Civil War Signals

Ominous music and drum beat.

Intelligence gathering has always been paramount to fighting and winning wars. The Civil War was no exception. It is a tremendous example of how accurate and timely intelligence is vital to the outcome on the battlefield.

The Civil War, through the introduction of the telegraph, a relatively recent technology, revolutionized military communication in the United States. The telegraph allowed for near real-time, two-way communication. It gave senior commanders the ability to exercise command and control throughout the war. Union and Confederate leaders could communicate with their senior field commanders on strategies, movements, and events on the field. President Lincoln spent hours each day in his military telegraph office in Washington receiving updates and directing his commanders. Sending messages along the 15,000 miles of wire strung for telegraph operations during the war was easy; it was also easy to intercept them. Both the North and the South needed to use cryptologic methods to secure their communications. Lincoln's telegraphers, civilians in the U.S. Military Telegraph Service, protected his communications through the use of Stager's Telegraphic Cipher Book. The Telegraph Service was mainly civilian run. This allowed senior leadership in Washington to keep a tight grip on the use of the telegraph system. Although mainly used for higher-level communications between senior commanders miles apart, the telegraph was occasionally used on the battlefield. Wire was strung from the back of a wagon to connect commanders on the field with rapid communications. Through telegraphy, near real-time communications from headquarters and on the field changed military communications for all time. The need for the secure relaying of information pushed the development of improved cryptologic techniques and created a demand for highly skilled communication officers.

Although the new technology of wire telegraphy was in use during the Civil War, it was often not convenient on a battlefield. Few telegraph lines ran through a battle area. The chief of the Union Army's Signal Corps, Major Albert Myer, used Aerial Telegraphy, today more commonly called wig-wag, to rapidly send messages across a battlefield or down a communication line. It involved waving a flag, or special torches at night, in prescribed patterns of left and right to indicate letters, numerals, and other characters. Myer invented the system before the war. It was taught to students at the military academies, so when the Civil War broke out, officers on both sides were familiar with the system. The Union and the Confederacy used the wig-wag for tactical communication on the battlefield. Because flag signaling required the sender to be seen, the messages could be easily viewed by the enemy as well as the intended receiver. With both the North and South using the same system, encryption was required to protect visual messages from being understood. Most often a cipher disk was used to encrypt the letters before they were waved. Signalmen needed to place themselves in a visible vantage point which not only allowed them to signal across great distances, it also gave them an extended view of the surrounding area. Part of their job was to report any actions of the enemy they may see. Because the enemy would not want these kinds of messages relayed to the troops on the ground, they tried to make good use of their sharpshooters and artillery fire to eliminate the signalmen. Men in the Union Signal Corps suffered casualties disproportionate to conventional troops. To recognize extraordinary bravery during battle, Union signalmen were awarded the Battle Honor Flag.

Speed and accuracy are not the only crucial elements of communication on the battlefield. The third requirement is protecting the information being transmitted. Both wire telegraphy and visual signaling with flags or torches were easily intercepted. Since both systems were well known to units on both sides of the conflict, securing those communications was critical. An effective way of protecting information was through the use of codes and ciphers. Codes change entire words or phrases while ciphers change individual letters. Both systems can also transpose the words or letters to further complicate the message. The most effective code during the Civil War, used by the Union's Military Telegraph Service, was developed by Anson Stager. Despite being called the Telegraphic Cipher, it was a route transposition and code system, basically a word substitution system, the code disguised important words in the message, with code words found in the book. The words were then transmitted following an assigned pattern. This resulted in a completely unintelligible encoded and jumbled message. Lincoln's directives were understood only by his commanders and not the Confederacy. Ciphers were also popular. The North commonly used cipher disks, while the South started using the Vigenere Square and later a cipher reel. Each of these devices changed individual letters into other letters through the use of a keyword. Getting messages delivered in time and intact could determine the outcome of a battle. Whoever does this most effectively gives his side the advantage. This is as true now as it was in the Civil War. The job of the communication officers today has many of the same requirements as those from the Civil War, though the technology has changed dramatically. Communication officers still practice cryptography to secure vulnerable information. And they still put themselves in harm's way sending and receiving messages vital to the commanders in the field.