back in front of Allatoona pass. He was below it with his whole army,to and Joe Johnston's best defensive position had been bypassed (see Map B, Figure 8). Sherman explained the process to his wife in a letter:

> Johnston may fight us at the line of hills just this side of Marietta [Kennesaw Mountain], but I think I can dislodge . . . . He has a strong, well-disciplined army, but I think we can lick him on any thing like fair terms. So I will not run hot-headed against any works prepared for us. He thinks he checked us at Dallas. I went there to avoid the Allatoona pass, and as soon as I had drawn his army there I slipped my cavalry into Allatoona pass and round the main Army in its front, a perfect success. I never designed to attack his hastily prepared works at Dallas and New Hope Church, and as soon as he saw I was making for the railroad around his flank he abandoned his works and we occupied them for a moment and moved by the best road to our present position.[104]

Sherman's war of maneuver was temporarily over as Spring rains turned it into a war of mud. Even though he was stymied in making flank movements (see Map B, Figure 8), the General did not ease any of the pressure on the Confederates. "Still I pressed operations with vindictive earnestness, [unreadable word] always to keep our fortified lines in absolute contact with the enemy, and with the surplus force, feel forward from one flank to the other for his lines of communication or retreat."[105] Sherman's "vindictive earnestness" would led him to make his only major blunder during the campaign, the "Hurrah!" assault at Kennesaw Mountain, which will be covered later in this chapter.

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[104] Sherman, *Home Letters*, 294-95.

[105] Sherman Collection, Library of Congress.

Sherman's use of maneuver led to his success at Dalton, Resaca, Allatoona Pass, and New Hope Church and was directly responsible for the fall of Atlanta. It also led to very high morale in the Federal Army. Sherman had written earlier to his wife that his men were aware of his tactics and that they supported him. He wrote: "I know full well that I enjoy the unlimited confidence of the President and Commander in Chief, and better still of my own army. They will march to certain death if I order it, because they know and feel that night and day I labor to the end that not a life shall be lost in vain. I always ignore secondary objectives and strike at principals with afore-knowledge that the former follow the latter, nor or my combinations extra hazardous or bold."[106]

While the maneuver warfare tactics of Sherman bolstered his own armies' morale, for the Confederates they brought confusion, demoralization, and the conviction that "Sherman didn't fight f'ar." Joseph Johnston was astute enough to realize that a series of retreats would seriously affect the morale of his army. He attempted to make up for what he lacked in ability to defeat the Federals with strong personal leadership. He made numerous appearances before the hard fighting troops of the Army of Tennessee, and assured them that the retreat was part of his plan. The Confederate soldiers with Johnston wanted to fight and he was aware of that fact, but he could not get them into position to defeat the Federals. His assurances that the "Confederacy was as fixed an institution as

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[106] Sherman, *Home Letters*, 321.

England or France"[107] helped to improve morale temporarily, but eventually the retreats greatly harmed the Confederates' morale.

The report of an officer of Kentucky's Orphan Brigade summed up Sherman's tactics. L. D. Young wrote of the Federal attack at Resaca, the second major battle of the campaign: "It was a veritable picnic for the Confederates. . . . we [were] presented such a glorious opportunity, protected as we were by earthworks, with clear and open ground to the front. Had Sherman continued this business through the entire day (as we hoped he would), the campaign would have ended right there. This day's work was a clever ruse of Sherman's and demonstrated the cunning of the wily general, for while he was thus entertaining us with the main part of the army, especially his artillery, like the sly old fox he was, he was planning our undoing by sending down the river to our rear, Dodges Corps to fall on our rear and cut our communications and interrupt our retreat."[108]

The effect of Sherman's flanking maneuvers on the Army of Tennessee was one of long-range demoralization. A major serving with Johnston's army wrote after being outmaneuvered only twice: "Thursday May 19th--the troops were placed in position at an early hour and it was announced that we would go no further. General Johnston, in an address to the troops, told them that our communications were safe at last, and we would now turn upon the advancing columns of the enemy and give him battle. This was received with enthusiasm

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[107] Ibid., 983.

