Book Reviews

The World's Worst Warships by Antony Preston. London: Conway Maritime Press, 2002. 192 pages, photographs, tables, glossary, bibliography, index. £19.99, cloth; ISBN 0-85177-754-6.

Reviewed by Kenneth P. Hansen

In his 1911 book *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land*, Admiral Alfred T. Mahan, wrote: "You cannot have everything [incorporated into the design of one warship]. If you attempt it, you will lose everything. On a given tonnage … there cannot be the highest speed and the thickest armor, and the heaviest battery, and the longest coal endurance." Mahan knew that compromise is always required in the design of warships and that over ambition is frequently fatal. In *The World's Worst Warships*, Antony Preston has assembled 30 examples of what he considers to be the worst warships built between the 1860s and 1970s to illustrate six factors he feels have the greatest influence on warship design. These factors are cost, perceived threat, industrial capacity, design competence, operating environment, and incorrect post-battle analysis (10).

Preston's prodigious reputation as a naval analyst lends great credibility to the arguments he puts forward. The introduction covers many essential areas in the conceptual origins, design, construction and combat performance of warships. Preston's list of essentials includes national strategy, industrial capacity, construction standards, propulsion theory, the difference between engineering performance under trial conditions versus operational conditions, endurance, seakindliness and seaworthiness.

The 30 ships are examined in chronological order in individual chapters of about six pages, beginning with the American Civil War monitors and ending with the French *La Combattante*-class fast attack missile craft. A data table is provided for each ship, all but two have at least one photograph, and 22 are illustrated with excellent line diagrams. Each chapter is summed up with a brief concluding section. Most unfortunately, there is no concluding chapter.

Not every ship examined was an abject failure or a graceless oddity. Several ships are noted for superlative performance in one or two areas (for example, the seaworthiness and internal volume of the British *Powerful*-class protected cruisers; the innovative triple-gun turrets of the Austro-Hungarian *Viribus Unitis*-class dreadnoughts, the endurance of the German *Deutschland*-class armoured ships, and the speed of the Italian *Condottieri*-class heavy cruisers). Preston levels his most pointed criticism at ships that were obvious hybrids between types or which attempted to "cram a quart into a pint pot." Japanese, German and Swedish designs suffered most from trying to accomplish too much on a finite displacement. Preston's analysis relies heavily on the performance of these ships in combat, many of which fought engagements for which they were not designed while engaged on missions for which they were not intended.

Preston clearly expresses his opinion that warships should have certain basic characteristics including good endurance, balanced armament, sturdy construction, seakindliness, ample speed and reliable propulsion. His examples show ships that have sacrificed too much on the sacred altars of speed and armament, proving to be so flimsy and short-legged that they were rendered ineffective even before leaving port. However, the author's bias as a proponent of the Anglo-American philosophy of maritime supremacy is evident in his condemnation of innovative designs born of the continental approach to naval power. Preston's treatment of *why* states built such unique ships to satisfy national requirements is, unfortunately, cursory. The text is without footnotes or endnotes, leaving the opinions expressed without reinforcement.

Several other deficiencies leave this book with a decidedly unfinished feeling. Some of Preston's six factors and essential design areas are not addressed for each ship, rendering the logic incomplete. None of the 30 ships selected are held up against a detailed comparison with contemporary examples of the same type of ship. The result is that the reader is compelled to accept the author's judgements without being offered much in the way of proof. Preston falls prey to his own warning that "the propulsion of warships is another minefield for the non-specialist" (14).

Endurance data is missing for seven ships and the book either does not give cruising range or bunkerage data for nine of the ships. Included in this group are the German *Deutschland*- and *Bismarck*-class ships, whose exceptional endurance was one of their most prominent characteristics. Those that do have complete endurance data are given for differing speeds, making them useless for comparison. The endurance figures given for the American *Wickes*- and *Clemson*-class 'flushdeck' destroyers are

the widely quoted and highly misleading design targets of 2,500 miles at 20 knots, which the author hints was achieved on 225 tons of fuel (82). Norman Friedman's authoritative *U.S. Destroyers* shows that the contracts for the *Wickes*-class actually called for 3,400 miles at 20 knots and the *Clemson*-class were built with 35 per cent greater bunkerage capacity (41-42).

