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NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

A THEORY OF NAVAL STRATEGIC PLANNING

by

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June 1988

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REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; Distribution is unlimited.
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5 MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION Naval Postgraduate School 6b OFFICE SYMBOL (If applicable) Code 38	7a. NAME OF MONITORING ORGANIZATION Naval Postgraduate School
6c. ADDRESS (City, State, and ZIP Code) Monterey, CA. 93943-5000	7b ADDRESS (City, State, and ZIP Code) Monterey, CA. 93943-5000
8a NAME OF FUNDING / SPONSORING ORGANIZATION Director of Net Assessment 8b OFFICE SYMBOL (If applicable) OSD/NA	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MIPR DNAM 70105
8c ADDRESS (City, State, and ZIP Code) Office of the Secretary of Defense Washington, DC 20301	10 SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO / PROJECT NO / TASK NO / WORK UNIT ACCESSION NO
11 TITLE (Include Security Classification) A THEORY OF NAVAL STRATEGIC PLANNING	
12 PERSONAL AUTHOR(S) Haley, John F.	
13a TYPE OF REPORT Master's Thesis 13b TIME COVERED FROM ____ TO ____	14 DATE OF REPORT (Year, Month, Day) 1988 June 15 PAGE COUNT 119
16 SUPPLEMENTARY NOTATION Thesis in part sponsored by OSD/NA project "Strategic Management for the Defense Department." The views expressed in this thesis are those of the	
17 COSATI CODES FIELD / GROUP / SUB GROUP	18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number) Strategy; Planning; Strategic Planning; Force Planning; Naval Planning; Navy Planning; Naval; Navy

19 ABSTRACT (Continue on reverse if necessary and identify by block number)

This study proposes a theory of naval strategic planning for programming. It identifies and describes those factors which should influence how the Navy determines its future force requirements and eventual capabilities. The work is premised upon the following hypothesis: Within the context of national military strategy, naval long-range planning for future forces should be based on an in-depth understanding of three factors:

(1) the future role of the sea in national military strategy;
(2) the missions naval forces will be required to perform; and
(3) future trends in naval warfare.

The first task of planning is to guide the organization into an uncertain future. It must identify those factors which can be used to determine future requirements. The resultant concepts can then be further developed as required by the organization's overall needs. Strategic planning is

20 DISTRIBUTION / AVAILABILITY OF ABSTRACT ☐ UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED
22a NAME OF RESPONSIBLE INDIVIDUAL J.J. TRITTEN	22b TELEPHONE (Include Area Code) 408-646-2228 22c OFFICE SYMBOL Code 56

DD FORM 1473, 84 MAR 83 APR edition may be used until exhausted
All other editions are obsolete

SECURITY CLASSIFICATION OF THIS PAGE

☆ U.S. Government Printing Office: 1988—606-24

Block 16 continued:

author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

Block 19 continued:

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Approved for public release; distribution is unlimited

A Theory of Naval Strategic Planning

by

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN NATIONAL SECURITY AFFAIRS

from the

NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

This study proposes a theory of naval strategic planning for programming. It identifies and describes those factors which should influence how the Navy determines future force requirements and eventual capabilities. The work is premised upon the following hypothesis: Within the context of national military strategy, naval long-range planning for future forces should be based on an in-depth understanding of three factors: (1) the future role of the sea in national military strategy; (2) the missions naval forces will be required to perform; and (3) future trends in naval warfare. The first task of planning is to guide the organization into an uncertain future. It must identify those factors which can be used to determine future requirements. The resultant force concepts can then be developed as required by the organization's overall needs. Strategic planning in first and foremost a frame of mind for conceptualizing those requirements. This study proposes a theory to establish that framework.

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A. INTRODUCTION

> The conclusion that the sailor has not always been able to explain too clearly is that, no matter what single situation is taken up for discussion be it great or small, nuclear or non-nuclear, it is not adequate to assess the usefulness of naval power in terms of that one situation.[1]

Rear Admiral Wylie describes a characteristic of navies that has placed the U.S. Navy at a distinct disadvantage in the annual budget debates. The overall worth of a navy cannot be accurately gauged by a fixed-scenario projection of a future global war or other single-criterion method of analysis. A second characteristic compounds the problem. At face value, power projection capable navies are more expensive to procure, operate and maintain than other forces. Given the choice, naval officials would prefer to justify the procurement of expensive assets in terms that favorably demonstrate total naval capability.

A traditional procurement approach has been to articulate the multiple diplomatic, policing and military roles navies perform in support of national policy.[2] Requests were justified by noting the Navy's ability to provide a wide range of capability across the conflict spectrum from peace to crisis to war.[3] Moreover, it was argued that the longevity of naval assets made them a prudent investment.

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[1]J.C. Wylie, "Why a Sailor Thinks Like a Sailor," U.S. Naval Institute Proceedings, August 1957, p. 817.

[2]See Barry M. Blechman and Stephen S. Kaplan, Force Without War: U.S. Armed Forces as a Political Instrument (Washington: The Brookings Institution, 1978) and updated version by Philip Zelikon, Journal of Strategic Studies, March 1984.

[3]See Ken Booth, Navies and Foreign Policy, Chapter 1 for an excellent description of the multiple functions naval forces perform.

Increasingly, however, the force planning debate has centered around the multiple assumption, NATO-Warsaw Pact conflict in central Europe.[4] This approach is thought to provide a force-sizing estimate of total U.S. military capability in a very demanding scenario. Moreover, it is generally believed that a force capable of responding to a NATO-Warsaw Pact conflict would be able to handle lesser contingencies. The procedure is well established and unlikely to change significantly in the future. Undoubtedly, at least part of the rationale behind the Maritime Strategy was to address the scenario issue head on, in terms favorable to the Navy.

One of the central premises of this study is an extension of Admiral Wylie's statement. Not only is it inadequate to "assess the usefulness of naval power" by any one situation or criterion, it also is unwise to plan the procurement of future forces that way. Single issue approaches are not suitable for long range naval force planning. They are short-to-mid range (3-7 years) procedures. Their purpose is to test acceptability as units are about to be introduced into active service. The single issue method does not adequately address the ten to 25 year period that is the concern of long-range strategic planning.

The Navy should not permit short term budgeting pressures to subvert its long range vision. It must distinguish between measures required to sell a program and those that led to its development in the first place. This study concentrates on the latter issue.

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[4]See Congressional Research Service reports Planning U.S. General Purpose Forces: The Navy, 1976; Building a 600 Ship Navy, 1982; Future Budget Requirements for the 600 Ship Navy, 1985 and William W. Kaufmann, A Thoroughly Efficient Navy, 1987.

B. HYPOTHESIS

The purpose of this study is to propose a theory of naval strategic planning for programming. It is concerned with identifying and describing those factors which influence future naval force requirements and eventual capabilities. The central question under consideration is: How should the navy plan for its long range future? Specifically, the work will frame the force planning problem in terms of the operational environment the Navy is likely to encounter in the future. The following hypothesis is proposed:

> Within the context of national military strategy, naval long range planning for future forces should be based on an in-depth understanding of three factors: (1) the future role of the sea in national military strategy; (2) the missions forces will be required to perform; and (3) future trends in naval warfare.

The term "theory" is used in the Clausewitzian sense. Specifically, theory is a construct employed "to clarify concepts and ideas that have been, as it were, confused and entangled."[5] The purpose of theory is to facilitate clear thinking on a given problem. It will not spew forth simple answers to complex issues. Rather, good theory begets sound analysis because it helps the decision-maker frame the problem in its totality.

The long range naval force planning problem can be expressed in terms of answers to three general questions.

* WHAT WILL BE THE FUTURE ROLE OF THE SEA IN NATIONAL MILITARY STRATEGY? This concerns the strategic context within which the Navy will operate. Of interest is the relationship between sea power and the future. This relationship defines why the U.S. requires a Navy and its future role in national military strategy.

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[5]Carl von Clausewitz, On War, ed. Peter Paret and Michael Howard (Princeton: Princeton University Press, 1976), p. 132.

* WHAT ARE THE MISSIONS THAT THE NAVY MUST ACCOMPLISH? National strategy determines missions. Missions, in turn, determine operational objectives. Objectives influence employment strategies. A broad-based understanding of what these missions entail, why they are important and how they are interrelated is vital to the planner. Faulty assumptions about naval missions may result in irrational force structure decisions.

* WHAT ARE THE BROAD TRENDS IN NAVAL WARFARE? This question concerns the future nature of naval warfare. Although this is a complex and diverse issue, it is possible to identify some general trends. Naval engagements can be described by certain processes. The important characteristics of fleet actions can be analyzed in terms of the processes. The analysis reveals promising avenues for future research and development.

The overall objective of the study is to construct a conceptual model of the naval strategic planning problem. The utility of the model is that it provides a framework for envisioning future force requirements. It is based on the fundamental assumption that force requirements should be derived primarily from two sources: projected mission requirements and trends in naval warfare.

Before proceeding with the analysis, it is necessary to address two additional issues. The first is the concept of "strategic planning." The discussion follows the planning process from the national level--beginning with broad interests and objectives--down to the level of the individual services. Strategic planning at each level is briefly examined. An operational definition for the purposes of this study is proposed. Second is an overview of several single-issue approaches to defense planning. Analysis of their strengths and weaknesses reveals that

differing assumptions lead to alternative solutions to the planning problem. The section concludes with consideration of the assumptions that underlie this study.

C. STRATEGIC PLANNING

1. Strategy

Strategy is a broad and unwieldy field of study. In order to arrive at a workable definition of naval strategic planning, it is necessary to begin with the general and then narrow the focus. Strategy, in the broadest sense, is a "plan of action designed in order to achieve some end; a purpose together with a system of measures for its accomplishment."[6] The purpose is the end; the measures the means.

The highest level of strategy is grand or national strategy. The Department of Defense (DoD) Dictionary of Military and Associated Terms defines national strategy as:

> The art and science of developing and using the political, economic and psychological powers of a nation, together with its armed forces, during peace and war, to secure national objectives.[7]

A component of national strategy is military strategy:

> The art and science of employing the armed forces of nation to secure the objectives of national policy by the application of force or the threat of force.[8]

This definition is closely patterned after Clausewitz's "theory of using battles for the purpose of war."[9] As part of the armed forces, each of the services is assigned specific roles in support of the comprehensive military

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[6]J.C. Wylie, Military Strategy (New Brunswick, NJ: Rutgers University Press, 1967), p. 13.

[7]Dictionary of Military and Associated Terms (JCS Pub 1) (Washington: Government Printing Office, 1987), p. 244.

[8]Ibid., p. 232.

[9]Clausewitz, p. 69.

strategy. However, the DoD definition provides little guidance on how the services might prepare for these roles. The following conception of military strategy is more useful to this end:

> The art of strategy is to determine the aim, which is or should be political; to derive...a series of military requirements they create, and the preconditions which the achievement of each is likely to necessitate; to measure available and potential resources against the requirements and to chart from this process a coherent pattern of priorities and a rational course of action.[10]

Referring back to the general definition of strategy, the aim denotes the purpose; the course of action is the system of measures. The aim of military strategy should be determined at the highest level of the national security apparatus. It should be derived from national or grand strategy. The course (or courses) of action should be of a joint nature, a synthesis of individual service capabilities. They are determined by comparing and contrasting requirements, preconditions and resources with service capabilities in order to develop a "coherent pattern of priorities."

By this definition, separate and distinct service strategies do not exist. Each component service is assigned specific roles within the framework of the national military strategy. The services, in turn, analyze the requirements, preconditions and resources necessary to achieve their roles. Ideally, this results in ordered courses of action derived from and designed to accomplish a specific service function within the national military strategy.