[108] L. D. Young, *Reminiscences of a Soldier of the Orphan Brigade* (Louisville, 1913), 82-83.

by the troops; *but alas* . . . . [emphasis supplied] Before 12M. [midnight] it was determined to change the line for one in the rear just behind Cassville."[109]

A report of one of the Confederate generals who served with Johnston, written immediately after the War, detailed the problem with morale in the Army of Tennessee. Lt. Gen. Stephen D. Lee stated: "I regard the morale of the Army [of Tennessee] greatly impaired after the fall of Atlanta, in fact, before its fall the troops were not by any means in good spirits. The army, having constantly yielded to the flank movement of the enemy, . . . its efficiency for further retarding the progress of the enemy was much impaired."[110]

Sherman's maneuver tactics had a similar effect on the citizens of Georgia. In a June 2, 1864, letter to a Georgia soldier, Thomas Gresham, serving in Virginia, his younger sister wrote: "I don't love to hear of so much falling back; I am afraid the army [Sherman's] will get too near to us. There are a great many sick and wounded in the hospitals here."[111]

In another letter written in mid-June the sister, Minnie, voiced what was a consensus for Confederate Georgians. "Nobody has the faintest idea of Johnston's motive in falling back so far to an open country where if Sherman chose, he [Johnston] can be flanked interminably. The suspense is hard to bear especially for the refugees."[112] Thomas's father voiced similar sentiments in a letter

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[109] *Official Records*, XXXVIII, Pt. 3, 104.

[110] *Southern Historical Society Papers*, III (1877), 64.

[111] Minnie Gresham to Thomas Gresham, June 2, 1864, the Gresham Papers, Virginia Polytechnic Institute and State University.

[112] Ibid., June 10, 1864.

written at the same time: "Sherman had force enough to confront Johnston, while a large force was sent to his rear and Johnston was compelled to retreat - how long this will continue none can tell."[113] Another Gresham letter in mid-August tried to defend the tactics Johnston had used but, carried the statement that was the most telling: "I love Gen J. but I think and we all can see, even the honest critic that if he could not check Sherman in the mountains, he could not on the plains.[114]

For a few weeks in June, Johnston was able to "check Sherman in the mountains." Kennesaw Mountain and its out-guards, Pine and Lost Mountains, stand as sentinels on the northern approach to Atlanta. Easily defended and difficult to flank because of its proximity to water obstacles, the Kennesaw Mountain defense line became the lynch-pin of Johnston's defensive construction. A veritable Confederate Maginot Line, the Kennesaw defense, per se, was impregnable; but like the French rendition of the static defense, it could be bypassed by a determined enemy.

Sherman had no doubts that the Confederate defenses at Kennesaw would be hard to break. He was familiar with the terrain in the vicinity of the mountain because in 1844 Sherman had toured Georgia as a young army officer. Sherman's messages in early June indicate that the defensible terrain to the north of Atlanta had earned his respect.

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[113] I. I. Gresham to Thomas Gresham, June 14, 1864, Gresham Papers.

[114] Leroy Gresham to Thomas Gresham, August 10, 1864, Gresham Papers.

In a June 5 message to Halleck, Sherman reported, "The enemy discovered us creeping around his right flank and abandoned his position and marched off last night. . . . I expect the enemy to fight at Kenasaw [sic] Mountain, near Marietta, but I will not run head onto his fortifications. An examination of his line shows an immense line of works, all of which I have turned with less loss to ourselves than we have inflicted on him."[115]

In another message to Halleck two days later, Sherman's respect for the mountain and the rifled musket defense were still notable. Sherman indicated that he was still satisfied he could out-maneuver the Jonhston. "If he fights at Kenasaw [sic] Mountain, I will turn it."[116]

Two weeks of continuous rain turned Georgia's red clay roads into quagmires. By mid-June, Sherman's ability to maneuver had been brought to a standstill. In a June 16 message to Halleck, Sherman reported that he could not find a flank that he could turn. He wrote:

> [I] Shall study it, and am now inclined to feign on both flanks and assault the center. It may cost us dear, but in result would surpass an attempt to pass around. The enemy has a strong position and covers his roads well, and the only weak part of his game is having the Chatahoochee in his rear. If by assaulting, I can break his line, I see no reason why it would not produce a decisive effect. I know he shifts his troops to meet our supposed attacks, and thereby, fatigues his men, and the woods will enable me to mask our movements.[117]

Later in the month, still held in place by Kennesaw Mountain's awesome defenses, Sherman gave other reasons besides "a decisive effect" for wanting to

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[115] *Official Records*, XXXVIII, Pt. 4, 409.

[116] Ibid., 433.

[117] Ibid., 492.

attack the entrenched Confederates. By late June, the continuous rain had given way to typically hot summer days. With the roads now dry, Sherman returned to his attempts at trying to flank the Confederates. On June 21, his flanking maneuvers brought savage Confederate counterattacks. By June 26, Sherman realized that he could not continue to stretch his line, now ten miles long.[118] The Confederate assaults had shown him that the Rebels were not afraid to fight. He feared that his attacking army--stretched too thin--might in turn be attacked and defeated.

