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Code-Breakers of the Second World War

The Third Reich is Listening: Inside German Codebreaking 1939–45 by Christian Jennings.

New York: Osprey, 2018. Pp. 368. ISBN 978–1–4728–2950–4.

Bletchley Park and D-Day by David Kenyon.

New Haven: Yale Univ. Press, 2019. Pp. xxx, 295. ISBN 978–0–300–24357–4.

X, Y & Z: The Real Story of How Enigma Was Broken by Dermot Turing.

Stroud, UK: History Press, 2018. Pp. 320. ISBN 978–0–7509–8782–0.

Review by Jonathan Beard, New York City (jb752@caa.columbia.edu).

In 1974, Frederick Winterbotham's *The Ultra Secret*[1] inaugurated (for English-speaking readers) a major part of World War II historiography. Since then, dozens of books have assessed signals intelligence (SIGINT) during the war. I will review here three recent works that have found new ways to look at codebreaking from both sides of the battlefield.

In *The Third Reich Is Listening*, popular military historian Christian Jennings considers the German side of codebreaking efforts, using a small fraction of the vast corpus of postwar documents that historians have, as yet, never fully exploited. As Nazi Germany began to collapse in 1945, Anglo-American cryptologic intelligence teams—managed by the Target Intelligence Committee (TICOM) were sent into the Reich to seize equipment and documents and to capture and interrogate German code-making and code-breaking experts, who often wrote detailed reports translated into English (1). Jennings highlights particular cryptographic battlefields, covering German successes against low-level RAF codes during the air war in France in 1940, their exploitation of Soviet lapses during the sieges of Sevastopol and Stalingrad, and their use of radio intelligence to secure a victory in the Battle of Kos during a little known campaign in the Aegean Sea. The book usefully examines battles and theaters of operations typically left out of earlier accounts of the impacts of cryptology on the course of the war, which tend to concentrate on British and American success against Enigma and other high-level German codes, and the Americans' breaking of Japanese diplomatic and military codes.

The star exhibit for the importance of codebreaking has always been the Battle of the Atlantic. From 1941 to early 1943, the German navy had the advantage, because its code-breaking department, the B-Dienst (*Beobachtungsdienst*) had been reading many British codes even *before* the war. The British codebreakers at Bletchley Park (BP) made inroads into German communications, but the U-boat arm enjoyed better Enigma machines and superior cipher discipline, as compared with the Luftwaffe and Army. A see-saw battle of wits saw first the Allies, then the Germans, capitalizing on their code-breaking successes. The battle was finally decided in May 1943, when superior anti-submarine weapons, changes to British codes, and breaks into the U-boats' own Enigma

1. New York: Harper and Row.

communications, led to the destruction of forty-one U-boats. Jennings's discussion of operations in the Atlantic is more enlightening about German codebreaking than most previous accounts. But he is less well informed about military technology, as may be seen in his description of signals that Adm. Karl Dönitz, commander of the U-boats, sent to his captains at sea:

> Of course, the longer the message, the better a target it made for interception, either by Allied direction-finding radar, or by HF/DF, or "Huff-Duff." To avoid sending long signals that devices such as Huff-Duff could track was one reason why the Germans preferred using the Enigma. It could condense relatively long messages into groups made up of four letters that could be sent very fast by a good Morse operator. (146)

But there is no such thing as "direction-finding radar," nor can radar detect radio signals. And, while high frequency direction finding did help locate U-boats when they were transmitting, this had nothing to do with "intercepting" messages. Nor did the Enigma "condense" messages; it merely encrypted them. Elsewhere, Jennings describes the use of acoustic-homing torpedoes in *1939* (they were not introduced till March 1943). He also implies that submarines sent radio messages after submerging.

The author provides a useful chronology of the codebreaking war, a glossary of terms, and a fine, short bibliography. He ends his book with a good concluding chapter discussing what future historians of World War II codebreaking need to do.

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With his *Bletchley Park and D-Day*, David Kenyon, research historian of Bletchley Park, has written a book that replaces a fine earlier study of the subject by Ralph Bennett.[2] With access to thousands of documents declassified in the last forty years, he paints a far more detailed picture of BP and of the Normandy campaign than Bennett was able to. He begins by setting the record straight concerning just what work was done at BP.

> For most of the staff at Bletchley Park, men and women, life was tedious rather than stimulating. The cryptanalytical achievements of the senior codebreakers had been converted into a series of relatively simple linked tasks, each of which was performed by a different group. This "production line" approach meant that many staff had little idea of how their particular task fitted into the process as a whole; however, the system resulted in a highly efficient machine that was capable of processing vast quantities of data on a daily basis. (17)

The thousands of women at BP performed many of the most tedious chores; though they operated the primitive computers that helped decode messages, they were not trusted to maintain or repair them.