2. Planning

There is a great deal more material available about corporate strategic planning than there is on its defense

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[10]David Fraser, Alanbrooke (London, 1982), p. 215.

counterpart.[11] In fact, significant portions of military strategic planning have been adapted from the corporate sector.[12] However, Allen Schick does provide a useful definition in an article on the evolution of the Defense Department's Planning, Programming, and Budgeting System (PPBS). According to Schick, strategic planning is:

> The process of deciding on objectives of the organization, on changes in these objectives, on the resources used to attain these objectives, and on policies that are to govern the acquisition, use and disposition of these resources.[13]

This definition adds another element to the notion of strategy as a purpose combined with a system of measures to accomplish it. Specifically, strategic planning is future-oriented. It is concerned with determining objectives, conditions that might impact objectives, and policies to attain them regardless.

Strategic planning takes place at all of the aforementioned levels of strategy. This is depicted in Figure 1, and described in general terms below.[14] The discussion is of the interest-objective approach to defense planning. As will be shown, other approaches are also used. However, this method is generally the most comprehensive.

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[11]See King and Cleland, Strategic Planning and Policy; Marcus, Building the Strategic Plan; Moskow, Strategic Planning in Business and Government; Radford, Strategic Planning: An Analytical Approach among others.

[12]See especially The Maritime Balance: The Navy Strategic Planning Experiment, 1979.

[13]Allen Schick, "The Road to PPBS: The Stages of Budget Reform," Public Administration Review, December 1966, p. 244.

[14]This diagram is adapted from Strategic Concepts of the U.S. Navy (NWP-1), 1976, p. I-1-2.

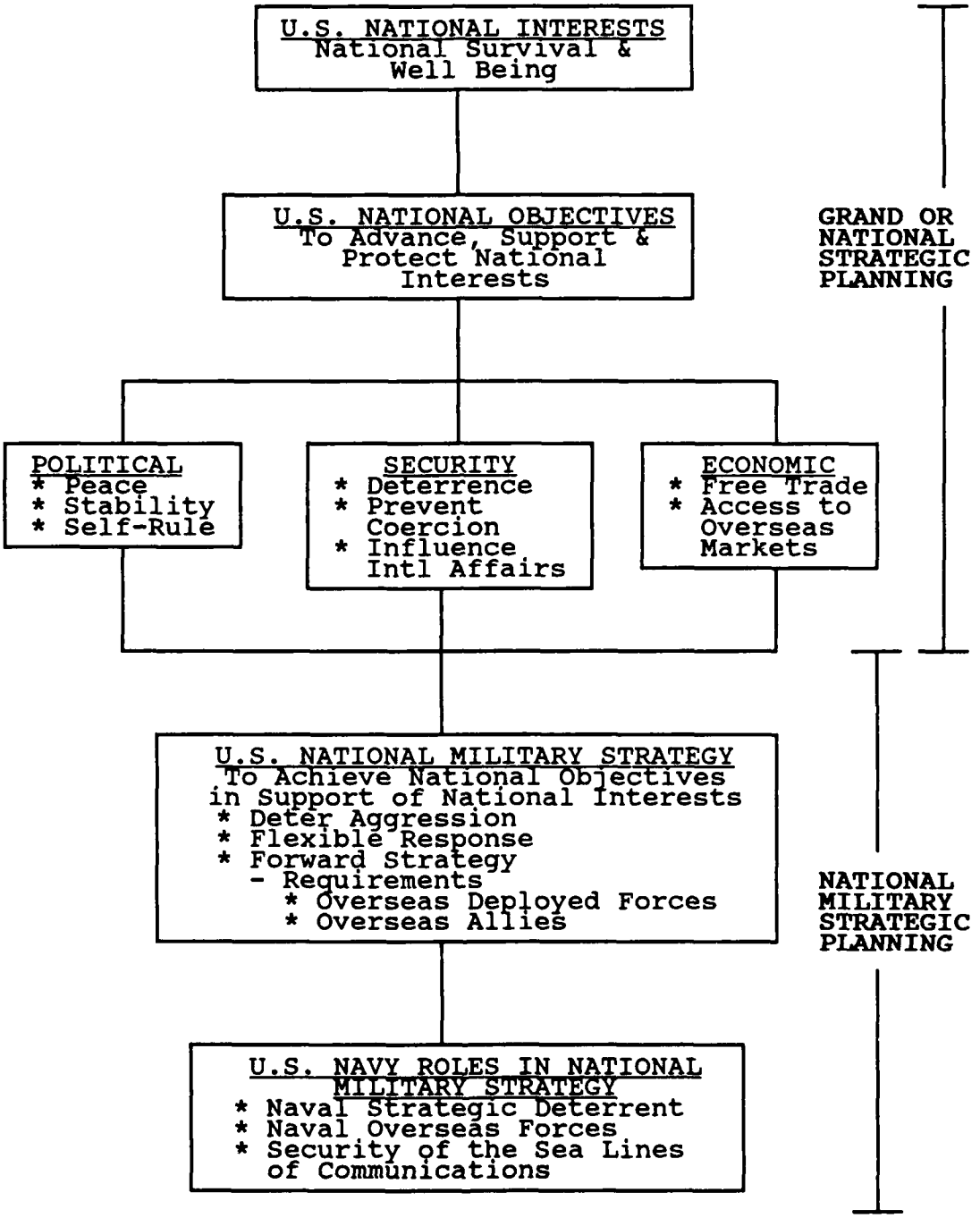

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Figure 1 Levels of Strategic Planning

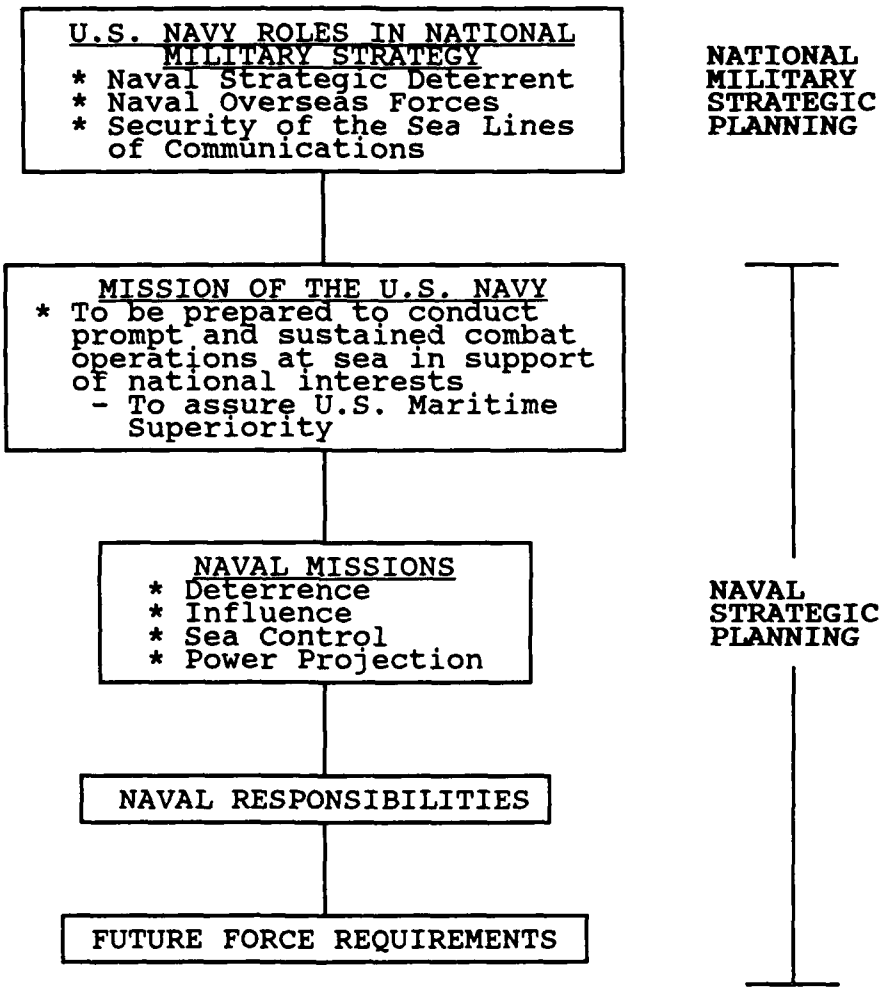

Figure 1 (continued) Levels of Strategic Planning

At the grand or national level, the planner is concerned with determining national "interests and objectives [to] establish strategic requirements,...policies [to] provide rules for satisfying them...[and] assets [to] provide the means."[15]

At the national military level, strategic planning is the process of assessing alternative futures, determining political and/or military objectives and developing courses of action to achieve them. A broad course of action (i.e., national military strategy) details the roles or functions of the individual services. The services compare existing capabilities with those required by the strategy to determine future requirements. These are sent back to the national military level where the requirements of each service are prioritized in order to best meet the overall needs of strategy.

The planning that occurs at the service level is the subject of this study. National military strategy establishes the strategic context within which the services operate. It assigns them broad roles or missions. These functions are the ends or objectives in their planning processes. The services must develop a system of measures to achieve them. Service strategic planning is derivative of and subordinate to its national and national military counterparts.

The problem confronting service planners is similar to that of the corporate sector. Broad objectives are known (e.g., ensure security of the sea lines of communication (SLOC) or increase productivity). What is required is a course of action and a methodology for visualizing future requirements.

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[15]John Collins, Grand Strategy: Principles and Practices (Annapolis: Naval Institute Press, 1973), p. 7.

Charles M. Mottley describes the problem-solving process as follows:

> Relate your missions to estimates of future situations; diagnose your needs; identify the issues...; conduct strategic analyses and studies to help define alternative courses or options; agree upon an appropriate policy, then transform it into a preferred course of action.[16]

The most difficult part of the process occurs prior to the policy formulation stage. The future strategic situation must be envisioned. Missions must be thoroughly understood in relation to that future. Strategic analysis must identify suitable, feasible, and acceptable options.[17] The option must be suitable in terms of the mission or missions it is designed to accomplish. It must be feasible with respect to future operational requirements, environments, and resources. Finally, it must be acceptable in terms of performance, cost, timing and effectiveness.[18] Obviously, the factors used to measure the suitability, feasibility and acceptability of an option are key to the entire procedure.

3. Naval Strategic Planning

In general, strategic planning is the process of determining the purpose or objective of strategy and developing the measures to achieve it. It is oriented ten to 25 years in the future.

Naval strategic planning is a specialized branch concerned with developing options to accomplish the roles or functions assigned to the Navy by national military strategy. National military strategy determines the Navy's

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[16]Charles M. Mottley, "Strategic Planning," in Lyden and Miller, Planning, Programming and Budgeting: A Systems Approach to Management (Chicago: Markham, 1972), p. 130.

[17]Ibid., p. 134.

[18]Ibid., p. 138. See also Sound Military Decision (Newport, RI: Naval War College Press, 1943) for a more detailed description of suitability, feasibility and acceptability as measures.

broad objectives or missions. The naval strategic planning problem is to analyze the missions, ascertain what is required to accomplish them, and select the means to that end. Furthermore, the entire process must be future-oriented.

Essentially, and for the purposes of this study, naval strategic planning is force planning. The following definition is proposed:

> Peacetime naval strategic planning is the process of determining future force requirements to accomplish the roles and missions assigned by national military strategy. Naval needs are ascertained through mission analysis and an evaluation of the future strategic environment. Options are envisioned through capabilities analysis. This analysis measures the suitability, feasibility and acceptability of the concept in terms of the future naval environment.

The process is illustrated in Figure 2. Ideally, the output of this system is sent to the national military level. There it is considered along with options from the other services. These are prioritized and acted upon according to the demands of the national military strategy.

It should be emphasized that the concern here is long range (10-25 year) planning. The objective is to visualize promising force concepts for research and development. Some of the more common approaches to force planning do not offer this forward-looking vision. Before further developing the theory, several of these approaches are examined.