Sherman held a council of war with his senior commanders to elicit their opinions. In his *Memoirs* he recorded: "I consulted with Generals Thomas, McPherson and Schofield and we all agreed that with prudence we could not stretch out any more, and, therefore there was no alternative but to attack 'fortified lines' a thing carefully avoided up to that time. I reasoned, if we could make a break anywhere near the rebel center and could thrust in the strong head of a column, that with the one moiety of our army we could hold in check the corresponding wing of the enemy, and with the other sweep in flank and overwhelm the other half."[119]

Sherman's rationale may seem a bit strained in light of his success in using the boot and shovel approach to defeating the Confederates. The key to understanding what he did is not in his evaluation of its chance for success, or how he would capitalize on his victory. The key is in his phrase, "therefore, there

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[118] "My lines were ten miles long, and every change necessitated a great amount of work. Still we are now ready and I must attack direct or turn the position. Both will be attended with loss and difficulty, but one or the other must be attempted." Sherman, *Home Letters*, 298.

[119] Sherman, *Memoirs*, Vol. II, 60.

was no alternative." Sherman was an action-oriented soldier for whom inactivity was inconceivable. He firmly believed in the old military saying, "Do something, even if it's wrong." At Kennesaw, having no alternative, he took the action-option. It was wrong.

On the morning of June 27, Sherman sent his men to face the level streams of fire the well-entrenched Confederates were prepared to deliver. Hedley's account (page 29) of the failed attack gave the Federal view of the disaster. The words of a soldier in the First Tennessee Regiment portrayed it from the Southern side.

> On the fatal morning of June 27, all at once a hundred guns from the Federal line opened upon us. Almost at the same time a solid line of blue coats came up the hill. My pen is unable to describe the scene of carnage that ensued for the next two hours. Column after column of Federal soldiers were crowded upon that line. No sooner would a regiment mount our works that they were shot down or surrendered. Yet still they came. It seemed impossible to check that onslaught, but every man seemed to think that at the moment the whole responsibility of the Confederate government was on his shoulders.
>
> I am satisfied that every man in our regiment killed one score to four score, yea, five score men. All that was necessary was to load and shoot. In fact, I will ever think that the reason that they did not capture our works was the impossibility of living men to pass over the bodies of their dead.[120]

Sherman wrote that he was "satisfied of the bloody cost of attacking entrenched lines."[121] He did not use "Hurrah!" tactics again. It was with maneuver and offensive entrenching as his primary tactics that he finished the war. Having made the connection between the deadliness of the rifled musket and the ineffectiveness of the tactics he had been taught, he turned to a solution that

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[120] Watkins, "*Co. Aytch,*" 158.

[121] Sherman Collection, Library of Congress.

proved its worth in saved lives on battlefields from Dalton to Bentonsville: the solution of Boots and Spades.

CHAPTER VIII

THE DEADLY CONNECTION

"We could not break the ememy's center without being too crippled to act with any vigor afterward."[122]

In the broad sweep of Civil War history, numerous characters stand-out. Sometimes they are common soldiers upon whom the spotlight temporarily shined. They are like the courageous Sergeant Authur MacAuthur who was awarded the Medal of Honor for taking up the fallen colors of his regiment at Missionary Ridge and then leading them up-hill against strong Confederate defenses. On the other end of the spectrum stands Robert E. Lee, who although

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[122] Sherman's report of the failed attack on Haynes's Bluffs indicates that he had made the connection between the failure of "Hurrah!" tactics and the power of the rifled musket. He also wrote: "I attribute our failure to the strength of the enemies' position both natural and artificial, and not to superior fighting . . . ." Armed with the concept that the tactics in use were not working, he changed them. *Official Records*, XVII, Pt. 1, 609.

beaten in combat, eclipsed war and hatred to become a symbol of dignity and duty. General Lee's fame rose during the Civil War and, over a century and a half after his defeat, is even greater and remains unblemished. William T. Sherman stands somewhere in between.

General Sherman is only occasionally given the special attention he deserves by history professors and their students. Yet, among America military officers, he has found a niche and has become somewhat of a cult figure. They have been forced to evaluate the attrition tactics and head-on assaults of America's previous wars and the massive waste of men and equipment lost in America's war in Southeast Asia. Cost and the useless waste of men's lives forced America's military planners to seek different answers to the same old questions. "How do you do more with less?" and "How can we defeat our enemy on the battlefield and not destroy ourselves in the process?" For their answers they have turned to Sherman, who provided them 125 years ago.

