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COMMAND AND CONTROL MECHANISMS
IN THE
CHICKAMAUGA CAMPAIGN: THE UNION EXPERIENCE

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE

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by

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ABSTRACT (Continued)

This thesis analyzes how Major General William S. Rosecrans, commander of the Army of the Cumberland, employed the command and control mechanisms available to him as he maneuvered his army from Tullahoma, Tennessee toward Chattanooga, Tennessee in August-September, 1863. It also analyzes how these mechanisms were employed during the battle of Chickamauga itself, on 19-20 September, 1863.

General Rosecrans possessed three mechanisms for commanding and controlling his army. The first was the military telegraph, provided by the quasi-military U.S. Military Telegraph service. Next were the assets of the fledgling U.S. Signal Corps, which consisted of signal flags and torches, and a portable version of the telegraph. Finally, there were couriers, who were usually mounted, and were provided by subordinate unit details, or by units specifically formed for courier duty.

The thesis concludes that General Rosecrans did not use his command and control mechanisms effectively. Rosecrans relied too heavily on couriers to carry messages over densely wooded, cross-compartmented terrain in order to send orders to his widely dispersed subordinates and receive information from them. While Rosecrans made wide use of the military telegraph, to include using it during the battle itself, he did not effectively use his Signal Corps assets. These assets were used essentially as static observation posts, and only to a limited degree as a means for effecting command and control.

The thesis further concludes, however, that General Rosecrans' use of command and control assets was not a decisive factor in the outcome of the campaign or battle. While his reliance upon courier assets added significantly to the time required to obtain information and send orders, it was not the reason for the Union defeat at Chickamauga.

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

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CHAPTER 1

INTRODUCTION

This thesis will analyze the functional aspects of the command and control mechanisms used by the Union's Army of the Cumberland during the campaign and battle of Chickamauga, August-September 1863. It will do so in order to determine how effectively these mechanisms were used and to establish what affect they had on the outcome of the battle. The Commanding General of the Army of the Cumberland was Major General William S. Rosecrans. The command and control mechanisms available to him included the telegraph, the signal flag, and the courier. How he used these assets, in combination, to acquire information and to direct subordinates is the primary focus of the thesis. The internal operations of the Commanding General with his own staff will not be an object of investigation, but rather the interfacing of the Commander and staff with the environment outside the headquarters. This outside environment includes superior, adjacent, and subordinate headquarters, the terrain, and the enemy; all of which the commander must obtain information from (or about), and consequently send information to.

The following research questions will be investigated:

(1) What mechanisms were used to facilitate command and control during the campaign and the battle? How was the decision made over which mechanism to use? How did the terrain affect the choice of mechanism?

(2) What was the effect of each mechanism upon the outcome of the campaign and battle? Did the use of any particular mechanism provide a decisive edge?

(3) What observations can be drawn from this historical example with regard to command and control in today's environment?

The thesis will analyze three different time periods. The first covers the interval from August 16 through August 29, as the Army moved from the vicinity of the Elk River, below Tullahoma, Tennessee, toward the Tennessee River. This period found the army split into at least ten major columns moving through cross-compartmented terrain across the Cumberland Plateau and Walden's Ridge. The lateral spread of Rosecrans' army approached 80 miles at some points. Of particular note is the movement of Rosecrans' left-most unit, the XXI Corps, under Major General Thomas Crittenden. This corps was widely separated from the rest of the army and severely tested the command

and control system. The next period of interest is from the crossing of the Tennessee River until the consolidation of Rosecrans' three corps near McLemore's Cove and Lee and Gordon's Mill. These actions cover the interval from August 29 through September 17. Again, Rosecrans dispersed his units over a wide front, over densely wooded, cross-compartmented terrain in an effort to cut Bragg's lines of communication. During this phase, Major General Alexander McCook's XX Corps was widely separated from the remainder of the army, a circumstance which almost proved disastrous. The geographic area covered by the army during this period was less than in the previous phase. However, due to the proximity of the enemy, there was an inherent requirement for reaction time to improve. Reaction time in this sense refers to the time spent in acquiring information, deciding what to do, transmitting orders to subordinates, and then ensuring that those orders are being properly executed. Improving reaction time might today be referred to as "getting inside the enemy's decision cycle".

The final phase consists of the preparations for, and the conduct of, the battle itself. A comparison of the mechanisms used here versus those used in the previous two phases will provide significant insights, particularly since the timeliness requirement for acquiring information and issuing orders was the most demanding during this phase.

The initial intent of the thesis was to compare the mechanisms used by the opposing Commanding Generals (i.e., Major General Rosecrans, Army of the Cumberland, and General Braxton Bragg, Army of Tennessee). It has been determined, however, that adequate data on the mechanisms used by the Army of Tennessee do not exist in sufficient detail to make an acceptable comparison.

Although both the campaign and battle of Chickamauga might at first seem too broad an area for investigation, significant differences occur between the "operational" phase of the campaign and the "tactical" phase of the battle with regard to the requirement to acquire information and issue orders in a timely manner. It follows that the stress on the mechanisms used to effect command and control would increase as the timeliness requirement increased, and that the use of a particular combination of mechanisms that was effective during one phase might prove to be ineffective during another. The manner in which General Rosecrans adjusted the employment of the mechanisms available to him in order to alleviate the stress and provide for a more effective system will be investigated.

As far as is known, an investigation of the command and control system, as defined above, has never been applied to this significant battle. There are significant parallels

between the Union Army in the field in 1863 and today's Army field forces. Both are at the leading edge of a "technology explosion," on a scale never previously applied to the battlefield. An investigation of the effects of "how they did it then," in essentially a non-automated environment, should provide valuable historical insights.

CHAPTER 2

COMMAND AND CONTROL

The Nature of Command and Control

Today, "command and control" is defined in Joint Chiefs of Staff Publication 1 (JCS Pub 1) as "the exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of the mission".¹ Although "properly designated commanders" exercise this authority in different ways on the battlefield, depending on their individual leadership styles, it can be said that each commander goes through the same process, or cycle, when commanding. The U.S. Army Command and Control Master Plan describes the command and control process in the following manner.

First, a commander must acquire information. Information must be acquired about the unit mission. This is usually obtained through orders disseminated from a higher headquarters, or through the commander's own analysis of the situation. The commander must also obtain information on the status of his own forces. He must know their location, what they are doing, and their ability to carry out the mission. Information on the enemy is obviously vital, to include their strength, location and intentions. Also, a commander must obtain information on the terrain in which he must carry out his mission.

The commander acquires information directly through personal observation or indirectly, through reports or messages from higher, adjacent, and lower units. As he does, he continually assesses it. He assesses the significance of incoming information upon his unit's ability to carry out its mission. Specifically, he must assess whether any actions different from those his unit is currently performing are warranted, in light of the new information acquired. If no new actions are warranted, the commander continues to acquire and assess information.

If however, new actions are warranted, the commander must determine what those actions are. This involves identifying what actions are feasible under the circumstances, analyzing and comparing them, and then selecting the one (or combination) which has the greatest potential of allowing his unit to succeed in its assigned mission.

The final step of the command and control cycle is direction. This involves the issuance of directives, or orders, telling subordinate units what to do. These directives implement the decision made by the commander in the previous step. They can be issued by a commander through personal contact with a subordinate, or indirectly through other communications means, such as a written order.

Once a commander has issued a directive, he monitors the situation to determine the effect of the directive on

the battle. Thus, he is again acquiring information and the cycle starts over.²

Commanders have processed through these steps of the command and control cycle throughout the ages. The cycle is performed in varying degrees of sophistication at different levels of command, but the lowest squad leader to the highest Army commander has to: find out what is happening; determine if his original plans and orders are still valid; if not, he must decide what to do, and then tell his subordinates what their actions are in carrying out that decision.

What has changed over the centuries are the mechanisms a commander uses to assist him in proceeding through the command and control cycle. When commanders personally led their troops in battle the cycle could be performed simply and quickly. The commander could use his own senses to determine the status of his troops, the enemy, and the terrain he was working on. His mission was usually clear, physical destruction of the enemy. As armies grew in size and complexity, and as commanders took less of a role in the actual front line fighting, they could no longer rely on their own senses to get a complete picture. They relied on other mechanisms, particularly for acquiring information and directing subordinates.

In today's high technology world, there are a wide variety of systems designed to assist the commander in

performing the steps of the command and control cycle. This "command and control system" is defined in JCS Pub 1 as the "facilities, equipment, communications, procedures and personnel essential to a commander for planning, directing and controlling operations of assigned forces pursuant to missions assigned." This thesis will investigate specific elements of the command and control system available to the Union Army commander during the campaign and battle of Chickamauga and the impact those elements had on his ability to acquire information and direct subordinates.

Command and Control in the American Civil War

In the United States Army in 1861 there was not a single officer, with the exception of the aged General Winfield Scott, who had experience in commanding anything higher than a regiment in the field. Brigade, division and corps commanders learned how to control their units through first-hand experience on the battlefield.³

Civil War battles were commanded predominantly by West Pointers. Of the sixty largest battles, West Point graduates commanded both armies in fifty-five, and in the remaining five a West Pointer commanded one of the opposing armies.⁴

The curriculum at the Military Academy during the time when most Civil War generals were cadets was heavy on

the side of engineering, tactics, and administration. Strategy was also taught and was based upon the writings of Antoine Henri Jomini, who had served with Napoleon, and is universally regarded as the foremost writer on the theory of war in the first half of the nineteenth century.³ As Professor T. Harry Williams states of Jomini:

He sought to formulate a set of basic principles of strategy for commanders, using as his principal examples the campaigns and techniques of Napoleon. The most convenient approach to Jomini is through the four strategic principles that he emphasized, the famous principles that many Civil War generals could recite from memory:

- (1) The commander should endeavor by strategic measures to bring the major part of his forces successively to bear on the decisive areas of the theater of war, while menacing the enemy's communications without endangering his own.
- (2) He should maneuver in such a way as to engage the masses of his forces against fractions of the enemy.
- (3) He should endeavor by tactical measures to bring his masses to bear on the decisive area of the battlefield or on the part of the enemy's line it was important to overwhelm.
- (4) He should not only bring his masses to bear on the decisive point of the field but should put them in battle speedily and together in a simultaneous effort.⁴

Many West Point generals in the war had been exposed to Jomini's writings, either through direct reading of Jomini's work or through the work of Jomini's disciples. The two most notable American disciples of Jomini were Henry W. Halleck and Dennis Hart Mahan. Halleck, who served as General-in-Chief during part of the war, wrote the widely circulated Elements of Military Art and Science, first published in 1846 and reissued in 1861. It was

essentially an interpretation of Jomini's principles, and in many cases a direct translation.⁷

A contemporary of Halleck, Dennis Hart Mahan was also a West Point graduate and later became a Professor of Military and Civil Engineering and of the Art of War at the Academy. His work, titled Advance-Guard, Outpost and Detachment Service of Troops with the Essential Principles of Strategy and Grand Tactics, published in 1847, was used as a basis to teach a whole generation of soldiers, many of whom became general officers during the Civil War. Mahan's work was also a reproduction of Jominian principles.⁸ Thus, the foundation of strategic and tactical thought exhibited by Civil War generals was based upon Napoleon's campaigns, as interpreted by Jomini.

The influence that these teachings had on senior Civil War commanders has been debated. Some modern historians doubt that one short course would influence a cadet to such a degree that he would still be imbued with its principles some twenty years later, overriding his experiences in the Mexican War or Indian fighting.⁹ The important point is that most of the senior commanders on both sides during the Civil War had similar military training in tactics and strategy, along with similar combat experience in the Mexican War and in fighting the Indians. However, by 1861, technological advances affected these strategic principles and tactical techniques;

improving some, while causing others to become obsolete. The advent of rifled shoulder weapons, with their increased accuracy, caused the tightly packed, parade-field formations to incur devastating losses. Units by necessity were required to disperse, or be destroyed en masse. Spreading units out meant that commanders could no longer control their forces visually, and therefore had to rely on other means to determine what was occurring and to pass on orders.¹⁰

Improved transportation means, particularly railroads, enabled large units to be strategically transported and re-supplied with much greater ease and speed than ever before.¹¹ The increased ease of transporting and logistically sustaining large formations was a contributing factor to the growth in size of the armies themselves. The increased size caused a subsequent increase in the span of control of the commander. It also meant that armies were becoming too large to move operationally on a single axis. They had to spread out to facilitate movement to the battlefield, and then concentrate to fight upon arriving at the battlefield.¹² This meant that an improvement, or change, in the command and control mechanisms used was required.

These advancements in technology in the mid 19th century meant that a field army commander found himself trying to command and control a larger army, spread out

over more terrain than his predecessors. This meant that he must acquire more information, from a wider area, make decisions concerning it, and subsequently pass orders to subordinates, all faster than he had done previously. Other aspects of technology, however, helped him alleviate these difficulties.

The United States Military Telegraph

The first use of the telegraph for military purposes was in the Crimean War (1854-5). However, it was used to connect the higher headquarters of the allies, and not for control of troop formations in battle. The British also used the telegraph in India in 1857-8, where the British field headquarters was connected to government offices in Calcutta. Here the telegraph wire was carried on rollers and in carts and was strung out on the ground or in the branches of bamboo trees. As much of this wire was non-insulated, it became useless in wet weather, although in dry weather it was reported to have worked over one hundred miles.¹²

The Crimean and Indian wars brought the use of the telegraph to the attention of German military officials. It appears that the Germans were the first to introduce the telegraph in peacetime as a permanent part of their army organization. The British began teaching the use of the telegraph for field use to their officer trainees in 1857,

the same year the French used the telegraph in their Algerian war.¹⁴

At the outbreak of the American Civil War there were three great private telegraph corporations competing in the United States, the American Telegraph Company, the Western Union Telegraph Company, and the Southwestern Telegraph Company. Together, they connected all of the cities and a great number of towns in the nation. In the south, the American Telegraph Company met the Southwestern Telegraph Company at Chattanooga, Tennessee, Mobile, Alabama, and New Orleans, Louisiana. The Southwestern Company occupied the remainder of the south and southwest.¹⁵

When it became apparent that the Civil War was going to last longer than the three months originally anticipated, the Union Secretary of War looked for someone to organize and manage a military telegraph system. The man he found was Anson Stager.¹⁶ Anson Stager was a thirty-six year old telegrapher who had been managing one of Western Union's offices. Stager's plan called for an overall manager of the U.S. Military Telegraph service, with assistants in each military district or department. Additionally, the overall manager would select all operators, repairers, builders, and others engaged in military telegraph work.¹⁷ Originally, the military telegraph personnel were to remain civilians. However, Quartermaster General Montgomery Meigs, Stager's

supervisor, insisted that only commissioned officers should handle government funds for the purchase of supplies. Consequently, Stager and his assistants were given commissions. Stager was promoted to colonel; he had originally been commissioned as a captain. His assistants, one in each department or district, not commissioned originally, were then commissioned as captains. Operators, repairers, builders, etc., remained civilians, however.¹⁰

On February 26, 1862, the federal government took control of all telegraph lines in the United States, putting them under its control for use by the military. The U.S. Military telegraph was established. This action was not intended to deter the use of the telegraph for ordinary affairs, or for private business.¹¹ Thus, the telegraph network in the United States was controlled by the government, with essentially civilian supervisors given officer's commissions, and civilian operators and laborers. This network conducted military business, along with private business. The assistant supervisors and civilians in the various departments were directly responsible to Anson Stager, not the commanding general of the department. Unity of command was definitely not evident with regard to the operations of the U.S. Military Telegraph.

Both the Union and Confederate forces made extensive use of the telegraph. It was during the Civil War that the

telegraph demonstrated its tactical value, as well as its strategic value. At the higher echelons of the army, a commander was forced to control his subordinate units through indirect means. This was due to large unit size and consequent dispersion, and the obstructions caused by terrain. The telegraph allowed the commander to quickly communicate with his outlying units to pass on orders and instructions. It also allowed those units, and conversely the commander, to receive information on the enemy that they could not have received in an equal amount of time through any other means. Couriers, staff officers and aides could not compete with the speed of the telegraph. The instantaneous response of the telegraph gave the commander a new dimension of command and control. He was able to acquire information from a wider front more quickly than ever before. He was able to directly control far-flung units, even though separated from them physically.²⁰

The overall effect on the command and control of divisions, corps and armies was remarkable. Up until this time, the commander relied upon the messenger to be his eyes and ears. The time factor between the occurrence of a reportable event and the commander becoming aware of that event depended upon the speed of a foot mobile or mounted courier, or upon a system of relay stations using visual signals. These in turn were obviously hampered by distance, terrain, fatigue and weather. The effects

were to a great degree eliminated by the near instantaneous transmission capability of the telegraph. Thus, the time required for a commander to process through a command and control cycle could be reduced from days to hours on the strategic level, and from hours to minutes on the tactical level.²¹

There were some disadvantages inherent in this new-found capability. On the practical side, it took time to erect telegraph lines. Once erected, they were immobile, and therefore inflexible to changing situations. Telegraph lines had to be protected from enemy destruction. Telegraphs relied on cumbersome, acid filled wet cells to generate electricity. There were additional disadvantages from a philosophical point of view. As noted by General Francois de Chanal, an observer with the Union forces during the Civil War:

It is a great advantage for a general to be constantly kept in communication with the commanders of the corps of his army. If however, the facility leads him to remain at the central station and neglect to go in person over the scene of action, it may lead to serious results. No dispatch can be as useful as the seeing of what takes place with ones own eyes.²²

On the strategic level, the telegraph put army commanders in the field in direct contact with the President, Secretary of War, and General-in-Chief in Washington, D.C.. This meant more centralized control over the field forces. This was both a blessing and a curse.

While the telegraph allowed senior decision makers in Washington to have relatively current information on the situation in the field, it also allowed these senior leaders to micro-manage troop formations from afar, an unfortunate consequence that remains apparent to this day. This over-control was contrary to the necessity of smaller units to function in a dispersed and often independent manner because of improved weapons accuracy and the growing obsolescence of Napoleonic tactics.²²

During the Civil War the telegraph became an integral part of the Federal military establishment. Its significant contribution to the effectiveness of command and control was to remain pre-eminent until the invention of the telephone, wireless and radio.²⁴

The United States Army Signal Corps

The United States Army Signal Corps traces its birth to an Act of Congress, approved on March 3, 1863. This act gave the Signal Corps status as a separate branch of the Union Army. Signal activities, however, had been on-going in the Army for several years, thanks to the efforts of Albert J. Myer, the Army's first Signal Officer.²⁵

Albert Myer, born in 1827, showed interest in communication at an early age. After serving an apprenticeship as a telegraph operator, he gained entrance to medical school, where his graduating thesis was titled

"A Sign Language for Deaf Mutes". It was while serving as a surgeon in the Army that Myer became interested in signals for military use. While stationed out west he observed Indians communicating with each other from hilltop to hilltop by waving their lances. Myer was struck by the idea of connecting adjacent military posts, or parts of an army in active operations, through similar means. He devised a system of signals which later became the basis of the code used during the Civil War.

Myer brought his system to the attention of the War Department, which conducted a series of experiments to investigate the system's use for the entire Army. These experiments were successful, and led to the appropriation by Congress of \$2,000 for the manufacture or purchase of equipment for field signals and for the appointment of one Signal Officer to the Army. Myer was appointed to this position on 2 July, 1860.²⁴

The principle underlying Myer's system was to have a series of easily recognized waving motions, portrayed by means of a flag on a staff during daylight and torches by night. These motions became known as wigwag motions. When used in combination, according to a pre-arranged code, they could send signals or messages.²⁷ Myer's system called for the use of flags varying from two to six feet square on a staff sixteen feet long. White flags with a red square in the center were to be used against a dark background,

and red flags with a white center against a light background. Black flags with white centers were also used.²⁰ These flags, along with torches at night, could be read at a distance of eight miles at almost all times, except of course in fog or rain. They were readable at distances of fifteen miles on days and nights ordinarily clear and were found to be legible up to distances of twenty-five miles. Telescopes were often necessary for reading wigwags at long distances.²¹

Signals using the devices described above were made by signal troops at signal relay stations. Signal stations were of two types, observation stations and communication stations. Troops in observation stations acted as scouts, reporting on enemy movements and on terrain conditions, in addition to being signalers. A signal station could act in both capacities.²² Stations were carefully selected with great consideration given to the proper background being presented to other friendly stations, while being hidden from the enemy. Two officers on duty at a signal station were preferable, although not always possible. An enlisted man was kept at all times manning the telescope. It was Myer's ambition to develop a corps of signal officers trained in the duties of reconnaissance, capable of making clear and condensed reports, skilled also in the arts of cryptography and telegraphy and familiar with ciphers.²³

Although quite valuable for large unit control and

for providing up-to-the-minute intelligence, signal stations had obvious drawbacks. Although the personnel manning the stations were mobile, the stations themselves were entirely dependent upon a clear line of sight in order to communicate with each other. Therefore, selection of new stations had to be pre-planned along the intended routes of march of an advancing army. Intended routes were not always the actual routes used.

