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A Brief History of Cryptology and Winthrop

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Brief history of Winthrop College and Cryptology

On May 15, 1942, President Franklin Roosevelt signed a bill that established the Women's Army Auxiliary Corp or WAAC. On June 30th, of the same year, he signed a bill that created the same thing for Navy. This group was called the Women Accepted for Voluntary Emergency Service or WAVES. Thousands of women from across the country volunteered for duty in these groups. Women were vital to the war effort because they could take non-combatant positions allowing the men in those jobs to be available for combat.¹

One of the most important noncombatant jobs was cryptology. Both the Army and the Navy had relatively large cryptographic offices at the beginning of the war. The Army had 331 people, and the Navy had 730 people working in cryptology before the attack on Pearl Harbor on December 7, 1941.² After the attack on Pearl Harbor, the military realized the need to increase these departments and the number of employees grew into the thousands.

In November of 1942, the curriculum committee at Winthrop College in Rock Hill, South Carolina proposed and implemented a course in cryptanalysis. This course would be taught by the math department. This course was described as a national defense training course offered so the general college student could become useful to the Signal Corps. The course would have elements of coding, decoding, and a standard type of

¹Jennifer Wilcox. *Sharing the Burden Women in Cryptology during World War II*. Fort George G. Meade, MD: Center for Cryptologic History, National Security Agency, 1998.

²Jennifer Wilcox. *Sharing the Burden Women in Cryptology during World War II*.

cycles. There were no formal prerequisites for the course, but it was to be offered to seniors and juniors who planned to leave before graduation.³

The class at Winthrop began in the spring of 1943 with 34 girls enrolled in the course. According to the teacher, Dr. Ruth Stokes, 33 out of the 34 girls would be offered employment with the Signal Corps. The class would continue until the spring of 1945.⁴ The class was never officially listed in the course catalogs, and there was no class roll. It has been suggested that a total of 60 to 100 girls went through the course while at Winthrop College, but due to the secretiveness of the class, a total is not known.

The Army and Navy only accepted women who met officer status to work in cryptology and preferred them to have strong math and language skills. Both services put a higher value on woman's integrity than her skills in cryptology. They could train her in cryptology, but her loyalty to the United States could not be doubted.

Women who were selected to be cryptographers had to meet the following criteria:

1. of excellent character who were citizens, preferably native born, of the United States;
2. who had no intimate connections with foreigners in the United States or foreign countries;
3. whose loyalty, integrity, discretion, and trustworthiness were unquestioned; and

³ Faculty Committee Records Curriculum Committee 1935-1957, Louise Pettus Archives, Winthrop University, Rock Hill, South Carolina.

⁴ President Sheldon Phelps Correspondence Related Records 1942-1944. Louise Pettus Archives, Winthrop University, Rock Hill, South Carolina.

4. whose financial status and/or habits were such as to render unlikely their succumbing to any temptations that might endanger national security.⁵

During the War, the Army and Navy sent graduates of their cryptographic programs to their respective offices. The Army Signals Intelligence Service was first located in the Munitions Building in Washington, D.C. As the need for signals intelligence grew, the operation was moved to a junior college for women, Arlington Hall, in Arlington, Virginia. The Navy's signal intelligence service increased as well, and they moved from the Navy Department to Mount Vernon Seminary which was later called the Naval Communications Annex.

Those women who were accepted to work in cryptology were sworn to secrecy. They were not allowed to discuss their work outside of approved channels. If they did it could be considered an act of treason and the penalty could be death. Neither the Army nor the Navy told these women how their work fit into the whole war effort. While those women who worked in breaking the codes knew how their work aided the men overseas; those who intercepted the unbroken messages and worked on the cryptanalytic machines rarely learned what they meant.

While the majority of the women who worked in cryptology enjoyed their work, it did take a toll on their health. The women were required to work in shifts, and this interfered with their normal eating and sleeping habits. It is especially hard for those who lived in barracks that housed women in other wartime occupations. It was noted that their

⁵Jennifer Wilcox. *Sharing the Burden Women in Cryptology during World War II*.

living arrangements were the primary cause of stress, not the actual work. Women who worked as civilian cryptologists were also noted not to be sick as often as the women who were connected to the Army or the Navy. The civilian workers were allowed to keep regular schedules, take vacations, and had private housing.⁶

Winthrop College was one of the few colleges in the country to teach cryptology. Dr. Ruth Stokes was very influential in getting the class started and teaching the class. She understood that women would be needed to help the war effort and that Winthrop could provide these women. The women from Winthrop that worked in cryptology came from varying backgrounds and majored in subjects that included strong math and language skills. It is unfortunate that due to the secrecy behind their work many of the women never spoke about what they did, and it is only in their obituaries that one finds out that they were involved in cryptology.

Susanna O. Lee

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⁶ Jennifer Wilcox. *Sharing the Burden Women in Cryptology during World War II*.