Another major frustration is the author's mixed use between chapters of metric and imperial units for armament and armour data, which also impede the reader's ability to make comparisons. And, a minor detraction from the appearance of this otherwise handsome book is the extremely small and fine font used to set the type, making reading quite difficult.

Preston concentrates most heavily on warships from World Wars I and II and the Cold War. Contemporary readers will not find much insight into the new and radically different security challenges facing naval policy makers and fleet architects.

The only Canadian 'angle' to this book is a passing reference to the *Diadem*-class protected cruisers, of which HMCS *Niobe* was an example (49). Preston praises these 11,000-ton cruisers for their seaworthiness, innovative propulsion system, high endurance, modern layout of their main armament, and ability to transport large numbers of troops (an unintended role for these ships). His criticism stems from their high cost, large crews and the failure of a Russo-French cruiser threat to British trade to materialize.

These expensive ships are held out as "an object lesson in the dangers of accepting over-enthusiastic intelligence estimates" and "designing warships to satisfy worst case scenarios" (47-49). The fact that these large cruisers were retained and subsequently assigned to a number of other secondary roles, such as training, sovereignty patrols, trooping and accommodations, rates very little mention. The broader purposes of sea power beyond fleet engagement are not considered in this book.

The World's Worst Warships falls far short of being the authoritative and informative work that its provocative title and its famous author promise. A more thorough examination of fewer warships using Preston's very credible criteria could have produced an excellent reference work of enduring worth. Without citing other authors and original documents, this book is reduced to an opinion piece of tertiary rank. The lack of more modern examples of poor warship designs is a major oversight. Only the well-known credibility of the author makes this book worth reading for students and enthusiasts. Unfortunately, it is clear that laying out a book requires as much compromise in purpose as does the designing of warships. In this case, too much has been attempted in too little space, and Preston has failed in his attempt to cram a quart into a pint jar.

Grace Hopper – Admiral of the Cyber Sea, by Kathleen Broome Williams, Annapolis, MD: Naval Institute Press, 2004, 240 pages, photos, bibliography.

Reviewed by Robert H. Thomas

Rear-Admiral Grace Hopper was one of the great pioneers in the development of software that ultimately led to the technological revolution. She was a leader in the creation of common business-oriented language (COBOL) and led the development of many of the critical software concepts that form the basis of modern computing. She loyally served the US Naval Reserve from 1943, starting at the Harvard Computation Laboratory, to 1986, when she was forced to retire as a Rear-Admiral at the age of 89 – the oldest serving officer in the navy. She went on military leave of absence from 1967 to 1971, and then subsequently was fully employed by the USN for the next 15 years. In her civilian career she worked for the UNIVAC division of Remington Rand until retirement in 1971. Immediately after retiring from the navy, she went to Digital Equipment Corporation where she maintained a hectic schedule for several years until failing health intervened.

This book is part of a series entitled *Library of Naval Biography*, most of which covers nineteenth century American naval leaders. This slim volume unfortunately falls between two stools. It moves back and forth from the history of the early development of computers to the life of Hopper. The former is cursory and anticipates the reader having a substantial knowledge of the subject. The latter aspect is often limited to a recitation of the positions held, working relationships and technical achievements. It is only in the final, brief chapter that Hopper comes alive as a person. With only 195 pages of text and the extensive list of bibliographic sources, much more could have been said.

Hopper was a driven, strong-willed and charismatic individual. Her character was exemplified by the many challenges she overcame in earning a PhD in mathematics at Yale and breaking new ground continually, both in

the new field of computing technology and in the old one of entering occupations traditionally held by men. Her accomplishments were many and, remarkably, continued over five decades.