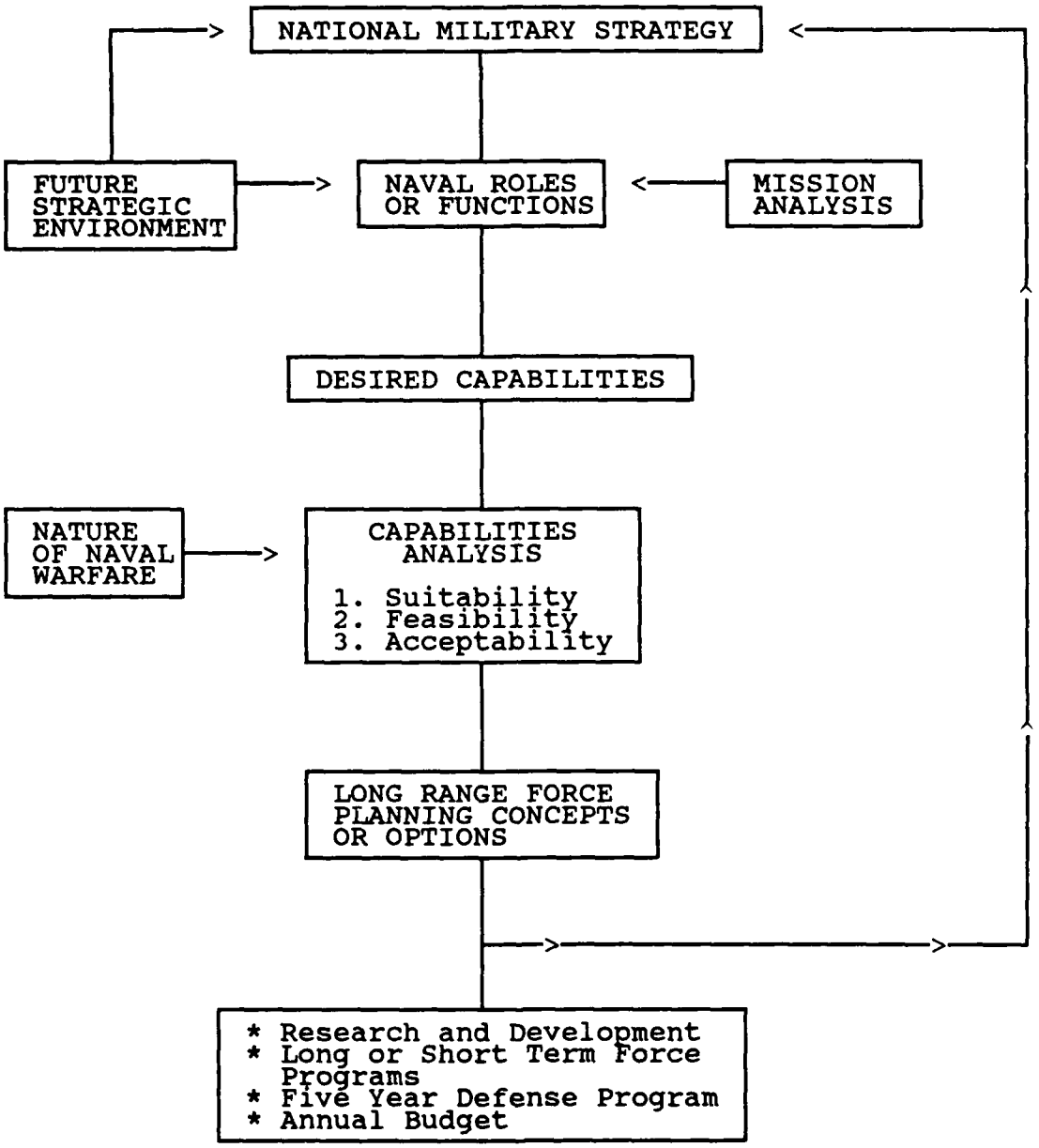

Figure 2 Naval Strategic Planning Process

D. ALTERNATIVE APPROACHES TO DEFENSE PLANNING

Any discussion on force planning must begin with a caveat. Force planning is a broad field of study, one in which seemingly everyone has an opinion. Former Under Secretary of the Navy R. James Woolsey noted this, writing:

> The number of offices, institutions and influential individuals in the government with different but firmly held views about the proper future of the Navy is beginning to approach the number of ships in the fleet.[19]

Necessarily, what follows is only an overview of the subject.

One of the better articles on force planning recently appeared in the Naval War College Review. Henry C. Bartlett noted that:

> PPBS...does not provide complete insight into alternative approaches or focuses which force planners use in the longer term to help them determine the level and mix of required forces....[D]ifferent planning focuses tend to lead to alternative solutions or choices.[20]

A failure to recognize this point could confuse the ends-means relationship in strategy. Forces or weapons should not determine future strategy. However, their capabilities and availabilities can influence future strategic decisions.[21] The force planner should have an appreciation of the assumptions upon which various approaches are based.

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[19]R. James Woolsey, "Planning a Navy: The Risks of Conventional Wisdom," International Security, Summer 1978, p. 18.

[20]Henry C. Bartlett, "Approaches to Force Planning," Naval War College Review, May-June 1985, p. 37.

[21]Henry E. Eccles, Military Concepts and Philosophy (New Brunswick, NJ: Rutgers University Press, 1965), pp. 261-2. For example, British procurement policies in the 1970's greatly impacted its strategy in the 1982 Falklands conflict, especially in anti-air warfare. See Department of the Navy, South Atlantic Conflict Lessons Learned, 1983.

Bartlett's eight approaches to force planning are depicted in Figure 3.[22] These categories are used mainly to indicate tendencies. They are not absolutes. Actual planning incorporates elements of each. The four approaches considered below are more dominant than others in U.S. force planning circles: Top Down; Fiscal; Technological; and Threat-Scenario.

APPROACH	PRIMARY FOCUS	OTHER EMPHASIS
Top Down	Objectives	Longer Term
Fiscal	Budget	Dollar Constraints
Technological	Technological Superiority	Technological Optimism
Threat	Opponent Capability	Net Assessment
Scenario	Circumstances	Opponent and Vulnerability
Mission	Mission Areas	Mission Balance
Hedging	Uncertainty	Flexibility
Bottom Up	Current Capabilities	Shorter Term

Figure 3 Approaches to Force Planning

1. Top Down

The Top Down, or interest-objective, approach to planning has been alluded to in a previous section. Briefly, the process involves identifying a set of fixed interests, juxtaposing them on alternative future environments and creating a strategy to attain them.[23] Interests determine objectives and strategy. Strategy, in turn, determines requirements. The process occurs throughout the hierarchy of the national security apparatus from the national level down to the individual services.

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[22]Bartlett, p. 37.

[23]U.S. Army, An Approach to Long Range Strategic Planning (Carlisle Barracks, PA: U.S. Army War College, 1973), p. 1.

The main advantage of this approach is that it lends a macro-perspective to the planning process. Each level must focus on the ends or objectives determined by the next higher echelon.

Disadvantages include the tendency for planners to concentrate too heavily on the future. Important current problems may be put off for future solution. Another tendency is to ignore constraints for too long. Finally, lower level planners may be hesitant in challenging assumptions made at a higher echelon. This could result in flawed policy decisions throughout the chain of command.[24]

Overall, however, the Top Down method is the most comprehensive planning approach. It is well suited to long range planning. While many factors can change in a ten to 25 year period, national interests and objectives usually do not.

2. Fiscal

Budgetary constraints drive the Fiscal approach to force planning. Obviously, all planning is subject to monetary restrictions. However, they are the primary emphasis in this approach. The Defense Department is allocated a specific share of the Federal Budget after domestic and foreign policy accounts are settled.[25] Strategies and force structures are developed from available funds. The desired strategy is that which "is most efficient also being the most economical."[26]

One advantage of this approach is that defense requirements are considered in context with other national

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[24]Bartlett, p. 38-39.

[25]William D. Staudenmaier, "Strategic Concepts for the 1980's," Military Review, March 1982, p. 37.

[26]Charles J. Hitch and Roland N. McKean, The Economics of Defense in the Nuclear Age (New York: Atheneum, 1986), p. 3.

objectives. Another is that fiscally constrained planning may promote efficiency and effectiveness.[27]

A major disadvantage is that resultant force structures may be inadequate in relation to the threat. Moreover, this approach encourages spending cycles dependent on threat perception. Typically, a four to five year growth cycle rapidly builds up existing forces. This is followed by a down cycle in which recent improvements may be forfeited. Long term continuity is lost. Finally, the Fiscal approach promotes service rivalries. More emphasis is placed on justifying budgetary shares than on coherent national military strategy.[28]

3. Technological

This approach is based on technological optimism. Technology is harnessed to remedy force imbalances. The process is well rooted in American history; U.S. planners have consistently consulted technology in developing force multipliers. Generally, there are two different ways to address the technology issue: reactive planning and adaptive planning.

Technology is the driving force in the reactive approach. A revolutionary technological breakthrough is on the horizon. Weapons systems and platforms must be flexible enough to accommodate rapid and unpredictable change:

> It is the rapidity of change, the rapidity with which we transition from one approach to another inside the [adversary's] cycle of observation, decision and action which is the key to victory.[29]

The general problem with this approach is expense. Rapid development of new systems or concepts every few years does not come cheaply. Moreover, it tends to encourage

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[27]Bartlett, p. 47.

[28]Ibid.

[29]Gary Hart, "The U.S. Senate and the Future of the Navy," International Security, Spring 1978, p. 182.

change for its own sake, divorced from any strategic rationale. Nonetheless, the reactive method is well suited to naval platforms. Ships are better able to accommodate modernization than most other forces.

The adaptive approach rejects the technological imperative. Improvements in capability are viewed as evolutionary, not revolutionary. The spectacular breakthrough is popular mythology. Rather, planners should concentrate on a synthesis of different technologies to provide desired mission capabilities:

> The key is to identify the essential capabilities for the general mission...and then to identify the technologies essential for those capabilities.[30]

Both approaches encourage initiative and innovation. Moreover, they exploit a comparative U.S. strength. Former Secretary of Defense Weinberger's policy of Competitive Strategies is a recent positive example of this approach.[31]

Disadvantages include the tendency to equate complexity with quality at the expense of quantity. Quality is a measure of mission effectiveness, not technological complexity. Complex systems are expensive, slow to develop and slow to produce in quantity. This means that fewer numbers are affordable. Another disadvantage is the tendency to spend too much for the last five percent of capability.[32] Prudent planning balances the relationship between quality, quantity and complexity with mission requirements.

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[30]Karl Lautenschlager, "Technology and the Evolution of Naval Warfare," International Security, Fall 1983, p. 48.

[31]See DoD Annual Report To The Congress Fiscal Year 1988. "The central idea...is simple enough: aligning enduring American strengths against enduring Soviet weaknesses," p. 66.

[32]Bartlett, p. 46.

4. Threat-Scenario

One of the more common approaches to defense planning is Threat-Scenario based. The two are combined because for the past 30 years a single threat--the Soviet Union--and a single scenario--the NATO-Warsaw Pact conflict--have dominated the field. The process begins with an assessment of opposing capabilities in a well defined scenario. From this analysis, specific force deficiencies are identified. Programs are developed to remedy these shortfalls. Quantitative policy analysis aids in selecting the most promising systems. The resulting mix of programs is balanced against budgetary constraints. Finally, the revised total force is reevaluated in terms of the original scenario. Gaps in capability and other risks are identified for future consideration.

There are a number of advantages to the Threat-Scenario approach. It forces policy-makers to focus on total military capability.[33] A properly constructed scenario may reveal alternative tactics or strategies for exploitation. It is generally believed that a force capable of responding to a NATO-Warsaw Pact conflict would be able to handle lesser contingencies.[34] Threat-Scenario encourages the establishment of priorities among competing systems or services. Finally, the process readily adapts to quantitative methods of policy analysis.[35]

There are an equal, if not greater, number of disadvantages to this approach. Most of these adversely impact the Navy. Navies are versatile, multi-mission forces with very long life cycles. The Threat-Scenario approach focuses on a limited number of missions at a fixed point in

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[33]Bartlett, p. 42.

[34]For another view see Andrew F. Krepinevich, The Army in Vietnam. The author argues that the Army's European-oriented force structure and concept of warfare was not applicable to conditions in Vietnam.

