Behind the Enigma: The Authorized History of GCHQ, Britain's Secret Cyber-Intelligence Agency
John Ferris (Bloomsbury Publishing, 2020), 823 pages, illustrations, maps, portraits, bibliography, index.

Reviewed by Jessica Garrett-Harsch

The history of GCHQ, Britain's cryptologic and cyber-intelligence agency, has largely been shrouded in mystery. The public knows about the WWII successes of British codebreaking against the German Enigma machines that helped sink U-boats terrorizing Allied shipping in the Atlantic. The brilliance of Alan Turing and his colleagues at Bletchley Park is legendary. But what is revealed in the new book by John Ferris, *Behind the Enigma: The Authorized History of GCHQ, Britain's Secret Cyber-Intelligence Agency*, is the much longer, richer, and influential history of British codebreaking.

Ferris is one of the preeminent scholars of intelligence and cryptologic history in the world today. He brings his expertise from a long academic career, combined with a deep understanding of the two major SIGINT organizations in the world, GCHQ and NSA, to this work. For years, he has been a popular speaker at the Symposium for Cryptologic History organized by NSA's Center for Cryptologic History (CCH). From 2008 to 2009, he was the CCH's first international scholar-in-residence, working on an innovative reinterpretation of the pre-WWII British and American SIGINT relationship. Shortly thereafter, he was chosen to write the authorized history of GCHQ. Throughout the book, it's clear that his time working closely with both organizations has given him an insight that is rare in a historian outside the Intelligence Community. While not perfect, it is and will be an important reference guide for scholars of British intelligence history, the US-UK intelligence relationship, and, more generally, the evolution of SIGINT.

Officially GCHQ is just over 100 years old (1919–2021) but elements of what became one of the premier intelligence agencies in the world started either in the first weeks of WWI or, depending on how you look at it, years before with other, more informal, codebreaking organizations. Ferris begins well before WWI, in Victorian England, describing early intelligence gathering focused on mail and telegrams. He spends some time exploring how intelligence was gathered and used in the early Victorian period, and how it grew, changed, and faded away in the late Victorian period, and then reemerged in the early days of the First World War.

World War I is where British codebreaking, and Ferris's narrative, really hit their stride. These pre-WWII chapters work particularly well because information on early cryptology, and WWI cryptology specifically, is scarce. What Ferris argues is that "SIGINT was a success for Britain between 1914 and 1918, yet its limits were notable." There were successes in the European theater, as well as the Middle East, but most successes were canceled out by German successes on the other side. The problem mainly came down to the fact that SIGINT requirements and ability greatly outpaced the science and technology of communications at the time. It was hard to effectively use SIGINT to support military operations with WWII-era SIGINT capabilities, while military and communications technology was less developed. However, British codebreaking continued to mature and evolve so that when World War II broke out it could leverage the technology and skill of its small organization into the intelligence juggernaut of ULTRA fame.

The chapters on WWII codebreaking retread a lot of known material but also expand the general understanding of the period. Ferris writes, "Bletchley shaped the war and the future of intelligence and data processing, SIGINT and GCHQ, but in different ways than the myth suggests. Bletchley matters too much for the history to be understood through myth." To combat that he discusses the interagency struggles between Whitehall, Bletchley Park, the War Department, and the Royal Navy. He delves into collection and management issues and problems with herding brilliant, independent analysts within the constraints of the growing and increasingly diverse, worldwide presence of GCHQ. For me, the real importance of the WWII discussion is showcasing the origins of the cryptology-computer relationship that ultimately birthed the realm of cybersecurity that would become

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so important not only to intelligence but to the everyday lives of people worldwide.

Also of significance is his discussion, from the British perspective, of the early and lasting importance of the UK-USA agreement which led to the Five Eyes community, the most important SIGINT partnership in history. The case studies on the development of the UK-USA relationship, especially the Suez Crisis and the Hungarian Revolution, are an interesting look at the challenges both agencies faced. Ferris does a nice job of showing the importance of navigating, and nurturing, that relationship for both sides. He also succeeds in showing how the success of UK-USA during the Cold War ultimately helped stop the war from going hot.

The majority of this book is devoted to the post-WWII period, as GCHQ navigated changes in UK government policy, changed locations from the suburbs of London to rural Britain, and fostered the UK-USA relationship, which while long lasting, had warmer and cooler periods. Scholars will find details here that they probably haven't seen before, especially not in one large volume. But for those not steeped in British government bureaucracy or with only a limited understanding of mid-20th-century British politics, the details can be lost in the confusing narrative of hiring practices, clerical vs. executive levels, issues with Whitehall and funding, and even division of labor against targets.

The other issue for some readers will be the focus on mostly pre-2000 operational issues. There is a long section of detailed case studies, including one on the Falklands War, which covers about as many pages as the post-2000 material. That section could have been condensed into a much shorter section and still hit the point that the Falklands War was a major success for GCHQ. Unfortunately, the part on terrorism and cybersecurity encompasses about 50 pages of a 800+ page book, and while that may be understandable because of security and classification issues (which Ferris briefly addresses), it still comes as a letdown for those looking to get the inside scoop on the challenges that GCHQ is able to solve today within the realm of cutting-edge technology.

One of the places in which the book works best is Ferris's exploration of the challenges that GCHQ still faces with diversity. It will come as a surprise to some that British codebreaking organizations (predecessors to GCHQ) employed large numbers of women much earlier than any other intelligence agency in the world. There were brilliant women codebreakers as early as WWI. However, in current times, as we in the United States have seen, women rise to the highest levels in the intelligence world, with a woman having run CIA for two and a half years, a woman nominated to become the director of national intelligence, and several women in the number-two spot at NSA, GCHQ has lagged behind in promoting women to the highest levels. Ferris also explains that GCHQ continues to struggle with issues of hiring and promoting people of color, a problem that started in the days of colonialism that has not yet been fully addressed. His exploration of issues related to class, race, sex, and colonialism work to draw a deeper portrait of the environment GCHQ employees navigate. While this is clearly a less desirable facet of GCHQ, it also shows that they are striving to grow into a more diverse and successful organization.

Overall Ferris has produced an informative, detailed, and, at times, compelling history of GCHQ, and British codebreaking in general. It will be the go-to reference guide for those interested in a deeper understanding of British cryptologic history. But readers should be aware that this is a scholarly work, written in a traditional style of history. This book is not a collection of exciting GCHQ operational success stories that reads like a spy thriller as many might expect. This book requires extensive prior knowledge of the subject to really get the most out of it. Ultimately *Behind the Enigma* works well for the scholar or committed intelligence enthusiast, but possibly not for the casual reader.

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The reviewer: Jessica Garrett-Harsch is a historian in NSA's Center for Cryptologic History.