The timeliness and accuracy of signals received by wigwag were dependent upon several factors. Weather and terrain affected the distances between signal stations. The shorter the distance between relaying stations the more times a message had to be repeated. This not only increased the time required to get a message back to a commander, it also increased the number of trained signalmen required. The greater the number of personnel handling a message, the greater the chance for error.

In addition to its visual signals by flag and torch, the fledgling Signal Corps experimented with a portable telegraph system. This system became known as the field telegraph, or "flying" telegraph. (In contrast to the visual signals, which became known as the "aerial" telegraph). The field telegraph consisted of a wagon loaded with a portable telegraphic device, hand-carried reels bearing several miles of light wire, light-weight lance poles shod with iron and fitted with insulators, and

tool kits. The telegraphic device was known as the Beardslee telegraph, after its inventor, George W. Beardslee of New York. It was the very first electrical device designed and built specifically for Army signals.²²

The Beardslee Telegraph solved problems plaguing both the Signal Corps and the U.S. Military Telegraph. With the Signal Corps, visual signals obviously could not be used in adverse weather or heavily wooded terrain, both of which cut down, or eliminated, visibility between signalling stations. The field telegraph provided quick, temporary wire lines between stations in this event. The field telegraph could also be extended completely forward to the front line units more readily than could the less flexible Military Telegraph system, thus providing a true tactical communications capability.²³

Training operators to use the Beardslee device took only hours to accomplish, as compared to months, or years, to develop a competent Morse operator used with the Military Telegraph. The Beardslee device had numbers and the letters of the alphabet stamped on it. An operator simply pointed to a letter through the use of an attached, movable pointing device. This action caused the same letter to be indicated on the device at the other end of the wire.

The Beardslee device operated on a magneto principle, which generated a current when hand turned,

similar to today's field telephones. This obviated the need for the heavy, acid-filled storage batteries used by the Military Telegraph. The Beardslee device provided a lightweight, simple, rugged capability, easy enough to operate so that relatively unskilled soldiers could use it.²⁴

It was not without its drawbacks, however. Although it proved quite useful in the Peninsula Campaign, and again at Fredericksburg, at Chancellorsville its shortcomings became more evident. The inferior quality wire used shorted out when subjected to weathering, or to being cut by wagons, artillery, or curious soldiers. Additionally, it could not generate enough electricity to signal through more than a few miles of wire. Further, even though Beardslee operators were easy to train, they could never compare with a trained Morse operator in the speed with which they could transmit messages.

Eventually, after sensing the rising competition, the U.S. Military Telegraph began its own version of a portable system. They loaded their batteries on wagons, along with reels of bare wire which they strung on hastily erected poles. With this system they could provide field communications in competition with the Signal Corps, at longer ranges and with greater speed of transmission.²⁵

The Signal Corps also suffered from a lack of what we today refer to as signals security. Their visual means

of signalling were often difficult to hide from the enemy. The mere presence of a signal tower indicated that a military force was nearby. Visual signals could be readily intercepted and their code fairly easily broken. (This problem was largely overcome, however, with the implementation of the cipher disc, which Myer invented). Nevertheless, the Signal Corps lost the faith of many Union commanders.²⁶

Colonel Myer fought vehemently for a unification of field communications services under one organization, the Signal Corps. Likewise, Colonel Anson Stager of the U.S. Military Telegraph felt his organization should handle all services. The competition between the two organizations had not been resolved by August, 1863, the beginning of the Chickamauga campaign.²⁷ What resulted was the presence of two competing communications agencies in the Union Army. There was the Signal Corps with its flags and torches, and its field telegraphs. Then there were the more permanent lines of the Military Telegraph. A commanding general in the field had direct control over the totally military Signal Corps, but only limited control over the largely civilian Military Telegraph.

Couriers

Couriers remained the chief means of communication during the Civil War, as they had for centuries past. When there was no telegraph line, or when conditions were not suitable for a signal line, couriers filled the gaps.²² In a fast moving situation or in densely wooded terrain, couriers were the only means of communication available.

The speed and reliability with which couriers accomplished their missions varied greatly. They were more prone to the adverse effects of weather, fatigue, and distance traveled than were their more technological counterparts, the telegraph or the signal flag. Their great advantage, however, was that they could provide to the commander receiving orders a personal explanation of the intent of the commander issuing them.

Personnel on courier duty came from several different sources. Many times they were temporarily detailed from line units. They could also be established as a permanent part of a commander's staff as aides-de-camp. They would normally be mounted but could also be on foot, especially during the actual battle, when commanders were relatively close together.

When couriers were required to carry dispatches over long distances, such as from divisions to corps, or from corps to army headquarters, courier lines were established. These lines consisted of a series of courier stations,

details of five-or-six men under a non-commissioned officer, placed at convenient points along the road. If the couriers were lucky, they had a cabin to stay in while awaiting their turn to carry a message to the next station. The couriers remained fully prepared to move at a moment's notice. Their horses likewise remained fully saddled. As a message arrived from the preceding courier station, the non-commissioned officer in charge would check its destination, and the speed at which it was to be dispatched; for example, a message could be marked "Trot", or "Gallop," or "Full Speed." The non-commissioned officer would hand the message over to the next courier, who would proceed on his way. The distance between stations depended on the amount of area the courier line was responsible for, and the number of mounted assets available."

Similar to the other methods of communicating messages, couriers possessed advantages and disadvantages. They were flexible, and added the human dimension to command and control. They could go anywhere that troops were located. The human dimension was also their weakness. Couriers could misinterpret what they saw, or the messages they were to carry and explain to the receiving commander. They could get lost. They were vulnerable, as are all humans, to the effects of their environment; to getting tired, cold and wet; and not least of all, to getting shot by the enemy.

The remainder of this thesis will investigate the use of these command and control mechanisms in the Army of the Cumberland during the period August 16 to September 20, 1863. Chapter 3 will describe the Army of the Cumberland itself, along with the specific telegraph, Signal Corps, and courier assets available. Chapter 4 will describe the movement of the Army from the area around Tullahoma, Tennessee, to its arrival at the Tennessee River and subsequent preparations to cross the river. Chapter 5 will describe the crossing of the Tennessee River, and movement east to Lookout Mountain, along three widely separated routes. It also describes the subsequent consolidation of the three corps after it became apparent that the Confederate forces were concentrated near LaFayette, Georgia. Chapter 6 describes the events leading up to and including the battle of September 19-20. Chapter 7 will provide conclusions.

ENDNOTES

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CHAPTER 3

THE ARMY OF THE CUMBERLAND

The Commanders

The Chickamauga Campaign of August-September, 1863, took place in extremely rough mountainous terrain with a limited road net. The Federal plan of campaign envisioned a major river crossing, followed by a broad front advance by three widely separated army corps through this cross-compartmented terrain. Together, the plan and the terrain strained existing command and control mechanisms (flag, telegraph, courier) to the limit during the campaign. Similarly, two of these mechanisms (telegraph, courier) were tested severely during the battle of Chickamauga.

The Army of the Cumberland in August 1863 consisted of approximately 65,000 infantry soldiers, 11,000 cavalry troopers, and 5,000 artillerymen (who manned 273 artillery pieces).¹ Its Commanding General, Major General William S. Rosecrans, had subordinate to him three numbered corps, a reserve corps, and a cavalry corps. The XIV Corps, consisting of four divisions, was commanded by Major General George H. Thomas. The XX Corps of three divisions was commanded by Major General Alexander McCook. The XXI Corps had three divisions and was commanded by Major General Thomas L. Crittenden. The Reserve Corps contained

three full divisions and was under the overall command of Major General Gordon Granger. The Cavalry Corps of two divisions was initially under the command of Major General David S. Stanley. During the latter stages of the campaign, and during the battle, it was commanded by Brigadier General Robert H. Mitchell.

William Starke Rosecrans was born in Delaware County, Ohio on September 6, 1819. His father was a prosperous businessman, farmer and also engaged in the mercantile business. William received little formal education as a boy, but was a voracious reader and educated himself. He was admitted to West Point in 1838 and graduated as a second lieutenant of Engineers in 1842.²

His early military service was fairly routine. He performed engineer duties at Fortress Monroe in Virginia for one year before being assigned to West Point as an instructor, a position he held for four years. Rosecrans remained at West Point during the period of the Mexican War. He was one of only six men from his West Point class that did not see action in the war with Mexico.³

Following his assignment at West Point, Rosecrans reported to Newport, Rhode Island, where for five years he worked on constructing harbor fortifications and wharfs. He then spent a short time in Washington, D.C., on various construction projects before his health failed. His poor

health forced him to resign from the service in 1854. Rosecrans moved to Cincinnati, Ohio where he undertook various business ventures. One such venture was as the head of a kerosene refinery, where he attempted to produce a pure and odorless coal oil. He was severely burned in a laboratory explosion during this attempt. He was confined to bed for eighteen months while recuperating and showed the scars of this accident for the rest of his life. He was trying to rebuild his business when the war broke out in 1861.⁴

Rosecrans was by no means unique in his lack of tactical experience at the outset of the war. As a West Pointer, he was exposed to Jomini's theories and was an avid member of Professor Mahan's "Napoleon Club," which studied Napoleons campaigns.⁵ His experience subsequent to graduation was typical for a young engineer officer, but he lacked the combat experience many of his contemporaries had gained during the Mexican War. He was only a lieutenant when he originally resigned and therefore had no experience whatever in command and control of large units. When the war broke out in 1861 Rosecrans had been in civilian life for seven years.

When the war began Rosecrans volunteered his services to the governor of Ohio. He received a commission as Colonel of Volunteers and command of the 23rd Ohio Regiment. He soon received an appointment as Brigadier

General in the Regular Army and reported to McClellan in western Virginia, eventually commanding a brigade.

Rosecrans took command in western Virginia, (Department of the Ohio) when McClellan was recalled to Washington, D.C., following First Manassas.*

Rosecrans was transferred further west in April, 1862 to command a division of the Army of the Mississippi and participated in the siege of Corinth in May of that year. He rose to the command of that Army from June through October of the same year. It was during that time that he participated in the Battle of Iuka, Mississippi, under Grant. During the battle Rosecrans failed to trap the retreating Confederate forces, as was required by Grant's plan. This was the beginning of the friction that was to develop between the two leaders, friction that was intensified during the Battle of Corinth in October. Here Rosecrans delayed pursuing the disorganized Confederates for a day, allowing them to escape with most of their equipment.

With these two partial victories to his credit, Rosecrans was given command of the Army of the Cumberland on October 27, 1862. Late in December, after building up his supplies in Nashville, Rosecrans advanced against Confederate General Braxton Bragg, meeting him in the Battle of Murfreesboro, or Stone's River. Bragg's forces achieved tactical success and inflicted more casualties

than they received; however, he did not follow up his initial success and instead withdrew to Tullahoma, Tennessee on January 3, 1863, allowing Rosecrans to claim victory.⁷

Rosecrans' reputation as a military commander is mixed. He was considered by most to be highly intelligent, and an excellent planner and organizer. However, he had the reputation with others for lacking aggressiveness in executing those plans. It seems that at least U.S. Grant thought this after Iuka and Corinth.⁸ Rosecrans showed flashes of strategic genius, but had a tendency to get excited and give too many orders which were confusing to his commanders during the heat of battle.⁹

During a campaign, Rosecrans accomplished an incredible amount of work on his own, seemingly able to go long periods without sleep. He was a staunch Roman Catholic, whose brother was a bishop in the Church. He had a hot temper, which he could not always control and was often hasty in speaking his mind to either superiors or subordinates. He especially resented interference from above with regard to his plans, and then seemed to persist all the more stubbornly in his original intentions. This, coupled with his extreme dislike for politicians and what he considered political military men often brought him into conflict with his superiors in Washington, and eventually led to his relief. He was, however, well liked within

the Army of the Cumberland, where he was affectionately known as "Old Rosy" by his soldiers.¹⁰

Major General George Henry Thomas was born in the middle of slave territory in Southampton County, Virginia, on July 31, 1816. He secured an appointment to West Point in 1836, after receiving a local education. Thomas showed an aptitude for many subjects while at the Academy, particularly artillery and cavalry tactics. He graduated twelfth in his class in 1840 as a second lieutenant in the artillery, and was posted to the 3rd Artillery Regiment.¹¹

Thomas' career prior to the Civil War included duty in Florida against the Seminoles, where he was brevetted first lieutenant for gallantry.¹² He also won brevets for gallant service at Monterey and Buena Vista during the Mexican War. Additionally, he fought Indians in Texas and taught tactics at the Military Academy. When war broke out in 1861, Thomas was a major in the 2nd Cavalry. He replaced Robert E. Lee as lieutenant colonel in the 2nd Cavalry when Lee resigned to return to his native Virginia.¹³

Thomas faced the same decision that many southern born military men had to make in 1861, whether to fight for the Union or their home state. Thomas chose the Union, much to the chagrin of his sisters, who disavowed him to the end of their days.¹⁴ Ironically, there were many on

the Union side who distrusted him because of his southern heritage. He was a man without a state until Tennessee adopted him as a citizen in 1865.¹³

Thomas commanded a brigade in the Shenandoah Valley during the First Manassas Campaign. This was to be his only service in the Eastern Theater. Out west, he commanded the victorious Union forces at Mill Springs in January 1862. Despite winning the Union's first decisive victory, Thomas was passed over for praise and promotion by the War Department, perhaps because of the continuing sentiment against him because of his southern heritage. He commanded Halleck's right wing during the siege of Corinth, before being reassigned as Don Carlos Buell's second in command in the Army of the Ohio. After Buell was forced to step down, Thomas accepted command of what eventually became the XIVth Corps in the newly designated Army of the Cumberland, under General Rosecrans. He held the center of the Army of the Cumberland's line at Stones River in December 1862 and January 1863.¹⁴

Thomas seems to typify the quiet, conservative professional that was perhaps denied his just rewards. He acquired a love of botany when he was young, a quiet hobby that he was to pursue for the rest of his life. At age nineteen, he began studying law under the apprenticeship of his uncle. It was a family friend in Congress who urged young George to apply to the Military Academy, no doubt

thinking of the benefits of its free education.¹⁷ His painful decision to place his nation before his state cost him the love of his sisters, who shunned him. It also won for him the distrust of his Northern compatriots who could never quite accept him as one of their own. Thomas was a fairly large man, six-feet tall and weighing over two-hundred pounds, and his natural inclination, coupled perhaps with a spinal injury he received in 1860, caused him to move in a moderate, deliberate pace. His soldiers affectionately referred to him as "Old Slow Trot" or "Old Pap." He lacked the ruthless ambition shown by many others aspiring for glory during the war. In September, 1862, he received orders to succeed General Buell in command of the Army, after dissatisfaction arose in Washington over Buell's performance. Thomas declined the command, defending Buell's actions and re-iterating his support for his superior.¹⁸ His personal demeanor was reflected in his battlefield actions, which were considered prudent and deliberate. Once resolved to act, however, he did so decisively and with great confidence and vigor. However, his perceived slowness of action caused him to be held in low esteem by some of his superiors, particularly Grant.¹⁹ He played a significant role in some of the Union's most important battles, but today has been forgotten by many.

At the beginning of the movement toward Chattanooga, Thomas' XIVth Corps consisted of four divisions. His First

Division was commanded by Brigadier General Absalom Baird; the 2nd Division by Major General James S. Negley; the 3rd Division by Brigadier General John M. Brannan; and the 4th Division by Major General Joseph J. Reynolds. Its strength was approximately 22,000 officers and men.²⁰

Major General Alexander McDowell McCook was born in 1831 in Columbiana County, Ohio. He was one of fourteen "fighting McCooks," brothers and cousins of Alexander who saw Civil War service.²¹ He entered West Point at age 16 and graduated in 1852, needing five years to complete the four-year course. Upon graduation, he was commissioned a second lieutenant of Infantry and posted to the 3rd Infantry Regiment. He served with his regiment in New Mexico, participating in several Indian campaigns. In 1858 he was detailed to instructor duty at the Military Academy, where he taught tactics, a position he held at the outbreak of the war.²²

When the war began, McCook was relieved of his instructor duties and reported to his home state. He was elected Colonel of the 1st Ohio volunteers, which were already enroute to Virginia. He commanded this regiment at First Manassas. Later, he commanded a brigade in Kentucky and a division under D.C. Buell in the Army of the Ohio, where he participated in the battles of Shiloh and Corinth. After the withdrawal of the Army of the Ohio from Tennessee

to Louisville, Kentucky, McCook was given command of one of the newly organized corps. This eventually became the right wing, and then the XXth Corps, in the Army of the Cumberland under Rosecrans. McCook commanded the right wing at Stones River, where he received the brunt of the Confederate attack, but was able to hold off defeat after the commitment of the Army reserve.²³

At the outset of the Chickamauga Campaign McCook's XXth Corps consisted of three divisions. The First Division was commanded by Brigadier General Jefferson C. Davis, the Second Division by Brigadier General Richard W. Johnson, and the Third Division by Major General Philip H. Sheridan. His effective strength at the beginning of the campaign was approximately 13,000 officers and men.²⁴

Major General Thomas Leonidas Crittenden was born in Russellville, Kentucky, on May 15, 1819. He was the son of U.S. Senator John J. Crittenden, brother of Major General George B. Crittenden of the Confederate Army, and cousin to Brigadier General Thomas Turpin Crittenden. Thomas Crittenden was a lawyer by trade, but at the outbreak of the Mexican War he enlisted in the Army and served as aide to General Zachary Taylor, and then as Colonel of the 3rd Kentucky Infantry.²⁵ He was mustered out of the service in 1848.

At the outbreak of the Civil War Crittenden remained loyal to the Union. He took command of all state troops remaining with the Union after Simon B. Buckner led other state troops to the Confederacy. Crittenden was commissioned a brigadier general of volunteers in September 1861, and commanded a division in Don Carlos Buell's Army of the Ohio at the Battle of Shiloh, and under Buell in Halleck's army at Corinth.

In the fall of 1862, as Buell reorganized his army in Louisville, Kentucky, he assigned Crittenden command of one of the three corps formed.²⁴ This force became the left wing in the Battle of Stones River, under Rosecrans, and was subsequently designated the XXI Army Corps.²⁷

At the outset of the Chickamauga campaign the XXI Corps consisted of three divisions. The First Division was under the command of Brigadier General Thomas J. Wood; the Second under Major General John M. Palmer; and the Third Division under Brigadier General Horatio P. Van Cleve. The Corps' strength in September, 1863 was approximately 14,000 officers and men.²⁸

Major General Gordon Granger was born in Joy, Wayne County, New York on November 6, 1822. He was educated at home before entering West Point in 1841, from which he graduated in 1845, a second lieutenant of Infantry. His initial assignment was with the 2nd Infantry, but he was

soon after transferred to the newly organized Regiment of Mounted Riflemen (later, the 3rd Cavalry). Granger accompanied Scott's army in the Mexican War and he won brevets there to first lieutenant and captain for gallantry. His subsequent service, before the outbreak of the Civil War, was mainly on the western frontier against hostile Indians.

Granger fought at Wilson's Creek, Missouri, in August 1861, and his conduct there won him the colonelcy of the 2nd Michigan Cavalry. He participated as a brigade commander in the operations against New Madrid and Island No. 10, and in the siege of Corinth. He was promoted to major general of volunteers in September, 1862, and commanded a division in minor operations in Kentucky and Tennessee until the summer of 1863, when he was assigned to Rosecrans' army.

Granger was known for his independence, independence which occasionally bordered on insubordination, but at times he was said to lack energy and drive. It was only in a dire emergency that he would show the best of his capability.²⁹ Granger commanded the Reserve Corps throughout the campaign and battle of Chickamauga. The Reserve Corps consisted of three full divisions, numbering over 17,000 men. However, only two brigades of Brigadier General James Steedman's First Division, and a detached brigade under the command of Colonel Daniel McCook, took

part in the battle. The strength of the Reserve Corps that took part in the battle was approximately 5,000 officers and men.²⁰

Major General David Sloane Stanley, chief of cavalry, Army of the Cumberland, was born in Cedar Valley, Ohio on June 1, 1828. He was educated in a log school house until he was fourteen years old, when he was apprenticed to study medicine. However, in 1848 he received an appointment to West Point, from which he graduated in 1852, as a second lieutenant of dragoons (cavalry). His antebellum service was on the western frontier against hostile Indians.