Despite her great success, Hopper did not consider herself to be a feminist, believing that success for women was achieved simply by hard work. She chose to ignore the bureaucratic and other obstacles faced by most women of her generation in pursuing non-traditional careers but did, however, recognize that the women employed in lower echelons were not treated equitably. Much more could be said about how her views were formed and the degree to which her remarkable intellectual capabilities and unique qualifications that gained her early entry into the computer world may have limited her understanding of the challenges faced by other, less gifted women. How much of her experience was related to being divorced and childless – a significant factor that permitted her recruitment into the navy at the age of 37.

This book will be of interest to those who wish to understand the bureaucratic processes surrounding the early development of computing in the US Navy and the roles played by emerging civilian companies. It will also be worth reading for young women entering technological fields. They may see how far they have come, but may not gain a complete understanding of how painfully those advances have been achieved.

American Admiralship: The Moral Imperatives of Naval Command, by Edgar F. Puryear Jr., Annapolis, MD: Naval Institute Press, 2005. 647 pages, notes, index, ISBN 1-59114-699-2.

Reviewed by Gary L. Garnett

Commander Puryear has incorporated his life's work of over 40 years of research, interviews and discussion and personal correspondence with over 1,000 officers of one star rank and higher to create this book. *American Admiralship* includes information about more than 125 people of four star rank. Puryear's objective has been to learn why the most senior US naval officers believed they were successful leaders.

Having compiled this prodigious number of interviews and oral history, Puryear opines that there is a pattern to successful American military leadership. According to him, "Among them are (1) willingness to put service before self; (2) the desire and strength of character to achieve positions that require making tough decisions; (3) a sixth sense that enhances the judgment required for most sound decisions; (4) an aversion to yes men; (5) maturity in perception and judgment attained through lifelong professional reading; (6) mentorship, which reflects understanding of the need to develop successors from among the most promising men and women under one's command; (7) delegation of responsibility among one's most respected subordinates; and (8) true character, the cardinal requisite of leadership, as illustrated by a leader who fixes problems and does not blame others or look for a scapegoat when things go wrong. Acceptance of personal accountability is the prerequisite for character."

While this is an impressive list, some questions immediately come to mind. Are all these moral imperatives? Are they more related to peace-time Admirals? Where is courage? Would Nelson fit into this pattern? I suggest not.

One has to get through about half of the book before one former Chief of Naval Operations (CNO) notes that he "learned a lot from him – what not to do." In my experience, observing the actions of one's seniors is just as helpful in learning how to handle people and situations as how not to. Puryear indicates that his intention is to present both "the bad as well as the good" in his chapters but overall he is very gentle in his approach.

Oral histories can tend to be kind to the individuals involved and when selecting from such a large pool as is available to Puryear, it is entirely possible to choose information to support one's own theories. Puryear has written extensively on the subject of leadership and character covering the senior leadership of both the US Army and US Air Force prior to this book about the US Navy. I certainly found the material from the World War II and immediate post-war admirals – e.g., King, Leahy, Halsey, Spruance and Nimitz – to be very interesting where their personal opinions were blended with hard examples. To me, however, the material from the more modern leadership lacks the same degree of credibility as the oral histories are not supplemented with documented sources. In the cases where I knew several of the senior American officers personally or by reputation in my dealings with other senior US officers, the reminiscences often seem to be somewhat generous in nature.

I was particularly interested to read the chapter on Admirals Rickover and Zumwalt to see how Puryear would handle these two controversial leaders. He seems to take

the middle road relying on previously written material and the many interviews and oral histories of the senior US Navy leadership. He appears to conclude that Rickover stayed too long but that it is almost a certainty that no other individual could have done more to establish the US Navy's nuclear submarine capability or its standard of excellence. Rickover is forgiven for his unorthodox relationship with Members of Congress and his disinterest in being a team player within the US Navy on the basis that he always managed to get the budget that was needed for the nuclear community.

