Women Spies and Code Breakers

1840: Augusta Ada King

WWI: Elizbeth Smith Freedman **Code Breaker**

WWII: Bletchley Park **Code Breakers**

WWII: Agnes Meyer Driscoll **Code Breaker**

WWII: Virginia Hall **Spy**

WWII: Madame Fourcade **Spy**

WWII: Odette Sansom **Spy**

Post Cold War: Amaryllis Fox: **CIA Agent**
Week 2

- Ancient Greeks--Shaved head of most trusted slave.

- 2000 year old Greek ship—had computer on board.

- Revolutionary War.
  - George Washington and British used codes during the Revolutionary War.
  - General Gage had an American mistress. Delayed critical British troop movements by two weeks.

- Review

- Polish Code Breakers.
  - Bletchley Park.
  - U. S Washington, DC code breakers.
    - Agnes Meyer Driscoll
    - Ann Caracristi

- Vera Atkins—Power behind SOE’s French operations.

- Maurice Buckminster---Head of SOE’s French sector.

- Virginia Hall. The jail break.
2000 year old Greek ship—had computer on board.

- Antikythera shipwreck actual and mockup.
Bletchley Park

- 1945—a staff of nearly 10,000 –75% were women, many civilian.
  - Six out of ten were in uniform.
  - Many Americans were brought over.
Enigma

- U-570 attacked by Hudson Lysander.
- Inexperienced captain and crew.
  - Could not scuttle the sub.
  - Enigma was captured.

British intelligence did early work on decoding the Enigma machine.
Pamela Rose

• An actress.

• Pamela’s understanding of German was useful for filing decrypted messages.

• For that work she sacrificed her first role on the West End.

• She was one of the very few examples of women being promoted from “humdrum roles”.

• Pamela became head of Naval Indexing, a section that has subsequently been hailed as a precursor of the Information Age.

• Co-ordinating vital fact-finding forays long before the advent of the microchip.

• She remained modest about her wartime achievements. “I think I was promoted because I couldn’t type!

• Yes I suppose most of the Heads of Sections meetings were with men. I was given my own room and had some responsibility but I missed the girls’ chatter.”
Pat Davies

• Not based at Bletchley.

• A WREN Women’s Royal Naval Service.
  • Joined at age 18.
  • In the Y Service. (British intelligence collection sites).
  • Moved between three English coastal locations.

• Her final listening post was Abbot’s Cliff in Kent.

• Over age of 95, Pat remains a tireless champion of her secret war work.
  • Lectures, theatre tours, television appearances.
  • Used any means available to explain Britain’s massive interception mission.

• “Doing this work at an early age meant my life went down a totally different track.

  • Before the war her parents could not afford to send her to a university, eventually attended three of the very top ones.”
    • St. Andrews, Oxford and Harvard.

• After the war, Pat had a stellar media career as a producer in the then-new medium of television.
Pat Davies-The Listener

- Patricia Davies spent World War II listening - spending hours at a time trying to pick voices from squealing static.

- A room full of women scouring the radio waves and scribbling down nonsensical monologues.
  - These messages were orders destined for German sub-marine bases on the west coast of France or ships in the Baltic Sea.

- The seemingly random jumble of letters were a code produced by the Enigma machine

- German orders also sent as Morse code, a series of long and short beeps.
- Davies remembered the openings and closings of messages.

- "They had a code that all ships used for heading and signing off, that always began with three letter groups, beginning with the letter Q."

- Picked up radio signals that didn't seem to fit into the German naval pattern.
  - From German tanks on the Russian front talking to each other.

- Good code breakers were continually on the alert for patterns and variations.

- France’s British Ambassador awarded Pat France’s Legion D’Honneur-their highest honor and most famous in the world.
College Girls and Teachers

- Recruited by the U.S. Army and Navy from small towns and elite colleges, more than ten thousand women served as codebreakers during World War II.
  - Shortage of men.
  - Called presidents of Ivy League women’s schools first.
  - Expanded to college students and high school teachers as need rapidly grew.

- 70% of Army—80% of Navy code breakers were women.

- A strict vow of secrecy nearly erased their records of their efforts from history.

- Said they were doing low-level office tasks. (Including own families).

- Housed in DC and Arlington, VA.

- Ran early IBM computers.

- Involved complex math linguistics.

- Trained in Northampton, MA Navy. Wore uniforms and marched.
Women Code Breakers Today

• Heroines of *Code Girls* were trailblazers.
  • Math, statistics and technology.

• Fields that, to this day, are often unwelcoming to women.

• Assumption that the work was beneath the men.

• Google memo by Google engineer James Danmore.
  • Argued that the underrepresentation of women in tech is the result of biology *not* discrimination.

