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Strategic Anti-submarine Warfare and Naval Strategy

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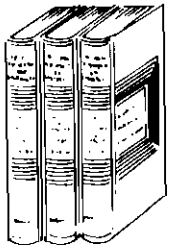

BOOK REVIEWS

James T. Westwood

Stefanick, Thomas. *Strategic Antisubmarine Warfare and Naval Strategy*. Lexington, Mass.: Lexington Books, 1987. 384pp. $49.95

We are fortunate to have had two books about strategic ASW published in the last two years, the first in 1986 is Dr. Donald C. Daniel's *Antisubmarine Warfare and Superpower Strategic Stability*, which has been reviewed in this journal by Lieutenant Sam Tangredi, and now this more recent addition to the literature by Thomas Stefanick.

Nearly two-thirds of Stefanick's book consists of operational-technical appendices on submarine design and construction; methods and problems of detecting, tracking, and localizing submarines; and the distribution and types of ASW forces in the navies of the United States and the U.S.S.R. These detailed appendices not only support the analysis and judgments of the main text, but serve also as a one-volume reference for naval planners, naval analysts, and those in industry who develop and support naval programs.

While Stefanick's treatment of the operational and technical problems and prospects of strategic ASW is well-researched and sound overall, he is at his best when pursuing his main theme, the examination of developments and trends in strategic ASW with regard to their near and long-term implications for the new U.S. Maritime Strategy. Stefanick's book recognizes explicitly and implicitly a key, indeed a crucial, role which is played by strategic ASW operations in the execution of that strategy. Therefore, the book makes a deliberate and highly definitive contribution to the constructive criticism and potential strengthening of that strategy. U.S. Navy officials have stated that the Maritime Strategy is open to debate and will benefit from refinement. (However, it must be understood that the espoused U.S. Maritime Strategy is in outline or conceptual form of partially tested tenets, and that the actual, fleshed-out naval strategies are described in classified operations plans and orders produced by the headquarters staffs of U.S. unified and specified commanders in chief.)

A graduate of the Naval War College, Mr. Westwood writes widely as a Soviet military specialist and defense analyst.

For all of its in-depth research and thought, the book contains certain errors of fact and interpretation. On page 43, for example, it is stated that because the earliest Soviet sea-launched ballistic missile (SLBM) could be launched only from a surfaced submarine, all subsequent Soviet SLBMs can be surfaced-launched as a matter of choice. In fact, starting with the SS-N-6, Soviet SLBMs must be "wet-launched" from a flooded tube; this requires that the submarine be submerged at the time of launch. The buoyant, liquid-fueled SLBM is floated out of the tube and the engine is ignited on the surface. This requires the submarine to release the SLBM at a relatively shallow depth of perhaps 100 to 200 feet. (U.S. SLBMs are "dry-launched" from unflooded tubes by compressed gas.) Soviet solid-fueled SLBMs must be "dry-launched," but they are not common. The reason that most Soviet SLBMs are liquid-fueled is that such missiles are simpler to manufacture and maintain than are solid-fueled missiles. The trade-off is that they are more unstable and unsafe than are solid-fueled missiles. The Soviets have experienced major submarine casualties at sea because of this instability, most recently in a Yankee-class SSBN near Bermuda in 1986. (The Soviet SLBM launching technique is described in John E. Draim, "Move MX Missiles Out to Sea," *National Review*, 12 December 1980, p. 1526.)

An example of erroneous interpretation is on pages 87-88; Stefanick says that Soviet SSBNs "can of course function as SSNs" because from forward positions they can attack naval bases with much less SLBM-time-of-flight (and thus less warning time) than could rearward-positioned SSBNs. The connection between the kind of attack stated here and the position of the attacking submarine is unclear unless by SSN the author means SSGN, though Soviet SSGNs normally would attack surface ships rather than bases ashore. In any case, Soviet SSBNs would be ineffective were they to be employed as SSNs. For example, when contrasting the speed, weight, turning radius, and sonar capability of the Delta-class SSBN with that of the Victor-class SSN, it is apparent that even though both have the same torpedo capabilities, the Delta is slower, less maneuverable, and has no attack sonar.