At the outbreak of the Civil War, Stanley was offered a Confederate commission as colonel of an Arkansas regiment, but turned it down. His initial Civil War service was in the Missouri Campaign, where he received a commission as a brigadier general of volunteers in October, 1861. Stanley commanded a division in the Army of the Mississippi at New Madrid, Island No. 10, Iuka and Corinth. He was promoted to major general in April 1863, his commission being dated from November 1862. From November 1862 to September 1863 he was Rosecrans' chief of cavalry. He was, however, on sick leave during the actual battle of Chickamauga, having turned over his command to Brigadier General Robert B. Mitchell on September 15, 1863.²¹

Brigadier General Robert B. Mitchell was born on April 4, 1823, in Richland County, Ohio. Whether he graduated from Kenyon College, Ohio, or Washington College, Pennsylvania, is a matter of controversy. It has been recorded that he graduated from each institution, but neither school has any record of his attendance.

Mitchell was a lawyer by profession. He was a practicing attorney in Mansfield, Ohio, before taking time out to participate in the war with Mexico, serving as a lieutenant in the 2d Ohio Infantry. He later resumed his law practice. Mitchell re-settled in Kansas Territory in 1860, served in the legislature, and also served as the treasurer of the Territory until Kansas became a state in 1861.²²

With the outbreak of the Civil War, Mitchell was commissioned colonel of the 2d Kansas Infantry and participated in the Battle of Wilson's Creek, where he was badly wounded. He was appointed brigadier general in 1862, and commanded a division at the Battle of Perryville, Kentucky. Mitchell was then stationed at Nashville for several months before assuming command of the cavalry for the Army of the Cumberland on September 15, 1863.²³

The cavalry command of the Army of the Cumberland consisted of the 1st Division, under Colonel Edward M. McCook, and the 2d Division, under Brigadier General George

Crook. Its effective strength was approximately 10,000 officers and men.²⁴

Command and Control Assets

The Army of the Cumberland made extensive use of the telegraph, under the control of the United States Military Telegraph, as did most of the Northern armies. The U.S. Military Telegraph in the Department of the Cumberland was under the charge of John C. Van Duzer, who was attached to Rosecrans' staff with the honorary appointment of captain (although he was not officially commissioned a captain until October 27, 1863). Van Duzer was born in Erie County, New York, in 1827. He originally worked as a printer, and eventually became editor and publisher of a county newspaper in New York. It was there, in 1848, that Van Duzer learned telegraphy. He held various jobs as a telegrapher up to the beginning of the Civil War, at which time he volunteered his services to the Union. On 9 January, 1863, he was appointed Second Assistant Superintendent, U.S. Military Telegraphs, and re-assigned from Grant's department to the Department of the Cumberland.²⁵

Van Duzer collected a large quantity of telegraph stores during the six-months of inactivity in Murfreesboro, following the Stone's River battle. These supplies included about one-hundred miles of wire.²⁶ During the

last half of 1863, at the time of the Chickamauga Campaign, Van Duzer employed approximately 180 operators, repairers, laborers, and clerks in the Department of the Cumberland.³⁷ By direction of Rosecrans, one operator was assigned to each division, and two to each wing (later, each corps); three were assigned to the Army Headquarters. These three rode with the General and attended to all telegraph correspondence. Couriers were in readiness at all times, to be sent to the nearest established telegraph office.³⁸ Van Duzer and his men established telegraph stations throughout the campaign's area of operation. They kept pace with the army's advance and linked Rosecrans to his corps commanders; to his line of communication back to Murfreesboro and Nashville; laterally to Grant's forces in Vicksburg and Burnside's forces in eastern Tennessee; and ultimately to Washington D.C.³⁹

The Signal Corps in the Army of the Cumberland was under the command of Captain Jesse Merrill.⁴⁰ Merrill, originally of the 7th Regiment, Pennsylvania Reserve Corps, received his signal instruction in the first class of students to be trained at the Signal Camp of Instruction, Georgetown, District of Columbia, in August 1861.⁴¹

General Buell, then commanding the Department of the Ohio requested a detail of signal officers in December 1861. In January 1862, he was sent a detail of five

officers, including Merrill, and ten men from the Signal Camp. Merrill took command of the signal detachment on March 17, 1862, when its original commander became ill and was relieved from duty.⁴²

Merrill and his party set up their own signal camp of instruction in the department to train officers detailed to signal duty. These officers were provided by the regiments in the department. However, there was at that time no permanent organization for the Signal Corps within the Union Army. The bill passed by Congress, March 3, 1863, officially establishing the Signal Corps called for one captain for each army corps or military department, and as many lieutenants, not to exceed eight, as the President might deem necessary. For each officer there was to be assigned one sergeant and six privates.⁴³ However, these rules were not yet observed in 1861. As a result, officers detailed to Signal Officer duty from their regiments could be recalled at any time. Indeed, there was an annoying tendency for brigade commanders to recall the officers detached from their commands at the moment their signalling service was most urgently needed.⁴⁴ Not surprisingly, this occurred most often just before a major battle was to take place, as brigade commanders tried to maximize their present for duty strength. This problem occurred during the Battle of Corinth, when the signal party was not able to participate because of the unexpected withdrawal of

many of its members by their parent units. Those officers which were not recalled by their parent units often volunteered for staff duty in the Army headquarters, or acted as aides or reconnaissance scouts.⁴⁵

Although faith in the ability of the Signal Corps might not have been very strong, they nevertheless were used during major movements made by the Army. They were first employed in the movement from Louisville, Kentucky to Nashville, Tennessee, in February 1862. They were employed again at Shiloh, although the thick woods prevented any extensive use. After Corinth, Gen. McCook, who was separated from the remainder of the Army by the Tennessee River, used the Signal Corps to maintain contact between himself and army headquarters.⁴⁶

In the move from Nashville to Murfreesboro, in late 1862, the Signal Corps again had difficulty supporting the army because of the dense woods. The constant movement of the elements of the army and of its commanders also prevented the Corps from establishing signal stations in trees, on hills, etc., in a timely manner. Similar reasons were cited for the lack of extensive use of the Corps at Stone's River.⁴⁷

The reputation of the Corps within the Army of the Cumberland was mixed. Lieutenant Colonel George E. Flynt, General Thomas' Chief of Staff in the XIV Corps indicated he had "little confidence in the flag system at best".⁴⁸

However, Rosecrans complained to the Adjutant General of the Army in December 1862, when four lieutenants from his signal detachment were to be transferred to Memphis. He earnestly recommended the order be rescinded, since such a transfer would break up his small Signal Corps, which he had just put into "working time".⁴⁷ Likewise, Thomas himself lauded the usefulness of the Corps, noting its practicality and great usefulness during the moves in Kentucky, and again at Stone's River. He said a "signal corps was one of the essential organizations of a well-appointed Army".⁵⁰ After the Battle of Chickamauga, Rosecrans stated "the Signal Corps has been growing into usefulness and favor dally for the last four months, and now bids fair to become one of the most esteemed of the staff services".⁵¹ The competition and subsequent function between the Signal Corps and the U.S. Military Telegraph did not seem to be a major problem in the Army of the Cumberland during this period. Van Duzer stated in his report of this period:

During the whole year I received valuable aid from Captains Merrill [et.al.], of the Signal Corps and the cooperation of these two branches of the service was hardy and cordial. I have no other than pleasant recollections of my intercourse with the officers of that Corps.⁵²

Captain Merrill had an average of forty-two officers on duty in the Signal Corps in the Army of the Cumberland

In 1863. His other assets included five signal field trains (field telegraphs, or "flying" telegraphs). Some of these field trains carried five miles of wire, some had ten, in addition to lance poles, reels, and tool sets. These field trains became available after the Battle of Stone's River and therefore had not been used in battle up until the time the Chickamauga Campaign began.⁵² The troops assigned to Signal Corps duty performed two major functions. First and foremost was to establish communications among the various elements of the army. Second, they performed duties as scouts or intelligence gatherers, reporting back information on terrain and enemy troop movements.⁵⁴

Couriers were the third major command and control mechanism used by the Army of the Cumberland. They were used throughout the campaign, and provided communications between units of all echelons. Although most infantry, mounted infantry, or cavalry units were liable for courier duty, Rosecrans had a unit that performed this duty as one of its primary missions. The 15th Pennsylvania Volunteer Cavalry Regiment served Rosecrans as his headquarters guard, and as his personal reconnaissance and courier asset.

The 15th Pennsylvania Voluntary Cavalry Regiment began in 1861 as the Anderson Troop, an independent cavalry company of Pennsylvania volunteers. They were specifically

formed to serve as headquarters security and to perform courier service, and were named in honor of Brigadier General Robert Anderson, of Fort Sumter fame, who commanded the Army of the Ohio at Louisville, Kentucky in 1861. The company was raised by William J. Palmer of Philadelphia, who conceived of the idea of organizing a select body of intelligent young men of good standing from throughout the state for headquarters security and guard service.⁵⁵

Palmer was elected captain of the unit, which departed Carlisle Barracks, Pennsylvania in December 1861 for Louisville. General Don Carlos Buell had replaced Anderson as commander of the Army of the Ohio by the time Palmer's command reached Louisville. Buell adopted the unit as his headquarters guard, although it retained its original designation as the Anderson Troop.⁵⁶ Buell was so pleased with its performance that he asked Palmer to raise a battalion. Palmer quickly agreed to do so. The response to the recruiting efforts throughout the state were so positive that Palmer succeeded in recruiting a regiment. He received War Department permission to officially organize the 15th Pennsylvania Volunteer Cavalry, although it was still unofficially known as the "Anderson Cavalry", or "Anderson Troop".⁵⁷

The Anderson Troop wore a distinctive uniform. Many of its members came from well-to-do families, so could afford to have their uniforms tailor made. The jacket was

similar to a regulation cut cavalry shell jacket, but sported elaborate orange braided trim, rather than the traditional cavalry yellow. The light or dark blue trousers also had orange stripes. The officers wore a regulation uniform, with the exception of the shoulder straps, which were orange cloth bordered with gold embroidery rather than the traditional yellow.⁵⁸ The weapons carried by the troopers included a light cavalry saber, a Colt revolver, and a Sharps carbine.⁵⁹

The new regiment got off to a rocky start. Before it could be fully organized it was committed to counter the invasion of Maryland by the Confederates. The unit was committed piecemeal as untrained scouts, pickets and couriers. Colonel Palmer was captured on September 18, 1862, while on an independent reconnaissance mission. The remnants of the regiment were reassembled at Carlisle Barracks and then transferred to Louisville to General Rosecrans, who had succeeded Buell as commander of the newly formed Army of the Cumberland. No permanent officers had been chosen for the command, since the terms of enlistment designated that each man enlisting did so as a private.⁶⁰ Rosecrans apparently wanted to use the Regiment as part of his regular cavalry force, and approximately two-thirds of the troopers simply refused to march with him. They contended that they had enlisted to be headquarters security and couriers, and were not properly

trained for full combat duty. Those who did initially march with Rosecrans saw action at Stone's River, and suffered substantial losses. After Stone's River Rosecrans reorganized the unit, and Colonel Palmer returned from captivity to take command of the regiment.⁴¹

During the Chickamauga Campaign the Regiment did indeed perform duties as Rosecrans' headquarters security element, as reconnaissance scouts, and as couriers. Corporal James W. Over, Company G, 15th Pennsylvania Cavalry, notes the following:

During the Tullahoma and Chickamauga campaigns our Regiment, with the exception of three companies attached to the department headquarters, was used for special scouting and courier duty. In these campaigns the wings of the army were frequently so far separated that the courier line was forty or fifty miles in length. Five or six men would be stationed at posts at intervals of six or eight miles, one always being ready, night and day, to mount and receive the dispatch from the approaching courier and carry it at a gallop or trot, as might be indicated on the envelope, to the next post. Most of the dispatches were sent from the different headquarters in the evening, and the couriers had many exciting and dangerous rides across mountains, through forests and country infested with rebel guerrillas, when the nights were so dark they could not see the road and had to depend upon their horses to follow it.⁴²

This chapter has introduced the principal commanders of the Army of the Cumberland serving during the August-September 1863 time frame. It has also introduced the three primary command and control mechanisms available

to Major General Rosecrans, with specifics on their status in the Army of the Cumberland during the same period. The following chapters will investigate precisely how they were employed during the campaign and battle of Chickamauga.

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CHAPTER 4

MOVEMENT TO THE TENNESSEE RIVER

June 1863 found the Union and Confederate forces facing each other on three main fronts. In the east, General Robert E. Lee and his Army of Northern Virginia held the initiative for the moment. Lee was preparing for the invasion of the North against the Army of the Potomac, currently under the command of Major General Joe Hooker. In the west, Major General U.S. Grant continued his strangle-hold on Lieutenant General John Pemberton's forces at Vicksburg.

In middle Tennessee, Major General Rosecrans' Army of the Cumberland occupied the area around Murfreesboro. Opposing him was General Braxton Bragg's Army of Tennessee. Both armies had been relatively inactive since the battle of Stone's River in December 1862. Both were occupied with gathering enough forage before hostilities resumed. Rosecrans was also concerned with keeping his line of communication to Nashville secure. Additionally, Rosecrans wanted his flanks secure before advancing south. Thus, he was interested in the situation in Vicksburg, which for the time being kept Confederate General Joseph E. Johnston's army occupied. On Rosecrans' left flank, Major General Ambrose E. Burnside's Army of the Ohio was to advance into eastern Tennessee from Kentucky via the Cumberland

Gap. This move by Burnside would occupy the Confederate corps of Major General Simon B. Buckner, currently in east Tennessee.¹

On June 23, after much prodding by General-in-Chief Halleck, Rosecrans was ready to move. Bragg's infantry was in fortified positions from Shelbyville to Wartrace. His forces also occupied the gaps in the high ground south of Murfreesboro, through which Rosecrans' advancing army must pass. Bragg's cavalry secured his flanks from McMinnville on the right to Columbia on the left.

Rosecrans felt that Bragg's positions at Shelbyville were too strong to attack directly. He therefore sent his Reserve Corps, under Major General Gordon Granger, and the Cavalry Corps under Major General David Stanley, against this position as a feint. Meanwhile, he massed his three main corps against Bragg's right at Wartrace. The movement succeeded. Although there was considerable fighting at the gaps, the Confederate forces were forced back from one position to the other. The strongly fortified left, near Shelbyville, also had to move back to keep from being cut off. By 30 June, the Army of the Cumberland had reached Manchester, where it concentrated. Bragg's army fell back to Tullahoma. However, on July 1 Bragg evacuated Tullahoma and headed for Chattanooga. Within a week all of his army was concentrated there.²

The Tullahoma campaign lasted only nine days, in which General Rosecrans maneuvered General Bragg out of entrenched positions at Shelbyville, out of strong positions in the mountain passes, out of a fortified base at Tullahoma, and all of the state west of the Tennessee River. He had lost only 560 men killed, wounded, or missing.²

At the end of the Tullahoma campaign Rosecrans' army was spread out along the western base of the Cumberland Mountains. [See Figure 1.] Crittenden's XXI Corps was on the left, in McMinnville. Forty miles to the west was McCook's XX Corps, forming the right flank. Thomas and his XIV Corps were in the center at Manchester. Chattanooga lay nearly seventy miles to the southeast by rail, even further by road.⁴

Now that Middle Tennessee was cleared, Bragg's army constituted one major objective for Rosecrans. Pushing Bragg completely out of Tennessee would accomplish the long sought after goal of liberating the East Tennessee Unionists.⁵

The other major objective was Chattanooga itself. At one time, Richmond, Corinth, Chattanooga and Vicksburg had been the four bastions of the Confederacy's frontier. Corinth and Vicksburg were now in Union hands, Vicksburg having fallen on July 4. Richmond was of greater importance as a symbolic objective, but Chattanooga was

more important in the strategic sense. Railroad lines ran from Chattanooga to the Ohio, the Mississippi, the Gulf, and the Atlantic. Chattanooga guarded the approach to the eastern Tennessee coal fields. The possession of Chattanooga would practically isolate Virginia and North Carolina from Alabama and Mississippi. It gave access to the interior of Georgia. It was the gateway which enabled the Confederates to shift troops between Virginia and the West. Chattanooga held some political importance also. Many of its inhabitants, who did not own slaves, were pro-Unionists. As General Thomas stated, "Holding Chattanooga enabled us to strike at its belly where it lived".⁴

General-in-Chief Halleck again urged Rosecrans to mount an offensive against Bragg as soon as possible. Halleck's worry was that General Joseph E. Johnston's forces, no longer engaged in Mississippi after the fall of Vicksburg, would reinforce Bragg. Halleck wanted Rosecrans to destroy Bragg and capture Chattanooga before this could happen. Halleck repeatedly relayed the "great disappointment" felt in Washington over the slowness of Rosecrans' advance.⁷

Although Rosecrans had many admirable traits, he was irascible, and was constantly wrangling with the War Department, complaining that something was wrong which needed to be righted in Washington, not in his Army.

Rosecrans felt he needed time to prepare before moving toward Chattanooga. He needed to collect supplies, particularly forage for his animals, and the corn in that region would not be ripe for at least two weeks. The railroad leading southeast from Murfreesboro, his main line of supply, had to be repaired. He also needed time to acquire information on the mountain roads and passes over which he must move.²

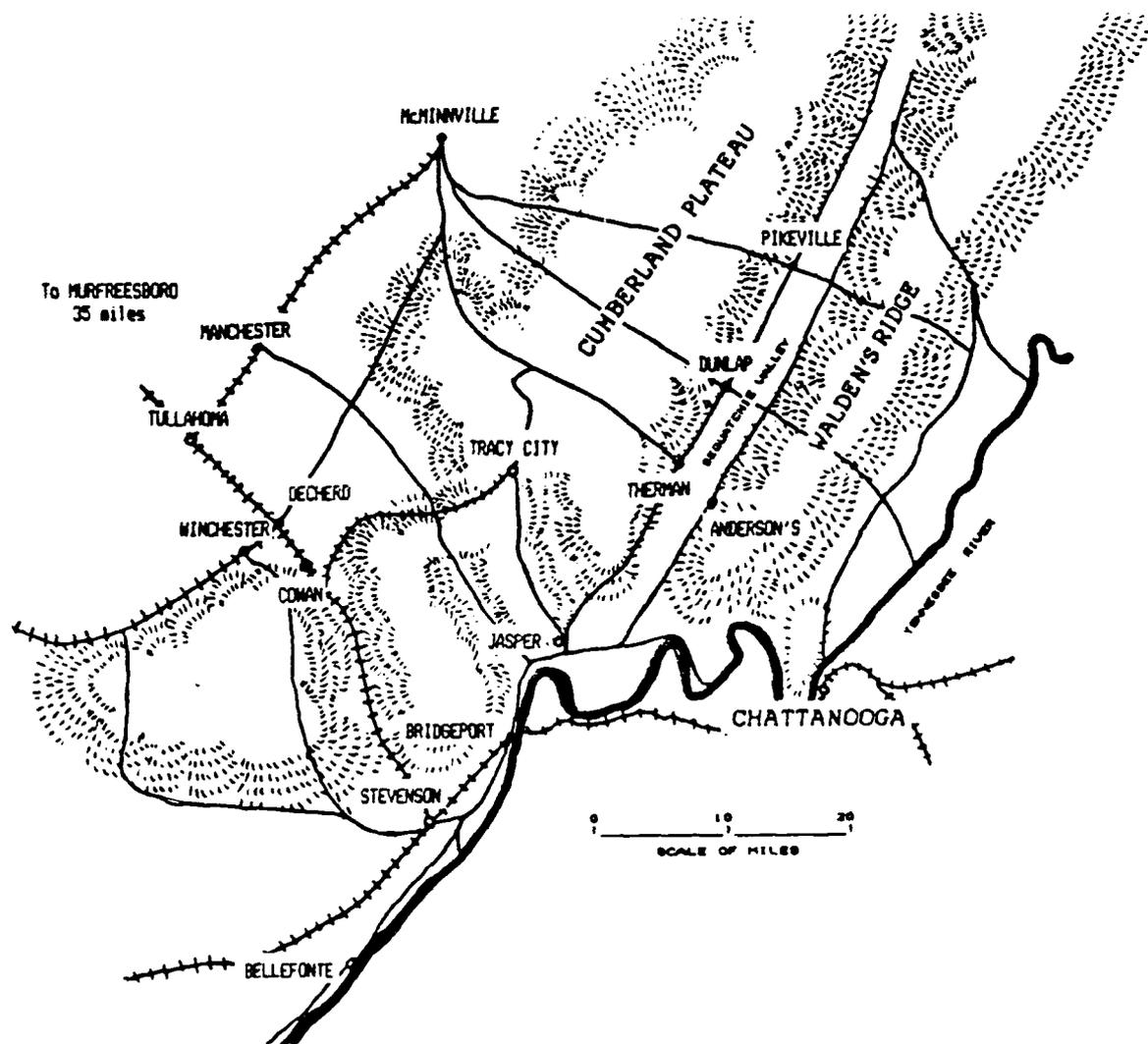


FIGURE 1. TULLAHOMA TO THE TENNESSEE RIVER

The great Cumberland Mountain Range was Rosecrans' immediate obstacle. This range divided the waters which flowed into the Cumberland River to the north, and the Tennessee River to the south. The Cumberland Range rose far to the northeast, and extended into Alabama to the southwest. Directly in front of the Army was the Cumberland Plateau, 2200-feet high. Beyond was the Sequatchie Valley, three-or-four miles wide and sixty-miles long. East of the Valley rose Walden's Ridge, 1300-feet high. Further to the east was the Tennessee River, 400-to-600 yards wide above Chattanooga, 400-to-900 yards wide below it. Unlike the Mississippi, the Tennessee was blocked to military traffic 200 miles south of Chattanooga at Muscle Shoals. The Navy could not aid Rosecrans, as it had assisted Grant at Vicksburg.²

The routes taken to get to the Tennessee River would depend upon where Rosecrans wanted to cross. Essentially, he had three choices. He could cross above Chattanooga, directly across from the city, or below it. To cross directly opposite the city itself would be difficult. The river is narrow there and commanded from high ground on both sides.¹⁰ Crossing the river above Chattanooga was the most direct route. It would allow Rosecrans to gain the support of Burnside's forces and threaten Bragg's line of communication, which was the railway from Chattanooga back through Dalton, Georgia.