Sherman was faced with what must have seemed to him, a world gone mad. A man who loved the South and who had spent the years before the war as the Superintendent of Louisiana Military Academy, he was forced to destroy what he loved and perhaps kill his former students. Anti-democratic and stoutly non-political, he became the virtual savior of American democracy and surely provided the necessary means for President Lincoln to be re-elected.

Yet through all the death and the destruction, one thing stood-out: on the battlefield, where his talents were vital, he was an innovator. When he had realized mid-way in the war that men making frontal attacks were doomed by the

power of the rifled musket unless they had a measure of protection, he gave them shovels. After it became obvious to him that "Hurrah!" tactics could not break an entrenched line defended by rifled muskets, he changed his tactics.

He used "Hurrah!" tactics to hold his enemy in place and confuse them regarding his intentions. Then he would launch a portion of his force on a maneuver to the enemies' rear, to "psychologically dislocate" the Confederates, and to strike their weakly defended lines of retreat and communication. The history of his campaign in Georgia is replete with evidence that Sherman's answer to the deadly connection that he had made was successful.

Although Sherman's campaign was not bloodless (his forces took over 31,000 casualties), the figures are startling because Sherman was the attacker. In virtually every battle listed in Table One, the attacker, even when they were victorious, bore the brunt of men killed and wounded. Sherman should have taken a tremendous number of casualties, far more than his enemy's 34,000 killed and wounded. Yet he did not, because the boot and the shovel reduced the numbers.

It is easy to contrast the maneuver tactics of Sherman with the attrition tactics of Grant. Grant fails in the comparison. Because of Grant's penchant for "Hurrah!" tactics his casualty figures were astounding. In one battle alone, Cold Harbor, he took one quarter of the number of casualties that Sherman had in his whole campaign.

Even more startling is the realization that Grant was not successful until he adopted the tactics of Sherman. Grant's failed attacks against the Petersburg

lines were to no avail until he held Lee's forces in place with a portion of his army and then attacked the exposed flank of the Army of Northern Virginia with another part. Grant's use of Sherman's tactics brought him success and the destruction of Lee's army.

Sherman had made the deadly connection between the rifled musket and the failure of "Hurrah!" tactics. He used that knowledge to defeat the rifled musket, the men who were armed with it, and the society they were attempting to defend.

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APPENDIX A

DEATH AND TECHNOLOGICAL INNOVATION: A MODEL FOR DESTRUCTION

BACKGROUND

During the American Civil War a deadly new innovation, the rifled musket, began to play havoc on the battlefield. At the beginning of the War in 1861, most soldiers were equipped with a smooth-bore musket that had an effective killing range of only seventy-five yards. Within a year, virtually all soldiers were armed with a rifled musket that had an effective range of 350 yards.

Most battlefield commanders did not make changes in their tactics to allow for this deadly new device.

THE PARAMETERS OF THE MODEL

1. Classic Civil War battles were normally a line of defenders, either two, four or six soldiers deep (one behind the other), defending against successive lines of attackers.
2. The attackers attacked in formations that had them move forward in lines two deep or in a mass that was anywhere from six to twenty deep.
3. The line of attackers attempted to attack the line of defenders straight on.
4. The defenders were stationary.
5. The defenders used or created cover that protected 50 to 90 percent of their bodies.
6. The attackers moved at a constant rate of 90 steps per minute or 70 yards per minute.
7. When the attackers came within fifty to seventy-five yards of the defenders, they would fire a volley at the defenders, yell "Hurrah!", charge, and physically confront the defenders with muskets used as clubs or, as a last resort, with bayonets.
8. When the attackers reached the fifty to seventy-five yard "Hurrah!" charge point, they stopped, fired a volley and then charged.
9. The defenders fired a volley while the attackers were firing their volley.

10. The defenders fired an additional volley as the attackers made their charge.

11. The battle was won by the attackers if the defenders either broke and ran, were killed to a man, or surrendered to the attackers.

12. The defenders won if the attackers broke and fled back across the battlefield, were killed, or surrendered.

13. The soldiers in the Civil War could fire their rifled muskets at a rate of two (plus) times per minute (25 seconds per round equals: two rounds a minute, four rounds in two minutes, and seven rounds in three minutes). Therefore, if a line of defenders was two deep, they could fire four (plus) rounds per minute at the attackers.

14. It took the attackers a minimum of four minutes and twenty seconds from the time they came within effective rifled musket range of the defenders to reach the point on the battlefield where they fired their first volley (70 yards per minute for a distance of 300 yards).

