

Mair Thomas: Life at Bletchley Park

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ABSTRACT

Breaking the German Enigma Codes by Britain's intelligence team at Bletchley Park (BP) was considered to be one of World War II's best-kept secrets. Better than the secret itself is the fantastic feat of nearly ten thousand people keeping that secret for decades from friends and family, both during and following the war. In recent years, women have begun to gain recognition for their part in the codebreaking operation at BP. Less recognized are the women who tirelessly listened to radio transmissions at Y Stations across the globe, waiting for enemy communication. Women made up about 75 percent of BP's workforce and were the backbone of the cryptology team that broke Germany's so-called unbreakable codes. Nearly eight thousand women are listed on the Honour Roll at the installation, who kept silent for decades. The contributions of women at BP are too numerous to detail; therefore, this paper highlights memories of a few who were interviewed by various authors and focus primarily on one woman's experience and life at BP, Mair Eluned Russell-Jones (née Thomas).

Keywords: Enigma Code, women's history, World War II, Bletchley Park, Hut Six, Ultra, X-station

Mair Thomas: la vida en Bletchley Park

RESUMEN

Romper los códigos alemanes por parte del equipo de inteligencia británico en Bletchley Park (BP) se consideró como uno de los secretos mejor guardados de la Segunda Guerra Mundial. Mejor que el secreto en sí es la fantástica hazaña de casi diez mil personas que lo han mantenido oculto durante décadas a amigos y familiares, tanto durante como después de la guerra. En los últimos años, las mujeres han comenzado a ganar reconocimiento por su participación en la operación de descifrado de códigos en BP. Menos reconocidas son las mujeres que escucharon incansablemente las transmisiones de radio en las estaciones Y de todo el mundo,

esperando la comunicación del enemigo. Las mujeres constituían aproximadamente el 75 por ciento de la fuerza laboral de BP y eran la columna vertebral del equipo de criptología que rompió los llamados códigos irrompibles de Alemania. Casi ocho mil mujeres figuran en el Cuadro de Honor de la instalación, que guardaron silencio durante décadas. Las contribuciones de las mujeres en BP son demasiado numerosas para detallarlas; por lo tanto, este artículo destaca los recuerdos de unos pocos que fueron entrevistados por varios autores y se centra principalmente en la experiencia y la vida de una mujer en BP, Mair Eluned Russell-Jones (de soltera Thomas).

Palabras clave: Código Enigma, historia de la mujer, Segunda Guerra Mundial, Bletchley Park, Hut Six, Ultra, X-station

Mair Thomas: 布莱切利园的生活

摘要

英国情报队在布莱切利园（BP）破解德国恩尼格玛密码一事被视为二战期间保存最好的秘密之一。比这一秘密更妙的是近一万人在二战期间和二战后将该秘密保存几十年之久，不让朋友和家人知道。近年来，女性开始因其在BP执行密码破译操作中发挥的作用而获得认可。认可度较少的则是那些在全球Y电台孜孜不倦聆听无线电广播，等待敌方发送传播的女性。BP全体员工中75%是女性，她们是密码学团队的主心骨，破解了德国所谓的无法破译的密码。近8000名女性被列在工作地点的光荣榜上，她们在几十年里保守着该秘密。BP女性作出的贡献多到无法细数，因此，本文强调了少部分接受了不同作家采访的人的记忆，并主要聚焦于一名女性在BP的经历与生活，她就是Mair Eluned Russell-Jones (née Thomas)。

关键词：恩尼格玛密码，女性历史，二战，布莱切利园，6号营（Hut Six），Ultra，X-电台

Abbreviations

BP	Bletchley Park
GC&CS	Government Code and Cypher School
GCHQ	Government Communication Headquarters
OSA	Official Secrets Act
RAF	Royal Air Force

Definitions

bombe. This machine used to discover the wheel settings for the Enigma keys, based on an earlier version of the Polish bomba,

Enigma. A cipher machine used by German military and government from the 1920s until 1945.

hut. A temporary building built around the Bletchley Park Estate grounds, which housed different teams and the primary work-zones.

rotor. A wheel on an Enigma machine

Ultra. The British code-name for all signal intelligence from 1941 throughout the duration of World War II.