Chief among the author's purposes for this book is to show long-term trends in strategic submarine and antisubmarine warfare, and to examine their implications as regards the U.S. Maritime Strategy. He achieves that purpose. In a number of places, Stefanick gives a perspective on the especially high value the Soviets place on their SSBN force. His explanation of the Soviets' investment in SSBNs and SLBMs for the two Soviet Five-Year Plans, 1976 to 1985, in contrast to their lesser investment in the Strategic Rocket Force's ICBMs and MRBMs for the same period, is particularly significant. Stefanick's data here, as elsewhere, is based on OSD sources. Other open sources, which he does not cite, support his explanation of the Soviet regard for SLBMs in relation to other continental and intercontinental-range weapons. This reviewer shares Stefanick's conclusion that the Soviets prefer

SLBMs to shore-based weapons even though they actually have more missile silos and launchers ashore than afloat. Moreover, a publicly quoted CIA study of 1982 shows that the Soviet budget for the navy is more than twice as large as the budget for the Strategic Rocket Force. Naturally, this may be a function of the higher costs of seaborne strategic forces than of land-based strategic forces, but it is a cost which the Soviets clearly were willing to pay through 1985 (since then they have restructured their basic military budget).

According to Stefanick the U.S. Maritime Strategy should be reexamined, not in terms of the ASW conditions prevailing when that strategy was formulated (c. 1980-1984), but rather in terms of tomorrow's conditions. Now, as in the past, otherwise cogent strategies, technologies, and even new systems that have been years in development, sometimes prove deficient because their designers or proposers did not comprehend *future* implications of the factors on which they are dependent. "What-if" brainstorming is not the solution to this. The solution arises from rigorous and methodical forecasting. This is discussed in Albert Clarkson's little-noticed book: *Toward Effective Strategic Analysis* (Boulder, Colo.: Westview Press, 1981) and in other works, including those of Soviet origin, over the last 15 years or so.

Soviet military scientists are more serious and more systematic about forecasting in military affairs and in weapons acquisitions than are their U.S. counterparts. This is largely because they have fewer options and less resources to correct mistaken interpretations of the future, and this imposes a greater discipline on Soviet judgments about trends and their implications.

An example of the difference between Soviet and American approaches to the future is apparent with respect to the value placed on the study and application of military history. In the United States, military history is little valued in military educational and staff cultures, making revision and new direction in military thought more likely here than in the Soviet Union. This condition badly needs correction in U.S. circles to preclude not only banality in peace but disaster in war. For example, over the last few years the Soviets, in response to the U.S. forward Maritime Strategy, appear to have been formulating a forward counterstrategy of their own, and we seem to be surprised.

Finally, it should be noted that Stefanick makes much of trends and developments in non-acoustic detection and submarine tracking by both the United States and the U.S.S.R. This emphasis is appropriate, and, while Stefanick independently draws conclusions about the future of non-acoustic ASW, which parallel the official conclusions of the Navy Department (and other DOD agencies), he holds out for a special exception of an otherwise unalarming forecast—an exception which even now may be maturing with powerful implications for the future security of U.S. submarines at sea.

Indeed, it is exceedingly important to ask and to answer the question of whether the West or the Soviet Union is ahead in strategic ASW and why.

Stefanick points out how important that question is, and has been for over a quarter of a century, to the elected representatives of the American people. Indeed, in 1985 Congress authorized expenditure of $10 million in public funds to secure an answer to that vital question, a question in which non-acoustic means of ASW figures prominently. A follow-on study, budgeted at perhaps three times the original sum, will not be completed until mid-1990. (See R. Woodward and C. Babcock, "CIA Studies Sub Vulnerability," *Washington Post*, 6 June 1985, pp. A1 and A16; and J. Nesmith, "Are Soviets Developing Ability to Destroy U.S. Submarines?" *Atlanta Journal and Constitution*, 19 October 1986, p. 21.)

