

1994

Jane's Underwater Warfare Systems, 1993-1994

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Recommended Citation

Cross, Richard III and Watts, Anthony J. (1994) "Jane's Underwater Warfare Systems, 1993-1994," *Naval War College Review*: Vol. 47 : No. 4 , Article 17.

Available at: <https://digital-commons.usnwc.edu/nwc-review/vol47/iss4/17>

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World War II, the Office of Naval Research (ONR) and the National Science Foundation (NSF) have been at the forefront of ocean studies. Until 1970, ONR was the dominant source of ocean science funding and was largely responsible for the early development and maintenance of oceanography. ONR has always taken a long-term view toward the U.S. commitment to oceanography, and it is still the lead agency in supporting several areas of basic science, such as ocean acoustics.

Currently, ONR and NSF share responsibility for funding the majority of oceanographic research, primarily by awarding grants to such university and private laboratories as the Scripps Institution of Oceanography and the University of California (both university affiliated) and the Woods Hole Oceanographic Institution (private). In this regard, the National Research Council has characterized the partnership between the federal granting agencies and their private and university patron laboratories as productive and mutually beneficial.

This work is a good primer on the direction of U.S. ocean science and its contribution and relevance to U.S. economic, environmental, and national security planning. It describes significant research areas of oceanography, such as geology and geophysics, biology, chemistry, and coastal sciences, and their impact on national economic, environmental, and defense priorities. Much oceanographic research is related directly or indirectly to national security. With the end of the Cold War and the introduction of the white paper

"... From the Sea," the focus of U.S. Navy ocean science is expected to shift toward the coastline or littoral regions of the world. The war in the Persian Gulf emphasized the need for near-shore data and research, and ONR has already begun to direct more resources toward shallow-water science.

A concise and highly accessible review of the U.S. effort in oceanography, the book details the relevance of ocean science to a broad range of national priorities and offers an excellent depiction of the Navy's programs and contributions within the context of ocean science generally.

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Watts, Anthony J., ed. *Jane's Underwater Warfare Systems, 1993-1994*. United Kingdom: Jane's Information Group, 1993. 348pp. \$245

The original annual naval review, *Jane's Fighting Ships*, first issued in 1897, has been so expanded over the past decade that there are now some twenty different Jane's annuals covering a broad variety of subjects, most of them military. This growth reflects both the rapid development in technology and the Jane's Information Group's effort to chronicle this technological expansion. Thus, *Jane's Underwater Warfare Systems*, fifth edition, is devoted to the latest status of antisubmarine warfare, underwater weapons, mine warfare, and associated underwater warfare systems—subjects little considered in 1897.

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Furthermore, the underwater technology, particularly as developed by the major world naval powers, often involves sensitive information that is reluctantly revealed. Anthony J. Watts, the editor, therefore does not rely heavily on an elaborate intelligence service, either within Jane's organization or of leaks by competing powers. Most of the definitive information presented in this pricey volume comes from the subsystem manufacturers—the contractors who remain anxious to export the results of their research, in properly desensitized form.

As an unclassified reference source, the book is very good, if not necessarily complete. The editor acknowledges drawing on the excellent British *Navy International's* files as well as on *International Defense Review* and *Jane's Defense Weekly*, both of which provide periodic, thoughtful reviews on the material covered in this book. While the foreword is global in nature, discussing broad international political and technical trends, the body of the book, despite the encompassing titles, deals with component systems below the vehicle level.

Thus, the first section, "Anti-submarine Warfare," starts with the submarine integrated combat and weapon control systems, all computer based, of the European countries and the United States, the latter including the BSY-1 and BSY-2. There are system descriptions, some diagrams, photos of the operators' displays, a summary of operational status, and a list of the contractors involved. In the following U.S. section on underwater weapon control, only the Trident fire control system is included. None of the former

Soviet bloc naval control systems are listed, although they may appear in later editions, as Russia in particular attempts to sell its technology on the world market.

Airborne integrated systems are covered in the same format but only for Europe and the United States. The LAMPS MK III system for only the SH-60B helicopter is covered; that for the SH-60F is not. Shipboard sonar systems, both hull-mounted and towed, are discussed more thoroughly and in the same format. The submarine sonar section does include a summary of the Commonwealth of Independent States (CIS) types but with little in the way of specifics. Those for the U.S. include the BQQ-5, BQQ-6, BQR-19, and the BQS-13, BQS-14A, and BQS-15.

More generally, underwater weapons, mine warfare, and associated underwater weapons systems are discussed in the same selective manner. In the foreword, the editor emphasizes that mine warfare, both laying and sweeping, will be a major concern in the future, particularly for amphibious and other near-shore forces. This point has been emphasized by the mine damage incurred by U.S. forces during the Iran-Iraq war as well as Desert Storm. This section's coverage includes CIS mines; and while twenty-two types are listed, the information is brief and, for the newer mines, not as complete as for other types. U.S. mines are covered up through the Mark 67; the Advanced Sea Mine program receives mention. The processes of detecting, destroying, and sweeping mines are given good coverage, primarily for those systems of European or North American origin. A

final section on "Associated Underwater Warfare Systems" discusses ancillary technology considerations, such as acoustic analysis, hydrographic surveys, acoustic ranges, training, and simulation.

The conclusion is an extensive series of tables, which can serve as points of departure and reference. There is a complete sonar listing by country, designation, description, and manufacturer; a torpedo table with characteristics including warhead, type of guidance, speed, and range; mines and depth charges, with information similar to the sonar table; and, similarly listed, acoustic and electronic countermeasures. Next is a contractor's table, which is of considerable value to those entering the field, complete with addresses, telephone, and fax numbers. The last table is a listing of all manufacturers mentioned, with page numbers for their respective products. Finally, there is a comprehensive list of all equipment covered in the book—an impressive number of entries.

Jane's Underwater Warfare Systems, a breakoff from *Jane's Weapons Systems*, is a good unclassified summary of much of the world's underwater technology. It does not have it all, but nothing compares at this price. It is ideal for those entering the field, and it makes an excellent reference. The closest publication to it in the U.S. is *World Naval Weapons Systems*, published by the Naval Institute Press, which, with its 1993 supplement, is less expensive and, in the same warfare area, less complete.

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Codevilla, Angelo. *Informing Statecraft: Intelligence for a New Century*. New York: The Free Press, 1992. 491pp. \$24.95

Angelo Codevilla's book, *Informing Statecraft*, should be required reading for policy makers, military commanders, and all intelligence professionals. Codevilla has produced a very readable, informative work on the intelligence business, intended to enlighten and guide the restructuring of the U.S. intelligence community for the twenty-first century. He begins his preface by stating that conflict is an "ineradicable part of international affairs. Knowledge of friends and enemies can be decisive in conflict. In statecraft such knowledge is called 'intelligence.'" This simple opening sets the tone for his book, which is a back-to-basics approach that examines all aspects of intelligence, particularly the areas of collection, counterintelligence, covert action, and research and analysis. He discusses successes and failures, draws on lessons learned from history, and then, in the end, offers some principles to use as a basis for fixing the "system."

Codevilla's primary aim is to remove intelligence from the "grip of the bureaucrat." He charges that the bureaucratization of intelligence has largely contributed to the inability of the United States to respond to crises, and he also claims that bureaucrats often view intelligence largely in terms of how it benefits their agency.

Codevilla is an academic, a senior research fellow at the Hoover Institution at Stanford, California. Although