Even though so much has happened to me since leaving BP, those four years have probably influenced me more than the other ninety-two.

—Mair Thomas Russell-Jones (1917–2013).

The fall of Western Europe to Nazi forces was a devastating blow to the world. Britain found its people standing alone against a more advanced foe. Germany used cryptography to pass messages back and forth concerning movement, operations, and invasion plans. The German Enigma machine was a highly complicated machine that looked like a typewriter, consisting of wheels that changed the code to write unbreakable messages. Britain's Foreign Office and MI6 opened an intelligence center at Bletchley Park (BP) dedicated to breaking the German Enigma Codes. Thousands of men and

women dedicated long hours and years of their lives in service to their nation, including breaking the codes, thereby shortening the war. Intelligence played a significant role during World War II, and secrecy was paramount. One of those people, Mair Thomas, kept her work on the codes at BP secret for close to sixty years and only recently decided to tell her story of spending four years of her life in Hut Six, working on breaking codes of the German army and air force.¹

Intelligence War

Intercepting German intelligence was a crucial component in the war effort, piggybacked from Y stations, where messages were overheard and documented, then passed to Station X, BP for decrypting. Decoded messages were then passed to the Foreign Office under the code name Ultra. Ultra enabled British and Allied forces to plan and maneuver against Germany and the Axis. In the 1920s, Germany developed a system called an Enigma machine, used for commercial, military, and government communication. The machine was complicated, using rotors, keyboard, and plugboard to change settings daily. Polish cryptologists had worked for years on decoding German messages including building a bombe machine, which enabled the ability to search for rotor settings.

Frederick William Winterbotham (1897–1990), Group Captain in the Royal Air Force (RAF) and head of aerial intelligence in MI6, oversaw the distribution of Ultra Intelligence during

World War II. His book, *The Ultra Secret*, first published in 1974, was the first book in English to reveal Britain's success in breaking the German Enigma codes.² The term Ultra is the code name used for all intelligence received from BP concerning cryptographic intercepted messages. Winterbotham's book was written from his memory alone. His story shocked the English-speaking world when first released; Winterbotham opened the door for others, including Gordon Welchman, to break their sworn silence and tell their story of breaking the codes.

Gordon Welchman (1906–1985), in his book, *The Hut Six Story*, provides details of the operation in Hut Six and the development of the Secret Intelligence Service's move to BP. He explains that due to the buildup of war in Europe and the fear of a possible bombing of London once the fighting began, the Government Code and Cypher School (GC&CS) was moved to BP in August 1939, just weeks before Britain declared war on Germany. Admiral Sinclair purchased BP to transfer the GC&CS out of the Foreign Office in London, and the name of GC&CS was changed to Government Communications Headquarters (GCHQ). The estate was a prime location just forty-seven miles outside of London, with a railway junction making for easy access to Cambridge and Oxford.³

Commander Alastair Denniston was head of the GC&CS and began prepping BP with several outbuildings known as huts for the upcoming war with Germany. Denniston had also contacted leading mathematicians and

lecturers to request their service if war broke out, including Gordon who oversaw Hut Six. New technology was desperately needed to face the encrypted codes of the Enigma machine, and the best minds in the country were recruited to save their nation island. Encrypted message systems had changed rapidly from the Great War's simplified pad and paper system. Winterbotham claims Denniston explained that cryptology messages from World War I used the following method:

Denniston explains to me that there were a number of methods used to encypher messages, mostly based on the use of books of numerals held only by the sender and the recipient, but that machines had also been tried out. The basis of encrypting was that each service up to now had used its own particular codebook in which a multitude of words and phrases likely to be used by that particular service had opposite each phrase or word a numerical group.⁴

Of course, no code is infallible, as codebooks could become lost or even stolen, but the safest method used during the Great War was the "one-time pad method" described as:

In order to make the messages secret, therefore, additional groups of figures known only to the sender and receiver must be added so as to make the final groups in the signal untranslatable by any third party. The safest way to do this is for both the

sender and receiver to have a sort of tear-off pad, on each sheet of which are columns of four digit groups printed absolutely at random.... Once used the whole page of the pad is torn off and destroyed.... And was at the time the only known absolutely safe cypher.⁵

A few years following the war, the safest cipher method became outdated, making way for a mechanical and computerized method of cryptology that the Germans created in the 1920s, called the Enigma machine. According to Gordon Welchman, under Hitler's command, the entire German military was overhauled, creating divisions within branches to produce a fast-moving force. To be effective, the German's relied on "revolutionary radio communication capabilities."⁶ A highly trained German "mobile signals organization" was developed and "equipped with an Enigma cipher machine."⁷ Britain's only hope was to develop an intricate network of Y stations to intercept German radio transmissions to send to GCHQ.