Kenyon dismantles a persistent myth about BP and its product, code-named ULTRA. Previous works, including Bennett's, described the gathering and delivery of crypto-intelligence as a "pure" process: analysts were purportedly not informed about the course of the war outside of what they learned from decoding German communications to ensure that they provided "uncontaminated intelligence" to BP's customers. But, in fact, Bletchley constantly received information "obtained in various other ways, including from agents in France, POW interrogations, and air reconnais-

2. Bennett spent the war in Hut 6 at BP analyzing deciphered German signals. His *Ultra in the West: The Normandy Campaign of 1944–45* (NY: Scribner's, 1979) stood out from the growing literature on BP because he was an academic historian who wrote well and had access to relevant intelligence documents. Rather than explaining codebreaking procedures or life at BP, he showed exactly how and when SIGINT produced there affected the fighting after D-Day.

sance and photography. This extra material significantly helped the staff at Bletchley, and enriched their understanding of the intercepts which formed their main task" (104).

Kenyon adds vignettes that will interest readers familiar with the historiography of D-Day and the ensuing post-invasion fighting. When Gen. George S. Patton was first informed about ULTRA, he told the liaison officer: "You know, young man, I think you had better tell all this to my Intelligence staff, I don't go much on this sort of thing myself. You see, I just like fighting" (95). The top British commander, Gen. Bernard Montgomery, reputedly resented ULTRA but Kenyon notes that his attitude did not affect the conduct of the campaign. The book also provides a detailed account of the intelligence aspect of one of the most controversial events of the landings—the unexpectedly bloody battle for Omaha Beach.

The volume is enriched by two maps and thirteen pages of well chosen photos, many from the BP archives, as well as a long "Note on Sources and Further Reading" to guide readers who want more.

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Anglophone experts on the breaking of ENIGMA have long acknowledged the crucial contribution of Polish cryptologists at the beginning of the war. When, in 1926, the German navy sent its first Enigma machine messages, they were quickly intercepted by the *Biuro Szyfrów*—"Cipher Bureau"—which, however, could not decode them. The Poles owned a commercial version of Enigma, as did the British and French, but the German military had modified their version, adding a plugboard and rewiring the rotors. The messages it produced could not be read by the codebreakers of any country. The Poles, who had far more reason than any other nation to fear their neighbor to the west, tried a new tack: They hired three young mathematicians—Marian Adam Rejewski, Henryk Zygalski, and Jerzy Różycki—to see what they could do. By 1932, they had succeeded in determining how the German Enigma worked—an achievement that later astounded their French and British counterparts.

The entire story of the Polish contribution to solving Enigma and the fates of the men involved has not been told in English until now. In *X, Y & Z: The Real Story of How Enigma Was Broken*, Dermot Turing, a British lawyer (and Alan Turing's nephew), tells the Polish side of the Enigma story, tracing the lives of the cryptologists, mathematicians, and radio experts involved from 1926 to their eventual deaths. The crucial events of the late 1930s have been covered in previous books, but Turing clarifies how far the Poles were ahead of their French and British colleagues. He provides a dramatic account of the meeting of cryptologists in Poland on 27 July 1939, where the Poles demonstrated their understanding of the German military Enigma and revealed their invention of the *bomba*, the first electromechanical device for solving the machine's settings. "The Polish revelations had shortened the British attack on Enigma by at least a year" (124).

Only a few weeks after this meeting, of course, Poland was invaded from the west by the Wehrmacht and from the east by the Soviet Union. The Polish cryptologists fled as fast as they could southward to Romania and thence to France. The heart of *X,Y & Z* is the narration of their three years in France and Algeria as pawns in a complex game of double- and triple-cross. At first, the Poles worked for the intelligence agencies of the French Republic. When France fell and Vichy took over the administration of southern France, where the Poles were operating, they and their anti-German, anti-Vichy French sponsors continued to decipher German messages and collaborate with the British via radio. When the Germans occupied southern France in November 1942, some of the Poles were arrested and spent the rest of the war in captivity. Though a few made their way to England, none ever again did important work on German codes.

Though Turing does not emphasize it, there was a striking difference in the postwar fates of the World War II cryptanalysts. In Britain and the United States, they mostly went back to civilian life and died in their beds.[3] Ralph Bennett ended his career as president of Magdalene College, Cambridge.[4] Nearly all the "code girls" of Arlington Hall got married, as did the thousands of women who worked at BP.[5] The surviving top German officials were interviewed by TICOM. One of the Poles died on a ship that sank between Algeria and France; two others died in Sachsenhausen concentration camp—one during an Allied bombing attack. Marian Rejewski was the only analyst who returned to Poland, where he had to endure endless interrogations and persecution for his association with the prewar Polish army.

Dermot Turing has written a great book filling out our picture of Second World War code-breaking. His prose crackles with energy and an appealing sense of humor, enhanced by dozens of photographs, many of which will be new even to devoted students of his subject. An invaluable appendix explains how the Poles used math and machines to crack Enigma.

3. Alan Turing, of course, was not so fortunate, as his nephew notes. See his belated obituary in the *NY Times* (5 June 2019), available online.

4. See obituary in *The Telegraph* (23 Aug. 2002), available online.

5. See Liza Mundy, *Code Girls: The Untold Story of the American Women Code Breakers of World War II* (NY: Hachette, 2017), with review at *MiWSR* 2018-046.