[35]Woolsey, p. 21.

time against a specific threat. A navy tailored to a 1988 threat may be irrelevant in the year 2000. Given the longevity of ships, submarines and aircraft, the current threat could change faster than our ability to adapt.[36] The planning initiative is passed to the adversary. Examining a threat with an eye to counter it leads to a defensive posture. One is always looking to defend, always reacting.[37]

The Threat-Scenario approach is based on a series of assumptions to which the real world rarely conforms. Moreover, there is a danger that the scenario may begin to take on a life of its own. What were once assumptions gradually become accepted as fact.[38] Alternately, assumptions can be modified to argue virtually any position. One analyst used this method to suggest eliminating the U.S. surface navy:

> An increasing number of defense authorities have recognized a war in Europe, which is likely to begin with little or no warning, would be decided in a matter of weeks....This suggests that convoy escorts, the ASW mission for which many of our surface ships are best suited, may not even exist in a NATO conflict[39].

Lind does not address what happens if: (a) the war is not in Europe; (b) it begins with plenty of warning; (c) it is not decided quickly; (d) there is a national requirement for surface units to do something other than escort convoys, a task relevant only in a certain kind of conflict. A glaring weakness of assumption-based planning is obvious from this example. The scenario can only

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[36]John B. Bonds, "A Thoroughly Efficient Navy: Review," Naval War College Review, Autumn 1987, p. 103.

[37]J.H.F. Eberle, "Designing a Modern Navy: Workshop Discussion," in Power at Sea: II. Superpowers and Navies (London: International Institute for Strategic Studies, 1976), p. 30.

[38]Bartlett, p. 42.

[39]William S. Lind, "Is It Time to Sink the Surface Navy?," USNI Proceedings, March 1978, p. 63.

artificially test the ability of forces to cope in certain situations. It can never prove that these situations will come to pass.[40]

A final disadvantage is that the approach lends itself too readily to quantitative methods of policy analysis. What cannot be quantified is often neglected. Concepts, tactics and weapons "which do not respond to some previously identified threat" have no constituency.[41] Important peacetime, crisis or out-of-theater missions are not fully considered. These missions are the bread and butter of navies. Moreover, their successful execution may be what is required to avoid a war in the first place.

Finally, scenario forces are evaluated in terms of quantitative cost-effectiveness. The question most often asked is: "How much should be spent to give a ship some marginal increment of additional performance...useful in only a handful of imaginable scenarios?"[42] This kind of reasoning often results in marginal force improvements designed to counter known adversary capabilities. Ultimately, improvements on the margin lead to parity.

In summary, the Threat-Scenario approach can be a useful planning tool if properly employed. It can help establish priorities. It can test the ability of forces in a most demanding situation. However, the process is based on a number of artificial assumptions. These may or may not conform to the real world. The scenario only evaluates war-fighting capability. Its planning perspective is narrow and somewhat myopic. Taken to the extreme, this approach can

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[40]Thomas H. Etzold, "U.S. Navy Planning in the 1970's," in Harry E. Borowski, ed. Military Planning in the Twentieth Century (Washington: USAF Office of History, 1986), p. 290.

[41]Richard J. Lunsford, "Defense Planning: A Time for Breadth," Parameters, March 1978, p. 17.

[42]U.S. Defense Policy: Weapons, Strategy and Commitments (Washington: Congressional Quarterly, 1980), p. 56.

lead to a fundamental misunderstanding on the nature of war. 1600 years ago the Roman Vegetius wrote:

> It is the nature of war, that what is beneficial to you is detrimental to your enemy; and what is of service to him always hurts you. It is therefore a maxim never to do, or to omit doing, anything in consequence of his conduct, but to consult invariably your own interests only.[43]

The Threat-Scenario approach to planning turns this logic on its head. It often premises planning on the enemy's strengths, not its weaknesses. In the final analysis this tends toward a stalemate.

E. ASSUMPTIONS OF THIS STUDY

The purpose of this introductory section was to establish a conceptual framework for the remainder of the study. The central question under consideration is: How should the navy plan for its long range future? The discussion touched on a numbers of topics--from strategy to strategic planning to force planning. The theory presented herein should be viewed in this context. It suggests an alternative method for thinking about future naval force concepts.

The theory can be summarized as follows. Desired capabilities are determined by juxtaposing the naval roles assigned by national military strategy with: (a) a forecast of the future strategic environment; and (b) a thorough understanding of basic naval missions. Next, the suitability, feasibility and acceptability of these capabilities are analyzed in terms of the broad trends in naval warfare. The result is a series of force concepts for the future. Based on priorities set at the national level, resources are allocated to turn the concept into systems or platforms.

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[43]Flavius Vegetius Renatus, Military Instructions, Book III, p. 159.

It is necessary at this point to make a distinction between requirements and capabilities. The output of the long range planning process is a set of concepts to guide procurement policies. These are future force requirements. They are based on desired capabilities. Current capabilities, on the other hand, drive present strategy:

> [S]trategy must rest on the rock of core capability....the correlation of forces reveals what strategy our forces can support, and a supportable military strategy governs national aims and ambitions.[44]

This distinction is important because it underscores the true objective of strategic planning--to provide future forces with the capability necessary to support projected strategic requirements. A failure to plan adequately for the future could undermine national policy.

As with the other approaches to planning, this theory is based on several assumptions. These are considered below.

* NAVAL STRATEGIC PLANNING IS NOT THE SAME AS NATIONAL MILITARY STRATEGIC PLANNING. Naval planning is subordinate to and derivative of its national military counterpart. This study adopts the Top Down method of determining objectives and strategy (depicted in Figure 1). Naval planning is based on the roles and functions assigned by national strategy. Essentially, for the purposes of this study, naval strategic planning is future force planning.
* IT IS NOT POSSIBLE TO PREDICT WITH CERTAINTY THE PATTERN OF A FUTURE WAR.[45] This is especially the case for the 10-25 year period that is the subject of this study. Preoccupation with specific threats or scenarios tends to narrow the planner's vision. The objective of long range planning is to develop concepts that cover a

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[44]Wayne P. Hughes, Jr., "Naval Tactics and Their Influence on Strategy," Naval War College Review, p. 3.

[45]Adapted from Wylie, Military Strategy, p. 83.

broad spectrum of possibilities.[46] These concepts should be derived from the capabilities one desires in the future. This perspective is attained by focusing on missions and warfare trends within the context of overall strategy.

* THE ENDS SHOULD DICTATE THE MEANS. It is essential that naval roles and functions be analyzed in terms of the four naval missions: deterrence, sea control, power projection, and influence. A mission-orientation helps establish naval ends. For example, the primary objective of anti-submarine warfare (ASW) is to aid in securing working control of the sea. A means to that end is the sinking of submarines. Therefore, the proper planning question is: What does the ASW concept under consideration contribute to securing a working control of the sea? Its submarine-sinking ability is one measure, albeit a very important one, of total capability. This is what is meant by a mission-oriented perspective.

* TECHNOLOGY IS BEST EMPLOYED BY FIRST DETERMINING THE CAPABILITY DESIRED. This is the adaptive approach to technology employment. Naval missions and warfare trends help to establish desired capabilities. New or existing technologies are then harnessed to attain them. This approach does not rule out the possibility of a technological breakthrough; nor does it imply that the planner will always be capable of recognizing the potential of new technologies.[47] However, the vast majority of technological innovations are evolutionary.[48] The adaptive approach seeks a balance

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[46]Ibid., p. 84.

[47]See Wayne P. Hughes, Jr. Fleet Tactics: Theory and Practice (Annapolis: Naval Institute Press, 1987), Chapter 8 for an in-depth discussion on the influence of technology on tactics.

[48]Lautenschlager, p. 4.

between technological opportunities and tactical requirements based on projected mission and warfare trends.

* THE OUTPUT OF THE LONG RANGE PLANNING PROCESS IS A CONCEPT, NOT A SPECIFIC PLATFORM. The first task of planning is to guide the organization into an uncertain future. It must identify those factors which can be used to determine future requirements. The resultant concepts can then be further developed as required by the organization's overall needs. Strategic planning is first and foremost a frame of mind for conceptualizing these requirements. This study proposes nothing more than a theory to establish that framework.

II. THE STRATEGIC CONTEXT: MARITIME POWER IN US STRATEGY

A. INTRODUCTION

> The beginning of wisdom in American strategic thinking is to recognize that the United States is first and foremost a sea power.[49]

Maritime power is a fundamental component of total U.S. national power. The United States has deep-seated political, economic and security interests in the use of the sea. It has benefited enormously from said use. The naval strategic planning process should rightly begin with an appraisal of the future role of the sea in national military strategy. This section examines three topics to that end: (1) the nature of maritime power; (2) naval roles in national military strategy; and (3) an assessment of how these roles might evolve in the future. The objective is to articulate not only why the U.S. requires a navy, but also its future functions in national military strategy. This establishes a strategic context on which to base the naval planning process.

B. MARITIME POWER

The naval planner should have an appreciation for the nature of maritime power. This includes the following two factors: a working definition and its strategic importance. Many faulty assumptions about the Navy's role in national military strategy are founded on a basic misunderstanding of maritime power. Henry E. Eccles writes:

> A failure to understand the simple fundamentals [of maritime power] tends to create uncertainty and

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[49]Ray S. Cline, "Needed: An 'All-Oceans Alliance,'" Sea Power, April 1980, p. 39.

misunderstanding in subsequent development of force structures, operations, policy and plans.[50]

1. Definition

Maritime power is an element of national power which contains two sub-systems: sea power and sea force.[51] Sea power is merchant (and other) shipping, maritime bases and their supporting infrastructures. Sea force is the navy (the definition would include the Coast Guard and the Marine Corps).[52] This relationship is depicted in Figure 4.[53]

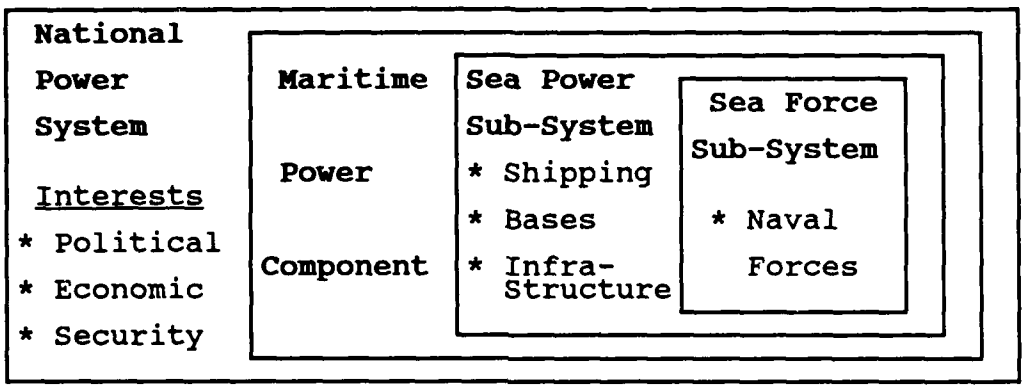

Figure 4 Maritime Power

The diagram is useful because it defines maritime power in its entirety. Importantly, naval forces are depicted as more than simply the sea-based leg of the armed services. They are the enforcement arm of the maritime component of national power. Their value is directly related to the importance of that component in the overall structure. This point should not be underemphasized. The naval function transcends traditional methods of evaluating

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[50]Henry E. Eccles, "Strategic Principles and the Imperatives of Sea Power," Strategic Review, Fall 1973, p. 51.

[51]Ibid., p. 52.

[52]Ibid., p. 51. See also James Eberle, "Maritime Strategy," Naval Forces, No. II 1987, p. 41.

[53]Adapted from William Reitzel, "Mahan on the Use of the Sea," in To Use The Seas (Annapolis: Naval Institute Press, 1977), p. 15.

military power (e.g., deterrence or war-fighting capacity). It must be performed across the spectrum of conflict. It directly supports the national power system in peace, crisis and war. Naval power is "wholly about the use of the sea and only incidentally about the use of force at sea."[54]

2. Strategic Importance

The strategic importance of maritime power is derived from a characteristic of the sea. The oceans cover two-thirds of the Earth's surface. Importantly, they are controlled by no nation. A country with the ability to use the sea can benefit politically, economically and militarily relative to other nations. It can extend its sovereignty to non-adjacent areas of interest. This is a strategic quality.[55] A navy's function is to ensure that advantage.