Sinclair McKay's book, *The Secret Listeners: How the Y Service Intercepted the Secret German Codes for Bletchley Park*, provides insight into the frontlines of codebreaking.⁸ The men and women assigned to Y stations spent countless hours listening across the airways for enemy communication. The Y Station workers would record the coded messages. Mair Thomas describes the importance of the Y stations to the work done at BP:

Beyond BP there are a number of listening stations, military and government installations that are intercepting German intelligence. They are called Y stations and run by the army, navy, RAF, Marconi, Foreign Office, MI6, and the General Post Office. These stations combine a mix of direction-finding and interception. Direction-finding tracks the exact location of enemy operations, but it is the intercepted intelligence that is precious to BP. The stations in Chatham and Denmark Hill provide BP with regular and powerful intelligence. Once intercepted and written down, they are transported to BP via motorcycle couriers coming to BP bringing, 3,000 messages daily from all over the country.⁹

Mair Thomas

In October 1917, in the midst of the Great War, news headlines read of the famous spy Mati Hari's execution by a French firing squad, Britain's first bombing raids of German civilians, and the Russian government take-over by Vladimir Lenin.¹⁰ During the same week, Mair Thomas was born on October 17 in the small village of Pontycymer in South Wales.¹¹ Her parents Thomas and Agnes Thomas both contributed to the household financially. Thomas worked in senior management as a winding engineer, while Agnes owned a dress shop.¹² Mair's only sibling, Beti, her sister, was born in 1921. The Thomas's lived in a middle-class neighborhood with a maid that did the cleaning and looked after the girls. According to Mair, "most of the people

that lived on our side of the street kept maids; they were well-off families with fathers that earned good money."¹³

Like most children, Mair was enrolled in primary school at age five and began taking piano lessons. Her love of music and skill would follow her throughout her educational journey. With dreams of becoming a concert pianist, Mair was thrilled to become the school pianist once she started secondary school at the age of eleven and kept the position until she graduated at age eighteen.¹⁴ Two events affected Mair deeply before finishing secondary school in 1936. The first occurred in 1934, when her mother was diagnosed with "pernicious anaemia," leading to her death in February 1935.¹⁵ The second was Mair's newfound Christianity, which would provide her with strong "faith, resilience, and a fighting spirit," lasting qualities for the rest of her life.¹⁶

Following the death of her mother, Mair had a "yearning for adventure," and applied to Mount Hermon College located in southern London.¹⁷ Mount Hermon focused on missionary training, dedicated to bible studies and public service. Mair was assigned to London's East End, which became highly populated with Jews fleeing persecution throughout Europe, primarily Germany. Anti-Semitism had been growing across Europe, and in 1935, Germany passed Nuremberg Laws that deprived Jews of their rights and citizenship.¹⁸ England had its own fascist group, the British Union of Fascists, headed by Oswald Mosley, who planned a march on October 4, 1936, in London's East

End.¹⁹ Remembered as the Cable Street Battle, the event remained with Mair, leaving with her constant guilt over the persecution of Jews before and during the Holocaust.