The tandem use of both qualitative and quantitative means of assessment and measurement is necessary to illuminate both the Congressional question and its answer. For example, in "New Soviet Methods for Antisubmarine Warfare," (*Naval War College Review*, July-August, 1985) and in other works cited by Stefanick, naval analyst James M. McConnell of the Center for Naval Analyses provides a qualitative assessment showing that the Soviet Union has made steady progress in recent years in developing non-acoustic ASW technologies which may be leading them to uniformity of phenomenology. Stefanick cites two press reports of a year earlier which, together, give the distinct impression that by the early 1980s the Soviets had developed an *operational* non-acoustic ASW capability, however limited it may have been. What McConnell and others unintentionally omit in qualitative analysis is the possibility that some part of what is observed of Soviet non-acoustic ASW developments represents willful Soviet deception with the aim of connoting a degree and speed of development which does not exist in fact. Quantitative analysis of real data can help to reveal any such deception.

Quantitative analysis of comparative progress in non-acoustic ASW between the United States and the U.S.S.R. can produce useful measurements and perhaps resolve the issue if done from a "man from Mars" perspective, i.e., one whereby there is neither political nor cultural interest in the question or in the answer.

This "man from Mars" might begin by differentiating between ASW efficiency and ASW effectiveness—the former having to do with how well ASW methods and techniques work, the latter with the results to which ASW leads in the way of the frustration and sinking of submarines. He might observe that, in terms of effectiveness, what is acceptable temporarily by one party may not be acceptable or even immediately recognizable by the other party. A "man from Mars" would perceive quickly that a fundamental problem lies in the differing values and expectations of the two parties. He would show that the two parties use different performance standards to assess the efficiency of ASW and different measures to determine the effectiveness of end results according to their varying national security requirements and military readiness philosophies.

Next, our "man from Mars" might offer an approach to determining who is ahead in strategic ASW—an approach which would treat both parties' efficiencies equally over the same period of time without respect to differing desiderata of end results. His rationale for this approach would be that non-acoustic ASW is a means to an end, not an end in itself. For example, the "man from Mars" might offer party Blue the following test to apply to party Red:

Using actual Red data as known, compare: Pd versus Pfd (where Pd is probability of real detections and Pfd is probability of false detections) for both acoustic and non-acoustic means of submarine detection over a period of time sufficient to include an amount of time *before* the introduction of non-acoustic means equal to the amount of time *after* the introduction of non-acoustic means.

That is, it is vital to compare the efficiencies of both acoustic and non-acoustic means for the same party (and for both parties) in order to indicate, by discovery, the extent to which non-acoustic means is as satisfying, or more satisfying, than the traditional acoustic means already in hand. Pd versus Pfd is almost universally acceptable to all parties ("martians" included) for measuring the efficiency of detections of almost all kinds. Only by comparing the present and the future with the past can progress be assessed accurately. Moreover, if Blue can measure quantitatively the extent of Red's growing efficiency, Blue can use that measurement as a dividing line between actual and apparent progress.

Finally, the "man from Mars" might point out that in any case, non-acoustic ASW for both parties is developing apace because each party's submarines are becoming more quiet over time and that as submarine quietness approaches ambience, both parties are compelled to pursue, with increasing dedication and commitment, non-acoustic means and techniques of ASW. The party with the most to lose and the most to gain over the least time will kick hardest on the non-acoustic door.

Daniel, Donald C. *Anti-Submarine Warfare and Superpower Strategic Stability*. Urbana and Chicago: Univ. of Illinois Press, 1986. 222pp. $32.50

Will our SSBN force remain a secure deterrent in the immediate future? This question, obviously one of ultimate strategic import, has inspired a chain of periodic reassessments by scholars and analysts. Of assessments to date, Dr. Daniel's book is the most concise and candid. Quite simply, the author, in reaching his conclusions and recommendations, avoids both the wild speculation on future threats and/or the obligatory arms control fantasies that are usually encountered in the open literature on strategic ASW.