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Writing Assignment 1

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Cryptography in the American Civil War

Imagine you are a soldier fighting for the Union in the American Civil War. You are hoping to help keep the United States of America united. However, as you are on the front lines battling against Confederate troops, you must communicate with other parts of the army currently in battle. In order not to give away your plans or alert the enemy that you know of their movements, it is necessary to encrypt your messages before you send them. But how? This is where cryptography enters the realm of war. Cryptography has been used for thousands of years, the great Roman emperor Caesar has a cipher named after him, and the Union soldiers would use this cipher within their own signaling in order to conceal their messages. This method proved to be successful as it helped them in several battles throughout the war. The use of Caesar ciphers by the Union helped to keep their messages on the battlefield hidden from the enemy thus allowing them to communicate freely.

The Union army used a combination of cryptography to successfully communicate on the battlefield. The first method used was through their flag signalers. These signalers had five different signals, each standing for a number one through five. By combining combinations of these signals the Union was able to create an alphabet with which to communicate with each other on the battlefield. However, this method was not enough for the Union, as had the Confederates gained knowledge of the signals and alphabet, they would be able to decrypt these messages and know what the Union Army was preparing to do. Because of this, the Union Army also took to using a set of cipher disks in order to encrypt their messages. These cipher disks had an alphabet with corresponding signal combinations on the outer ring and another alphabet on the inner ring. When the outer ring was moved, the alphabet was shifted, thus encrypting the message. The message was then received by the Union counterpart, and using their ring, was then decrypted using the previously agreed upon shift (Civil War Signals). By using this type of encryption, the Union Army was able to send signals back and forth using different shifts, thus making it nearly impossible for the Confederacy to decrypt quickly for use on the battlefield. This encryption was necessary, as when this method of signaling was used without any encryption, experienced and attentive observers were able to steal the messages for the Confederacy on multiple occasions (Wrixon). Because of this, the cipher disks were created by Albert Myers and used by the Union Army for the remainder of the war. The success the Union Army had using these disks helped them to win battles throughout the war by being able to communicate without threat of Confederacy decryption.

The cipher disks used by the Union Army helped them to encrypt messages. By doing so, the Union Army commanders were able to communicate with each other about movements they were performing as well as movements the Confederacy was performing. One of these major battles was the Battle of Chancellorsville. In this battle, the Union General knew that the Confederacy was able to break the Union messages being sent by flag signaling. Knowing this, the Union Commander ordered fake messages to be sent, and waited to see if the Confederacy fell for the trap. After decrypting the Confederates messages pertaining to the bogus signals, the Union commander then sent true signals, thus confusing the Confederate Army (HistoryNet). This knowledge of the interception of Union signals by the Confederates prompted the Union Army to begin using the cipher disks mentioned above.   
 Since the Civil War, cryptography has only become more advanced and widespread in its use by nations at war. However, when messages are intercepted and decrypted by sovereign nations, ethical dilemmas may come to light. One of these ethical dilemmas took place in World War I. In this case, a telegram sent from Germany to Mexico prompting the Mexicans to attack the US through submarine warfare and ground invasion in order to distract them from the war in Europe was intercepted by the British. Given this knowledge, then President Woodrow Wilson was faced with an ethical dilemma of deciding to enter the war in Europe against the Germans, thus putting millions of American lives at risk, or to ignore the message thus endangering American lives on shipping vessels in the Atlantic as well as US lives if the Mexicans were to invade (Alexander). This dilemma Wilson faced put countless lives at risk in either aspect. The choice essentially boiled down to putting American lives at risk overseas by going public and joining the war or putting American lives at risk at home in the United States in the case that the Mexicans invaded. Facing this dilemma, Wilson made the decision to release the telegram to the media. This prompted anti-German sentiment throughout the United States and ultimately led to the United States entering the war.

**Works Cited**

Alexander, Mary and Marilyn Childress. "The Zimmerman Telegram." Social Education 45, 4 (April 1981): 266

Wrixon, Fred B. “Civil War Cipher Disks.” *Civil War Cipher Disks.* Cryptome.org, 24 Dec. 1997. Web. 08 Sept. 2016.

Hageman, Mark C. “The Cipher Disk “Signalling in Cipher”” *The Cipher Disk ~ Signalling in Cipher.* Signal Corps Association, n.d. Web. 08 Sept. 2016.

D’Aoustand, Maurice. “Hoodwinked During America’s Civil War: Union Military Deception | HistoryNet.” *HistoryNet*. Civil War Times, 06 Dec. 2006. Web. 08 Sept. 2016.