In general, there are three important uses of the sea: (1) as an efficient means of transport; (2) as a valuable source of natural resources; and (3) as a base for threatening or exercising military power against the shore.[56] From these uses come the general functions of naval forces: (1) to prevent or secure the conveyance of people or goods; (2) to prevent or secure the acquisition of sea-based resources; and (3) to prevent or secure the projection of military force versus targets ashore.[57]

In summary, maritime power is more than the ability to wage war at sea. It is an integral component of the national power system. Naval forces are the maritime enforcement arm. The relative importance of the sea in the

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[54]Michael MccGwire, "Changing Naval Operations and Military Intervention," Naval War College Review, Spring 1977, p. 6.

[55]Ibid., p. 5.

[56]See James A. Barber, "The Uses of Naval Force," p. 76; or Ken Booth, "Roles, Objectives and Tasks: An Inventory of the Functions of Navies," p. 84; both in Naval War College Review, Summer 1977.

[57]MccGwire, p. 5.

overall system should determine the value and strength of the naval arm.

Maritime power permits a country to extend its sovereignty to non-adjacent areas. The three general uses of the sea are for transport, resources and projection of power ashore. Naval forces can prevent or secure these uses in support of national policy.

C. NAVAL ROLES IN NATIONAL MILITARY STRATEGY

Ideally, national interests and objectives determine the relative importance of maritime power in the overall security system. National military strategy, in turn, assigns the Navy broad roles to secure interests and objectives. The roles are based on the general uses of the sea noted above. The following discussion derives current naval roles using this, the Top Down, approach.

1. National Interests and Objectives

National interests are generalized statements describing factors deemed important to continued U.S. prosperity and security. They encompass both broad ideals and specific security concerns.[58] Interests vary in intensity from those that are vital to survival, to those that are simply desirable outcomes.[59] Current U.S. national interests are depicted in Figure 5.[60]

National security objectives are "broad goals which support and advance the national interests."[61] Their purpose is to provide general guidelines to assist in the

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[58]U.S. Department of Defense, Annual Report to the Congress, Fiscal Year 1988 (Washington: Government Printing Office), p. 41.

[59]See Donald E. Nuechterlein, National Interests and Presidential Leadership: The Setting of Priorities (Boulder, CO: Westview Press, 1978), pp. 4-18.

[60]Adapted from National Security Strategy of the United States (Washington: Government Printing Office, 1988), p. 3.

[61]Ibid.

formulation of foreign and defense policies. Recent U.S. national security objectives are shown in Figure 6.[62]

* Survival of the U.S. with its fundamental values and institutions intact.
* A healthy and growing economy.
* Growth of freedom, democracy and free market economies throughout the world linked by fair and open international trade system.
* Stable and secure world free from major threats to U.S. interests.
* Health and vigor of U.S. alliance relationships.

Figure 5 U.S. National Interests

* To maintain the security of our nation and our allies.
* To respond to the challenges of the global economy.
* To defend and advance the cause of democracy, freedom, and human rights throughout the world.
* To resolve peacefully disputes which affect U.S. interests in troubled regions of the world.
* To build effective and favorable relationships with all nations with whom there is a basis of shared concern.

Figure 6 U.S. National Security Objectives

[62]Adapted from National Security Strategy, p. 4-5.

The importance of maritime power in securing these interests and objectives is apparent. The United States has global interests and responsibilities. It has basic political, economic and military requirements to use the sea. Politically, America is separated by two oceans from its major allies and the "troubled regions of the world." Economically, U.S. prosperity is tied to an interdependent global system of trade. A full "99.8 percent of the more than 700 million tons of goods transported annually in U.S. overseas trade goes by ship."[63] Moreover, both the U.S. and its allies are dependent on resources located overseas. Militarily, nearly every conceivable threat to U.S. interests necessitates using the seas for both transport and projection purposes.

Maritime power is a critical component of the overall national security system by any criteria. Much of the above discussion is fairly obvious. However, it is important to return to first causes in establishing a strategic context for the long range planning process. First and foremost, America requires a navy because it "must be able to use the high seas whenever and wherever it finds it necessary."[64] U.S. military strategy assigns the Navy certain roles to secure that use.

2. Present National Military Strategy

National military strategy is a component part of grand strategy. It is concerned with the employment of military power in support of policy. U.S. national military strategy has remained relatively constant over the last 25 years. Generally, it has consisted of four basic elements:

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[63]J.P. Moorer, "U.S. Naval Strategy of the Future," Strategic Review, Spring 1976, p. 76.

[64]James L. Holloway, "The U.S. Navy - A Functional Appraisal," Oceanus, Summer 1985, p. 3.

Deterrence; Flexible Response; Forward Deployment; and Arms Control.[65]

Deterrence of aggression has been America's basic defense strategy since 1945.[66] Deterrence protects U.S. interests by convincing an adversary that the risks of aggression are unacceptable. It requires both the capability and the resolve to fight at varying levels of violence.

Flexible Response is meant to provide a wide range of military options commensurate with the level of provocation. It supports deterrence by convincing the adversary that any aggression can be countered by force. One of the main objectives of Flexible Response is to establish some degree of control over the scope, intensity and duration of the conflict.[67]

Geopolitical considerations dictate that U.S. forces be forward deployed. Alliance solidarity is an integral part of national security policy. The U.S. depends on its allies not only for military security but also for economic prosperity. The forward deployment of U.S. forces reassures our allies and helps to stabilize the world environment.[68]

The trend over the last eight years has been to integrate arms control objectives with defense policy. The arms control agenda should "enhance deterrence, reduce risk...[and] support alliance relationships."[69] The inclusion of arms control in national military strategy ensures that arms control proposals do not inadvertently undermine other aspects of defense policy.

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[65]See National Security Strategy pp. 20-31 or Annual Report, pp. 51-65.

[66]Annual Report, p. 42.

[67]Strategic Concepts of the U.S. Navy, p. I-2-2.

[68]Annual Report, p. 49.

[69]National Security Strategy, p. 23.

3. Present Naval Roles

As used in this study, the difference between naval roles and naval missions is one of emphasis.[70] Naval roles are general statements describing what naval forces do in support of military strategy. Naval missions are directly concerned with how the roles are performed.

The Navy identifies three main roles it conducts in support of national military strategy: (1) strategic nuclear deterrence; (2) providing the maritime component of overseas deployed forces; and (3) ensuring the security of the sea lines of communications (SLOCs).[71] The relationship between these roles and the deterrence, forward deployment and Flexible Response elements of military strategy is apparent. They are also related to the general uses of the sea described previously. This relationship is depicted in Figure 7.

		NAVAL ROLES IN MILITARY STRATEGY		
USES OF THE SEA		Strategic Nuclear Deterrence	Maritime Forward Deployment	Security of the SLOCs
	Transport		X	X
	Resources		X	X
	Projection	X	X	X

Figure 7 Naval Roles vs Uses of the Sea

[70]Naval missions will be covered in depth in the following section.

[71]William Crowe, "Western Strategy and Naval Missions Approaching the 21st Century," in J.L. George ed., Problems of Sea Power as We Approach the Twenty First Century (Washington: American Enterprise Institute, 1978), p. 22.

It should be noted that in performing their roles, naval forces can either secure or prevent the corresponding use of the sea. For example, maritime forward deployed forces could either project naval power ashore or prevent another nation from doing so. Similarly, forces in a nuclear deterrence role could either promote the viability of our deterrent or threaten to undermine the adversary's.[72]

D. THE FUTURE STRATEGIC ENVIRONMENT AT SEA

The future strategic environment at sea depends on three factors: (1) changes in the uses of the sea; (2) changes in national military strategy; and (3) changes in naval roles in military strategy. These issues are discussed below.

1. Uses of the Sea

How man has used the oceans has remained fairly constant over time. However, the relative importance of these various usages to man has grown. This trend should continue. Shipping is now the most efficient and economical means of extra-continental transportation. A revolutionary breakthrough in other forms of locomotion is unlikely. Therefore, sea-based transport will continue to be the dominant mode, linking together an interdependent world economy.

The future of sea-based power projection is less certain. On one hand, navies equipped with long-range nuclear weapons are capable of striking land targets with relative impunity. However, the viability of low-to-mid intensity power projection is more complicated. This is because of the proliferation of land-to-sea missiles and missile-carrying patrol boats and aircraft in the inventories of even the smallest navies. The situation has

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[72]Provided, of course, that it is determined these actions enhance deterrence.

led some analysts to question the future role of naval power projection.[73]

The most dynamic changes affecting the use of the sea concern the increased significance of the ocean as a resource base. A growing number of nations are exploiting the sea as a new source of food, energy and raw materials.[74] The trend has been for smaller countries to claim large areas of the sea and seabed for their exclusive use. This process threatens to undermine a characteristic of the sea on which maritime powers depend; "their status as an international common to which all of mankind had free access."[75]

In summary, the seas will be increasingly important and the site of growing competition in the future. Shipping should remain the most economical means of transport. Smaller nations may attempt to extend their sovereignty over larger areas of the sea and seabed in their quest for resources. At the same time, low-to-mid intensity naval power projection could become more difficult as a result of the anti-ship missile threat. This is a disturbing trend for countries, like the U.S., that promote free use of the seas. Its interest in securing freedom of the seas will necessitate a viable naval power projection capability. However, the future environment may make these operations more risky.

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[73]See especially Michael MccGwire, "Changing Naval Operations and Military Intervention," Naval War College Review, Spring 1977, p. 8.

[74]Geoffrey Till, Maritime Strategy in the Nuclear Age (New York: St. Martin's Press, 1984), p. 203.

[75]James A. Barber, "The Uses of Naval Force," Naval War College Review, Summer 1977, p. 76.

2. National Military Strategy

In assessing the future of U.S. national military strategy, Colonel William O. Staudenmaier, USA, noted the following strategic trends:[76]

* Superpower Nuclear Parity
* Nuclear Proliferation
* Depletion of Non-Renewable Resources
* Economic Interdependence
* Increased Importance of Transnational Movements
* Growth of Regional Centers of Power
* Five Major Power Centers (U.S., U.S.S.R., P.R.C., Western Europe, Japan)

The affect these trends will have on the four pillars of U.S. defense policy is uncertain. However, some of the possibilities are considered below.

Deterrence is likely to remain the cornerstone of U.S. strategy. In particular, nuclear deterrence will continue to influence how other operations are carried out. This is especially the case if another nuclear power is involved. An irrevocable feature of modern strategy is that all lesser military operations are conducted in a nuclear context.

The strategic debate in the 1990's will probably center around the future of Flexible Response, particularly as it applies to Western Europe. Some analysts believe the U.S. should "emphasize a wider range of contingencies than...the massive Warsaw Pact attack on Central Europe."[77] In a similar vein, others contend that Superpower nuclear parity has stabilized the situation in Europe. They support a strategy of "flexible global response using

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[76]William O. Staudenmaier, "Strategic Concepts for the 1980's," Military Review, April 1982, pp. 40-44.

[77]Discriminate Deterrence, Report of The Commission On Integrated Long-Term Strategy, January 1988, p. 2.

technologically advanced conventional forces."[78] The debate is by no means concluded and is likely to be very controversial. How it will impact the Navy remains to be seen.

Closely related to the future of Flexible Response is the policy of forward deployment. The Commission on Integrated Long-Term Strategy recently concluded that forward deployed forces "in some critical, threatened areas" will remain a fixture of U.S. defense policy.[79] However, two trends point to a change in the nature of forward deployment. The first is the growth of regional powers in areas of vital U.S. interests (e.g., Southwest Asia, Pacific Basin, and South/Central America). Second is the difficulty of securing and maintaining bases in these regions. The Commission has identified a requirement for:

> versatile, mobile forces, minimally dependent on overseas bases, that can deliver precisely controlled strikes against distant military targets.[80]

These developments could substantially increase the role of maritime forward deployment in military strategy.

