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Anti-Submarine Warfare and Superpower Strategic Stability

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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.

Strategic ASW is the current academic term for operations pitting SSNs and other ASW forces against SSBNs. Despite common usage of the term—particularly by critics of the Maritime Strategy—the actual distinction between "tactical ASW" and "strategic ASW" is hazy since both are the same operationally. The difference is in targets, and it is the political impact of the theoretical threat that modern ASW systems pose to SSBN survivability (read: Soviet SSBNs) that concerns the arms control community. Avoiding the political and philosophical debates, Dr. Daniel goes directly to the heart of the issue and asks: does modern ASW indeed pose a threat to SSBN forces? After intensive research in the open literature, his answer is a relatively simple one—while ASW forces might threaten individual SSBNs operating within sensor range, a well-commanded SSBN force could easily find open ocean in which to avoid detection should it choose to do so. Similarly, Daniel finds the fear of a sudden technological breakthrough overrated. Historically, technological advances in ASW produce corresponding means of avoiding detection. Thus, a wartime threat to SSBN forces would be more the result of bad strategy or lagging research than current ASW capabilities. As the author explains it, American and Soviet ASW capabilities *should* not be destabilizing for the main reason that "SSBN forces have undertaken the necessary measures to protect themselves." This includes extending the ranges on submarine-launched ballistic missiles (SLBMs) in order to increase the size of possible SSBN operating areas.

Dr. Daniel's straightforward presentation of material, frequently portrayed as politically arcane and scientifically complex, is refreshing. He first identifies the physical means and "generic features" of ASW operations, and explains this background information in a fashion understandable to the nontechnician. This initial focus is not on physical science in general, but on those particular properties that limit or control ASW capabilities. There are no complex formulae, simply a basic description of ASW sensors and how they might be deployed (including space-based systems).

The second and third sections detail the ASW problem from the practitioner's perspective, with the second section devoted to U.S. ASW and Soviet SSBNs, and the third describing Soviet ASW and U.S. SSBNs. Each section carefully delineates the ASW platforms and doctrines and how they might be viewed in terms of the unique operational objectives of the two nations. The author is sensitive to the differences in employment strategies, which is in pleasant contrast to the "one strategy fits all" assumption made in other works detailing SSBN operations. Dr. Daniel provides individual assessments of the ASW strengths and weaknesses of both sides and summarizes them in a laundry-list format that makes a particularly handy reference for

discussions or debates. This comprehensive list is worth the price of the book.

The author's final recommendation concerning possible arms control restrictions of ASW is cautiously worded but appropriate. Since there is no real threat, there is little that a treaty fix—if it were ever negotiated and actually adhered to—could do except confuse a stable situation. If the book's conclusion makes anyone angry, it is because it is honest.

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Moore, John E. and Compton-Hall, Richard. *Submarine Warfare Today and Tomorrow*. Bethesda, Md.: Adler and Adler, 1987. 308pp. $22.95

Since the advent of nuclear power, submarines have evolved into first-line fighting ships—the mark of a great naval power. Their speed, endurance, stealth, and combat effectiveness make them preeminent in a wide variety of naval missions from covert mining to strategic nuclear deterrence. However, their cost is high, with estimates for the initial unit of the proposed U.S. SSN-21 series close to $1.7 billion. Arguments about the size and quality of the submarine force often focus on the cost, ignoring other vital factors; submariners in Western countries are often not very articulate about the true capabilities of, and need for, such ships.

The authors are retired British submariners with extensive command experience. Additionally, Moore is the editor of *Jane's Fighting Ships*, and Compton-Hall is the director of Britain's submarine museum. Their purpose is to present as accurate a picture as possible of submarine operations, using unclassified sources. They cover the environment in which submarine operations take place, review the weapons and equipment of the present and near future, and discuss how they are developed and procured. There are chapters on the major navies' submarine orders of battle, on the technical and operational facets of ASW, and on the potential of midget submarines in a world of increasingly sophisticated engineering. The utility of submarine presence in a maritime conflict is illustrated by the submarine and anti-submarine operations conducted by both sides in the Falklands war. There is a discussion of the strategic deterrent value of SSBNs and the impact that cruise missiles may have on strategic planning.

The authors are highly critical of the procurement processes in Britain and the United States whereby platforms and propulsion systems are designed first and then fit with weapons. The importance of proper design increases as the Soviet submarine force draws even in technology with its opponents in the West. The authors offer a lengthy critique of the British independent nuclear deterrent force. They claim it is not British, being mostly U.S.-designed; not independent as it must be targeted in close cooperation with the United States; and too small to be much of a deter-