• "You see this innate belief that men are the geniuses and women are the congenial people who do the boring work."
Some of the Girls

• Virginia D. Aderholt---First to learn of beginning of WWII. Deciphered and translated Japanese message to Switzerland declaring their unconditional surrender.

• Agnes Meyer Driscoll—died January 10, 2016, age 94.

• Dot Braden—October 1943 –23 year old from Lynchburg, VA.
  • “I didn’t know where I was going or what for. I really didn’t care,” said Bruce, who was recruited in 1943. “I just thought, ‘Oh well, I finished Randolph-Macon, I can do anything.’”

  • Fantastic memory.

• Ann Caracristi---rose through the NSA ranks to become the first female deputy director.

  • Known for her leadership.
Agnes Meyer Driscoll

• Born 1889 died 1971.
  • 1911---received A.B. degree from Ohio State University. Majored in mathematics, physics, foreign languages and music.

• One of true “originals” in American cryptology.
  • 1918—inlisted in the Navy. Assigned to Code & Signal section.
  • Chief Yeoman-highest position available for a woman.

• 1920—Studied at the Riverbank Laboratories in Geneva, Illinois.
  • William and Elizbeth Friedman started there.

  • Herbert O. Yardley—Cipher Bureau (American Black Chamber).
    • First U. S. peacetime code-breaking agency.
    • Disguised as a commercial enterprise.

• Co-developed Communications Machine (CM).
• Shared $15,000 U. S. Congress award with coinventor's widow.

• 1921-1922---Washington Naval Conference.
  • Decrypting of Japanese communications led to advantageous American bargaining position during naval arms negotiations.
Agnes Meyer Driscoll--2

• As Navy cryptanalyst, broke many Japanese codes and developed early machine systems.
  • 1920’s—Red Book Code.
  • 1930’s---Blue Book Code.
  • 1940’s---critical inroads to JN-25, Japanese fleet’s operational code.
    • Exploited after Pearl Harbor for the rest of the war.

  • M-1 cipher machine (ORANGE machine). Used by diplomatic core.
    • Uncovered two American spies secretly passing information to the Japanese.

• Led early efforts against German naval Enigma machine.
  • Later superseded by U.S.-U.K. cryptologic exchanges in 1942-43.

• After WWI—continued as a civilian in same department.

• 1937—Injured in car accident. Never fully recovered, but returned to work in 1939.
  • Broke the JN-25 code. A system of over 30,000 five-number groups.
  • Not fully exploited until late 1942.
    • Advanced warning for attack on Midway Island.

• 1940---transferred from JM-25 to breaking German Naval codes, focusing on Enigma.

• 1943---moved to work on new Japanese attaché machine.
  • Filled many positions until retirement from National Security Agency in 1959.

Dot Braden (Bruce)

In 2014 “The Imitation Game” story of British cryptanalyst Alan Turing sparked a renewed interest in America’s code breakers.

Mostly American men, but many young non-collage women from the South and Midwest flooded Washington DC.

Raised with importance of education.
  • All four of her children attended college.

High school—active in clubs and sports.
• 1942—graduated Randolph Macon Women’s College. 4% for women at the time.

1943---Taught high school for one year. Left due to continually increasing work load with no increase in pay.

1943---recruited as a code breaker. “I just graduated Randolph-Macon, I can do anything”.

Broke messages relating to Japanese Army’s routing of supply ships, which transported everything from food, oil and medicine to soldiers.

Information was so timely, Dot and co-workers knew of Japan’s surrender on August 14, 1945 before President Truman’s announcement at 7 PM.
Even after the war, Bruce knew there would be severe consequences if she revealed the true nature of her work. She still remembers the words from a letter sent to her from the War Department in 1946 that states, “You must never disclose this to anyone in your lifetime.”

Dot Braden took this very seriously.

“Code Girls” author Liza Mundy said that it took a long time to convince Dot that it was OK to talk about her wartime experiences. Still, she insisted that her son, a lawyer, be present.
At Work and Play
Ann Caracristi

- Career in cryptology began during WWII in the Army.
  - After brief civilian career after the war, joined NSA’s predecessor organizations.

  - A Group (Soviet issues).
  - Provided career support to other cryptanalysts.

- Chaired special panel convened by NSA Director Admiral Bobby Ray Inman to identify next generation of likely NSA senior executives.

- April 1980-August 1982—NSA’s sixth Deputy Director.

- 1982--Retired from NSA.

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• 1989-1991: president of the Association of Former Intelligence Officers.
Father of SOE

- Britain and Allies were blind in France.
  - No agents on the ground.

- Churchill asked for agency that would set Europe on fire.