This is what Bragg expected. However, this route would separate Rosecrans from his main supply line, the railroad. Resupply would have to be by wagon train over tortuous mountain passes. The third choice, below the River, would allow use of the railroad which extended through Tullahoma to Stevenson and Bridgeport, Alabama. It would require, however, movement over several mountain ranges in northern Alabama and Georgia after crossing the Tennessee, in order to attack Bragg's line of communication.¹¹

Rosecrans decided to cross below Chattanooga, while conducting a feint above it to deceive Bragg of his true intentions. A feint above Chattanooga would also cause Bragg to pull his guards from locations below the city, where the actual Union crossings were planned.¹²

Rosecrans' preparations were complete by mid-August, and on the 15th of that month, he issued his movement order to the corps commanders. On the 16th, the campaign to take Chattanooga began.¹³

Rosecrans' movement order of August 15 was very detailed. Thomas was to split his XIV Corps into two wings, with two divisions in each wing. One wing, Negley's and Baird's divisions, was to move to the vicinity of Stevenson, Alabama via the Crow Creek Valley. The other wing, Reynolds' and Brannan's divisions, was to move into the Sequatchie and Battle Creek Valleys. Crow Creek and Battle Creek Valleys are separated by approximately twelve

miles of steep, wooded terrain interlaced by creeks, therefore these two wings could not support one another. However, Thomas was given explicit instructions to "provide rapid and certain communication between his right and left wings by courier and signal, or both combined".¹⁴ The movement was to begin on the morning of August 16. Thomas was given until the 19th of August to be in position. He was also ordered to send Colonel John T. Wilder's mounted brigade of infantry on a special mission across Walden's Ridge. Wilder was to make a demonstration against Chattanooga from the north bank of the Tennessee River. This was to be a display of force, in order to deceive the Confederate forces in Chattanooga.¹⁵ Crittenden's XXI Corps was also given detailed instructions. Wood's, Palmer's, and Van Cleve's divisions were ordered to move to Therman, Dunlap, and Pikeville, respectively. All three towns are in the Sequatchie Valley. Van Cleve, on the Army's left flank, was also given Colonel Robert H. Minty's cavalry brigade from the Cavalry Corps. The cavalry was given the mission of first clearing rebels from the town of Caney, Tennessee. Then, with one battalion, it was to screen the left flank from the vicinity of Sparta, Tennessee, approximately thirty miles northeast of McMinnville. Crittenden's Corps was to be in position by the night of August 19th.

Crittenden was also instructed to open communications between divisions, and from the Corps to the Department Headquarters. Although no specific instructions were given as to the mechanism to be used, the communications to Department Headquarters, then in Winchester, Tennessee, was to be via McMinnville for the left-most units (presumably Palmer's and Van Cleve's divisions) or Tracy City for the right-most units (presumably Wood's division.)

Crittenden was also given instructions to send units further east over Walden's Ridge to reconnoiter crossing sites over the Tennessee River. At the same time he was to ensure that these forces were seen by the Confederate forces south of the river. This was to be done in support of the deception plan against Bragg. Wood, Palmer, and Van Cleve each sent brigade-sized units over Walden's Ridge to fulfill this mission. (Van Cleve sent what remained of Minty's cavalry brigade.)¹⁴

McCook's XX Corps was to have Johnson's division move via Bellefonte Road and set up camp near Bellefonte, Alabama. Davis' division was to move "by the best intermediate route over the mountains, down Raccoon Cove and select a camp between Mud and Raccoon Creeks," which lay approximately 18 miles southwest of Stevenson. Johnson was given until August 19 to be in position, Davis until the 20th. Both were instructed to open communication with Corps Headquarters. Sheridan's division

of McCook's Corps was already in the vicinity of Stevenson.¹⁷

The Cavalry Corps (minus Minty's brigade) was given instructions to follow the Department Headquarters with one brigade. The remainder of the cavalry were to be given special instructions by Rosecrans at a later time.

The Reserve Corps was to move to protect the depot being established at Fayetteville, Tennessee, and to move units down to Athens and Decatur, Alabama, securing Rosecrans' right flank. No special communication instructions were given to either the Cavalry or Reserve Corps.¹⁸

Thomas' right wing (i.e., Negley's and Baird's divisions), along with McCook's corps, the cavalry, and Department Headquarters were to draw subsistence from the depot established at Stevenson, or directly from the railroad which went to Stevenson. Thomas' left wing (Reynold's and Brannan's divisions), and Crittenden's corps were to draw subsistence from McMinnville or Tracy City, once the latter was established as a depot. The depots and railroad lines connecting them were under the protection of Granger's Reserve Corps.¹⁹

Rosecrans' very detailed movement order gave explicit instructions down to division level. Indeed, the corps commanders' prerogatives were not a consideration. Rosecrans even gave instructions to each division commander

to divide his trains into three sections, and then to replenish the haversacks of the troops from these sections successively, sending the empty wagons back to depots to be resupplied. He reminded commanders that "great pains must be taken to organize these trains, under competent officers, adequate guards, and staff".²⁰ Often, orders from Department Headquarters were issued directly to divisions. Occasionally, copies were sent to the appropriate corps commanders, but most often this was not the case.²¹ This was by no means an example of centralized planning, with decentralized execution. Rosecrans' command style was to micro-manage the movement of units directly from Department Headquarters. This command style puts an extra burden on command and control assets, particularly communications assets.

The U.S. Military Telegraph service provided the basis of the communications assets available to Rosecrans. The main line of the military telegraph ran along the Nashville and Chattanooga Railroad. The rail line ran generally southeast from Tullahoma, through Decherd, Cowan and Anderson, Tennessee, then down to Stevenson, Alabama, which was near the banks of the Tennessee River. The rail line then paralleled the river up to Bridgeport, where it crossed the river and ran almost due east into Chattanooga.²²

Captain Van Duzer of the U.S. Military Telegraph service established a telegraph office in Tullahoma on July 2. By July 7 he had extended the line south to Decherd, and a branch to Winchester. A branch line was also built from Tullahoma to McMinnville during that month. August saw the telegraph line extended south to Cowan, and a branch to Tracy City. The line then continued southeast along the railroad all the way to Bridgeport, Alabama, opening offices along the way at Anderson, Tennessee, and Stevenson and Bolivar, Alabama. From Stevenson the line was pushed southwest approximately twenty-five miles, to Larkinsville, Alabama.²²

Rosecrans seems to have jealously guarded his telegraph assets. On August 15, he chastised the colonel who commanded the engineer troops responsible for keeping the rail lines open, stating,

You have done wrong in interfering with our [telegraph] operations. Hereafter, all facilities you desire in telegraphing should be made known to these headquarters. All control of operations is confided to the chief, Captain Van Duzer.²⁴

On August 15, the entire Army of the Cumberland, still stationary, was tied together by stations of the U.S. Military Telegraph service.

Rosecrans telegraphed information to General-in-Chief Halleck on a daily basis. Transmittal time for these messages varied greatly, ranging from approximately two hours, to over twenty-six hours. The average, however, was

approximately eight hours for a message to get to Washington, D.C.²⁵ Rosecrans also attempted to keep in constant telegraphic contact with Burnside at Knoxville. In addition to telegraph messages between the two generals, Rosecrans instructed Crittenden to make physical contact with Burnside's right flank cavalry forces.²⁶

From August 16 through 20, the Army of the Cumberland moved toward the Tennessee River and the Sequatchie Valley in ten columns, spread out over eighty miles, over extremely rough terrain. Department Headquarters and Headquarters, XIV Corps, along with two of its divisions, straddled the existing rail and telegraph lines toward Stevenson. The other columns moved away from their immobile telegraph stations. Couriers became the prevalent means of communication. Couriers transmitted information from brigades to divisions, and from divisions to corps. They connected the corps headquarters to telegraph offices in the rear, at McMinnville, Tracy City, Cowan, Winchester, and Decherd. Dispatches could be quickly transmitted between telegraph stations, but then had to be carried by courier from the receiving station to the receiving command. Most orders to subordinate units carried instructions to establish a courier line to maintain communications with higher headquarters. Two companies of mounted infantry were suggested to one division commander

as a sufficient number of troops for courier duty between division and corps headquarters.²⁷

The Signal Corps did not contribute to controlling the Army movement from Tullahoma to the Sequatchie and Tennessee Rivers. Signal stations were not set up until August 20, after Crittenden's XXI Corps was established in the Sequatchie Valley. Once the Valley was occupied, and units were once again stationary, signal stations were established from Pikeville to Dunlap, and then from Dunlap to Therman. By August 23, the Signal Corps established signal stations linking Rosecrans' headquarters, by that time in Stevenson, with Thomas' XIV Corps headquarters in Bolivar Springs. This line was extended further to link Bolivar Springs with Bridgeport, then on to Jasper, where Thomas' left wing divisions were located.²⁸

The Chickamauga after-action report submitted on October 1, 1863 by Captain Jesse Merrill, Rosecrans' Signal Officer, implies that a continuous signal line was established from Pikeville to Stevenson, a distance of over sixty-five miles. This line would have connected all the corps of the army to the headquarters in Stevenson.

On August 24, however, General Reynolds of XIV Corps at Jasper, signalled Merrill with information on the general location of General Wood's division of XXI Corps, then near Therman. Reynolds also told Merrill that he did not know the location of Crittenden's XXI Corps headquarters, (then

at Dunlap).²⁹ Reynold's signal was apparently in response to a previous inquiry by Merrill.

This indicates that the signal line between Jasper and Therman was not yet established. There is no indication in the Official Records that a signal line ever was established between Jasper and Therman, linking XIV and XXI Corps. (It is also curious that Merrill was asking for the location of two headquarters, Wood's and Crittenden's, that supposedly were already connected via signal stations).

A line of signal stations eventually connected the four brigade-sized elements operating to the east of Sequatchie Valley, on Walden's Ridge. However, this signal line was not established until September 4.³⁰

The Signal Corps did display utility in its secondary mission as stationary observation posts. As the corps continued preparations for crossing the Tennessee River, Merrill's signal officers reported on Rebel activity on the far side of the River. On August 19, a signal station was established near the mouth of Battle Creek, supporting Reynolds at Jasper. This station performed observation duties for several days before being linked, on August 22, to the signal station at Bridgeport. Until that time, its observations had to be carried by courier to XIV Corps headquarters.³¹

Interestingly, as the signal stations were being established, (starting from about August 20), the corps were

still concerned with expanding their courier lines, and in maintaining the lines already established. Orders were given to the divisions of XXI Corps to establish courier lines immediately upon reaching the Sequatchie Valley, and they were used throughout the period XXI Corps occupied the Valley.²² On August 23, General Reynolds requested that a portion of the Cavalry Corps be assigned to him for courier duty. He stated that his orderlies were becoming worn out. He particularly needed the cavalry to act as couriers to Colonel Wilder's brigade on Walden's Ridge. On that day, August 23, Colonel Daniel Ray's Second East Tennessee Cavalry, of Colonel Edward McCook's First Cavalry Division, was ordered by Department Headquarters to establish a line of couriers from Bridgeport to Jasper, where Reynolds was located.²³ This relieved Reynolds of courier responsibility from Jasper to Bridgeport. A courier line connecting XIV and XXI Corps was established from Jasper to Dunlap on August 25 (the day after Captain Merrill requested information on the location of XXI Corps Headquarters).²⁴ However, some messages from XXI Corps to Department Headquarters were still sent telegraphically via McMinnville and Tracy City. On August 27, Cavalry Corps assets were again detailed to establish a line of couriers from Bridgeport to Department Headquarters in Stevenson, even though there was a telegraph line and a signal flag line connecting these two points.²⁵

Rosecrans' plan for movement to the Tennessee River was sound. He was severely constrained by the narrow routes through, or over, the Cumberland Plateau, which lay between his force and Bragg's. He also had to get to the Tennessee River as quickly as possible. Although Rosecrans was not known for speed of action, his mules and horses required 28 railroad carloads of forage a day, and forage was in very short supply north of the river.³⁴ Spreading his army out north of the river increased the area from which forage could be obtained. However, Rosecrans' most compelling reason for spreading his forces was to deceive Bragg. He needed to make a show of force to indicate a crossing above Chattanooga, where Bragg might be expecting him, while simultaneously moving the bulk of his army to crossing sites below the town.

Rosecrans did not make the best use of the command and control mechanisms available to him for the movement to the Tennessee. During the period August 16 through 19, one-half of Thomas' corps and Department Headquarters centered their moves on the existing rail and communications line. All other forces of the Army were continually moving away from their base of communications. These units were forced to carry messages by courier to a telegraph station in the rear. These stations would then forward the message to the gaining headquarters. This method used up scarce cavalry and mounted infantry

resources. Most importantly, it increased the time required for Rosecrans to obtain information and to send orders to subordinates.

Rosecrans, however, was not expecting contact with the enemy during this period. Therefore, timeliness of message delivery was not an overriding factor. He knew that Bragg was concentrated in Chattanooga, (although he was concerned about guerilla activity north of the River). Rosecrans was conducting an operational movement, albeit a wide-spread one, not a movement to contact. Further, the rough, densely wooded terrain precluded effective use of the Signal Corps assets. Additionally, there were the deception considerations, mentioned above. Rosecrans might be excused for his inefficient use of command and control mechanisms under these circumstances.

From August 19 to the end of the month, as units were stationary and making preparations to cross the Tennessee River, couriers were still the primary means of communicating. This was not an excessive burden on Thomas' or McCook's Corps, since both were positioned close to Department Headquarters. Crittenden's corps, however, stressed the system to its limit. Rosecrans' plan for the movement of the XXI Corps, as discussed above, was based on the necessity of conducting a show of force to deceive Bragg. Control of this movement was centered upon the

telegraph stations, and line of supply, available at McMinnville and Tracy City.

Crittenden's orders to report to Department Headquarters via McMinnville and Tracy City required the courier line to constantly ascend and descend the hazardous slopes of the Cumberland Plateau. If this was not enough of an obstacle to efficient control, there was no telegraph operator at Tracy City until after Crittenden's entire corps had occupied the Sequatchie Valley on August 19.²⁷ Couriers arriving at Tracy City, finding no operator, were forced to continue to the next active station, at Cowan.

Compounding the problem were Crittenden's units further east, on Walden's Ridge. Colonel Minty's Cavalry Brigade, attached to Van Cleve's division of Crittenden's corps, operated on the extreme left flank of the army. A report originating from Minty had to be carried by courier to Van Cleve's headquarters at Pikeville before being forwarded to Crittenden at Dunlap. The link from Pikeville to Dunlap could have been via courier or signal flag. The report was then carried across the Cumberland Plateau to the telegraph station at McMinnville, where it was transmitted over telegraph lines to Department Headquarters, by this time in Stevenson. The total distance travelled was over 150 miles, almost three times the straight-line distance between the origin and destination points. A similar path was followed for messages

originating from the other brigade-sized units operating on Walden's Ridge.

As an alternative, General Wood, of XXI Corps, requested that he be allowed to dispatch his couriers down the Sequatchie Valley to Jasper when sending messages directly to Department Headquarters, instead of over the Cumberland Plateau to Tracy City. He was refused permission. The route from his location, in Therman, to Jasper was not considered safe from Rebel forces.³⁸

Crittenden did complain to Rosecrans' Chief of Staff, Brigadier General James A. Garfield, about the courier situation on August 20. He pointed out that it was only seventeen miles from Jasper to Department Headquarters, then at Stevenson. This route was via relatively straight and flat roads. The distance from Crittenden's headquarters, in Dunlap, to Jasper was about equal to the distance from Dunlap to Tracy City, but the road to Jasper was infinitely better.³⁹ Messages could therefore be sent more quickly, and with less wear and tear on couriers. The subsequent communication to Crittenden, this directly from Rosecrans himself, and not from Garfield, made no mention of this predicament, although it did answer some other questions posed by Crittenden in his original dispatch.⁴⁰

Rosecrans could have used his Signal Corps to great advantage during this period when units were stationary.

There is no indication that any attempt was made to do so. The Signal Corps could have overcome part of the fear of the route from Therman to Jasper not being safe. Several signal stations, spread miles apart, were less liable to capture than a road-bound courier. Even if a commander chose to protect these signal stations with infantry, the infantry would not have to be mounted. This would save wear and tear on scarce mounted assets. Transmissions laterally from XXI Corps to XIV Corps via signal station, even of lengthy messages, would have been quicker than couriers carrying messages to telegraph stations in the rear. This type of situation, communication between stationary headquarters over terrain offering relatively good line of sight, such as up and down the Sequatchie and Tennessee River valleys, was precisely what the Signal Corps was best at doing.

Rosecrans had no apparent plan to manage his three communications assets. Captain Van Duzer with his telegraph service, and Captain Merrill with his Signal Corps acted independently. Rosecrans' only guidance to his corps commanders was to urge them to establish courier lines, and to report to Department Headquarters often. He did not establish any rules about which type of messages should be passed over a particular asset. During this period, General Thomas reported to Department Headquarters using all three means: signal, telegraph, and courier. Although

this could be seen as taking advantage of the multiple assets available, it might also be seen as a lack of discipline in managing those assets.