Finally, recent trends in arms control policy indicate a new emphasis on conventional force reductions.[81] Thus far attention has been centered around the conventional balance in Europe. However, naval forces are by no means exempt from the debate. In a recent statement, Soviet Secretary General Gorbachev proposed freezing or reducing the size of naval forces in the Mediterranean Sea.[82] Thus,

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[78]Richard B. Cheney and Thomas N. Harvey, "Strategic Underpinnings of a Future Force," Military Review, October 1986, p. 5.

[79]Discriminate Deterrence, p. 3.

[80]Ibid.

[81]National Security Strategy, p. 25.

[82]"World News," The Wall Street Journal, 17 March 1988, p. 1, Col. 3. He further recommended that the action begin July 1st of this year. This is the latest round of a long-standing Soviet policy to limit U.S. naval deployments.

arms control issues could influence future naval policy decisions.

3. Naval Roles

Changes in military strategy and the uses of the sea will also affect naval roles. It should be noted that this discussion concerns changes of a strategic nature. Operational and tactical matters are addressed in other sections of this study.

Strategic nuclear deterrence is more a national role than a naval one. It does not directly contribute to the nation's ability to use the sea. In many respects, however, nuclear deterrence is the Navy's most important task. This is because the ballistic missile submarine (SSBN) is the most survivable (and therefore most credible) leg of the nuclear triad. Any future development that degraded SSBN survivability (e.g., ASW advances) could undermine its credibility as a deterrent. Such a situation would probably necessitate employing a larger number of general purpose forces in a SSBN protection role. This scenario applies equally to the U.S. and the U.S.S.R. In either case, the strategic importance of acoustical research and development is apparent. Moreover, general purpose naval forces may be used more frequently in pro/anti-SSBN roles in the future.

Another changing aspect of nuclear deterrence could affect future naval roles--strategic defense. The mobility and flexibility of naval units make them possible candidates for strategic defense systems. There is, however, a major problem with this concept. The SSBN is so vital to deterrence that it is not used in other roles. A similar situation could develop if strategic defense systems were placed on surface units. The net effect might be a loss of overall naval capability. Thus, future deterrence concepts should be considered in context with their impact on other naval roles.

Finally, there is an aspect of deterrence that has not changed since nuclear weapons were first introduced. Specifically, the presence of nuclear weapons at sea "associates naval tactics with strategic considerations which override them and give them a context which must never be overlooked."[83] In other words, it is no longer possible to discuss other naval roles in a non-nuclear context.

The future of maritime forward deployment has been alluded to in the assessment of national military strategy. The trend appears to be toward an increased global naval presence to counter three factors: (1) open-ocean Soviet naval deployments; (2) erosion of the maritime right of free passage; and (3) shifting strategic emphasis from Europe to other areas of the world. The most likely kind of conflict forward deployed forces would encounter is the low intensity variety. President Reagan has stated that low intensity conflict can lead to:

* Interruption of Vital Resources
* Loss of Basing or Access Rights
* Expanded Threats to the SLOCs
* Expanded Opportunity for Soviet Gains
* Undermining Allies and Trading Partners[84]

Consequently, there is likely to be a continued strategic requirement for naval power projection. Given the lethality of modern anti-ship missiles, survivability may be as important as striking power in a future power projection force concept.

The final naval role is security of the sea lines of communications. This traditional task will be as important as ever in the future. The post-war years have been characterized by two trends relative to the SLOCs: increased

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[83]Hubert Moineville, Naval Warfare Today and Tomorrow (Oxford: Basil Blackwell Publisher Ltd., 1983), p. 45.

[84]National Security Strategy, pp. 32-34.

U.S. and allied dependence and a tendency to take free passage on the oceans for granted.[85] In peace, the SLOCs are vital to economic prosperity. In conflict, the requirement to move men and equipment across the ocean make them an integral part of the war effort. The major threats to the security of the SLOCs are the submarine in the open ocean, the patrol craft or mines in the choke-points, and land-based aircraft in both locations. Future SLOC security will require forces capable of controlling large segments of the ocean, above, below and on its surface.

E. CONCLUSIONS

The purpose of this section was to establish a strategic context for the naval planning process. Future force planning requires an appreciation for the role of maritime power in U.S. strategy. The analysis began by returning to first causes--the nature of maritime power and the six uses of the sea. The relative importance of the sea in overall strategy is determined by national interests and objectives. National military strategy then assigns broad naval roles based on the aforementioned uses of the sea. The process is useful for long-range planning because interests, objectives and strategy are relatively constant factors.

An assessment of the future can be made once the general framework is established. The objective is to identify trends and constants to guide force planning. Together, these factors define the future strategic environment. A summary of the issues identified in the foregoing analysis is presented below.

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[85]Crowe, p. 16.

USES OF THE SEA

* Increased importance of the sea in general, particularly:
  - Transport shipping
  - Resource base
* Erosion of the right of free passage

NATIONAL MILITARY STRATEGY

* Shift in strategic emphasis from Europe to Pacific Basin, South/Central America, Southwest Asia
* Abiding nuclear context for all naval operations
* Strategic Defense/Conventional Arms Control

NAVAL ROLES

* Continuing importance of sea lines of communications
* Increased maritime forward deployment as strategy shifts and foreign base access erodes
* Increased requirement for naval power projection, especially in support of sea control operations, with a corresponding increase in the risk of such operations
* Possible increase in pro/anti-SSBN role for general purpose forces

Figure 8 The Future Strategic Environment

III. THE OPERATIONAL CONTEXT: NAVAL MISSIONS

A. INTRODUCTION

> In the conduct of naval war all operations will be found to relate to two broad classes of object. The one is to obtain or dispute the command of the sea, and the other to exercise such control of communications as we have, whether the complete command has been secured or not.[86]

The purpose of this section is to develop an operational context for the naval long-range planning process. The operational context links the strategical requirements discussed above with the tactical trends examined in a later section. Analysis of the future strategic environment answers the question: What roles will future forces be required to perform? A survey of tactical trends will help answer the question: Which means should be developed? The connecting element is the operational context. It describes how the forces will accomplish their roles.

Naval force planning should be guided by both top-down and bottom-up influences. The overall goal should be to develop forces that not only fulfill strategic requirements, but also are attuned to the changing nature of naval warfare. A thorough understanding of the naval operational milieu is crucial to this process. Over the years, the content of naval operations has evolved in consonance with changes in strategic demands from above and tactical developments from below. The form of these operations, however, has remained relatively constant.[87] That form is the subject of this section--the operational context.

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[86]Julian S. Corbett, Some Principles of Maritime Strategy (New York: Longmans, Green and Co., 1918), p. 145.

[87]Content refers to the forces employed to accomplish various operational tasks and their impact on the task itself. Form is the underlying theory behind the operation (i.e., how the task was derived and why it is important).

Understanding this context is an important step toward effectively integrating changes from above and below.

The section is divided into four parts: (1) an explanation of why missions are used to describe the operational context; (2) a brief overview of peacetime and crisis missions; (3) a more detailed analysis of wartime missions; and (4) an assessment of how this information can be useful to the force planner.

B. A MISSION ORIENTATION

Naval missions were chosen to define the operational context for several reasons. First, a mission orientation focuses attention on operational outputs or objectives.[88] The purpose of a navy is to ensure or to exploit the use of the sea. Naval missions are directly concerned with securing, disputing or exercising said usage in peace and war. Second, naval missions are historically derived. Today's analyst can benefit from the works of past naval theorists by adopting this approach.

Finally, naval missions are based, in part, on the nature of the media in which the forces operate. There are several fundamental differences between land and naval warfare.[89] As will be shown, some of the confusion about the Navy's role in defense strategy results from a failure to recognize this point. For example, consider the following statement:

> The Air Force and Navy, by virtue of their focus on operational media more than warfare, have developed independent theories and strategies for the purposes and

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[88]See Stansfield Turner, "Missions of the U.S. Navy," Naval War College Review, March-April 1974, pp. 2-3; or Ken Booth Navies and Foreign Policy, p. 24 for an in-depth analysis of the benefits of a mission orientation.

[89]James J. Tritten and Roger Barnett, "Are Naval Operations Unique?," Naval Forces, No. V 1986, pp. 20-33. The authors contend naval operations are unique for the following reasons: three dimensional nature; global character; presence of non-belligerents; interaction with adversary; different objectives and weapons; and close proximity in crises.

> uses of their forces. Those independent service strategies, much more than the defense strategy, inform their visions on the kinds of forces they want and how they will use them.[90]

This study argues that what Builder mistakes for "independent theories and strategies" are nothing more than missions based upon the nature of naval (or air) operations. It is not possible to effectively integrate naval (or air) forces into defense strategy without first taking these missions into account. It is not "independent strategies" that steer the Navy and only "independent theories" in the sense that naval engagements are not fought like ground battles. The unique characteristics of the sea cannot help but inform the Navy's vision "on the kinds of forces [it] wants and how [it] will use them." The conditions and restrictions imposed by the sea help to define the operational context of naval forces. This context is best described by naval missions.

The Navy's basic mission is contained in Title 10 of the U.S. Code. It states, in part, that:

> The Navy shall be organized, trained and equipped primarily for prompt and sustained combat incident to operations at sea. It is responsible for the preparation of naval forces necessary for the effective prosecution of war except as otherwise assigned and is generally responsible for naval reconnaissance, antisubmarine warfare and protection of shipping.

This mission statement is fairly broad and generalized, as it should be. The Department of Defense has developed a more specific interpretation, especially with respect to force functions. Forces should be able to:

> seek out and destroy enemy naval forces and to suppress enemy sea commerce; to gain and maintain general naval supremacy; to control vital sea areas and to protect vital sea lines of communications; to establish and maintain local superiority (including air) in an area of naval operations; to seize and defend advanced naval

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[90]Carl H. Builder, The Army in the Strategic Planning Process (Santa Monica, CA: The RAND Corporation, 1987), p. v.

bases; and to conduct such land and air operations as may be essential to the prosecution of a naval campaign.[91]

Since the late 1950's, the Navy has condensed these multiple functions into two basic missions: sea control and power projection.[92] However, this breakdown is incomplete. It does not address the peacetime or crisis environment. For the purposes of this study, naval missions are divided into two categories: peace-keeping missions and combatant missions. This is depicted in Figure 9.

PEACE-KEEPING	COMBATANT
* Nuclear Deterrence * Naval Influence	* Sea Control * Power Projection

Figure 9 Naval Missions

The majority of the analysis will concentrate on combatant missions. While the peace-keeping function is of equal (or greater) importance, its credibility is derived in part from combatant capability. Thus, the operational link between strategic requirements and tactical trends is the interrelationship between sea control and power projection, tempered by peace-keeping.

C. PEACE-KEEPING MISSIONS

The purpose of naval peace-keeping missions is threefold: (1) to deter or dissuade another actor from taking actions detrimental to U.S. interests; (2) to reassure friends or allies of U.S. support; and/or (3) to influence the outcome of a course of events using naval forces. It should be noted that the breakdown of missions

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[91]Department of Defense, "Functions of the Department of Defense and Its Major Components," DOD Directive 5100.1, 1969, p. 9.

[92]Strategic Concepts of the U.S. Navy, p. I-3-1.

in this category (i.e., nuclear deterrence and influence) does not directly correspond to these three purposes. In fact, the vast majority of the peace-keeping function could be listed under the influence heading. Nuclear deterrence is listed separately because that function requires certain unique force characteristics. These are only briefly noted in order to address the larger issue of influence.

1. Nuclear Deterrence

As used here, nuclear deterrence refers directly to the sea-based component of the nuclear triad--the ballistic missile submarine (SSBN). It could be argued that other assets be listed under this heading (e.g., cruise missile carriers). However, from a force planning perspective, the SSBN is the only unit dedicated solely to nuclear deterrence. Other considerations influence the development of dual-capable forces.

Generally, a viable sea-based nuclear deterrent has the following characteristics: survivability, flexibility, and credibility. Survivability is the capacity to respond even after a first strike by an adversary. Flexibility is the capability to respond at varying levels of force and from varying directions. Finally, a credible deterrent is one adequate in terms of quantity and quality, combined with the perceived will to use it if attacked.

