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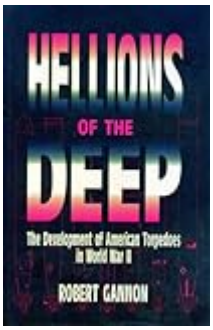

Robert Gannon. *Hellions of the Deep: The Development of American Torpedoes in World War II.* University Park: Pennsylvania State University Press, 1996. xiv + 241 pp. $28.50 (cloth), ISBN 978-0-271-01508-8.

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A Bumpy Road to Success

As anyone who has studied World War II in the Pacific knows, the U.S. Navy submarine fleet was amazingly successful and virtually destroyed Japan's merchant marine. The Imperial Navy's submarine campaign, on the other hand, was a fiasco from beginning–the midget subs at Pearl Harbor–to end. This is ironic, because any submarine's main weapon is its torpedoes, and America started the war with torpedoes that almost never worked, whereas Japanese torpedoes were the best in the world.

Hellions of the Deep, Robert Gannon's study of American torpedoes, attempts to be a comprehensive report on every type of torpedo used by American forces during World War II–submarine anti-ship, submarine anti-escort, aerial anti-ship, aerial anti-submarine, and those launched by PT boats and destroyers, too. It also offers a fair amount of information about what the Germans and Japanese were doing in torpedo development. In fact, it concentrates on three themes: the disastrous Mark 14, which crippled USN submarines for fully half the war; the Harvard Underwater Sound Laboratory (HUSL), which accounted for most of the research into torpedoes during the war; and the creation of the "Mine Mark 24," the acoustic homing torpedo used against German U-boats.

Much of this material is well researched and effectively presented, especially the story of the Mark 24, which Gannon claims was the first effective homing torpedo. Although Gannon is a professor of English at Penn State, he has worked for years as a science writer (as has this reviewer), and is well qualified, unlike most military historians, to describe the science and technology behind this revolutionary weapon. The challenge facing the collection of mostly young scientists at HUSL–few of whom had ever studied acoustics or seen a torpedo–was a formidable one. They wanted to create a torpedo that could be dropped from an airplane, locate a U-boat which had just dived, swim toward that U-boat and hit it. In the era of vacuum tube technology, it was a considerable feat just to produce a set of hydrophones and servos that could be packed into a small torpedo, stored on a ship for months, then survive being dropped into the water. Yet they succeeded, and invented a weapon that is credited with destroying 31 U-boats and damaging another 15–an almost incredible 32 percent success rate, since American planes dropped only 142 Mark 24s during the war.

Gannon captures the human drama of the work at HUSL well, no doubt because he interviewed dozens of scientists, submarine officers, and Navy bureaucrats over the course of 20 years to get the background he needed to write *Hellions of the Deep.* But his tremendous amount of knowledge, and the large portion of it coming from oral histories, does not always serve him well. Some of his informants seemed to have remembered the comic aspects of their war years, and not much more. Gannon's short chapter on Keyport, Washington, the Navy's West Coast torpedo facility, consists of little more than one amusing tale of using a test torpedo to chase a civilian motorboat. He would have better served his readers if he had omitted some of the "human-interest" passages, as well as the superficial introductory material on torpedoes during the American Revolutionary and Civil Wars. If, instead, Gannon could have provided more about German and Japanese torpedo work before and during the war, this would have been a better book. There is some coverage of Axis technologies, and a few mentions of British torpedoes, but not a word about Soviet, French, or Italian torpedoes.

That said, *Hellions of the Deep* does provide a detailed history of the wretched Mark 14, a weapon right up there with the Brewster Buffalo, and far more important to American fortunes in the Pacific. Miserly budgets during the 1920s and 1930s meant that not a single Mark 14 was ever test fired under war conditions before 1942–while the Navy wasted $78,000 (a large amount, then) developing a magnetic exploder that did not work. Gannon also provides good descriptions of the development of aerial torpedoes and of the Mark 18 electric torpedo. Among the wealth of statistics in this book is the striking fact that the United States produced 57,000 torpedoes during World War II, yet only fired 15,000 of them. Along with these statistics, Gannon has included dozens of photos and drawings, almost all of them appearing in print for the first time.

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