After her two-year stint at Mount Hermon, Mair applied to Cardiff University in Wales to focus on a Bachelor of Music degree and German studies.²⁰ She enjoyed one year of peace at university before the war began. Mair vividly remembered Sunday, September 3, 1939, when Prime Minister Chamberlain announced Britain was at war with Germany following the invasion of Poland. The first year of the war went badly for the Allies, as the Battle of Norway and Denmark provided a considerable blow to the Allies' morale. German forces brutally marched across Western Europe at an accelerated speed unseen during the Great War. Belgium, Holland, and France fell to Hitler's army, and allied forces were pushed back and surrounded at Dunkirk. Standing alone against Germany, Britain held back German forces from landing on her shores during the Battle of Britain.²¹

Following the German failure in the Battle of Britain, the German Blitzkrieg campaign began against Britain. From September 7, 1940 to May 1941, the Germans moved from daytime raids to nighttime raids.²² In January 1941, Cardiff, where Mair attended university, was bombed, killing 165, while another 427 received severe injuries.²³ Mair's closest college friend died during the raid, and Mair realized it was her war now.²⁴ As March rolled around, Mair had two chance meetings that helped



Figure 1: Bletchley codebreaker Mair Russell Jones talks of War – BBC News. Accessed August 16, 2020 https://www.google.com/search?q=https://www.bbc.com/news/uk-wales-15525735&client=firefox-b-1-d&sxsrf=ALeKk03RHSbVUc0PiFjF3WcLQ2VmcVXlFA:1597685676484&tbm=isch&source=iu&ictx=1&fir=iL-YjX2tvA_QkM%252CYpDm9aexmA262M%252C_&vet=1&usg=AI4_-kTKw4bu5jNkTCXsq5QTYaNFgKSog&sa=X&ved=2ahUKEwjSmNb54qLrAhVDPawKHRwcAVgQ9QEWA3oECAMQBw&biw=1920&bih=938#imgsrc=iL-YjX2tvA_QkM

decide her fate for the duration of the war. While studying for her final exams in the library, she was approached by a gentleman from the Foreign Office, most likely a recruiter sent to universities looking for people specializing in languages, such as German, Italian, and Japanese. The other encounter was a friend of Mair's whom she met through a Christian event at Cardiff and who

worked at BP. Mair decided to write the Foreign Affairs office. She received a response within a week with an interview appointment at the London office.

In early 1940, “Dilly Knox had made the first breaks into the Enigma code.”²⁵ Mair’s April 1941 interview consisted of questions regarding her “degree, music, and German in particular.”²⁶ She was given a brief description of the job, “that they were looking for graduates to work in a new unit,” and “the purpose of this new department was to intercept and crack codes the Germans were sending to their frontline troops.”²⁷ At that point, the Foreign Office was hand-picking “all the brightest young men, and by the continuing belief that only a certain type of person could be trusted to keep a secret,”²⁸ such as Elizabeth Blandy, an early recruit assigned to Hut Six. Elizabeth had been referred by a friend of her father who knew someone in the Foreign Office. In fact, early on, one had to know somebody who knew someone to land a job at BP.

By the time Mair interviewed for BP, the Foreign Office had provided a simple description, unlike earlier recruits, such as Elizabeth’s friend Jane Hughes. Jane provided insight into an early interview to work at BP; the first step was to find out if Jane was suitable. She met with Mr. Milner-Barry in an interview filled with lots of silence before advancing to the next level of interviews. Meeting with Commander Edward Travis was similar: he was under the Official Secrets Act (OSA) and could not say anything. Jane left with a job at BP and the understanding that

she had “an important job to be done and everyone ought to do it if they were able to because it was so vital.”²⁹

Secrecy

Decades of secrecy surrounded Britain’s breaking of the Enigma code and the use of the intelligence gained. Thousands of people were sworn to silence while doing a job without detailed knowledge of their job description or the reason for their work. People and expectations were different in the 1940s compared to today. Currently, governments and militaries contain massive amounts of classified documents, missions, jobs, and so forth, where leaking information has become quite prevalent surrounding politics. Most military actions and movements are headline news, but not in England during World War II. The silence was golden, and Britain used the OSA of 1939 to ensure that progress made on the German Enigma was as silent as the radio waves on most days.