- He loved spy work.

- June 1940-became PM and immediately challenged Hitler by any means possible. Six days.

- Important to convince British people and the free world (U.S.) that would keep fighting.

- Guerilla warfare a serious option.
  - Required Germany to divert resources.
  - Helped keep up spirit of resistance.
British SOE France Agents

Vera Atkins  
Power behind SOE

Maurice Buckmaster  
Head SOE France Desk

General Colin Gubbins  
Chief Executive SOE
Masters of Disguise and Deception

• France was initial sphere of operation.

• At operational level SOE people needed to master:
  1. Arts of disguise.
  2. Deception.
  5. Black propaganda.
  6. Forgery.
  8. Guerilla warfare.
  9. MURDER!

• Stuart Menzies, head of Secret Intelligence Services (SIS) strongly opposed SOE as being an amateur operation.
  • A risk to more serious intelligence operation.
  • SOE trained it operatives. SIS did not.

• Primary training in Arisaig, Scotland.
• At peak—about 13,000 operatives.
Very Detailed Training

- Scotland training camp was very difficult.
- Many dropped out.
- Simulated parachute drop most disliked task.
- Radio transmission most difficult and demanding.
  - Most dropouts due physical demands and parachute training.
- Radio operators most valued.
  - Highest mortality rate.

Training bridge in Scotland

Scotland

Norway
SOE Training Film

https://www.youtube.com/watch?v=YsDTZKbVZiw
SOE Light Bomber
SOE Tools

- Strip suit.
- Lockheed Hudson light bomber
- Westland Lysander light bomber.
- Very quick land and takeoff.
- Small space.
- Personnel and supplies.
- Flashed lights and L-shaped markers.
SOE Radios

• This diagram gives a clear view of the controls, as seen from the top.

• The case has four compartments; one for each of the modules.

• At the left is the spares box or accessory kit, here shown without its lid.
  • The spares box has two compartments: one for the spare valves and one for the accessories.

• The PSU (power Supply unit) is at the right, with the AC and DC connections at the right edge.
SOE Clandestine Portable Radio WWII

• The British Type 3 Mk. II, commonly known as the B2.
  • Arguably the most well known spy radio set used during WWII.
  • Officially designated as Type 3 Mk.II
  • Also known as Type B Mk.II, B.II and B2.

• Designed in 1942 by (then) Captain John Brown at SOE Station IX.

• Manufactured by the Radio Communication Department of the SOE at Stonebridge Park.

• The set was issued to agents and resistance groups and special forces operating on occupied territory.

• Radios became lighter as war progressed.
Virginia Hall

  - Father died young of a heart attack. Instilled in Virginia the will to succeed.
- Mother very society conscious and expected Virginia to marry well.
- Education: Roland Park Country School, Radcliff College.
- First Allied woman deployed behind enemy lines in France during WWII.
  - A British Special Operations Executive (SOE).
  - Revolutionized secret warfare.
- Lit flame of the French Resistance—General De Gaulle took credit and denied any role for women or non-French in resistance movement.
- Known as the “Limping Lady”. Most wanted by the Gestapo. Klaus Barbie “Butcher of Leon” put her wanted poster all over France, dead or alive.
- Married Paul Gaston Goillot—worked together during latter part of WWII.
- Post war—intelligence analyst of French parliamentary affairs (Special Activities Division) of the Central Intelligence Agency—CIA.
Early Life

- Attended Radcliff (Harvard) and Barnard College in New York.
- Virginia Hall moved across Europe with the support of her parents.
  - Studied in Germany, Austria and France. She was an enthusiast of modern languages and learned German, French and Italian.
- Wanted a career in Consular Service, but was continually rebuffed as a woman.
- In 1931 she joined the American Embassy as a Consular Service clerk in Warsaw, Poland.
  - She aimed to work at the US State Department to pursue a career in Foreign Service.
- Continually rebuffed.
- Turkey 1932--an unfortunate hunting accident when she mistakenly shot her left leg, which was amputated below the knee.
- She called her wooden leg “Cuthbert’ and carried on as if normal (weighed 7 pounds).
- In 1939 she was forced to resign from the US State Department.
  - Restricted employment of anyone with "any amputation of a portion of a limb".
- She later studied in Washington, DC at the ‘American University’.
Career

- Outbreak of WWII—was staying in France, which she considered her second home.
  - Became a driver in the Ambulance Service Unit. Fearless under fire.
- May 1940—escaped to England when the Nazis invaded.
  - Chance meeting led to an interview with British intelligence.
- June 1940—Position as a code clerk opened at the US War Department.
- 1941—Inducted as special agent in British SOE (Special Operations Executive).
  - Went back to France undercover as a New York Post reporter. (code name Mary)
  - Established a defiance network in Vichy for the next fifteen months.
- 1942—Based in Lyon. Later in the year, Germans captured France. Aroused their suspicions and fled to Spain over the Pyrenees through hip-deep snow.
  - Transmitted message that was she OK, but Cuthbert was giving her a bit of trouble.
  - Advised to eliminate him if necessary. *(Had 007 license to kill).*
Return to France

• Immediately arrested for entering Spain illegally.
  • Jailed for six weeks until got word to American officials in Barcelona.