ENDNOTES

CHAPTER 4

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29. Q.R., XXX, Part 3, p. 151.
30. Q.R., XXX, Part 3, p. 240.
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CHAPTER 5

MOVEMENT FROM THE TENNESSEE RIVER TO CONSOLIDATION AT McLEMORE'S COVE

By the end of August 1863, General Rosecrans' Army had crossed the first great barrier between it and its objective, and had arrived opposite the enemy on the banks of the Tennessee River. Rosecrans' plan seemed to be working so far. His units on Walden's Ridge above Chattanooga (Minty's, Wilder's, Hazen's and Wagner's brigades) were deceiving Bragg as to the Union Army's actual intentions. They were also keeping a close eye on the Confederate Army. Rosecrans felt that he could evict Bragg from Chattanooga by maneuvering south of the town and threatening Bragg's railroad line of communications to Atlanta. Once Bragg's lines were threatened he would desert Chattanooga and retreat toward Atlanta, or at least Rosecrans so assumed.¹

The last ten days in August were spent in selecting and preparing crossing sites on the Tennessee River, four of which were eventually chosen. [See Figure 2.] One was a pontoon bridge thrown over the river at Caperton's Ferry, near Stevenson, Alabama. Meanwhile, a trestle bridge was begun at Bridgeport. This bridge was finished on August 29, but then an accident occurred which caused a delay in its final completion until September 2. General Reynolds'

division of Thomas' XIV Corps seized Shellmound and crossed at that point using boats captured from several places along the river. Brannan's Division of XIV Corps used rafts and any other means available to ford the river at the mouth of Battle Creek. The Army of the Cumberland commenced crossing on August 29. All units, except those opposite Chattanooga for observation and deception missions, were across the Tennessee by September 4th.²

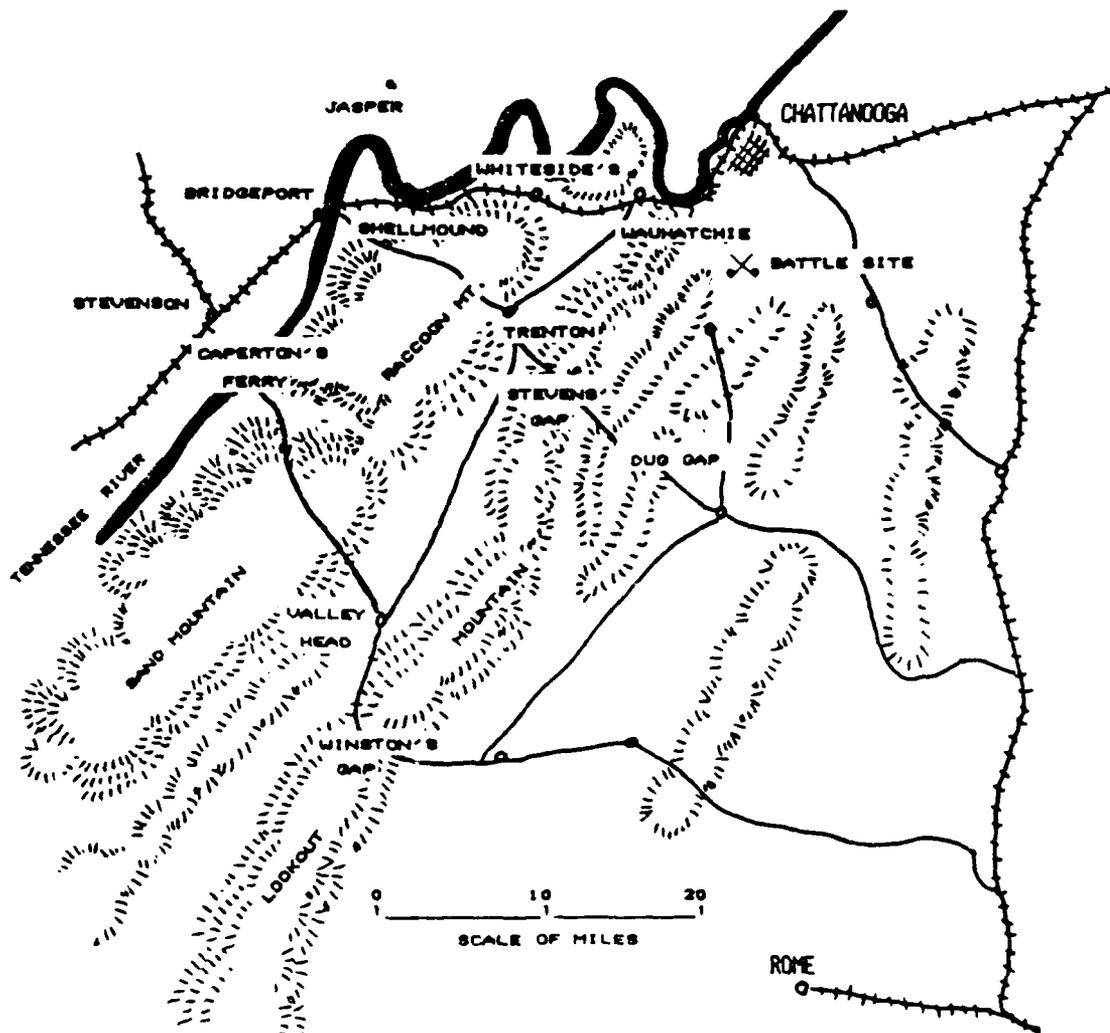


FIGURE 2. TENNESSEE RIVER TO LOOKOUT MOUNTAIN

On September 3, General Rosecrans issued the order for the next phase of the campaign. General McCook, after crossing Davis' and Johnson's divisions at Caperton's Ferry, was to move to Valley Head, and seize Winston's Gap. General Sheridan's division was to join McCook at Valley Head, by way of Trenton, after completing the bridge at Bridgeport.³

General Thomas crossed Negley's division at Caperton's Ferry, Baird's division at Bridgeport, Brannan's division at Battle Creek, and Reynolds' division at Shellmound. The entire corps, minus Wilder's brigade was ordered to concentrate at Trenton, and then send an advance to seize Stevens' and Cooper's Gaps, both on the eastern slope of Lookout Mountain.⁴

General Crittenden's corps, minus Wagner's and Hazen's brigades was to move down the Sequatchie Valley and use the crossings at Shellmound, Battle Creek and Bridgeport. Once across, Crittenden was to advance along Murphy's Hollow Road toward the base of Lookout Mountain, reconnoitering for the enemy. He was to proceed as far as Wauhatchie, thus threatening Chattanooga by the pass over the point of Lookout Mountain.⁵

The Cavalry Corps under General Stanley was to cross at Caperton's Ferry, and while moving to the right of McCook's Corps, proceed toward Rawlingsville, Alabama. From this point they were to reconnoiter toward Rome, and

Alpine, Georgia, to determine the location and intentions of the enemy.⁶ The terrain over which the army would be forced to move to execute Rosecrans' plan was, if possible, more treacherous than the Cumberland Plateau it had just traversed. The first great obstacle after crossing the river was Sand Mountain, with its northern extremity known as Raccoon Mountain. Sand Mountain rises 2200-feet above sea level and forms a plateau ten-to-twelve miles wide. East from Sand Mountain lies Lookout Valley, also known as Willis Valley. The valley is two-to-three miles wide, with Lookout Creek running down its center. Beyond Lookout Valley stands massive Lookout Mountain, rising 2400-feet above sea level and extending southwest from Chattanooga for eighty-five miles. From the thickly wooded western base of the mountain rise steep, rocky cliffs, leading to the plateau which is one-to-seven miles wide. The plateau is also wooded and has poor, sandy soil. The eastern slope of the mountain is as treacherous as the west. There were only three practical crossings of Lookout Mountain. First, a road led out of Chattanooga between the tip of Lookout Mountain and the Tennessee River. The next crossing was at Stevens' Gap, twenty-six miles south of Chattanooga; the third was at Winston's Gap, forty-two miles from town. Time and manpower would be required to repair the roads leading from the river crossing sites over mountains before supply and ammunition wagons could go over them.⁷

Between the eastern slope of Lookout Mountain and the railroads that served as Bragg's lines of communication to Atlanta was a series of narrow valleys, separated by smaller ranges of hills or low mountains. Immediately east of Lookout Mountain was Chattanooga Valley, formed by the Chattanooga River, and bordered on the east by Missionary Ridge. Further east from Missionary Ridge was Pigeon Mountain. Pigeon Mountain is actually a spur of Lookout Mountain, connecting with Lookout some thirty miles south of Chattanooga. Between Pigeon Mountain and Lookout Mountain is McLemore's Cove, which contains the headwaters of Chickamauga Creek. Beyond Pigeon Mountain is Broomtown Valley, which is bordered on its east by Peavine Ridge. Further east still lay Taylor's Ridge, John's Mountain, and Rocky Face Ridge, before reaching the north-south railroad lines. The Army of the Cumberland was entering enemy territory via the most difficult mountainous terrain it had ever crossed.^a

Rosecrans' plan also caused his army to be spread out over 60 miles, from the brigades north of the river to Stanley's cavalry in the south. Rosecrans' orders on September 3 called for the cavalry to open communications with General McCook near Valley Head. McCook, in turn, was ordered to open communications with General Thomas via Trenton, and Thomas was to open communications with Crittenden at Whiteside's. General Hazen was put in overall

command of all the troops still north of the river, covering the Army's left flank. (General Wagner argued that he ranked Hazen, and should therefore be in command. After checking with Washington, it was determined that Hazen was senior, and was retained in command.) Hazen was ordered by Rosecrans to keep open communications with Department Headquarters via Bridgeport, but would receive instructions from Crittenden. Hazen's instructions pointed out that should communications with Department Headquarters be interrupted, and it should appear to Hazen that his mission was no longer viable (e.g., if Bragg should evacuate Chattanooga) he would proceed to join his parent command via Bridgeport. Rosecrans' orders closed with a reminder to all corps commanders, and the cavalry, to make "frequent reports" to Department Headquarters, which were to remain at Stevenson until further notice."

The movements outlined by Rosecrans' September 3 order were completed by McCook's and Crittenden's corps by September 6, and by Thomas' Corps by September 8. The moves were relatively uneventful with respect to enemy action, although some Confederate forces were encountered on Lookout Mountain, particularly near its northern point.

The troops did, however, experience significant difficulty with the tremendously rugged terrain they encountered. General Thomas stated in a report to Rosecrans:

The roads to this point from Caperton's Ferry and Bridgeport are the most difficult ever passed over. The ascent and descent on both Sand and Lookout Mountains average about one and one-half miles in length, over each one of which it is absolutely necessary to double teams in ascending, in order to get loaded wagons up; and by two of the passes it is an exceedingly difficult matter to ascend with double teams.¹⁰

Up to this point the heavily wooded, cross-compartmented terrain posed the greatest threat to the Army of the Cumberland.

During the first week of September Captain John Van Duzer of the U.S. Military Telegraph service extended his telegraph line eastward from Bridgeport along the Nashville and Chattanooga Railroad. A telegraph station was established at Shellmound by September 4, and the wire was extended to Whiteside's by the morning of September 6. Van Duzer's original plan was to complete the line to Wauhatchie (which was accomplished on the night of September 6-7) and then use a railroad hand car to forward messages from Wauhatchie up Lookout, or Wills, Valley (i.e., travelling south) to Rosecrans' Headquarters, which was by that time at Trenton. Transporting messages to Trenton via railroad handcar was to be done until sufficient troops were in position to guard the railroad junction at Wauhatchie. After the troops were in position at Wauhatchie, the telegraph line would be extended to Trenton. These troops came from Wood's division of

Crittenden's corps, which was the vanguard along that axis of advance.¹¹

Captain Van Duzer's official report for this period was submitted on October 26, 1864 (over thirteen months after the battle) through the U.S. Military Telegraph chain of command. He never submitted a report to Department Headquarters and presumably was not required to. His report covered the period July 1, 1863-June 30, 1864. In it Van Duzer stated that he established a branch line from the office at Running Water Bridge, (presumably meaning Whiteside's) through Murphy's Hollow to Deer Head Cove, with an office at Department Headquarters, at Trenton.¹²

Contemporary facts seem to contradict this claim. First, the planned telegraph line from Wauhatchie to Trenton was never completed. In fact, on September 8, Van Duzer was ordered by Rosecrans to abandon the line to Wauhatchie, since it was not considered safe from Rebel guerrillas. Van Duzer reported to Rosecrans that he would subsequently establish a telegraph station at Crittenden's headquarters on September 9. Crittenden was located in Lookout Valley, approximately one-third the distance from Wauhatchie to Trenton.¹³ Events on September 9 obliterated the need for this station, however. Bragg evacuated Chattanooga on September 8. On the 9th, Van Duzer established a telegraph office from Whiteside's back through Wauhatchie and into

Chattanooga, occupying the offices recently vacated by the rebel telegraphers.¹⁴

Captain Jesse Merrill's Signal Corps established the branch line from Whiteside's through Murphy's Hollow to Deer Head Cove. More importantly, they used the signal, or field telegraph, to do it, connecting the field telegraph to the military telegraph at Whiteside's. Merrill's troops attempted to continue the line of communications to Department Headquarters at Trenton apparently trying to use aerial, or flag, signals. They could not do this initially because Confederate troops were still occupying Lookout Mountain and could observe them. Until Lookout Mountain was cleared the only way Rosecrans could send a message by telegraph was to send it via courier to the field telegraph site in Deer Head Cove.¹⁵ Even when that was accomplished, there was no guarantee that a telegraph could be sent from Whiteside's. Crittenden reported to Garfield on September 7 that no telegraph operator was at Whiteside's and that he was sending word to Wood, near Wauhatchie, to dispatch any operators currently with him back to Whiteside's so that the telegraph line and the field telegraph line (of the Signal Corps) could be connected. On September 8, neither Garfield nor Rosecrans had any idea of the status of the telegraph line.¹⁶

Merrill's Signal Corps took great pains to maintain communications among the forces north of the Tennessee

River. His report mentions that a line was established from Crown Point, on Walden's Ridge, near Poe's, extending down the ridge to connect with Wagner's forces opposite Chattanooga.¹⁷ By September 7, however, General Hazen reported that his Assistant Adjutant General, Lieutenant Colonel Kimberly, had established signal communications between Hazen's headquarters at Poe's Tavern and every crossing site for sixteen miles up and down the Tennessee River. Kimberly reportedly used plain black and white flags and a simple code to communicate between stations. Hazen emphasized that this method greatly economized on patrols and couriers required for his far-flung command.¹⁸ Captain Merrill made no mention of this accomplishment in his official report, indicating that his men perhaps had no part in its establishment.

The Signal Corps did connect the forces on opposite sides of the Tennessee River. General Wagner took the initiative in trying to establish communications with General Wood, his division commander, who was on the southern side of the river. He recommended that Wood establish a signal station on Raccoon Mountain. This station could then communicate with Wagner's station, which was located two miles north of Chattanooga, opposite Williams Island.¹⁹

Wagner sent a report to Rosecrans on September 7, indicating among other things that he had communications

with Wood. Wagner also indicated that he had sent Rosecrans a more complete report, by courier.²⁰ This would indicate that until September 7, when signal communications were apparently attempted across the Tennessee, the only means Rosecrans had of gaining information from his forces on Walden's Ridge was via courier, who had to travel across Walden's Ridge, and down the Sequatchie Valley to a crossing site at Shellmound, Battle Creek, or Bridgeport, a distance of over sixty miles over very rough terrain. Messages from Colonel Minty's cavalry forces, at Smith's Cross Roads, which formed Rosecrans' far left flank, would first go through General Hazen at Poe's Tavern, then to Wagner opposite Chattanooga, before being forwarded to Rosecrans.²¹ There is no indication that signal communications between the forces on opposite sides of the river was ever well established.

The signal situation did improve considerably on September 9, after Lookout Mountain was completely cleared of Confederates, and Chattanooga itself was evacuated by Bragg. General John Beatty, commanding a brigade in Negley's division, XIV Corps, had cleared the area on top of Lookout near Stevens' and Cooper's Gaps on September 7. Brigadier General Samuel Beatty, commanding First Brigade, Third Division, XXI Corps, sent a reconnaissance party up Nickajack Trace, approximately seven-to-eight miles from the northern tip of Lookout Mountain, in the early morning

darkness of September 9. Beatty's move was in coordination with that of Colonel William Grose, commanding Third Brigade, Second Division, XXI Corps, who ascended Lookout Mountain near Summertown, three miles south of the tip. Some scattered Confederate cavalry forces were the only resistance encountered.²² Wood's Division of XXI Corps pushed around the tip of Lookout Mountain and entered Chattanooga unopposed later that morning.²³

The Signal Corps enjoyed optimal conditions for its employment at this time. The combat forces north of the river were ordered across by Rosecrans, eliminating the need for the signal parties in use on Walden's Ridge and in front of Chattanooga. Personnel from these signal parties were employed establishing signal stations on Lookout Mountain. From this commanding position they could observe to the east, past Missionary Ridge, and quickly inform Rosecrans of suspected enemy movements. This was a critical time for Rosecrans. He needed to gain accurate information, as quickly as possible, on Bragg's forces, since he was unsure of their exact location or intentions. By September 11, a signal station was established in Rossville by signal officers attached to Crittenden's XXI Corps. This station was able to communicate with Department Headquarters in Chattanooga by relaying messages via the signal station on Lookout Mountain. The information gained by the signal stations of observation

could be quickly passed to Department Headquarters, particularly after Rosecrans established his headquarters in Chattanooga on September 11.²⁴

Although couriers played an important role in the movement from Tullahoma to the Tennessee River, their role became absolutely essential once the river was crossed. The lack of an extended telegraph network south of the Tennessee placed greater reliance on horse-mounted communications. The telegraph line from Bridgeport extending through Whiteside's, Wauhatchie, and then into Chattanooga was along the axis of advance for Crittenden's corps. Neither Thomas, McCook, Stanley nor those brigades north of the river had any telegraph stations to base their communications upon, so courier was selected as the primary alternative.

The 15th Pennsylvania Cavalry extended Rosecrans' courier line from Bridgeport across the river to Cave Spring on September 4. This line, which extended over a distance of eight miles, contained three courier posts, separated by two to four miles each. Another temporary line was established between Stevenson and Bridgeport, a distance of approximately ten miles. This line required fifteen troopers from the Anderson Cavalry to maintain.²⁵ These two examples show that courier lines, even when relatively short, and over relatively good terrain, became quite a drain on available manpower and horses.

Couriers became even more critical as the three wings of Rosecrans' Army spread out and moved eastward. Concurrently, the problems associated with couriers were magnified. Sheridan reported to Garfield on September 5 that the courier intended for Thomas had found him instead. Crittenden informed Garfield of a dispatch intended for Burnside which found its way, via courier, to XXI Corps instead. Colonel Edward McCook of First Division, Cavalry Corps, reported that he had run out of paper on which to write messages and requested a resupply from Cavalry Corps Headquarters. Negley reported that the country he was passing through was particularly suited for ambushes, with innumerable bridle paths branching off into the woods. He warned that it would consequently be dangerous for small detachments or couriers to pass.²⁶

An eloquent description of the trials and tribulations of the courier force was provided by Trooper John A.B. Williams, Company L, 15th Pennsylvania Volunteer Cavalry:

To the courier, however, were intrusted the written commands for the movements of the army, with which he was expected to make his way alone (unless particular danger was foreseen) through a country that was probably penetrated by the enemy's scouts or infested by more dreaded guerrillas.²⁷

Williams continued by describing the wait in a tiny hut along the courier line for his turn of duty, and how a courier from a previous post on the line galloped up and

handed a dispatch, intended for General Thomas' XIV Corps, to the non-commissioned officer in charge. The sergeant examined it and handed it to Williams, who had already mounted his horse. Williams headed out into the darkness in search of Thomas' headquarters. He did not travel far before being ambushed by guerrillas, in which his mount, named Shiloh, was killed.

I am not ashamed to confess that the expiring breath of Shiloh as it ascended from those wild woods wrung from my eyes a tear of anguish and regret...My situation was certainly alarming...Should I make my way back to the station, remount and bring a comrade with me? Perish the thought!...A feeling of pride determined me to go forward at all hazards and deliver my dispatch...I gave my belt an extra hitch, bade a mental farewell to the carcass of Shiloh, and started forward...For two hours (as I judged) I clambered up the rocky way, stopping every hundred yards to rest my limbs and fill my exhausted lungs.²⁰

Williams eventually encountered Union pickets, who provided him coffee, and the use of a mule they had captured.

Williams continued his journey:

...Aided by the advice of these boys, and a captured mule they had loaned me, I was not long in finding the way into the other valley, where the newly risen sun and freshly traveled roads enabled me to keep track of the 14th Corps. I found the Head-Quarters of Pap Thomas in the saddle, and delivered my dispatch to one of his staff.²⁰

Experiences such as Williams' show not only the sense of dedication of troopers of the 15th Pennsylvania Cavalry, but more importantly, the great difficulty encountered by couriers from any unit as they travelled around the clock,

down unmarked trails, trying to find units that were constantly moving, in enemy held territory.