Puryear's treatment of Zumwalt is much less generous although he gives credence to the excuse that Zumwalt was too young and inexperienced to have been put into such a position, and that if he had been appointed several years later he would undoubtedly have been one of the finest CNOs in history. It seems to me that Zumwalt had a choice of refusing the appointment on exactly the basis of not yet being ready to take over the position until he had experienced at least a major fleet or an international command. Given the interesting material from Admiral Holloway, his classmate and successor as CNO, it is clear that Zumwalt had spent much of his career preparing for the position and he was not about to let it slip from his grasp when the opportunity arose. Puryear concludes this section by stating that "The Navy does not need another Zumwalt in its foreseeable future."

All in all *American Admiralship* is a useful source on the subject of naval leadership particularly for US naval officers. For those in foreign navies there are many useful lessons both positive and negative upon which to reflect. As a bonus, readers are able to reinforce their knowledge of the major events in naval history over this 60-year period. One is left to wonder, however, which of these Admirals is the "Nelson" of the US Navy.

Protecting Maritime Resources: Boundary Delimitation, Resource Conflicts, and Constabulary Responsibilities, edited by Rachael Heath and Barry Snushall. Sea Power Centre Australia, University of Wollongong 2003.

Reviewed by Sub-Lieutenant John Arthur

Canada's naval community presently finds itself in a season of reflection on its domestic role, that of guardian of Canada's ocean sovereignty. This is happening amidst all the fresh attention higher authorities are paying to domestic operations following last year's release of a National Security Policy – to say nothing of the recent situation regarding Hans Island vis-à-vis Denmark. As always, it pays to consider the parallel experience of our allies, and in that light *Protecting Maritime Resources: Boundary Delimitation, Resource Conflicts, and Constabulary Responsibilities*, a recent volume from the "Papers in Australian Maritime Affairs" series, makes for interesting reading.

The book is essentially a transcript of lectures from the Maritime Studies Period held by the Royal Australian Navy (RAN) at Fairbairn, Australia, in November 2002, with the inclusion of two more formal papers presented there. The topics are varied but relate coherently to the dilemma of sovereignty at sea.

It is only since the 1982 United Nations Convention on the Law of the Sea (UNCLOS) that states have been as driven to establish as clear maritime boundaries as they have land ones. Here, the first paper examines an ongoing disagreement over maritime boundaries between Australia and New Zealand. Mr. Bill Campbell of the Attorney-General's Department of Australia points out that because the process is not arbitration but bilateral negotiation, with input from the Cabinet level – i.e., the process is political rather than legal – it therefore includes factors other than legal ones. No direct negotiation between governments can be conducted on a strictly legal basis, and the intrusion of politics in all its dimensions is inevitable. Friction on a completely different bilateral file may be allowed to hinder a settlement, as will be obvious to any observer of Canada-US relations. In a negotiation, says Campbell, as opposed to a third party settlement, it is open to both countries to take account of any factors they like. Pity those who negotiate at length what a judicial panel could sort out promptly.

Furthermore, the Australian experience demonstrates a "bid high" effect. Because the result of any negotiation is relative to the opening bargaining positions, it is in the interest of the parties to open with the most extravagant possible claims. Thus a difference in opinion over a boundary that was not, in fact, drastic may be escalated by the process itself. This is especially likely if the parties are friendly and there is little pressure to diffuse the dispute – as is also the case with US claims on Canadian waters at the Yukon and Dixon Entrance boundaries with Alaska. Campbell shows us why the least crucial boundary disputes can be hardest to resolve, and why sovereignty patrols in the Pacific may be poignant for some time to come.

Resource management adds another dimension of com-

plexity. With an enormous ocean area to cover and a limited fleet to cover it, Australia faces even greater obstacles than Canada to enforcing the writ of its fisheries management scheme. In the eighth paper of the book Mr. Paul Ryan examines the problem of reaching far-off Heard and McDonald Islands, a biodiverse World Heritage Site in the Southern Ocean pounded by 17m seas, gales, low visibility, and a polar climate. Like Canada, Australia has also resorted to contracting-out offshore surveillance, but whereas the Canadian program (with Newfoundland-based Provincial Airlines Limited) is limited to flights, the Australian Navy (RAN) has extended the practice to retain private-sector surface vessels. With these vessels lacking military capability when Australia Fisheries Management Authority (AFMA) officials want to board a vessel there is a problem maintaining "hot pursuit" – as required by UNCLOS – out into international waters.

