

a wealth of information supported well by citations and bibliographical sources. Certainly, it was an enjoyable read.

Robert Dienesch
Belle River, Ont.

David Sears. *Duel in the Deep: The Hunters, the Hunted, and a High Seas Fight to the Finish*. Annapolis, MD: US Naval Institute Press, www.usni.org, 2023. xiv +346 pp., illustrations, maps, notes, glossary, index. US \$34.95, cloth; ISBN 978-1-68247-560-7.

This history of the United States Navy's (USN) anti-submarine operations during the Second World War in the Atlantic Ocean focuses on the sinking of the destroyer USS *Borie* in November 1943. As far as possible, the author's story of the ship is told by crew members in their own words. The story of the *Borie* begins in the emergency building program of the First World War. The book follows the history of the US Fleet from the pre-war period, showing their extensive presence in Central America in the form of bases.

Chapter titles show the prose style to be punchy and action-oriented. The author combines a lively, personal "oral history" of crew members of the *Borie* with an account of the highest levels of strategy, technical advance, and intelligence. Chapters are short – four to six pages – with titles like "Shove off," "Four-stackers," "Scratch One Pigboat," "One Gung-Ho Guy," and "On Borrowed Time," which convey immediacy and action. The same personal style is assumed to tell the story of the major figures through published sources and some archival material (letters). Major themes are presented in alternating chapters to provide the context for the *Borie*'s "duel in the deep," including strategy, technical advances, intelligence, and communication. Strategy, especially the "special relationship" and the personal relations between Franklin Roosevelt and Winston Churchill, is portrayed as "hands-on."

"Wizard War" is the chapter beginning with the technical mission to North America headed by Henry Tizard in August 1940. With this began the transfer of technology in the form of working versions of radar and sonar to be studied at MIT and Cal Tech for mass production. The human and technical side of code-breaking recurs throughout and the mass production of primitive computers used to decrypt Enigma signals (Bombes) and work of keeping them running requires many chapters. The role of great universities in improving and adapting these technologies received from the UK is outlined. The convoy system and especially the controversy over it after the US entered the war is another theme.

The transcendent theme is the account of the USN's taking over from the British navy, a story which is traced largely through the relationships between Admiral Ernest King with his British opposites and with Franklin Roosevelt. On one occasion, the discussion strays into the Pacific Ocean to make the point that Roosevelt and King were not interested in assisting the British to regain their empire.

As an oral history, the author extends the normal boundary to include next-generation accounts from relatives of the deceased crew members as well as popular magazine articles from the time. The result is that the authenticity of some stories is questionable.

Beginning with chapter 18 ("The Land of Improvisation") the action shifts largely to the air with the introduction of small, escort aircraft carriers built on merchant hulls, beginning with HMS *Audacity*. In later chapters, more technology is introduced like homing torpedoes (*Zaunkonig* and *Fido*) and ship-mounted HF/DF. Above all, winning the industrial race to improve the "Bombes" was reducing the time to read messages, which were routinely shared by US and Commonwealth navies.

By book's end, the USN eclipses the Commonwealth navies for the first time in destruction of U-boats, thereby assuming the mantle of leadership. The author concludes "America's industrial juggernaut had taken time to gather momentum, but now the Arsenal of Democracy ran at full throttle... Evidence of America's ascendancy was global" (p.233).

This is a wide-ranging and refreshing attempt to present some aspects of the history of the submarine war in the Atlantic. The author's approach is trying to cover the widest possible swathe of individual stories at a personal level. Subjects covered include the roles of communication, technical advance, and intelligence-sharing, and are deeply fascinating. Technical advances, initially the transfer of crucial technology from the UK like computers used in cryptanalysis and centimetric radar, are followed by home-grown advances in aviation, especially carrier-borne aircraft, escort aircraft carriers, and long-range patrol aircraft. Bad news is in the use of formal sources, which are selective, and a lack of a bibliography. Important individuals get to pronounce upon themselves, as is the case with Winston Churchill. In addition, the Canadian effort is absent to the extent the Canada is all-but rendered invisible. There is also only a single general reference to the US Coast Guard and their neutrality patrols before and during the war.

Ian Dew

Thunder Bay, Ontario