



Code Warriors: NSA's Codebreakers and the Secret Intelligence War against the Soviet Union by Stephen Budiansky.

New York: Knopf, 2016. Pp. xx, 389. ISBN 978-0-385-35266-6.

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

Code Warriors recounts the struggle between the United States and the Soviet Union to read each other's communications—and prevent each other from doing the same—from the end of World War II to the present. Military historian Stephen Budiansky specializes in the role of technology and intelligence in war. In the present survey of covert war, he highlights bureaucratic changes, the role of computers, and the mathematics of cryptology, drawing on real-life narratives of code-breaking in Korea and Vietnam and other Cold War hot spots.

To some extent, *Code Warriors* continues Budiansky's earlier work, *Battle of Wits*,¹ a similarly fast-paced narrative of the cryptological battles fought during World War II. But, although he mentions the British and their Government Communications Headquarters, he concentrates on the famous National Security Agency (NSA), which makes America's codes, tries to crack those of other nations, and spies on everybody. Consequently, this book creates a peculiar political tension absent in the earlier volume. While American readers will presumably accept the USSR, the People's Republic of China, and North Korea as "the enemy," the NSA's massive efforts to read, or at least track, almost everyone's communications put it in a less favorable light.

This tension is most apparent already in Budiansky's prefatory "Author's Note" (xiii-xxi), in which he damns Edward Snowden and his journalist-collaborator Glenn Greenwald for their naiveté, simplistic worldviews, and "reckless exposure of ongoing foreign intelligence operations" (xvii). Yet, he also catalogs the misrepresentations and outright lies NSA officials have used to conceal their collection of information on citizens of every nation, including (illegally) Americans. He returns to this point in his closing pages, where he says US intelligence agencies, in containing Soviet communism, "left in their wake an often sordid trail of transgressions against law, morality, decency, and basic American values" (306).

The book's best chapters chronicle "Shooting Wars" in 1948-52, especially on the Korean peninsula. The North Korean invasion of the South in June 1950 surprised both the US Army and the Armed Forces Security Agency (AFSA), a predecessor of the NSA. The AFSA scrambled to find Korean linguists to decrypt North Korean communications; Budiansky credits these efforts with saving American forces from defeat at the war's outset. He goes on to explain that Gen. Douglas MacArthur's overweening self-confidence kept him from making effective use of signals intelligence that forecast China's entry into the war. But his treatment of the Korean War also illustrates his frequent over-reliance on the NSA's own version of its history. For example, he writes that

For decades, standard histories of the air war in Korea attributed the sudden improvement in mid-1951 in the kill ratio achieved by American fighter pilots against Chinese MiG-15 jets to the arrival of the new and more capable American F-86. During the final year of the war U.S. fighters shot down 345 MiGs in air battles with a loss of only 18 F-86s, a kill ratio of 19 to 1. In fact the real breakthrough had come from

1. Subtitle: *The Complete Story of Codebreaking in World War II* (NY: Free Press, 2000).

pulling together all of the signals intelligence sources in one center so that they could be rapidly correlated and passed on to fighters in the air. “The present top-heavy success of the F-86 against the MiG-15s dates almost from the day of the inception of the new integrated [signals intelligence] service,” reported an officer involved in the operation. On one day a visiting ASA [Army Security Agency] colonel observed the system in action as 15 MiGs were shot down without a single loss by U.S. F-86s. (140)

This is misleading. The long-debated question of Sabre-MiG kill ratios is unanswerable. Aviation historians have always known fighter pilots commonly over-claim their victories and air forces often hide their losses. Assessing the air war over Korea and Manchuria is especially problematic because, though the US Air Force had only a few F-86s in theater, the MiG-15s they fought were manned variously by North Korean, Chinese, and Soviet pilots. Moreover, the Russian pilots—likely including all the aces who shot down five or more American or British planes—did not even officially exist.

In addition, Budiansky, author of a history of military aviation,² ought to know that the F-86 was the only American fighter capable of intercepting the MiG-15, so its introduction to combat in Korea made a tremendous difference. The information in Budiansky’s source on the subject³ misleads in several ways. It implies that signals intelligence—the Americans had Chinese and Russian-language linguists listening to communist ground-control operators communicating with MiG pilots and immediately passing on information to Sabre pilots—was *the* key to the gaudy 19-1 kill ratio. None of the “standard histories” published before the late 1970s makes mention of any signals intelligence, because the NSA kept it all secret. Kenneth Werrell’s newer and better history of the air war over Korea covers the role of the linguists and taps post-communist works on Russian and Chinese losses to give a more balanced picture of this subject.⁴

Budiansky’s day-by-day account of “the Cuban missile crisis,” which tested Pres. John F. Kennedy’s new administration, ends with this sobering verdict:

NSA made an important contribution to the management of the greatest crisis of the Cold War, but signally failed to offer either advance warning of Soviet intentions or evidence of the arrival of the SS-4 missiles that were the crux of the entire matter. The only tangential indicator that signals intelligence provided came from monitoring plaintext telegrams sent by Soviet military officers to their wives and families back home telling them of their safe arrival in Cuba—“love and kisses messages,” NSA analysts called them—and the discovery that a number of the officers were known to be associated with the Soviet rocket forces. In the assessment of NSA’s declassified history of the period, the Cuban Missile Crisis “marked the most significant failure of SIGINT to warn national leaders” since the Japanese attack on Pearl Harbor. The inability to decipher any of the high-level cryptographic systems of the Soviet government or military was continuing to take its toll. (244-45)

Despite positioning antennae around the globe and in the skies to collect signals, developing ever-faster computers, and adding thousands of employees, NSA never did crack high-level Soviet codes.

Budiansky has an excellent discussion of signals intelligence and signals security in Vietnam. The NSA discovered that the North Vietnamese—by using traffic analysis or simply listening to American plain-language radio voice transmissions—almost always had advance warning of US airstrikes. But “bureaucratic inertia, overconfidence, and disdain for the intelligence capabilities of the enemy” (263) left Americans oblivious of such breaches.

2. *Air Power: The Men, Machines, and Ideas That Revolutionized War, from Kitty Hawk to Gulf War II* (NY: Viking, 2004).

3. Viz., the now declassified but heavily redacted *American Cryptology during the Cold War, 1945-1989*, 3 (of 4) vols. (Nat’l Security Agency: Ctr for Cryptological Hist, 1995-98) by Thomas R. Johnson – available at www.miwr.com/rd/1707.htm.

4. *Sabres over MIG Alley: The F-86 and the Battle for Air Superiority in Korea* (Annapolis: Naval Inst Pr, 2005).

Readers wanting to learn more about the details and the mathematics of cryptology will value *Code Warriors'* five appendices on the arcana of this field. The book is further enriched by good end-notes, a bibliography, and an index. It should be required reading for anyone interested in modern cryptology or Cold War intelligence battles.