These experiences help explain the great amount of time consumed by couriers in completing their missions. As the corps became fully separated, messages from Thomas to McCook could take anywhere from eight-to-twelve hours to be delivered; some took over a day, as couriers became hopelessly lost. Messages between Chattanooga and Thomas would often take twelve-to-fifteen hours. Messages from Crittenden, who was relatively closer to Department Headquarters, would take four-and-one-half to five-and-one-half hours. Even messages from corps to divisions could take seven hours, especially in XIV and XX Corps, whose couriers usually had to travel up one side of a mountain and down the next to deliver their dispatches.²⁰ Rosecrans' only solution to his mounting communications problem seemed to be to persistently badger his commanders to establish more, or longer, courier lines and report more frequently. Since McCook and Stanley were furthest away, their messages had the hardest time finding their destination, although neither Thomas nor Crittenden were immune to Rosecrans' wrath.²¹

On September 12, Stanley received the following message from Department Headquarters:

...after the most explicit order to connect with and keep open courier lines, he [Rosecrans] finds neither your own nor General McCook's headquarters are connected

with the headquarters of the department or of General Thomas. He directs me to say there is no military offense, except running from the enemy, so inexcusable as a neglect to keep up communications with headquarters. Our lines are now much extended, and we must husband our resources.²²

Obviously Rosecrans was highly perturbed about his lack of information. From the time he left Trenton for Chattanooga, on September 10, until September 13, when he moved his forward headquarters from Chattanooga to Stevens' Gap, he had very little indication of the status of Thomas' or McCook's corps, or Stanley's cavalry.²³

Rosecrans' instructions to his commanders on establishing courier lines were often contradictory, however. On September 9, McCook was ordered to open communications with Thomas and with Department Headquarters. On the 10th, Thomas was ordered to open communications with McCook; he was also ordered, in a different message on that date, to establish a line to Whiteside's, from which point Rosecrans could connect either by telegraph or courier. (Rosecrans was heading toward Chattanooga at this time.) Stanley was ordered on September 12 to establish a line to McCook and to Easley's, (down Lookout Valley toward Trenton.)²⁴ Clearly, Rosecrans appreciated the need for improved communications, but equally clear is the lack of any central plan to effectively use all the assets available to him.

McCook, in his own defense, responded that almost two regiments were devoted to trying to establish communications with Thomas and with Department Headquarters. He further complained to Garfield that he had not been informed when Department Headquarters moved from Stevenson to Trenton, nor from Trenton to Chattanooga. (This would indeed make it difficult for a courier to deliver his dispatches in a timely manner.) McCook also stated that couriers from the 15th Pennsylvania Cavalry had taken eight hours to carry a dispatch from him to Sheridan, only seven miles away, with the dispatch marked "Gallop". In another instance it took nine hours to deliver a dispatch from Department Headquarters, only twenty miles away.³⁵

Thomas also complained that it was nearly impossible to maintain adequate communications with McCook or with Department Headquarters. He had no cavalry assigned to him, and his mounted infantry assets, under Wilder, were working for Crittenden at the time. Thomas was reduced to using dismounted infantry to carry dispatches to his divisions. He was finally forced, on September 11, to use private citizens from the area to carry messages to McCook. He simply had no other assets available.³⁶

Crittenden's forces fared only slightly better. XXI Corps units were still fragmented on courier duty in the Sequatchie Valley as late as September 7, in order to maintain communications with forces on Walden's Ridge.

Department Headquarters finally recalled all couriers in the Sequatchie Valley on September 11.²⁷ As Crittenden was occupying Chattanooga on September 9, Rosecrans issued orders to his corps commanders to vigorously pursue an enemy that he felt was retreating toward Rome, Georgia. He ordered Crittenden to hold Chattanooga with one brigade while pressing on with the remainder of his force toward Ringgold. Meanwhile, Rosecrans ordered the forces north of the river to join Crittenden. McCook was ordered to move at once on Alpine and Summerville. Thomas was ordered to move as rapidly as possible to LaFayette, and to make every effort to hit the retreating enemy in the flank.²⁸ [See Figure 3.]

It is evident that Rosecrans felt he had Bragg on the run once again. By crossing the Tennessee River south of Chattanooga and threatening Bragg's line of communication, Rosecrans assumed he had induced Bragg not only to give up Chattanooga, but to retreat all the way back to Rome, and thence to Atlanta. Rosecrans' main goal then was to quickly pursue the Army of Tennessee and destroy it. He would not be content in merely consolidating at Chattanooga. Consolidating would allow Bragg the opportunity to regroup Confederate forces and launch a counter-attack against Rosecrans.

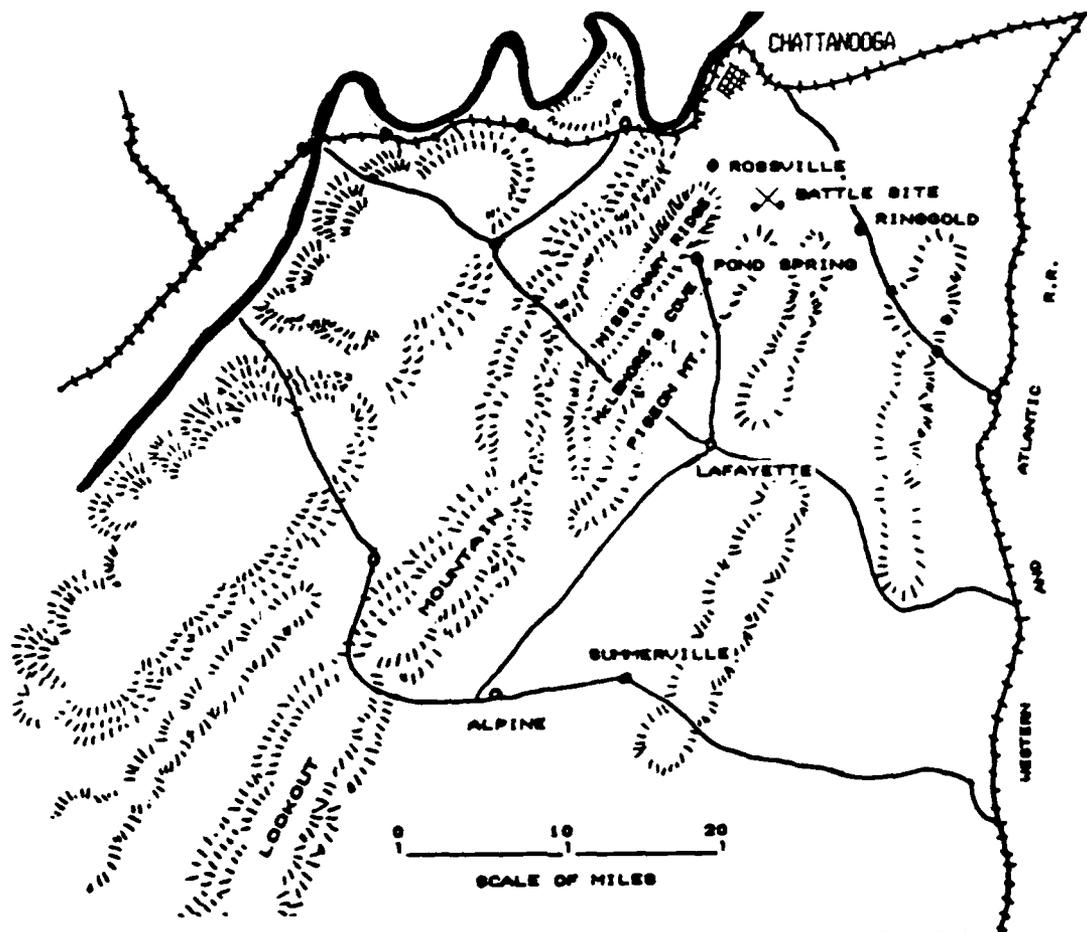


FIGURE 3. LOOKOUT MOUNTAIN TO THE WESTERN AND ATLANTIC RAILROAD

Rosecrans can be forgiven for his zealous pursuit of a retreating enemy. His troops, although fatigued by their arduous journey over the mountains, had not seen battle recently, so ammunition stocks were not a problem. The Army had succeeded in passing the two biggest terrain obstacles facing them, Sand and Lookout Mountains. The opportunity seemed ripe to push his three corps quickly and thus catch the head, tail and flank of Bragg's retreating forces, and gain a great victory.

By September 11, however, Rosecrans had a clearer picture of the position of Bragg's forces. Neither McCook's forces nor the cavalry had found any concentration of Confederate forces near Alpine or Summerville. Meanwhile, Negley's division of Thomas' corps had met resistance as it moved across McLemore's Cove toward Dug Gap in Pigeon Mountain. Negley felt threatened on three sides and pulled back to the foot of Lookout Mountain. Crittenden's forces advanced from Ringgold toward Lee and Gordon's Mill. By the evening of September 11, Rosecrans believed Bragg was concentrated at LaFayette, and intended to fight.

Rosecrans also realized that his forces were not within supporting distance of one another. With Crittenden at Lee and Gordon's Mill, Thomas at the base of Stevens' Gap, and McCook at Alpine, they were spread over forty miles flank to flank, and nearer to sixty-miles when considering the route McCook would have to take to join the others.²⁹ Now that Rosecrans had a clearer picture of the enemy situation and intentions, the speed with which his orders could be sent to subordinates, and the speed with which their situation could be reported back to him became more critical, and the deficiencies of his communications system became more evident.

Rosecrans left Chattanooga about midday on September 13 and traveled down the Ridge Road on Lookout Mountain to join Thomas near Stevens' Gap. Rosecrans took Garfield and

several other members of the staff with him, the remainder stayed in Chattanooga. Rosecrans wanted to personally direct the concentration of his army, and Stevens' Gap provided the most central location to do so.⁴⁰

Although Rosecrans moved to a more central command location on the 13th, the move did not simplify the communication procedures with his corps. On the 15th, General Mitchell, who had just assumed command of the Cavalry Corps, ordered one of his division commanders to send a large company, "in charge of an energetic and reliable officer," to establish a courier line from Winston's Gap, in Lookout Valley near Valley Head, to Rosecrans' headquarters, then near Stevens' Gap. (In a separate message to Garfield later that day, Mitchell stated that his cavalry was "badly used up, both men and horses." They were dreadfully short of forage for the horses, and had many sick troopers. Three hundred soldiers were sent back to Stevenson on the 15th, with three hundred more to be sent on the 16th.)⁴¹

Communications with Crittenden's XXI Corps was, if anything, further complicated. On September 13, Lieutenant Colonel Goddard, Assistant Adjutant General for the Department, who stayed in Chattanooga, informed Crittenden of Rosecrans' intended move to Stevens' Gap. Goddard told Crittenden that all of Crittenden's dispatches to Department Headquarters would be sent by courier. Further, Crittenden

should send duplicate dispatches; one to Chattanooga, and the other directly to Stevens' Gap, via Rossville. Sending the dispatches intended for Rosecrans via Rossville might indicate that they could be relayed to Stevens' Gap via the signal stations at Rossville and on Lookout Mountain. However, Goddard continued his message by saying that if the valley of Chattanooga Creek was found to be relatively safe, Crittenden could send his dispatches directly to Lookout Mountain via Nickajack Trace, where his couriers would intercept the courier line from Chattanooga to Thomas' Headquarters, which ran on top of the mountain all the way. Crittenden was again reminded to report (to both locations) very frequently.⁴²

The following example gives an indication of how this communications arrangement affected the execution of orders during this critical period. The original message by Goddard to Crittenden outlining the reporting procedures mentioned above was sent at 12:20 P.M. on the 13th. More importantly, that message also directed Crittenden to move the bulk of his command from Lee and Gordon's Mill back to Missionary Ridge, thus covering the roads leading toward Chattanooga. Five minutes later another message was composed, intended for Crittenden. This one, although signed by Goddard, was written by Major Bond, one of Rosecrans' aides. This message informed Crittenden of new information just received from General Thomas. It,

however, stated that Crittenden would only hold himself "in readiness to execute" the orders sent by the 12:20 message.⁴³ [Emphasis added].

Both messages were carried by the same courier to Crittenden, who acknowledged their receipt sometime before 6 P.M. (five hours later). Crittenden's reply to Department Headquarters, sent at 7:40 P.M., gave an update on the XXI Corps situation, and stated that after closely reading the 12:20 and 12:25 messages, he believed that what he thought to be an order to move back to Missionary Ridge was merely an order to prepare to move. Therefore, he would remain at Lee and Gordon's Mill until further orders told him to move back.⁴⁴

The message from Crittenden reached Goddard in Chattanooga over three hours later. Goddard took immediate action to inform Crittenden that although the wording of the 12:25 message written by Bond was unfortunate, Rosecrans indeed intended for Crittenden to move back to Missionary Ridge that night, as stated in the 12:20 message. Goddard sent this information to Crittenden via signal and courier at approximately 11 P.M. Goddard also used both means to inform Rosecrans, at Stevens' Gap, of the situation.⁴⁵

Crittenden sent two additional messages that night. One at 2:45 A.M., the other at 3:50 A.M., both asking clarification of Rosecrans' orders. The one at 3:50, at least, was sent by signal torches, since Goddard's

subsequent reply (clarifying once and for all that Rosecrans intended for Crittenden to move back to Missionary Ridge before daybreak) made reference to Crittenden's signal dispatch of 3:50 A.M., and significantly, Goddard's reply was sent out only thirty-five minutes after Crittenden's original message was sent. This shows how fast messages could be sent using signal flags or torches. Goddard's reply, sent at 4:25 A.M., was via signal and courier.

Crittenden's next message to Department Headquarters was sent at 10:30 A.M., and stated that his command had moved back to Missionary Ridge. This message was sent by courier to Lee and Gordon's Mill, and then by signal flag to Lookout Mountain; a duplicate went by courier up Nickajack Trace all the way to Lookout.⁴⁴

Garfield, who was with Rosecrans at the foot of Cooper's Gap, responded to Crittenden's 10:30 A.M. message by 2:45 P.M. There is no indication in his reply whether he received Crittenden's courier, or signal, dispatch. However, the four hour time lapse would have been fairly good time for a courier travelling the whole distance from Crittenden to Cooper's Gap. A courier from Crittenden at Missionary Ridge to Gordon's Mill, and then a signal communication to Lookout Mountain seems more likely.⁴⁷

Lieutenant Colonel Goddard, still in Chattanooga, received the duplicate of Crittenden's 10:30 A.M. message

at 4:00 P.M. Although it was marked "by signal from Gordon's Mills," it reached Chattanooga via courier. Goddard said that dust and smoke between Gordon's Mill and Chattanooga had prevented Signal Corps communication. Goddard, not knowing that Garfield had already received his own copy of Crittenden's message, said he would forward Crittenden's 10:30 A.M. message to Rosecrans/Garfield, although he had heard nothing from them since they left Chattanooga, over twenty-four hours previously.*

This incredible sequence of events shows that Rosecrans' command and control "system" required almost twenty-eight hours to process through one iteration of the command and control cycle, from issuing a directive (done by Goddard at 11 A.M. on September 13th) to receiving confirmation that the directive had been executed (i.e., Garfield receiving Crittenden's message at 2:45 P.M. on September 14th that XXI Corps had moved back to Missionary Ridge.) In the interim, several components of the "system", as defined in the Introduction to this thesis, were responsible for the delay. Actions by personnel added to the delay, especially Major Bond's unfortunate wording of the 12:25 P.M. message on September 13. Procedures, while not specifically adding time, nevertheless decreased the efficiency of the system by wasting scarce resources. The example here was that Department Headquarters required Crittenden to use couriers to send messages to Chattanooga

and to Rosecrans at Stevens' Gap simultaneously. These faults deal more with the inner workings of Rosecrans' staff, and are therefore beyond the scope of this thesis.

The greatest delay however, in Rosecrans' ability to find out what was happening, issue an order that would remedy the situation, and then ensure that the order was properly executed was the method of communications used. Although Signal Corps assets were used more extensively during this phase of the campaign, they apparently were not relied upon to any great degree to pass operational orders or situation reports. Their main function was to pass intelligence reports to Department Headquarters from stations of observation manned by Signal Corps personnel, even though they had displayed the speed with which they could pass messages, even at night. This was shown by the exchange between Goddard and Crittenden in the early morning hours of September 14. On the other hand, the widely used couriers, similar to other phases of the campaign, still got lost, shot at, or captured, even though the terrain between Crittenden's headquarters and Rosecrans' was far less forbidding.⁴²

Crittenden's communications problems demonstrated the lack of efficiency in the entire system. His XXI Corps was relatively close to Department Headquarters. McCook's XX Corps, on the other hand, was not. On the night of September 11, Garfield informed McCook of the near

certainly that Bragg's forces were concentrated near LaFayette. Garfield also informed McCook that Rosecrans had "suggested" that he close toward Thomas, but that the suggestion was by no means peremptory, that McCook's own discretion should dictate his moves. Garfield's message also said that his (McCook's) previous message to Department Headquarters, sent sixteen hours previously, had been received. It would probably take at least that long for Garfield's return message to reach McCook, since the courier would be travelling at night. (In fact, it took seventeen hours for the message to reach him).⁵⁰

By 10:30 A.M. on September 12, however, Garfield's tone had changed. He had received word by this time of the attack on Negley, and ordered McCook to get within supporting distance of Thomas at the earliest possible moment. A similar message was sent to Thomas at 11:15 A.M., but this one came from Lieutenant Colonel Goddard, Assistant Adjutant General at Department Headquarters. His tone was less emphatic than Garfield's to McCook, and merely suggested to Thomas that he call McCook up to within supporting distance, if he had not already done so. Thomas' message to McCook directing him to move was not dispatched until 6:05 A.M. on September 13, nineteen hours later. Thomas informed Rosecrans of this fact in a message sent at 7 A.M., stating that he would have ordered McCook

up earlier, but he thought Rosecrans was going to do it himself.⁵¹

McCook received Garfield's orders to move in support of Thomas at 12:30 A.M. on the 13th, fourteen hours after it was dispatched. (Thomas' message, sent at 6:05 A.M. that morning, did not reach McCook until 3 P.M. that day.) McCook sent a message to Thomas at 8:15 A.M. on September 13 stating he had commenced the move at daylight. McCook's original plan was to move along the top of Lookout Mountain toward Stevens' Gap, then descend into McLemore's Cove. However, he received information that the route along the top of the mountain was impassible. The only route remaining for McCook was to descend the western slope of Lookout Mountain, travel down Lookout Valley to Johnson's Creek, ascend the mountain again at that point, and travel east toward Stevens' Gap, then descend into McLemore's Cove. This change would add almost three days to McCook's move. He did not consolidate his corps in McLemore's Cove until the evening of September 17.⁵²

Six days had elapsed from the time Negley was nearly surrounded in front of Dug Gap until McCook was able to close in to support Thomas. Although much of this time was spent by McCook's forces ascending and descending Lookout Mountain a total of three times, most of the blame lies in the fact that a round trip communication from Department Headquarters to XIV or XX Corps, or between the two Corps

themselves, took roughly a full day to complete. This was due to the almost total reliance upon courier communications to connect these headquarters. Rosecrans averted disaster during this period only because Bragg was not able to muster his own forces properly to defeat Rosecrans in detail.

Rosecrans' plan after crossing the Tennessee River was fraught with danger. Although his initiative and aggressiveness in evicting Bragg from Chattanooga were commendable, his boldness in pursuing the retreating Confederates bordered on recklessness. Rosecrans simply did not have the command and control capability to accomplish a pursuit by three individual corps on widely separated axes, in thickly wooded, cross compartmented terrain.

Although Rosecrans issued orders on September 3 for how he expected communications to be established, he had no central plan to use the communications assets available to him in the most efficient manner. With the exception of Captain Jesse Merrill's field telegraph connecting to Captain John Van Duzer's military telegraph at Whiteside's, providing telegraph communications into Lookout Valley, there was no synergistic use of signal flag, field or military telegraph, and couriers.

By September 12, signal stations were established on the top of Lookout Mountain from its tip to Alpine, yet

these stations were used mainly for observation purposes, with no apparent effort made to internet them with courier assets in order to form a more efficient, responsive, and timely means of communication. (General Hazen seemed to recognize the utility of using signal flags in lieu of couriers while he was stationed near Poe's Tavern; however, no one else seems to have realized the potential.) Not even Jesse Merrill's after-action report makes any mention of how things might have been done more efficiently.

Merrill does seem to have recognized the advantage of using a mobile telegraph system in conjunction with signal flags. He used that combination in Murphy's Hollow and Deer Head Cove, as well as across Lookout Mountain to link Stevens' Gap to the western slope of the mountain. Linking these stations near Stevens' Gap, supporting Thomas' Corps, to the stations further south, supporting McCook's Corps, would have certainly decreased the amount of time Rosecrans needed to communicate to XIV and XX Corps, and subsequently consolidate them.

This linking of signal stations never occurred. The Signal Corps in the Department of the Cumberland had five field telegraph trains at the time. Some of the trains carried five miles of wire, some carried ten miles.⁵⁹ Considering the terrain between Stevens' Gap and Alpine, it seems entirely possible that Thomas and McCook could have been linked by the Signal Corps via a combination of signal

flags and field telegraph wire. Instead, an enormous expenditure of man and horsepower was used, with the additional cost of expending a great amount of time.