• March 1944---Joined Special Operations Branch of the Office of Strategic Services (OSS).
  • Returned to France on March 21 by British military boat.
  • Could not parachute due to artificial leg.
  • Disguised as an old lady.
    • Changed teeth filling to look French.

• Led a network of 1,500 people.
  • Paul Goillot, French-American, became her husband.
  • Blew up

• During her hike over the Pyrenees, Virginia sent a message back to SOE HQ that she was fine but that “Cuthbert” was giving her trouble.
  • Their reply: “If Cuthbert is giving you difficulty, have him eliminated.”
After the War

- After the end of the war, the French government awarded her the *Croix de Guerre avec Palme*.

- The British made her a Member of the Order of the British Empire.

- U.S. General William Donovan presented her with the Distinguished Service Cross.
  - President Truman wanted to present her the award, but Virginia did not want any publicity that might undermine her cover.

  - CIA Director Allen Dulles tried to marginalize Virginia.
  - Had no use for savvy women agents who did not use “gung ho” tactics.

- April 1961 Cuba--failed Bay of Pigs operation.
  - Virginia commented that it would never have happened on her watch.
  - She was known for meticulous planning.
  - Bay of Pigs—a rushed operation with little, but very faulty planning.

- Virginia is only woman among five CIA agents on their Wall of Honor.

- E. Howard Hunt said, "No one knew what to do with her. She was a sort of an embarrassment to the noncombat CIA types, by which I mean bureaucrats."

- Virginia and Paul retired to a farm in Barnesville, MD. Paul lived 5 years longer.
French Identity Papers
All In A Day’s Work

• Virginia’s niece, Lorna Catling, told CNN that Virginia was not interested in fame or recognition.

• Loved the excitement of it all.
  • An outdoors woman.

• How did a young woman from wealth become so adept at being a super spy?
  • Natural instinct and common sense.

• An excellent organizer.
  • Although her spy networks were compromised, agents in place helped with the D-Day invasion.
  • Got $$$$$ to agents and officials when needed. Many currencies.

  • Planned many prison breaks to free agents.

  • Set up network of radio operators. (Most vulnerable of all agents). Triangulation a new technique.

  • Strangers risked their lives to help her.

• Sent a woman SOE agent back when asked where she could get a perm.

• Taught American downed flyers to not walk bow-legged.
All In A Day’s Work-2

• Virginia mapped out and called in airdrops for the French Resistance.
  • Blew up bridges.
  • Attacked Nazi convoys.
  • Sabotaged trains.
  • Reclaimed entire villages before Allied troops advanced deep into France.
  • Often worked right under Nazi’s noses.
  • The Jail Break.

Not Everything Went Well

• Many agents disobeyed orders.
  • Caught with list of spies in pocket.
  • Did not end radio message with personal sign-off code.
  • Operated wireless radio’s too long.

• Trusted German agent against her gut feelings.
  • Alesch—Double agent, passed as a priest.
    • Exposed most French spy networks.
  • Virginias's one mistake cost many lives.
  • Lab upstairs used as a drop-off.
The Jailbreak

- October 1941—Virginia Hall learned that 12 agents were arrested by French police.
  - Mauzac prison near Bergerac.
  - Wireless operator Georges Begue smuggled out letter to Hall.
    - A priest smuggled in a radio.
    - In touch with London prior to the break.

- Recruited Gaby Bloch.
  - Wife of prisoner Jean-Pierre Bloch.
  - Brought tools and sardine tins.
  - Made a key to door of barracks.
- Hall was too well known to visit prison.
  - Assembled safe houses.
  - Vehicles.
  - Helpers.

- All met up in Lyon.
  - Smuggled to England.

- Hall agreed to have messages to SOE in London from Gloria network in Paris.
  - Infiltrated by Abwehr agent Robert Alsech, disguised as a priest.

- Alsech captured radios and sent false information to London.
A Climb to Freedom:

- Craig R. Gyrally personally followed Virginia Hall’s winter mountain escape to Spain. Difficult climb even in warm weather.

- Most residents in the area did not know her or even where the trail head leading into the Pyrenees started.
Q & A