The OSA was reenacted in 1911 from a prior act of 1889.³⁰ The act outlines many liabilities to the state, such as spying, harboring spies, wrongful communication or information, and prohibited places, and the penalties for each, which could be either misdemeanors or felony charges. In 1920, new amendments were added to the OSA, which changed/added new wording and modified penalties. Other items included were details regarding the unauthorized use of uniforms, falsifying or forging reports, and interfering with police or his majesty’s forces.³¹ Fol-

lowing an incident in 1938 concerning details of RAF readiness and deficiencies uncovered by Winston Churchill's future son-in-law, Duncan Sandys, the act was amended again to specify the sharing of information and the correct ranks that needed notification before information was furnished.³² It also added a disclaimer which combined the 1911, 1920, and 1939 acts into a single act: "This Act may be cited as the Official Secrets Act, 1939, and this Act and the Official Secrets Acts, 1911 and 1920, shall be construed as one, and may be cited together as the Official Secrets Acts, 1911 to 1939." It also extended the act to include Northern Ireland.³³

The Secrecy Act carried great significance to the women of BP. Many of the women interviewed by both Tessa Dunlop and Michael Smith for their books placed extreme importance on the signing of the act and their ability to keep BP secret decades after the war ended. According to Dunlop, none of the women featured in her book "has forgotten her introduction" to the OSA.³⁴ Although the OSA clearly defines punishment for crimes against the state, many of the women remember threats of treason and execution. From an interview with Gwen Watkins (née Davies), Dunlop writes of Gwen's version of signing the OSA:

Death threats like these were not uncommon. The wing commander who oversaw Gwen's induction made a lasting impression on the eighteen-year-old recruit when he finished his sermon on secrecy with a florid

threat, If she disclosed any information she 'would be liable to the extremest penalties of the law, and I'm not sure whether, at the moment, that's hanging or shooting by firing squad.'

Another woman interviewed by Dunlop, Ruth Bourne (née Henry) recalls the threat of a prison sentence at the very least, if she broke the OSA. Dunlop quotes Ruth's memory as:

I realize whatever we are doing, it is so secret that if you say anything you have to go to prison, "at least." I didn't know what at least meant. I thought what could be worse—chop off your head, hang you or deport you? I suppose everyone else thought the same.

Most of the women recruited early in the war years were from "relatively well-to-do families" and deemed trustworthy. They had connections to someone working at the GC&CS or a higher government office.³⁵ Very few of those early recruits interviewed by Michael Smith placed a high significance on signing the OSA in their recollection compared to those recruited later, as mentioned in Dunlop's book. Although all of the men and women associated with BP signed the OSA, those who were recruited through universities and crossword puzzle contests seem to have had a different experience placed upon the need for silence regarding their work than those with connections from the upper- to upper-middle-class families. Timing also seemed to play a part in the significance placed on the secrecy of the employees when informed of the

requirement to sign the OSA. In fact, the women working at BP at the beginning of the war remarked frequently on the “relaxed well-to-do atmosphere of the country estate” similar to a “weekend party at an English country mansion.”³⁶

In *My Secret Life in Hut Six*, Mair Russell-Jones (née Thomas) also remembers signing the OSA. The explanation she received was as follows:

As a government official you are obliged to sign it, and it is a binding legal document. If you disclose your work at Bletchley Park to anyone, you will be in breach of this, and the consequences could be serious, and even include imprisonment.³⁷

All people assigned to BP signed the OSA. Most of the women working there did not have detailed information on the operation but did understand that their job was of extreme importance, that the utmost secrecy was demanded, and that people would die if they shared information or failed at their job. Gossiping was not tolerated in or around BP, and anyone involved in loose talk found themselves dismissed or penalized by the law. Mair understood the need for secrecy, especially as the Germans never knew until after the war that their Enigma Code had ever been broken.³⁸

Life at Bletchley Park

Mair joined the BP team in 1941 where she was assigned to Hut Six under Gordon

Welchman and recounts the working conditions with dim lighting and lots of cigarette smoke. Shifts ran around the clock: “eight o’clock in the morning until four in the afternoon; four o’clock in the afternoon until midnight and midnight until nine in the morning,” with a half-hour lunch break.³⁹ During her work shifts in Hut Six, Mair’s job was to key in the received “various codes” into her copy of the Enigma machine, which was then sent to another hut to be deciphered.⁴⁰ The codes came in as a jumbled language from Y stations to BP, and the process for keying in codes was time-consuming.

