

Unexpected Histories

Volume 5

Top Secret Ultra

Edward Barnard

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Volume 5: Top Secret Ultra

Edward W. Barnard

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Also By Edward W. Barnard

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Chapter 1. Top Secret Ultra

The original large-scale digital computers were so secret that they were destroyed after the close of World War II, with the plans and diagrams burned in a furnace. Information on postwar computers of the 1940s has been declassified as recently as 2017. We can now trace the birth of digital computing.

Ultra

During World War II, the Allies were able to decrypt high-level German communications. The Allies kept this fact a secret. The British designated this intelligence *Ultra*, as in more secret than the most secret, i.e., *ultra secret*. [Figure 1.1, “Top Secret Ultra,”](#) shows one such document, the “History of Coast Guard Unit #387, 1940-1945”. Note there were exactly five copies and no more!

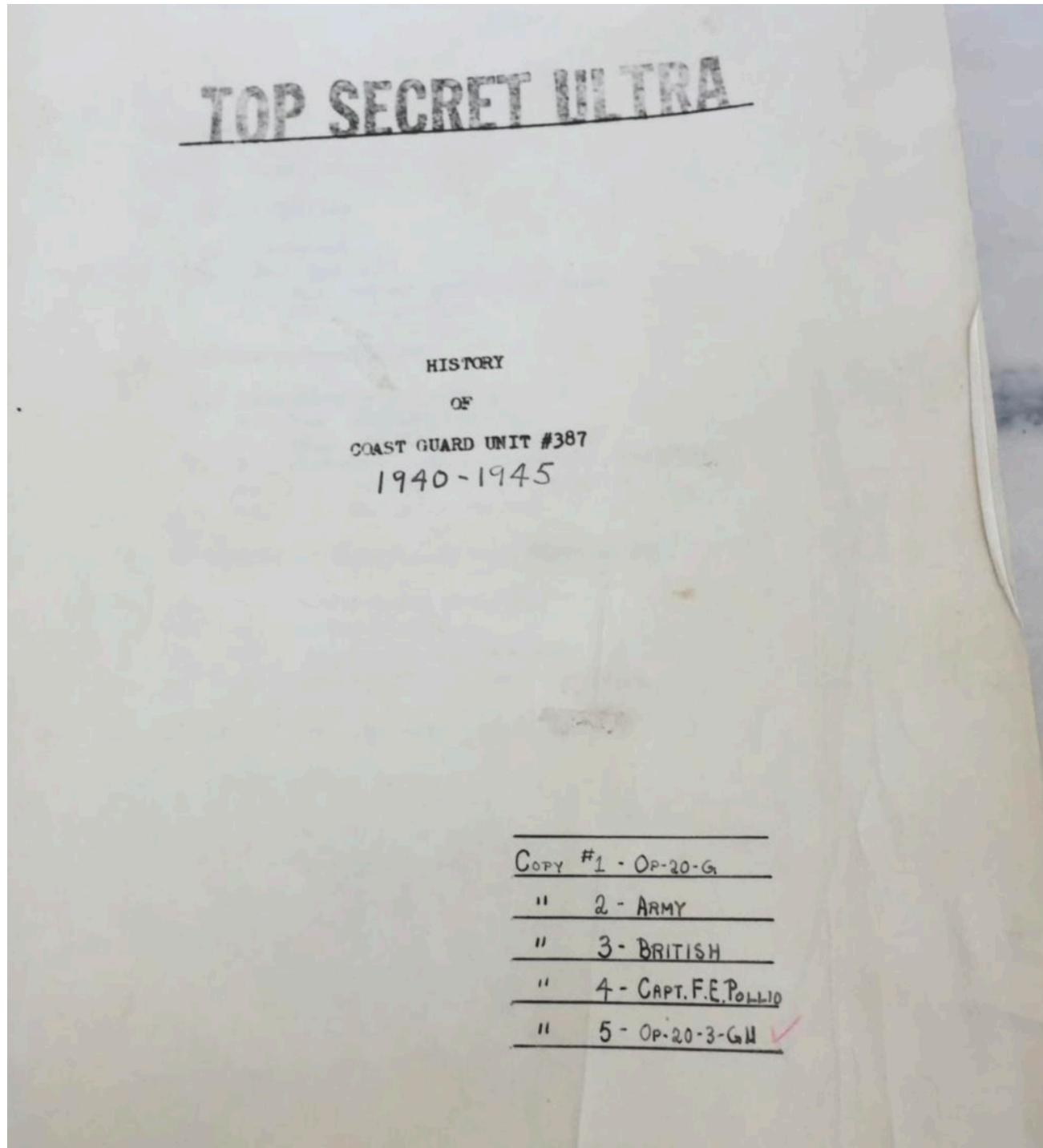


Figure 1.1. Top Secret Ultra

Ultra—and therefore the birth of digital computing as we know it—remained secret for decades. Harold C. Deutsch explains (in a document not released by the NSA until 2006) in *The Historical Impact of Revealing the Ultra Secret*:

We really should not have been greatly surprised. When Group Captain (Colonel) F. W.

Winterbotham's work, *The Ultra Secret*, burst on our consciousness in 1974, it undoubtedly produced the most sweeping sensation thus far created by an historical revelation. It was sweeping, especially, in the sense of seeming to demand immediate and wholesale revision of historical assumptions about virtually all that determined the course of World War II in the Atlantic sector.

Deutsch concludes:

Whatever verdict on the hotly debated question of whether the Ultra revelations require a "complete" rewriting of World War II history, there can be no argument that they will demand the reexamination of a vast complex of historical problems... Group Captain Winterbotham will have much support in saying: "No history of World War II is complete which does not take into account our knowledge of our enemy's intentions, disclosed by our 'most secret source.'"

Now, well into the 21st Century, it's hard to imagine how much was kept secret, and for how long. The first computers were Top Secret Ultra and remained Top Secret Ultra for at least *three decades beyond the close of World War II*.

The first large-scale computers were [literally destroyed to maintain their secrecy](#):

At the end of the war Winston Churchill issued orders that the ten Colossus computers were destroyed and broken into "pieces no bigger than a man's hand." Jerry Roberts later recalled: "The Colossus machines were all destroyed, except two which got away. There were ten machines—eight were dismantled and destroyed, and two were kept at Cheltenham at the new GCHQ." Tommy Flowers was ordered to destroy all documentation and burnt them in a furnace at Dollis Hill. He later said of that order: "That was a terrible mistake. I was instructed to destroy all the records, which I did. I took all the drawings and the plans and all the information about Colossus on paper and put it in the boiler fire. And saw it burn."

We now know that the birth of modern computing takes us along three paths during World War II:

- Bletchley Park in the UK
- The U.S. Army
- The U.S. Navy

[Bletchley Park](#) created the world's first large-scale electronic digital computer to break encrypted messages between Germany's high command and the generals in the field. U.S. Army and Navy cryptologists learned from Bletchley Park, going on to create modern digital computing.

We'll be tracing the U.S. Navy history, but that begins with Bletchley Park.

Lorenz Machine

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CDC

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