Rosecrans' plan for movement from Tullahoma to the Tennessee River required Crittenden's XXI Corps to be widely separated from its communications base, the military telegraph stations at McMinnville and Tracy City. This separation was necessary to secure Rosecrans' left flank, and more importantly, to deceive Bragg about the Army's true intentions. Additionally, the threat of enemy contact during that phase was less severe.

During the move from the Tennessee River eastward past Lookout Mountain, it was McCook's XX Corps that was isolated, and to only a slightly lesser degree, Thomas' XIV Corps. Further, enemy contact, and therefore the need to be able to quickly consolidate, was much more likely. Rosecrans did not have the capability to communicate effectively in this unfavorable terrain. His plan did not take this into consideration, and it almost proved disastrous.

Up to this point Rosecrans' main concern was in moving toward, and then finding, the enemy. Now that he had found them, his prime concern became how to deploy his forces to combat them.

ENDNOTES

CHAPTER 5

1. Q.R., XXX, Part 1, pp. 51, 53.
2. Q.R., XXX, Part 1, pp. 51-52.
3. Q.R., XXX, Part 1, p. 52.
4. Q.R., XXX, Part 1, p. 52.
5. Q.R., XXX, Part 1, p. 52.
6. Q.R., XXX, Part 3, p. 322.
7. Q.R., XXX, Part 1, p. 48; Lamers, Edge of Glory, p. 293; Steele, American Campaigns, p. 209.
8. Q.R., XXX, Part 1, p. 49.
9. Q.R., XXX, Part 3, p. 323.
10. Q.R., XXX, Part 3, p. 600.
11. Q.R., XXX, Part 3, pp. 348, 382, 407.
12. Q.R., Series 3, IV, p. 863.
13. Q.R., XXX, Part 3, pp. 442, 455, 480.
14. Q.R., Series 3, IV, p. 863.
15. Q.R., XXX, Part 1, pp. 240-241, 367; Part 3, pp. 417, 531.
16. Q.R., XXX, Part 3, pp. 414, 452.
17. Q.R., XXX, Part 1, p. 240.
18. Q.R., XXX, Part 3, p. 429.
19. Q.R., XXX, Part 3, p. 425.
20. Q.R., XXX, Part 3, p. 426.
21. Q.R., XXX, Part 3, p. 458.
22. Q.R., XXX, Part 1, pp. 780, 807.

23. Q.R., XXX, Part 1, p. 629.
24. Q.R., XXX, Part 1, p. 241.
25. Q.R., XXX, Part 3, p. 339.
26. Q.R., XXX, Part 3, pp. 368, 375, 390, 486.
27. John A.B. Williams, Trooper's Diary, p. 59.
28. John A.B. Williams, Trooper's Diary, p. 63.
29. John A.B. Williams, Trooper's Diary, pp. 64-65.
30. Q.R., XXX, Part 3, pp. 410, 483, 540, 544, 551, 565, 576, 577, 599.
31. Q.R., XXX, Part 3, pp. 567, 588.
32. Q.R., XXX, Part 3, p. 588.
33. Q.R., XXX, Part 3, pp. 508, 567.
34. Q.R., XXX, Part 3, pp. 488, 508, 588.
35. Q.R., XXX, Part 3, pp. 540, 603.
36. Q.R., XXX, Part 3, pp. 409, 511, 534, 538.
37. Q.R., XXX, Part 3, pp. 429, 467, 550.
38. Q.R., XXX, Part 1, pp. 53; Part 3, p. 483.
39. Q.R., XXX, Part 1, p. 54.
40. Lamers, Edge of Glory, pp. 313-314.
41. Q.R., XXX, Part 3, pp. 653, 654.
42. Q.R., XXX, Part 3, p. 607.
43. Q.R., XXX, Part 3, pp. 607-608.
44. Q.R., XXX, Part 3, pp. 608-610.
45. Q.R., XXX, Part 3, pp. 608-609, 610.
46. Q.R., XXX, Part 3, pp. 631-632.
47. Q.R., XXX, Part 3, p. 632.
48. Q.R., XXX, Part 3, p. 633.

49. Q.R., XXX, Part 3, pp. 647, 704, 755.
50. Q.R., XXX, Part 3, pp. 541, 571.
51. Q.R., XXX, Part 3, pp. 564, 568, 570, 602.
52. Q.R., XXX, Part 3, pp. 598, 599, 600, 603, 705.
53. Q.R., Series 3, III, p. 958.

CHAPTER 6

ACTIONS THROUGH SEPTEMBER 20, 1863

On the evening of September 17, 1863, General Rosecrans, for the first time in ten days, had his three corps within supporting distance of one another. When Rosecrans became convinced that Bragg was concentrating Confederate forces at LaFayette and not running toward Atlanta, he frantically began to reassemble his scattered Union forces with the hope of defeating or at least holding off Bragg, while also consolidating his precarious hold on Chattanooga. Rosecrans had not expected McCook to consume four days in moving from Alpine to Stevens' Gap to support Thomas. However, until McCook closed on Thomas, Thomas could not close in support of Crittenden.¹

As Rosecrans' corps came within supporting distance of one another, they were immediately ordered to move the entire line in a northeasterly direction down the Chickamauga Creek. [See Figure 4.] Rosecrans' intent was to cover the LaFayette Road leading toward Chattanooga, and prevent Bragg from turning his left flank. Indications were that Bragg was massing on Rosecrans' left, threatening to cut off Rosecrans' communication with Chattanooga. On the 18th, Thomas was ordered to move behind Crittenden's forces and march up the Dry Valley Road to the Widow Glenn's house. He was to pass by the Widow Glenn's house

and head toward the LaFayette Road and take up a position there, with his left extending obliquely across the road near the Kelly farm house, five miles north of Crawfish Springs.

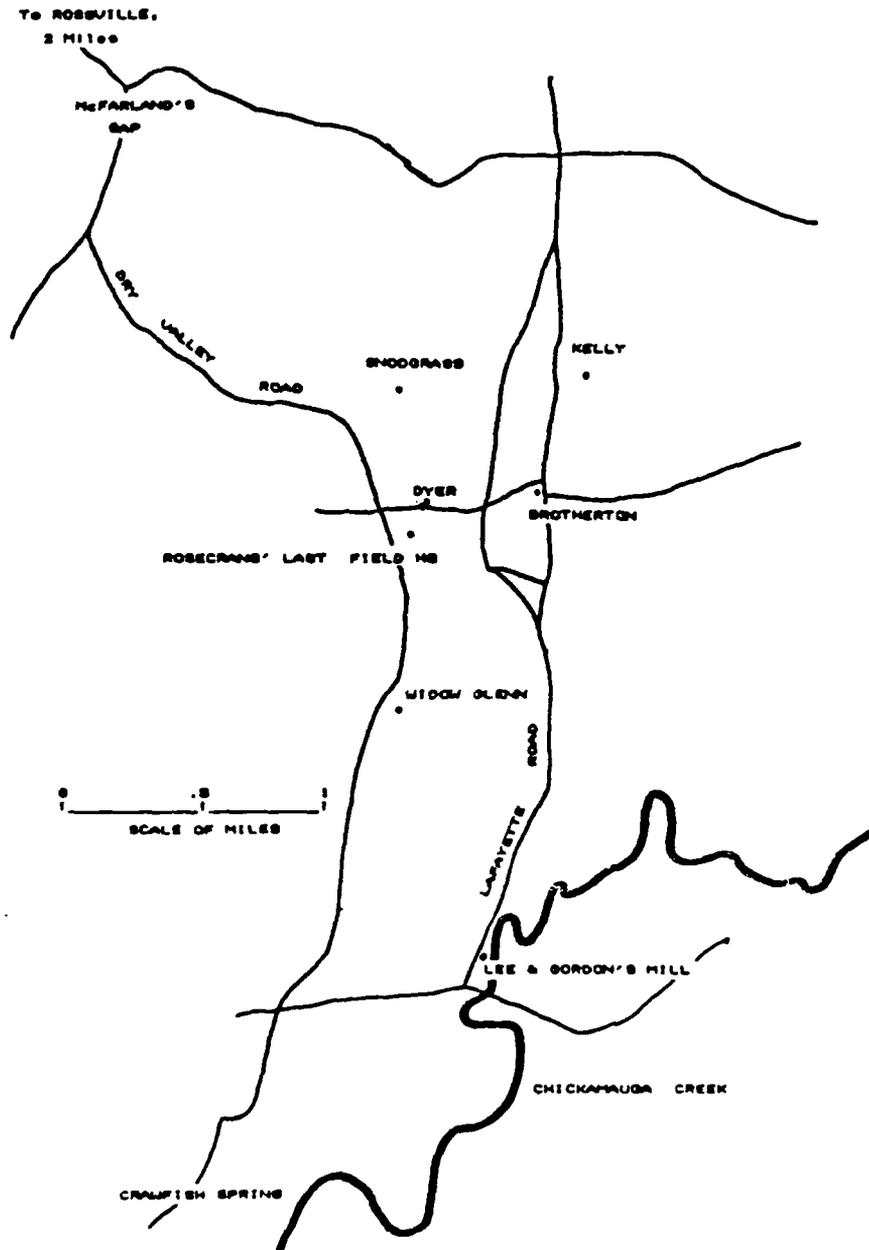


FIGURE 4. CHICKAMAUGA BATTLEFIELD

Crittenden, after screening Thomas' move, would extend his left to link up with Thomas. McCook was to follow Thomas, occupy Crawfish Springs, and cover Crittenden's right. The cavalry was to close in on McCook, and follow McCook's orders. Thomas moved his corps throughout the night of the 18th, and by dawn of the 19th had placed Baird's division near the Kelly house. Rosecrans' left now lay above Bragg's right. The two armies would not be out of contact with each other much longer.²

Rosecrans had been informed by Halleck on the 15th that it was probable that Lee had dispatched three divisions to reinforce Bragg. Rosecrans' reply to Halleck on the 16th stated that he had arrived at the same conclusion, based upon information received from various sources.³ Rosecrans, realizing that a battle with Bragg was imminent, moved his headquarters on the 16th to Crawfish Springs, and sent orders to his corps commanders to issue each soldier three days' rations and twenty rounds of ammunition to be carried in their pockets, in addition to having their cartridge boxes full.⁴

General Bragg's attack order was issued on the night of September 17. It called for crossing the Chickamauga beginning at 6 A.M. on the 18th, starting with the extreme right, at Reed's Bridge. Bragg's forces were to turn to the left after crossing, and sweep up the Chickamauga (i.e. heading south.) This would eventually place Bragg's army

between Rosecrans and Chattanooga. In his after-action report Bragg stated that the resistance offered by the Union cavalry, and the Confederates' difficulties arising from the bad and narrow roads caused delays in the execution of the plan on the 18th, and movement resumed on the morning of the 19th. By this time however, Rosecrans had shifted Thomas from the center of his defense to a position on the extreme left, in order to cover the roads leading to Chattanooga.⁵

Although Rosecrans had spent the previous three days in a forward position, centrally located among his corps, he still did not have a good feel for their whereabouts. As his headquarters was being established at Crawfish Springs on the 16th, he issued orders to his corps and cavalry commanders to report, by that night, the position of all units in their respective commands. This was to be done so Rosecrans could determine where each unit was located before issuing further orders.⁶ Even more peculiar was his order on the 17th to the same commanders ordering them to:

... post officers of intelligence on all available high points in your vicinity from day to day, to watch the valley and surrounding country closely and carefully, and report the result of their observations to you. He [Rosecrans] directs you to compare and consolidate their reports and forward the result to department headquarters daily.⁷

Apparently, Rosecrans had forgotten his Signal Corps assets, which were performing precisely those functions at that time.

A further sign that Rosecrans' information requirements were not being satisfied was another order sent to his corps commanders on the 17th. It ordered them to forward, as soon as possible, a special report of the troops in their command currently at the front and available for line of battle. The report was to be by divisions, with infantry and artillery separate, and would include a count of the number of artillery pieces available.⁹ Rosecrans also wanted all commanders to blaze and mark all roads leading to their rear and connecting to other commands, so they could be easily identified by couriers carrying messages.⁹

Also on the 17th, Rosecrans, after receiving news that dust had been seen in the direction of Blue Bird Gap, ordered General McCook to send the Thirty-Ninth Indiana, a mounted infantry regiment, to investigate.¹⁰ The very next entry in the Official Records shows a signal message from Lt. Fuller, who manned the signal station at Stevens' Gap, to McCook. Fuller stated, "that body of rebels is rapidly moving back toward Dug Gap."¹¹ Fuller's report might not be in relation to the order sent to McCook from Rosecrans. It may have only been a fortuitous coincidence for the person compiling messages for the Official Records. It

nevertheless indicates, once again, that Rosecrans did not turn to his signal corps for information, and apparently did not see them as a valuable communications asset. This was at a time when the signal corps enjoyed its most advantageous positioning of the entire campaign.

Rosecrans also ordered Captain Van Duzer, on the 16th, to extend the military telegraph line from Chattanooga to Crawfish Springs. Van Duzer was to build the line via Rossville, then extend it down the Dry Valley Road to Crawfish Springs. A telegraph office was to be opened in Rossville as soon as the line was extended to that point.¹²

Captain Van Duzer did not complete the extension of the telegraph line from Chattanooga to Rosecrans until the morning of the 19th, after the battle had begun. Until that time, telegraph messages intended for anyone outside the Army of the Cumberland had to first be carried by courier from Department Headquarters to Chattanooga, the nearest telegraph station. One of the most prolific users of the telegraph during this period was Charles A. Dana, Assistant Secretary of War, who was present at Rosecrans' headquarters. Dana sent reports to Secretary of War Stanton on a regular basis. From 17 through 20 September, he sent no less than sixteen dispatches to Stanton, describing every action the army was taking. On the 19th, he reported to Stanton on the average of every two hours.¹³

On September 19, telegraphic offices were opened at Rossville, by that time the headquarters for General Granger and the remainder of his Reserve Corps. Offices were also opened at a point to the rear of Thomas' headquarters (along the Dry Valley Road) and at Rosecrans' headquarters, which had been moved to the Widow Glenn's house on the morning of the 19th. The telegraph office remained in operation at the Widow Glenn's house until approximately 6 A.M. on the 20th, when Rosecrans moved his headquarters roughly one thousand meters north, to a position near the Dyer farm. After that time, the office nearest the battlefield was the one to the rear of Thomas' headquarters, along the Dry Valley Road. Van Duzer does state that the Departmental Headquarters office (near the Dyer farm) was re-opened on a stump near the entrance to Dry Valley Road. It remained in operation for only a few minutes before Longstreet's wing broke through on the Union right, causing the right to cave in.¹⁴ The office on the Dry Valley Road was kept open until the Union forces withdrew to Rossville on the night of September 20. The Rossville office was able to send reports back to Rosecrans, in Chattanooga, throughout the afternoon and evening of the 20th. ¹⁵

Van Duzer's telegraph operators, although civilians, were nevertheless exposed to as much danger as many of the Federal troops they supported. Two of Van Duzer's men,

John C. Holdridge and J.H. Bunnell were ordered by Van Duzer to open the office on the road to Rossville after the Union right had given away on September 20;

He [Holdridge] had just succeeded in cutting the wire for that purpose when a brigade of infantry formed in line of battle immediately in front, and opened fire on the advancing enemy; bullets were flying as numerous as hailstones in a cold storm. Bunnell called out for a ground wire and Holdridge cried, 'Give me a ground wire; who's got a bayonet for a ground? I'll go find one,' and off he started. A few moments later, the brigade gave way and John was swept on to Rossville, whence he probably accompanied Rosecrans to Chattanooga. Two days after, Bunnell met him at the office door in Chattanooga and asked, 'Have you found that bayonet yet?'¹⁴

Holdridge was present with Rosecrans in Chattanooga on the afternoon of the 20th.¹⁵

Similarly, Lieutenant Colonel Flynt, Thomas' Chief of Staff, sent a message to Major General Rousseau (who had assumed command of First Division, XIV Corps on September 21) advising him that,

The telegraph operator is instructed to remain where he is for your benefit. Send him word before you leave, to give him time to take up his wires. ¹⁶

The office was kept open until the withdrawal of Union forces from Rossville to the entrenchments of Chattanooga on the night of September 21-22.¹⁷

Captain Jesse Merrill's signal communications network was also expanded by the eve of the battle. By

then, signal stations had been established near the front at Lee and Gordon's Mill, Crawfish Springs, and Pond Spring. In addition, a station was established at High Point on Lookout Mountain establishing a commanding view of Missionary Ridge and the Chattanooga Valley. All these lines were worked on the 18th and 19th. ²⁰

The Signal Corps was of minimal use during the battle itself. On the night of the 19th a station was opened "near the battlefield" which could communicate with High Point. [The exact location of this station could not be determined by any of the sources used, nor could any record of messages between these two stations be found.] This station was kept open on the 20th. The station at Crawfish Springs was also kept open as long as Mitchell's Cavalry Corps was in that area. ²¹

Merrill states in his after-action report however, that observation of enemy movements on the battlefield itself, or communications between the different units of the Union Army on the battlefield was totally impossible due to the dense timber. In addition, the smoke and dust raised during the battle also prevented the observation stations at High Point and Summertown from observing unit movements. ²²

The observation station on High Point was shut down on the evening of the 20th. Additionally, the station at Summertown was ordered to send their wagons and horses to

camp in Chattanooga, to retain three days' rations, and to remain in operation on Lookout Mountain as long as possible. Company L of the 15th Pennsylvania Cavalry was sent to protect this station on the 20th, which remained in operation until the night of September 23.²³

The 15th Pennsylvania Cavalry had been extremely busy during the days preceding the battle. On September 16, approximately half the Regiment accompanied Rosecrans to Crawfish Springs, the remainder were still maintaining courier lines to the corps. By September 18, the Army of the Cumberland was concentrated and thus reduced the length of courier lines. Additionally, two companies of the Ninety-Second Illinois mounted Infantry (Colonel Smith D. Atkins, Commanding, originally from Wilder's brigade) were assigned to Colonel Palmer for courier duty. By that evening, nine of the Regiments' twelve companies were at Crawfish Springs.²⁴

The Regiment moved with Rosecrans on the 19th from Crawfish Springs to the Widow Glenn's house. During the first day's battle, it was kept concentrated near Department Headquarters. William F. Colton of Company A was present at the headquarters and described the activity there as follows:

Orderlies and couriers and staff officers were continually coming and going with orders and reports from the line. Officers were riding up and going off at full speed with verbal orders. Messages flashed over the field telegraph from general officers reporting the

varying phases of the battle. It was a scene of great interest and activity...the General would hurry off a courier here and a courier there, his eyes sparkling, his questions quick and earnest, his orders brief.²⁵

General Garfield, the Chief of Staff, and other members of the Adjutant General staff were present, sending off the General's orders as they were given. Brigadier General Morton, the Chief of Engineers, was also present with maps and compass at a nearby table. He would note by ear and from reports the localities of the various stages of the conflict.²⁶ Although Colton uses the term "field telegraph" in his account, Captain Van Duzer's "military telegraph" personnel operated the station at Widow Glenn's. Van Duzer himself was present at Widow Glenn's during this period.²⁷

In the early morning hours of the 20th, Rosecrans mounted his horse at the Widow Glenn's house and, accompanied by members of his staff, along with couriers and escorts from the 15th Pennsylvania Cavalry, visited different parts of the front line. He was also accompanied by Lieutenant Anthony Taylor of Company A, who carried a large roll of maps which Rosecrans referred to from time to time. When Rosecrans' headquarters was established near the Dyer farm later that morning, the escort companies (normally Companies A, B, H and K) accompanied him. These companies assisted in rounding up stragglers in

addition to protecting the Commanding General. The remainder of the Regiment were involved with carrying messages to and from the front lines.²⁸

As Longstreet's forces broke through the Union line and poured into the Dyer field, Colonel Palmer, commander of the 15th Pennsylvania, gave orders to form the Regiment, sabers drawn, behind the hill the headquarters lay on. Rosecrans gave Palmer orders to stop the stragglers, but by this time the Union right was being routed. Palmer, along with most of the Regiment fell back along the Dry Valley Road, trying to protect Rosecrans and rally the panic-stricken soldiers as best they could.²⁹ Before leaving the hill near the Dyer Farm, Garfield gave a verbal order to be carried to General McCook, (most previous orders had been written in the headquarters order book.) McCook was to throw his whole corps into the gap that the Confederates were pouring through. However, by that time McCook was probably enroute to Rossville, for the courier never found him.³⁰

Lieutenant Colonel Goddard called on another courier, Sergeant Wilmon W. Blackmar, Company K, to carry a message from Rosecrans to General Granger, in command of the Reserve Corps. Goddard said to Blackmar,

'...tell him what has happened here, as you see it. It is the General's order that he move up as rapidly as possible and cover our rear. General Granger is off here somewhere', pointing to our left.³¹

Blackmar, along with two other couriers, Sergeants Lingerfield and Miller, galloped off in the direction indicated by Goddard. The party split up when they thought they had run into Confederate lines, hoping that at least one of them would get through. Blackmar eventually rode into Thomas' lines, where he met Sergeant Miller. Miller had found Granger and delivered the message. Granger however, after hearing the heavy firing, had not waited for orders, and had already set his forces into motion to join Thomas. Blackmar had always supposed that the order he bore from Rosecrans to Granger was the last one given by the Army Commander on the battlefield of Chickamauga.³²

General Rosecrans' employment of command and control mechanisms during the battle of Chickamauga was similar to the other phases of the campaign. Although making better use of the military telegraph assets, Rosecrans still relied most heavily upon horse-mounted couriers to bring information to him and to carry orders to subordinates. In fact, the closed-in environment of the battlefield, with the close proximity of units on the line of battle, allowed Rosecrans to use couriers much more efficiently than he had in the past.