Once those codes were keyed in, they were moved to the correct hut by a “Wooden conveyor belt” which was the only connection between huts.⁴¹ Apparently, along with the bad lighting and smoke-filled air, the conveyor belts made quite a “racket,” as they were “constantly moving in a clanking, vibrating kind of way.”⁴² Mair noted the machine was constantly shaking the hut. Although she worked in a bad environment compared to standards today in a place of employment, she raved at the equality in treatment by the “top brass” and “social strata.”⁴³ According to Mair, class, education, or rank were unfelt. She describes Gordon Welchman and the general atmosphere of equality as:

Something I really liked about Gordon Welchman, and this would apply to the most of the top brass at BP, was they never talked down to you. You felt that we were all colleagues working together and that we were all



Figure 2: Bletchley Park was the home of the Government Code & Cypher School. GCHQ © Crown Copyright 2016. Accessed August 16, 2020. <https://www.gchq.gov.uk/information/world-war-ii-bletchley-park>



Figure 3: Hut 6 where Mair Russell Jones worked under Godon Welchman. Accessed August 17, 2020. https://i.telegraph.co.uk/multimedia/archive/02436/Bletchley-Park3_2436845b.jpg

equal. Most of us were graduates, but there was no pecking order. I was surrounded by people who'd been to Oxford or Cambridge, but no old boy network or anything like that. It was a marvelous atmosphere in many ways because you weren't aware of class or background. We were there to do a job and that's all that mattered. There were one or two annoying people who clearly felt superior to everyone else, but they were a minority. In many ways I'd known a privileged upbringing, but I was still from the Welsh valleys and probably sounded like it. But no one looked down on me or patronized me. And I would say there was also equality between the sexes. There were more women than men in BP, so the men had to watch their step! Even though we had to keep so many secrets and work the longest hours, there was something about that community in BP that I haven't seen since.⁴⁴

The stress of long hours, abnormal workload, and the smoky environment caused quite a bit of sickness among the people working at BP. Mair suffered two different illnesses during her service; the first time was shortly after she arrived and due to stress, poor living conditions, and long hours. She fainted and was hospitalized. The next time Mair became ill was at the end of her service when she contracted pneumonia and nearly died. Several hundred employees at BP also ended up

with pneumonia, and a few did not survive. By the time Mair recovered from her long illness, Germany had surrendered, and she was relieved of her duty. The time Mair spent at BP impressed her deeply. Some days were a blur of confusion and dizzying, but to be a part of something unique and worthwhile provided exhilaration. She was honored to have had the opportunity to work alongside "some of the most brilliant men that Britain has ever produced."⁴⁵ She thrived on the thrill of riding the "intellectual frontline" and fighting the war with "encrypted codes and phoney messages" over "bullets and bombs."⁴⁶

Conclusion

Breaking the German Enigma codes was crucial to the survival and success of the Allies and not only helped win the war but also helped shorten the length of the war. Messages heard and recorded at Y station provided those at X station the information to understand the Axis movements and military tactics. More women worked in both Y and X stations than men, but received less recognition for their participation. Through national loyalty, threats of death or treason, and the signing of the OSA, the silence of BP held for thirty years following the war. Women were rarely mentioned in new evidence concerning code breaking of the Enigma, yet they played a considerable role in the entire process of the intelligence department. The British government has begun to commemorate those involved in Ultra and the bombe machine in the last decade. The recog-

nition of women is even less, but there are close to eight thousand women on BP's Honour Roll.

Mair Thomas Russell-Jones was born during the Great War and served her country nobly during the Second World War. She was proud of her time working for the Foreign Office at BP and felt like she was part of something important. Russell-Jones upheld her obligation to the OSA for fifty years following her discharge from the Foreign Office. She worked under extended, stressful, and mundane conditions, typing in jumbled codes into a replica of the German Enigma machine at the cost of her health. Mair's only regret during her time code breaking was that the millions of Jews killed during the Holocaust could not be saved via the deciphered information.

Mair provided valuable insight into the community of BP. She showed the fighting spirit of the men and women who dedicated themselves despite poor working conditions, sicknesses that sometimes resulted in death, exhaustion, and performing a job rarely understood. Women made the primary force of Y stations and Station X due to the large number of men fighting in the war, but they never felt inferior as the BP community bonded together for the critical positions they played in breaking the German Enigma Codes. Secrecy may have interfered with post-war connections of the BP folks, but national pride and dedication remained the link to BP.

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Notes

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