With the contentious notion of "hot pursuit by remote means," RAN vessels could identify tracks by various ISR systems and hail by means of INMARSAT fax or other over-the-horizon communications – while alongside. In theory, this would provide a legal basis for the search and seizure of vessels on the high seas despite a lack of preceding immediate contact in territorial waters, as required by conventional interpretations. In one case, a government charter ship pursued an illegal fisher but, losing water, "hot pursuit" was continued by ISR until a RAN team flown to South Africa could board the suspect from a South African asset as she attempted to exit the Indian Ocean. Given its obvious utility in Canada's own struggle with illegal foreign fishing, any success with this legal limb-crawling will be of keen interest to DND.

Elsewhere in the book, Dr. John Reeve points out the interesting reversal brought on by Al Qaeda's tactics, whereby the nature of sea ports has changed from that of refuge to the locus of threat. For the first time in history, sailors may often be safer at sea. However, his contribution is only two pages, so there isn't much analysis or discussion of this interesting issue. Other chapters have an informality of tone and structure that leaves the reader wishing he had simply attended the conference himself.

Combat-related "glory" topics tend to hog most of the attention from strategists and historians alike, leaving somewhat of a hole in naval literature. Yet, as the editors point out in their Foreword, the RAN is unique among Australia's military services in that it is not only tasked to combat hostile engagement, but also operates at the lower end of the conflict spectrum when it is undertaking constabulary operations in the exclusive economic zone. For readers in countries like Canada which also lack a robust, force-capable Coast Guard to operate as a home fleet, US-style, this role will be familiar. It challenges naval professionals to be informed on a variety of legal, economic and environmental issues in addition to the conventional national security concerns on which other services have the luxury of focusing.

A weightier book would certainly be helpful, but this brief survey is a good start.

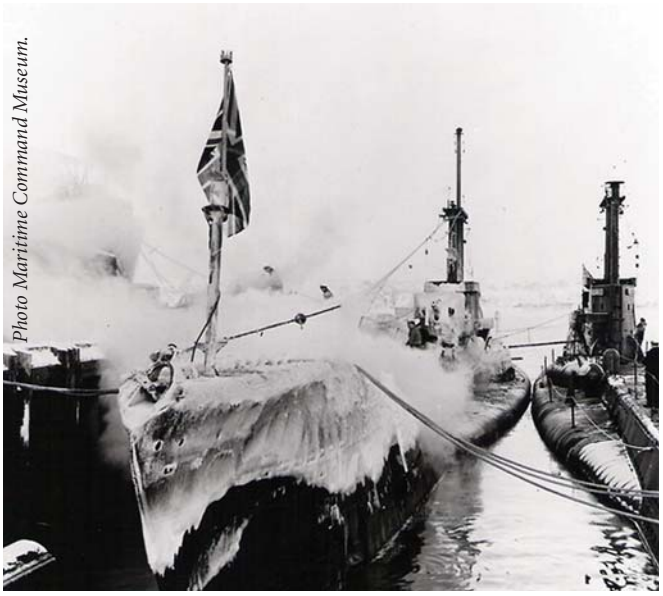

Photo Maritime Command Museum.

In early 1955, the Royal Navy started to maintain a squadron of three "A" class submarines in Halifax to assist in the antisubmarine training of the RCN and the RCAF. The first winter, shown here, was something the British sailors had not expected, and living conditions in the poorly-heated submarines were close to unbearable.