From an operational point of view, there is little else to be said of nuclear deterrence. Most of the factors that affect this category were discussed in the section on strategic requirements. However, one point is worth reiterating. Should the SSBN become more vulnerable in the future, general purpose forces may be diverted to ensure its survivability. This would be a combatant mission under the heading of sea control in support of a power projection capability.

2. Naval Influence

The naval influence mission involves the "use of naval forces, short of war, to achieve political objectives."[93] As noted above, influence can be employed to dissuade, deter, or simply reassure another actor. A navy is inherently more flexible than other forces by virtue of its ability to move freely on the seas. This enables naval forces to:

> demonstrate graphically the real fighting power of one's state in the international arena....Demonstrative actions...in many cases have made it possible to achieve political ends without resorting to armed struggle.[94]

The endurance, mobility, projection ability and relative freedom of action of naval forces provides the policy-maker with a wide range of possible options. Some of the more common uses of influence are listed below.

* To support international military commitments;
* To confirm political commitments on a routine basis;
* To demonstrate the capability to move and act in support of interests;
* To assert interest in areas far from one's shores;
* To manifest a credible war-fighting capability in times of increased tensions;
* To provide humanitarian aid;
* To coerce an opponent to comply with a preferred course of action.[95]

There is an another aspect of naval influence worthy of consideration. It not as apparent as other facets of this category. However, it becomes particularly relevant when, as is common today, an adversary's naval forces are operating in the vicinity of our own forces. Specifically, there is a distinction between sea control and naval

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[93]Turner, p. 14. See also James Cable, Gunboat Diplomacy (London: Macmillan, 1981) for specific case studies on the uses of naval influence in this century.

[94]S.G. Gorshkov, The Sea Power of the State (Annapolis: Naval Institute Press, 1979), pp. 247-8.

[95]James F. McNulty, "Naval Presence - The Misunderstood Mission," Naval War College Review, September-October 1974, p. 26. See also Booth, Navies and Foreign Policy, Chapters 2 and 3 for an in-depth look at naval presence and influence.

influence. Control of the sea in the traditional sense is not always possible in a non-war situation.[96] The presence of naval forces alone does not ensure control of the sea because one is not at liberty to eliminate an opponent's forces.

> When both parties are present, and as long as either one avoids a military clash, the relative strengths of naval forces do not play the same role as in war....Any fighting ship capable of reacting...is enough to prevent an attack. What counts is the fact that presence has to do with something other than fighting.[97]

A recent example involving naval operations off the coast of Lebanon illustrates this point. In that scenario, the U.S. established overwhelming naval superiority vis-a-vis the Soviet Union.[98] However, that massive presence could not guarantee the same degree of control that the force would have been able to assert in war. In fact, conditions of non-war might have even placed U.S. forces at a distinct disadvantage. Nothing would have (did) prevented Soviets warships from relaying to Syrian gunners the composition and location of ingressing U.S. reconnaissance or projection aircraft. In short, mere presence does not equate to control.

This distinction is important because it shows that there are limitations to what naval influence alone can achieve without combat. The simple dispatch of a naval task force may not be sufficient to achieve one's objectives. There are many factors involved in the calculus of naval influence other than war-fighting capability. Therefore, it

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[96]Jurgen Rohwer, "Naval Warfare Since 1945," USNI Proceedings, May 1978, p. 69. As will be shown, absolute control of the seas is unlikely even in war.

[97]Edward Wegener, "Theory of Naval Strategy in the Nuclear Age," USNI Proceedings, May 1972, p. 203.

[98]The U.S. Navy deployed 2 Carrier Battle Groups, a Surface Action Group and a Marine Amphibious Brigade in comparison to 3-4 Soviet combatants. It is worth noting that the Soviet Union acquiesced to U.S. dominance as compared with, for example, the 1973 Arab-Israeli War.

would be unwise to consult the mission as a guide to force planning. In the final analysis, a naval unit cannot be "designed" for influence or deterrence:

> A general deterrent effect on potential adversaries can only be conferred by an evident ability to perform conventional maritime tasks efficiently. Concentrating on the combatant function, in other words, will take care of the deterrent variant too.[99]

D. COMBATANT MISSIONS

The naval combatant missions are sea control and power projection. As noted earlier, the content of these missions has varied over the years with changes in strategic requirements and/or tactical developments. Their basic form, however, has remained relatively constant. This is because the theory from which the missions are derived is sound.

1. A Theory of Missions

Naval theory is based upon the nature of warfare and the unique characteristics of the sea.[100] With respect to warfare, theory acknowledges that man is by nature a land creature. The seat of purpose in war is always on land.[101] A navy contributes to the war effort only to the extent that it influences events ashore.

However, naval warfare is fundamentally different from war on land. In land warfare, control of territory usually equates to control of the national life of a people. For this reason, the operational objective in land warfare involves seizing and occupying territory. The same is not true in naval warfare. It is not possible to occupy the sea in the same sense that one occupies territory on land. Whereas control by one power or another is the normal state of affairs on land, the seas are characterized by an absence

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[99]Till, p. 216.

[100]The theory discussed herein is derived principally from Corbett's Some Principles of Maritime Strategy.

[101]Corbett, p. 11; or Hughes, Fleet Tactics, p. 25.

of control.[102] Thus, naval theory must account for two factors: (1) that forces be able to influence events ashore; and (2) that the seas are totally controlled by no nation.

The operational objective in naval warfare is control of the sea for a purpose. Exactly what that purpose is will vary according to one's strategic requirements and the adversary's susceptibility to influence from the sea. The important point is that the selected purpose(s) affect events ashore. It should be noted that control can be employed not only to adversely impact an adversary, but also to ensure the welfare of the people in the maritime state itself. Obviously, the decision on purpose lies at the very core of the force planning process. A navy unable to influence events ashore is irrelevant to most war efforts. This is the reason why a mission orientation is considered so crucial. Naval missions describe how forces can influence events ashore.

Corbett divided naval functions into two categories: those aimed at obtaining or disputing the command of the sea and those aimed at exercising such control as has been secured.[103] By command of the sea, Corbett meant "the control of maritime communications, whether for commercial or military purposes."[104] Obtaining command of the sea influences events ashore by denying to the enemy "the movement of his national life at sea."[105] Its impact is directly proportional to the enemy's dependence on the seas. Disputing command of the sea denies to an adversary control of communications for his purposes. It is based on the assumption that one is not strong enough to secure command for oneself. Finally, exercising command exploits

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[102]Corbett, p. 79.; Brodie, p. 91; Moineville, p. 31; Tritten, p. 25.

[103]Corbett, p. 145.

[104]Ibid., p. 80.

[105]Ibid., p. 79.

the control that has been obtained in order to directly or indirectly affect military operations on land. This category includes staging or defending against invasions, attacking or defending commerce and directly supporting projection operations against the shore.[106]

Obviously, much has changed in naval warfare since Corbett's time (e.g., the ability of naval forces to project power ashore with nuclear weapons). However, his basic theoretical framework remains valid. Sea control and power projection are the modern-day equivalents of command of the sea and the exercise of that command.

2. Sea Control

Command of the sea is more of a theoretical absolute than a plausible operational objective. Stansfield Turner has written that the transition in terminology from command of the sea to sea control was "a deliberate attempt to acknowledge the limitations on ocean control brought about by the development of the submarine and the aircraft."[107] In practice, however, command has always been relative in terms of area and time. Corbett described command of the sea as either general or local (area) and permanent or temporary (time). He also stressed that, in practice, not even general/permanent command could be absolute.[108] Thus, the term, "sea control," more accurately reflects that which is possible in practice rather than a change wrought by technology.

Sea control is the U.S. Navy's most important mission because "it is a prerequisite for the successful conduct of other types of naval operations."[109] This point should be emphasized, but not to the extreme. The

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[106]Ibid., p. 149.

[107]Turner, p. 6.

[108]Corbett, p. 90.

[109]Crowe, p. 21.

operational objective of naval forces is control of the sea for a purpose. Sea control is a necessary but not sufficient step to that end. It can only establish the conditions required to accomplish the objective. This does not mean to imply that control and purpose (i.e., sea control and power projection) are mutually exclusive missions. One does not require complete control to project power; but neither can one project power without some degree of control. The ideal naval unit has the capability to do both.

Sea control is remarkably similar to air superiority. Perhaps this is one reason why analysts like Builder claim the Navy and the Air Force have separate "strategies." Both missions aim to establish control over a vast medium for other ends. Moreover, both are somewhat irrelevant to the conflict unless they are exploited so as to affect events on land. Finally, both missions are most effectively accomplished by either destroying the adversary's forces or preventing them from accomplishing their mission.

Sea control can be defined as follows: The employment of naval (and other) forces to establish control over an ocean area for the period of time required to accomplish military objectives. Turner identifies four distinct approaches for obtaining control of the sea.[110] All are concerned with the destruction or neutralization of enemy forces.

* Sortie Control attempts to confine the adversary to its home waters or ports. This can be accomplished either by blockade or strikes on bases.
* Choke-point Control exploits geographical straits or narrows to isolate and destroy opposing forces.
* Open Area Operations actively seek out the adversary on the high seas.

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[110]Adapted from Turner, pp. 8-9.

* Local Engagement is close-in defense against attacking forces, such as in convoy escorting.

Given the difficulty of locating opposing forces at sea, the first and last approaches are probably the most efficient. However, if one has a requirement to use the seas extensively, sortie or choke-point control operations are almost a necessity. Open area operations are time consuming and tie down a large number of units. Local engagement passes the initiative at sea to the adversary.

There are also varying degrees of sea control. These are depicted in Figure 10.[111] Again, these categories are relative with respect to area and time. The goal is to obtain that degree of control necessary to accomplish military objectives. Obviously, movement toward absolute control (i.e., command of the sea) improves one's strategic position vis-a-vis the enemy. Nonetheless, the overall naval objective is not to gain or maintain control, but rather to use the sea for other purposes or deny use to others.[112] These purposes fall under the general heading of power projection.

* ABSOLUTE.....	Complete Freedom of Action; Enemy Cannot Operate
* WORKING.....	General Ability to Operate; Enemy at Great Risk
* DISPUTED.....	Each Side Operates With Considerable Risk
* ENEMY WORKING.....	Position # 2 Reversed
* ENEMY ABSOLUTE.....	Position # 1 Reversed

Figure 10 Degrees of Sea Control

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[111]Adapted from Eccles, p. 54.

[112]Herbert Rosinski, The Development of Naval Thought (Newport, RI: Naval War College Press, 1977), p. xxii.

3. Power Projection

Naval power projection is defined as follows: The employment of sea control in order to directly or indirectly support the land, sea or air campaign. This definition is closely patterned after Corbett's exercise of command. The objective is to exploit the degree of control that has been obtained to influence events ashore.

The following tasks are associated with the mission:

* Nuclear Strike
* Movement/Protection of Military Reinforcements and Logistical Support Equipments
* Commerce Interdiction
* Naval Gunfire/Missile or Tactical Air Support
* Amphibious Landing of Forces

The above definition is broader than the one that has dominated U.S. naval thought since 1945. The prevalent U.S. conception of power projection arbitrarily draws a line at the water's edge: those functions that are accomplished afloat are labelled sea control; those that involve breaching the shoreline fall under the heading of power projection.[113] One probable reason for this division is that, for a number of years after World War Two, the U.S. Navy encountered no significant opposition at sea. Naval doctrine naturally focused on those tasks likely to have the greatest impact ashore. The notion of naval power projection became closely linked to gunfire support, tactical air projection and amphibious assault. In the long run, however, this arbitrary division is dysfunctional. It complicates the task of articulating naval requirements. Two current trends could exacerbate the situation in the future.