As Rosecrans realized the general location of where he would have to fight Bragg, he took steps to have his military telegraph extended from Chattanooga to Rossville,

and then down to Crawfish Springs. Once this was accomplished it gave Rosecrans the capability of communicating with his Reserve Corps in Rossville, along with his base of operations in Chattanooga.

However, it took Captain Van Duzer the better part of three days to complete the extension, which was not completed until the 19th, after the battle had begun. Even then, Rosecrans could not use the military telegraph to communicate directly with his primary corps commanders, or his cavalry. The days immediately preceding the battle saw a great expansion in the signal corps observation and communication "network." Captain Merrill's organization enjoyed the most advantageous positioning of signal stations of the entire campaign. Their stations on Lookout Mountain were able to observe the Chattanooga Valley, Missionary Ridge, and what eventually became the battlefield itself.

However, Rosecrans once again did not seem to make full use of this valuable asset. Although the signal corps showed that messages could be passed very quickly, even at night, Rosecrans still relied heavily upon couriers to gain information and to issue orders. The 15th Pennsylvania Cavalry was used throughout this period as Rosecrans' primary means of communicating. The 15th did an admirable job, but once again was hampered by the shortcomings inherent in all couriers: they were slower than electronic

or aerial communications, they were more likely to get lost or shot, and their continued use over a long period of time further decreased their efficiency. Additionally, the use of scarce mounted assets as couriers, whether that be the 15th Pennsylvania Cavalry or other units, such as the Ninety-Second Illinois mounted infantry, precluded their use for other missions. While it is true that the 15th Pennsylvania Cavalry was specifically organized for use as couriers, they had other missions as well, such as reconnaissance; and the Ninety-Second Illinois mounted infantry was not organized to be couriers by any means.

Rosecrans did not have a plan for efficiently integrating his three communications assets. During the previous phase of the campaign, from the crossing of the Tennessee to the concentration at McLemore's Cove, there was some indication of mixing the assets available in order to form a more efficient communication network. The signal corps' field telegraph was used to branch out from the military telegraph station at Whiteside's; couriers were used in some instances to carry messages only to the nearest signal station, and not all the way to its destination.

Yet, the mixing of assets does not seem to have been expanded in the days preceding the battle, or during the battle itself. The military telegraph extended directly to Rosecrans' headquarters, linking Rosecrans with Rossville

and Chattanooga. Rosecrans had direct control over it, and Captain Van Duzer was right next to him during much of the battle. The tried-and-true couriers could be used to carry messages the short distances to the front lines. The signal corps was further hampered by a lack of line-of-sight observation, due to obstruction by trees or battlefield smoke, further limiting their participation.

What is not clear is why the signal corps' field telegraph was not put to greater use during this period. Captain Merrill states that the field telegraph was used earlier in the week to link various corps headquarters to signal stations of observation, or to link two corps headquarters which were in the same proximity (i.e., Thomas at Alley's house to McCook at Pond Spring.)²² However, no use of the field telegraph seems to have been made during the battle. However, Confederate Brigadier General Bushrod Johnson, who commanded a provisional division in Longstreet's wing on September 20, states in his after-action report that his men came across telegraph wires along the Dry Valley Road.²⁴ If these wires were along the ground, it might indicate that they were part of the field telegraph, since the field telegraph teams placed their wire on the ground, as opposed to up in the trees, like the military telegraph operators. However, these wires could also have been knocked out of the trees by the panic stricken Union soldiers as they retreated toward

McFarland's Gap. Captain Merrill gives no indication that field telegraphs were used on the battlefield. The Army of the Cumberland did had five field telegraph trains, each with five-to-ten miles of wire, more than enough to connect Rosecrans instantaneously with his forces on the battle line. Rosecrans relied instead upon mounted couriers for this mission.

The three types of communications assets did not fail to do their job during the battle. The leaders of the organizations used for communications: Colonel Palmer of the 15th Pennsylvania Cavalry, Captain Van Duzer of the Military Telegraph service, and Captain Merrill of the Signal Corps, along with their assigned soldiers and civilians, performed to the best of their ability. If anyone was at fault, it was the Commanding General for failing to make the best possible use of the assets he had available.

ENDNOTES

CHAPTER 6

1. Lamers, Edge of Glory, pp. 314, 318, 321.
2. Lamers, Edge of Glory, pp. 321-323.
3. Q.R., XXX, Part 3, pp. 644, 666.
4. Q.R., XXX, Part 1, p. 605.
5. Q.R., XXX, Part 2, pp. 31-32.
6. Q.R., XXX, Part 3, p. 668.
7. Q.R., XXX, Part 3, p. 702.
8. Q.R., XXX, Part 3, p. 702.
9. Q.R., XXX, Part 3, p. 702.
10. Q.R., XXX, Part 3, p. 706.
11. Q.R., XXX, Part 3, p. 706.
12. Q.R., XXX, Part 3, p. 605.
13. Q.R., XXX, Part 1, pp. 188-194.
14. Q.R., Series 3, IV, p. 863; Series 1, XXX, Part 3, p. 741; Plum, Military Telegraph, Vol. II, p. 67.
15. Q.R., Series 3, IV, p. 863; Series 1, XXX, Part 3, p. 739.
16. Plum, Military Telegraph, pp. 67-68.
17. Q.R., XXX, Part 3, p. 739.
18. Q.R., XXX, Part 3, p. 763.
19. Q.R., Series 3, IV, p. 863.
20. Q.R., XXX, Part 3, pp. 645, 722, 723, 754; Brown, Signal Corps, p. 476.
21. Q.R., XXX, Part 1, p. 241.
22. Q.R., XXX, Part 1, pp. 241-242.

23. Q.R., XXX, Part 1, p. 242.
24. William F. Colton, "The Chickamauga Campaign," in Charles H. Kirk, ed., Fifteenth Pennsylvania Cavalry, p. 232.
25. Colton, "Chickamauga," in Kirk, ed., Fifteenth Pennsylvania Cavalry, p. 233.
26. Colton, "Chickamauga," in Kirk, ed., Fifteenth Pennsylvania Cavalry, p. 233.
27. Q.R., Series 3, IV, p. 863.
28. Colton, "Chickamauga," and Howard A. Buzby, "Orderly Duty at the Headquarters During Battle," in Kirk, ed., Fifteenth Pennsylvania Cavalry, pp. 235, 263.
29. Colton, "Chickamauga," in Kirk, ed., Fifteenth Pennsylvania Cavalry, p. 235-236.
30. Charles S. Hinchman, "Chickamauga's Stricken Field," in Kirk, ed., Fifteenth Pennsylvania Cavalry, pp. 273-274.
31. Wilmon W. Blackmar, "The Break at Chickamauga and the Ride It Cost Me," in Kirk, ed., Fifteenth Pennsylvania Cavalry, pp. 260-261.
32. Blackmar, "Break at Chickamauga," in Kirk, ed., Fifteenth Pennsylvania Cavalry, pp. 260-261.
33. Q.R., XXX, Part 1, p. 241.
34. Q.R., XXX, Part 2, p. 459.

CHAPTER 7

CONCLUSIONS

This thesis has examined how General William S. Rosecrans used the three primary command and control mechanisms available to him during the campaign and battle of Chickamauga, August-September 1863. The overall conclusion is that he did not use these three mechanisms (signal flag, telegraph, and courier) to the best degree possible. An additional conclusion however, is that the inefficient use by Rosecrans of these command and central mechanisms was not a key factor in losing the battle of Chickamauga.

During all phases of the campaign Rosecrans relied most heavily upon his courier assets to acquire information from subordinate commanders on the current situation and subsequently, to pass orders to them. During the move from Tullahoma to the Tennessee River, couriers linked the advancing columns of the Army of the Cumberland as they moved over the treacherous Cumberland Plateau. General Crittenden's XXI Corps, its widely separated columns forming the left wing of the Army, stressed this system to the limit. Couriers repeatedly ascended and descended the Plateau to carry messages to telegraph stations which in turn connected to Department Headquarters.

The reason for Crittenden being separated so far was to threaten Bragg's right flank, and to deceive Bragg as to Rosecrans' true intentions. The Signal Corps could have more efficiently linked the XXI Corps to Department Headquarters by a line of signal stations down the Sequatchie Valley. However, that would not be as effective in deceiving Bragg. Rosecrans wanted Bragg to think the entire Union army was threatening Bragg's right. Rosecrans was also concerned that Confederate forces were near Jasper, Tennessee. If these Confederate forces observed or captured Signal Corps personnel in the southern end of the Sequatchie Valley, it could indicate the presence-in-force of the Union army below Chattanooga, which Rosecrans wanted to hide. In today's army, it is an accepted fact that efficiency may have to be sacrificed in order to bring about greater effectiveness of a deception operation. This philosophy can be applied to Rosecrans' move to the Tennessee River in August 1863, in which he was perhaps not as efficient in using his three assets as he could have been but was indeed successful in deceiving Bragg.

During the movement from the Tennessee River to the concentration of Union forces in McLemore's Cove, Rosecrans once again relied most heavily upon courier assets. The military telegraph was extended from Bridgeport across the Tennessee along the existing railroad line, and eventually reached Chattanooga. This line, however, was used by

Rosecrans primarily to connect him with his base of supply on the west side of the river, and to provide strategic communication to Halleck in Washington, D.C., or Burnside in Knoxville. It did not assist Rosecrans in commanding and controlling his once again widely-separated corps as they proceeded east in an attempt to cut Bragg's line of communication.

The Signal Corps saw increased use during this phase. They connected Union forces still north of Chattanooga with Rosecrans, and they attempted to link the three corps as they travelled over the thickly wooded, cross-compartmented terrain. Significantly, they also provided observation stations which could keep track of enemy activity. Although they performed their duties well during this phase, they were not relied upon to any great degree. They were used primarily as observation posts, not as communication assets. For every line of communication stations established by the Signal Corps, a line of couriers was also established, under Rosecrans' orders. The line of couriers was the one that Rosecrans relied upon. Once again, this caused great wear and tear on scarce mounted assets, since not only was the 15th Pennsylvania Cavalry used extensively during this phase, but mounted infantry assets were also used to supplement the courier line. This took the mounted infantry away from its primary combat role. The most significant effect of relying

upon couriers in this phase was that it greatly increased the amount of time necessary for Rosecrans to acquire information on the status of his units and the disposition of the enemy, and subsequently to send orders back to them. Couriers had a tremendously difficult time in negotiating the treacherous terrain. Additionally, during this phase couriers were more likely to contact enemy forces than they were in the previous phase.

Here again Rosecrans could have made better use of his Signal Corps assets. The height of Lookout Mountain ensured unobstructed view for miles. A judicious selection of observation stations, coupled with the use of the signal corps' field telegraph could conceivably have connected General McCook's distant XX Corps with Department Headquarters, or with Thomas' corps in a much more timely manner. Even a combination of signal stations connected by couriers would have been more timely than pure courier lines. Although these combinations were attempted, and at times proved successful, Rosecrans did not seem to capture the potential inherent in the Signal Corps. He continued to run his mounted assets "into the ground," literally as well as figuratively.

This lack of timeliness in communications had the greatest potential for disaster while General McCook's XX Corps was in the vicinity of Alpine, before Rosecrans realized that Bragg's forces had not retreated further

south, and were indeed concentrated near LaFayette. It took almost six days for Rosecrans to get word to McCook to close in on Thomas, and then for McCook to execute that mission (September 11-17.) Much of the delay can be blamed on the lack of timeliness inherent in the courier assets Rosecrans used to communicate with McCook. This delay in concentrating the three corps cannot be considered a significant factor in Rosecrans' losing the battle of Chickamauga. However, it could have been disastrous, had Bragg been able to marshal his forces properly, and entice them to attack Thomas and Crittenden's Corps separately, before they could concentrate.

During the actual battle couriers once again played the major role as a command and control mechanism. Here again, the 15th Pennsylvania Cavalry was the chief instrument used by Rosecrans to obtain information from subordinates and send orders to them. It is interesting, however, that Rosecrans instructed Captain Van Duzer to extend his military telegraph line from Chattanooga to Crawfish Springs, instead of using the Signal Corps' field telegraph for that purpose. The military telegraph was used during the other phases of the campaign in a traditional, static sense. That is, the telegraph line ran generally along existing railroad lines, and telegraph stations were at least semi-permanent. The problem was carrying messages to the telegraph stations. For this,

couriers were most often used (although there was one instance earlier in the campaign, near Whiteside's, where the field telegraph was used as an extension of the military telegraph station.) For the actual battle however, Rosecrans had the military telegraph station installed at his field headquarters, first at Widow Glenn's, then behind the hill at Dyer's farm. The field telegraph could have been used for this purpose, and could have connected all the subordinate corps to Rosecrans, providing almost instant communications. Perhaps Rosecrans had more faith in the ability of the military telegraph personnel, who were professionally trained civilians, rather than the mostly converted-infantrymen who were briefly trained by officers such as Captain Merrill, then sent out as signal officers.

Further, the field telegraph used by the signal corps was still experimental, in contrast to the tried-and-true military telegraph, which was in wide use before the war. There may have been reluctance on the part of Rosecrans to use a device that was still "getting the bugs worked out." Initially, the field telegraph boasted greater portability than the military telegraph. Apparently the difference in portability was not that significant during the Battle of Chickamauga since Captain Van Duzer does not seem to have had great difficulty in

establishing stations along the Dry Valley Road, or at Rosecrans' headquarters.

Also, there was a political battle being fought in Washington over control of the telegraph. The U.S. Military Telegraph service saw the Signal Corps' experimentation with the field telegraph as infringement upon their mission. The fledgling Signal Corps was not helped by the fact that Secretary of War Stanton personally controlled the Military Telegraph service, nor by the fact that he had ties to Western Union. Stanton made sure that his long distance telegraph lines took precedence over the tactical field telegraph. In fact, Special Orders No. 499, War Department, Adjutant General's Office, November 10, 1863 (less than two months after Chickamauga) directed that the field telegraph being perfected by the Signal Corps be turned over to the U.S. Military Telegraph service for further development.¹

There is no indication that Rosecrans was influenced against greater use of his Signal Corps assets as a result of this political intrigue. (In fact, Rosecrans would probably have used the field telegraph more, just to spite the Washington bureaucrats, had he known of the political competition between the two services.) What can be assumed, however, is that the Secretary of War probably did not encourage greater use of the field telegraph. Additionally, although not much is known about Captain

Jesse Merrill's personality, he might not have been the most forceful proponent to General Rosecrans of his service's capability. All of these factors combined to make the Signal Corps, and particularly its field telegraph, the "new kid on the block," with field commanders reluctant to try something new, and without a substantial political power base in Washington to encourage its increased use.

Rosecrans' apparent failure to realize the potential inherent in integrating the use of the available command and control mechanisms was evident throughout the campaign and battle. There is no indication whatever that he actively pursued combining assets, or that he even thought of doing so. Whatever limited combining of assets occurred, as described above, seems to have occurred due to the initiative of junior leaders, not the army commander. General Rosecrans treated each of his command and control mechanisms as a separate entity.

To state that Rosecrans' inefficient use of command and control mechanisms was not the key factor in losing the battle of Chickamauga is one thing. To state what was the key factor is quite another, and is well beyond the scope of this thesis. However, the initiative certainly swung in favor of Bragg when Rosecrans spent the better part of a week consolidating his widely-separated corps. This was after Rosecrans realized that the Confederate army was not

in headlong retreat toward Atlanta. On the battlefield, Longstreet's breakthrough on the 20th, sending the Union right reeling back toward Rossville and Chattanooga, was unquestionably the turning point. However, had Rosecrans, McCook, and Crittenden stopped at Rossville to regroup their shattered forces, then counterattacked into Polk's or Longstreet's Wing, who can determine what the result might have been? Another interesting point is that Rosecrans had telegraphic communications from Rossville to Chattanooga, and could easily have used it to communicate his instructions to the rear, instead of going to Chattanooga himself.²

Today's army is in a situation quite similar, in some respects, to that faced by the Army of the Cumberland in 1863. Command and control in today's army is receiving great emphasis as a result of the tremendous increase in technology, particularly computer technology, over the past decade. Computers have the potential to revolutionize the way we command and control our forces on the battlefield of the future.

A significant part of the revolution in command and control will be brought on by changes in communications capability. The new family of tactical radios known as SINCGARS (Single Channel Ground and Airborne Radio System) along with the area communications capability provided by

the MSE (Mobile Subscriber Equipment) system, and the position-reporting capability given by the PLRS (Position Location and Reporting System) will greatly increase our ability to "get inside the enemy's decision cycle," which is critical for successful execution of AirLand Battle.

The problem, though, is whether commanders will grasp the opportunities these new systems will provide. It is not easy to convince many modern commanders that new technology is really a blessing. Many feel, as perhaps Rosecrans did, that the tried-and-true manual methods of commanding and controlling, methods that they grew up with in the Army and feel most comfortable with, are indeed the best methods to use. Many commanders are reluctant to part with the "personal touch" of obtaining information or giving orders. They want to hear the tone of voice of the person reporting in, and want that person to hear the tone of voice of the person giving them an order. Perhaps this is why Rosecrans relied so heavily upon couriers; they provided a degree of personal communication between sender and receiver. Rosecrans could get a better feel for the battle through the "human factor" provided by a courier than he could through the wig-wag of a signal flag, or the electronic dots and dashes of a telegraph.

What is important to remember is that no system which introduces a new way of doing things comes without some sort of psychological, as well as physical price tag.

Although Rosecrans seemed reluctant to use his Signal Corps assets to their fullest potential, the concepts the signal corps introduced paid great dividends later in the Civil War, and again in future wars. Mobile field telegraphs were used extensively by Grant and Sherman later in the Civil War.² The multichannel system of today, and the Mobile Subscriber Equipment of the very near future are quite similar in concept of employment as was the signal flag system introduced by Albert J. Myer during the Civil War.

U. S. Army Field Manual (FM) 11-92, Combat

Communications Within the Corps, states the following:

To win the battle, commanders must have communications that are immediately responsive to their needs. The corps communications-electronics (C-E) officer directs organizations that provide these communications so that commanders at all echelons of the corps can:

- Concentrate adequate forces and weapons at the critical times and places.

- Direct the battle in order to obtain maximum effect from both firepower and maneuver forces.⁴

The manual further states that:

Communications is a command responsibility at all levels and requires more from the commander than a simple, "Take care of it" to his C-E officer. Some hard command decisions must be made to solve these problems if communications is to be the voice of combat power.⁵

General Rosecrans would fully agree with the first passage from FM 11-92. He constantly emphasized the need for establishing communications from the corps to his Department Headquarters. Where he failed completely was in understanding the impact of the second passage. Rosecrans had no C-E officer to manage the integration of the communications means available; and his failure to do much more than say "Take care of it" to his subordinates resulted in an unduly inefficient command and control system.

Commanders of today must realize that they are not the first, nor will they be the last, to be on the "cutting edge of technology." How well they accept this fact, and deal with it, could make a significant impact in our next war.

ENDNOTES

CHAPTER 7

1. Paddy Griffith, Battle Tactics of the Civil War (New Haven: Yale University Press, 1989), p. 70; Q.R., Series 3, IV, p. 821.
2. Plum, Military Telegraph, Vol. II, p. 69.
3. Griffith, Battle Tactics, p. 71.
4. United States Army, FM 11-92, Combat Communications Within the Corps (Washington, D.C., 1978), p. 1-3.
5. FM 11-92, p. 1-4.

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