Owen Reid Cote Jr. 2003. *The Third Battle: Innovation in the U.S. Navy's Silent Cold War Struggle with Soviet Submarines.* Newport Paper Number 16, Newport, RI: Naval War College Press, http://www.chinfo.navy.mil/navpalib/cno/n87/history/cold-war-asw.html

Reviewed by Ed Tummers

It is hard to believe that many of the students who enter university this year will have been born after the Cold War ended with the fall of the Berlin Wall in 1989. It is equally hard to believe that it has taken this long for a scholar to come along and document the record of naval innovation in anti-submarine warfare (ASW) during the Cold War. Dr. Owen Cote has written this paper as the

Photo: Canadian Naval Review.

A Canadian Sea King maritime helicopter and a USN nuclear submarine. Such cooperation was a major facet of the Cold War at sea.

first part of a larger project that seeks the best explanation for why and how the US Navy (USN) was able to maintain its record of innovation in ASW throughout the Cold War.

The first step Cote takes is to organize the history of ASW into four battles: the two World Wars, the Cold War and the present. The imbalance between the submarine and the ASW forces has shifted several times with innovations in offensive and defensive capabilities. But, according to Cote, it is important to understand this in terms of asymmetrical warfare, specifically, sea control versus sea denial. During the Second Battle (WW II), for example, a limited number of German submarines were able to deny huge areas of ocean to merchant shipping and naval forces. Eventually, the Allies prevailed, but only because they were able to sustain tremendous losses.

This contrasts with the so-called "Happy Time" for USN ASW forces in the 1970s, when the effective combination of fixed and mobile surveillance sensors and the rapid response of maritime patrol aircraft gave a tremendous advantage over the noisy Soviet submarines. The balance changed again near the end of the Third Battle (the Cold War) when the Soviets were forced to protect their SSBN bastions with their best SSNs against the forward strategy of the USN. In the case of the United States and its allies, which depend on the unrestricted movement of global trade, sea control is vital. Therefore, innovation must focus on the means to impose an asymmetric price on the opposing force.

Cote provides an excellent record of innovation from which to draw case studies and theories. At one point, Cote suggests that pessimism might have been a prime source of innovation. Thus, the imaginations of American engineers always exceeded the American systems actually available to counter them, leaving the Soviets perennially far behind. Another potential source of innovation he described was the response to the unexpected, such as the Allied response to commerce raiding during the First Battle (WW I).

However, there are gaps in the record of the Third Battle which might be further examined to enhance the usefulness of this book in subsequent analysis. For example, from an allied point of view, Canadians tend to place more importance on multilateralism than Americans, and various agencies have been established to further cooperation amongst allies. And it was the combined effort to develop new ASW platforms that led to Canada's part in developing its hydrofoil while the US developed fixed-wing hydrofoils and the UK investigated hovercraft. The discussion of the Third Battle is incomplete without discussing the reasons for USN acceptance of international cooperation as a means to ensure its technological capabilities during a general war.

There is also the thorny issue of security classification and access by allies. To be sure, there were clashes even with Office of Naval Research scientists over the issue of classification. And then there is the whole area of dual use technology in which there are both civilian and military applications for technology. For example, the decision to have private industry develop undersea cables for SOSUS, while at the same time developing a commercial market for trans-Atlantic communications, surely contributed to innovation. The same would apply to the cable ships to lay and repair these cables. These areas certainly had an impact on innovation.

The sections of the monograph discussing allied operations are of particular interest to foreign readers. So, while the USN was engaged with its noisy Soviet adversary in the open ocean, other roles were delegated to allied navies. Coordinated ASW with ships, organic helicopters and maritime patrol aircraft in protection of convoys and high value units became a particular strength of the Canadian Navy, for example. Cote discusses the USN efforts to re-acquire this expertise by activating Destroyer Squadron 31 to improve coordination at the operational levels between IUSS, submarine, fixed-wing and destroyer assets. It would be interesting to find out more about the involvement of the Second Canadian Destroyer Squadron in this effort of innovation during the mid-1980s.

Dr. Cote has provided the reader with an excellent summary of the history of ASW throughout the twentieth century, and leaves the reader with much to think about as we face the new and unknown challenges ahead.