15. During that 4.3 minutes the defenders could fire twenty rounds at the attackers (2.4 rounds per minute for two men times 4.3 minutes plus another round each while the attackers made their "Hurrah!" charge minus 11 percent for misloads/misfires). [(2.4)x2x4.3 + 2 = 22.64]-11% = 22.64-2.29 = 20 rds. See Chart One.

16. If the defenders were in line four ranks deep, which was a common practice, or in lines six ranks deep, as at Fredericksburg, the number of rounds per minute fired at the attackers rose proportionally.

17. As the attackers closed on the defenders, the accuracy of the defenders' fire became more lethal. See Chart One.

18. By the time the attackers could come to within bayonet range of the defenders, the defense could have fired a statistically deadly amount of rounds at their assailants; twenty if two deep, forty if four deep, and a staggering sixty if six deep.

Logic dictates that at some point it became a moot question of how many lines of attackers there were, if the defenders had enough ammunition[123] and the attackers continued to come at them in straight lines, because the defenders could shoot the attackers before they could get into position to use their bayonets.

The effects of artillery are not taken into account in this model for three reasons. One, artillery ranges and effects had not changed significantly since the Mexican War. Two, artillery had to fight in the open, and artillery tactics dictated that artillery batteries should neutralize each other. Three, Sherman's campaign was not fought against massed artillery but against the rifled musket defense, and artillery did not play a significant part.

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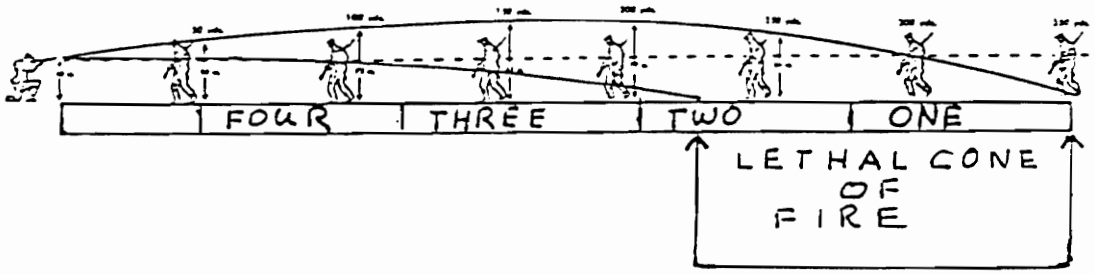
[123] None of the major battles of the Civil War (see Table One, Chapter One) was lost because the defense ran out of ammunition.



THE KILLING ZONE

CHART ONE

As the attacking infantryman on the right in the chart entered the effective range of the rifled musket, he was a minimum of 4.3 minutes away from his objective, the defending infantryman on the left. As the attacker attempted to march across the battlefield, the defender lowered his weapon to parallel with the ground. This action allowed the defender to keep the attacker in his sights. The lethal cone of fire that formed began at ground level approximately at 350 yards and ended at ground level at approximately 220 yards. As shown, that cone of fire of fire became increasingly lethal as the attacker got closer to its origin. In a two man deep defensive line, that cone was filled with twenty rounds. In a four man deep line the cone filled even more to fourty rounds. If the line was six deep the cone became virtually impenetrable because it contained sixty rounds.

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Professional Experience:

Command:
Regimental Executive Officer, infantry, Hawaii--
1985, 1987-88.
Battalion Commander, infantry, Hawaii/Japan--
1985-87.
Company Commander, Marine Security Guard Company, Africa--
1980-81.
Company Commander, infantry, Japan--
1975.
Company Commander, Platoon Commander, infantry, Vietnam--
1969-70

Staff:
Department Head/Instructor--
1981-1985
Administrative Officer--
1978-79
Action Officer--
1976-78
Aide de Camp--
1975-1976
Recruiting Officer--
1971-73

Student:
Command and Staff College (Cor.)--
1975

Amphibious Warfare School--
1973-74
The Basic School--
1968-69

Service Awards:

Early Promotion (heroism)
Bronze Star with V for Valor
Navy Commendation Medal with V for Valor
Purple Heart
Two Meritorious Achievement Medals
Navy Achievement Medals

Membership in Professional Societies:

Military Order of the Purple Heart
Marine Corps Association
Retired Officers Association
Southern Historical Association
Veterans of Foreign Wars
Phi Alpha Theta

Organizations and Affiliations:

Elks
Masonic Order, Master Mason
Sojourners
Methodist Church

Activities:

Sunday School Teacher
Civil War History lecturer at numerous Civil War organizations.
Physical Fitness
Writing a novel
Gardening