First, the growth of the Soviet Navy, combined with the proliferation of shore-based anti-ship weapons (aircraft

[113]See especially Turner, p. 10-13. Naval bombardment, tactical air projection and amphibious assault are the tasks most commonly included in the power projection category.

and missiles), has compounded the problems associated with sea control. The U.S. Navy can no longer depend on obtaining an uncontested ability to operate at sea, especially close to land. This trend has increased the risks involved with traditional over-the-shore projection tasks. It also directly challenges another projection operation--the movement of military goods and troops by sea.

Second, there has developed a tendency to classify specific platforms as either sea control or power projection units. The classification is based on the perceived ability of the unit to directly attack or support an attack against the shore. The trend has contributed, for example, to the arbitrary designation of the AEGIS-equipped cruiser as a power projection ship.[114] The argument against AEGIS could then be made along the following lines: AEGIS is an expensive asset that supports over-the-shore projection operations; those operations may be less feasible in the future; therefore, there is no requirement to procure a large number of AEGIS platforms.

The long-term implications of these trends are ominous. On the one hand, the proliferation of a largely airborne threat could directly challenge the U.S. ability to establish working control of the sea. On the other hand, a platform that is highly capable of countering that threat is endangered simply because it is associated with one aspect of the power projection mission. This example is a symptom of a larger problem. The debate on AEGIS and the future of the aircraft carrier has focused almost exclusively on over-the-shore power projection. There has been little recognition of the most important point with respect to naval missions--that sea control and power projection are directly interrelated.

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[114]See CBO Report, Future Budget Requirements for the 600 Ship Navy, p. 7, or John A. Williams, "The U.S. Navy Missions and Force Structure: A Critical Appraisal," Armed Forces and Society, Summer 1981, p. 501.

4. Mission Interrelationship

Admiral Crowe has written that "sea control and power projection are closely related...both functions depend in large measure on the same forces."[115] In this view, the notion of a "power projection ship" makes little sense. The interrelationship between the naval combatant missions is a function of three factors: (1) the naval operational objective; (2) the maritime environment; and (3) fiscal necessity.

The naval operational objective is control of the sea for a purpose. The purpose (i.e., one of the power projection tasks) cannot be accomplished without establishing some degree of control. Control for its own sake is irrelevant. The two missions fit together naturally.

The maritime environment imparts an advantage to the side that actively seeks out the adversary. Corbett wrote that "since maritime communications are common [to all], we as a rule cannot attack...the enemy without defending" ourselves.[116] Forward sea control operations automatically support power projection functions by actively engaging opposing forces. This enhances the survivability of nuclear forces, protects combat replacement forces and supplies transported by sea, and provides a secure operating area for other projection tasks. Conversely, to effectively operate in a forward sea control role requires some capability to project power. The range of modern weapons dictates that naval platforms have the capability to strike targets both at sea and ashore. Otherwise shore-based facilities could strike forces at sea with impunity.

Finally, there is a limit to the amount of resources that can be devoted to naval construction. Therefore, it is important that deployed units be multi-mission capable. The

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[115]Crowe, p. 22.

[116]Corbett, p. 86.

common misperception is that platforms such as AEGIS or the aircraft carrier are only suitable for over-the-shore power projection. It is then argued that too many assets are required to defend a rather small force of attack aircraft.

This analysis neglects two key points: (1) that the forward deployed carrier battle group facilitates free use of the sea elsewhere; and (2) that the battle-group's "defensive" air assets protect the entire fleet while attriting opposing forces. The attrition of opposing forces to facilitate free use of the seas is the definition of sea control. Sea control and power projection are directly interrelated. In the final analysis, the ideal naval platform is one whose capabilities are maximized for both missions.

E. NAVAL MISSIONS AND FORCE PLANNING

1. Summary

The central theme of this section has been that naval missions provide an operational context for the force planning process. The operational context links projected strategic roles with tactical trends. It describes how forces accomplish their assigned functions. Naval warfare is fundamentally different than war on land (and similar to war in the air). Naval theory simultaneously explains and accounts for this uniqueness. Missions are based upon and derived from naval theory. Therefore, a mission orientation assures that force planning decisions are compatible with the nature of operations at sea.

Naval missions can be divided into two categories: peace-keeping and combatant. Although forces cannot be specifically designed for peace-keeping, that function influences the planning process. The effectiveness of a deterrent force is directly related its the combatant capability. However, combatant features should not inadvertently undermine deterrence.

The naval combatant missions are sea control and power projection. Sea control is the employment of forces to establish control over an ocean area for the period of time required to accomplish military objectives. It is relative with respect to degree, area and time. If one has a requirement to use the sea extensively, sortie and/or choke-point control operations are the most effective means to that end.

Power projection is the exercise of sea control in order to directly or indirectly influence events ashore. It is usually associated with operations that breach the shoreline. However, it also concerns forces operating at sea that could eventually affect events ashore (e.g., nuclear forces; own or adversary's troop transport/supply assets). Sea control and power projection are directly interrelated. The capabilities of the ideal naval platform are maximized for both missions.

2. Missions and the Future Strategic Environment

In the section on the future strategic environment at sea, four trends were identified that could affect the naval role in national military strategy.

* Increased importance of the sea lines of communications.

* Increased dependence on forward maritime deployment as strategy shifts and foreign base access erodes.

* Increased requirement for naval power projection, especially in support of sea control operations, with a corresponding increase in risks both at sea and close to shore.

* Possible increase in pro/anti-SSBN role for general purpose forces.

Essentially, these trends indicate that the U.S. will be more dependent upon free use of the seas in the future. It is also likely that the Navy will have a limited number of assets in the years ahead. From a mission perspective, a nation with a strategic requirement to use the sea extensively but with limited assets available should

adopt a forward strategy. However, the growth of the Soviet Navy and the general proliferation of the land-based anti-ship threat increases the risks associated with forward deployment. Forces are at risk as soon as they enter key operating areas.

It is generally not possible to project power without first establishing some degree of control. The changing nature of the threat is making sea control more complicated. Therefore, at least in the near future, the sea control mission is likely to be of paramount importance. At a minimum, effective sea control ensures the security of reinforcements, supplies and nuclear forces at sea. In the general scheme of a land war, these projection functions are more important than the over-the-shore naval variety.

In the long-term, however, these trends highlight what should be a major naval force planning goal. Specifically, future naval forces should be capable of operating in an increasingly hostile forward environment. Moreover, they should have the capability to establish control and project power ashore simultaneously. An examination of naval tactical trends could help to identify some of the systems to be incorporated on future naval platforms.

IV. THE TACTICAL CONTEXT: TRENDS IN NAVAL WARFARE

> The tactical theories prevailing at any one time will determine not only the constitution of fleets but also the design of the individual warship.[117]

Bernard Brodie's observation on tactical theories and the constitution/design of fleets highlights the central theme of this section of the study. Decisions on the kinds of forces to procure are greatly influenced by perceptions on the nature of naval warfare--the prevailing tactical theories. Therefore, the planning process should contain a mechanism to ensure that tactical ideas keep pace with trends in naval warfare. The discussion which follows is an attempt to develop such a mechanism, a tactical context for the planning process.[118]

A. INTRODUCTION

It has been shown that projected strategic requirements should determine future naval roles in national military strategy. Naval missions operationalize these roles, but only in broad, general terms. At this stage (i.e., the tactical level), the naval force planning challenge is twofold: (1) to develop force concepts that fulfill strategic requirements; and (2) to ensure that these concepts are attuned to the changing nature of naval warfare.

In many respects, the development of a tactical context is the most difficult phase of the planning process. Relative to strategy and missions, the nature of naval warfare is constantly evolving. Moreover, a force premised on faulty or outdated ideas may fail miserably in combat.

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[117]Bernard Brodie, A Guide to Naval Strategy (Princeton, NJ: Princeton University Press, 1944), p. 265.

[118]Tactics is defined here as the "use of forces in battle."

The objective is to adapt both theory and force structure to meet the challenges of the future.[119]

This is no mean task given the complexity of modern naval operations.[120] The task is further complicated by the dual nature of warfare--one's will is directed "at an animate object that reacts."[121] The efficacy of tactical theory depends, in part, on the adversary's counter-moves. Thus, there are inherent uncertainties associated with the already complex study of tactics. In fact, tactical uncertainties are so great that the U.S. Navy's sole Vietnam War ace maintains that "nothing is true in tactics."[122] Brodie concurs: "there is nothing right or wrong but thinking makes it so applies even to the tactics of fleet actions."[123] It is doubtful that either Cunningham or Brodie intended for their comments to discourage tactical study.[124] Rather, they were probably warning against adopting an overly rigid approach to the subject. In other words, there are few, if any, absolutes in tactics.

A basic framework for analysis emerges from the above discussion. The tactical context for the force planning process incorporates three elements. First, the general character of the force concept under review is derived based

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[119]This discussion is not intended to promote change for change sake; nor does it imply that change is an absolute requirement. A force based upon the lessons of the last war is acceptable provided it is capable of fulfilling future requirements. The important point is to ensure that force concepts are evaluated in terms of the future, not the past.

[120]See James Watkins, "The Maritime Strategy," in USNI Proceedings Maritime Strategy Supplement, January 1986, p. 14, for a depiction of the complexity of naval operations.

[121]Edward N. Luttwak, Strategy (Cambridge, MA: Harvard University Press, 1987), p. 16.

[122]Robert Shaw, Fighter Combat (Annapolis: Naval Institute Press, 1985), p. x. Commander Randy "Duke" Cunningham achieved five victories during the Vietnam War.

[123]Brodie, p. 251.

[124]Cunningham has taught fighter tactics for the past 15 years; Brodie believed tactics "should be a full time occupation" for naval personnel (p. 247).

upon projected strategic requirements, as refined by combatant mission considerations. Second, a model is developed to facilitate tactical analysis. It should be broad enough in scope to account for the complexities and uncertainties inherent in naval operations. Finally, the force concept is evaluated in terms of the model. The objective is to identify promising avenues down which future research and development programs might move.

It should be noted at the outset that the discussion below does not consider all aspects of naval warfare. Rather, the focus of attention is on the central naval mission--sea control.[125] As has been shown, there are good reasons for emphasizing sea control over other facets of naval warfare. However, this narrow focus necessarily means that the analysis is incomplete. A different tactical model would be required to analyze other aspects of naval warfare (e.g., amphibious assault, commerce raiding, or nuclear strike).

B. FORCE CONCEPT: THE BATTLE FLEET

1. Battle versus Strike Forces

There is a fundamental difference between forces designed for battle and those designed for strike warfare. Battle forces combine the capability to concentrate offensive power against the opposition with the capacity for sustained defense.[126] Strike forces rely on surprise, stealth or speed to generate a one way assault against the opposition. They possess little or no means for defense.[127] The aircraft carrier battle group or surface action group are examples of battle forces. Submarines, attack aircraft or missile-carrying patrol craft are examples of strike forces.

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[125]This includes power projection in support of sea control.

[126]Lautenschlager, Fall 1983, p. 5.

[127]Ibid.

Obviously, the difference between battle and strike is one of degree.[128] Most naval units possess elements of each. In fact, the ideal naval unit would combine a potent striking potential with the capacity to survive in a hostile environment. Nonetheless, the distinction is important in force planning.

The proper balance of units and capabilities within a naval force depends upon its intended function.[129] Generally, strike-oriented naval forces are instruments of denial and/or destruction. They can deny to the adversary the ability to use the seas for its purposes. Alternately, they can deliver destructive firepower against targets ashore. Therefore, a strike fleet might best serve the interests of a country whose objectives include sea denial.[130]

Battle-oriented forces, on the other hand, are instruments of control and/or influence. Their capacity for sustained forward operations facilitates establishing control over large sections of the ocean for other purposes. Once working control has been secured, it can be exercised in ways that influence events either at sea or ashore. Control of the sea means control above, below and on the surface of the ocean. The surface ship is the only naval unit capable of sustained operations in all three of these media.[131] Therefore, the centerpiece of the battle fleet traditionally has been the capital surface ship. Nations

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[128]Soviet naval theorists also make the distinction between strike and battle. See Gorshkov, The Sea Power of the State, pp. 224-26; or "The Development of the Art of Naval Warfare," USNI Proceeding, June 1975, pp. 56-57.

[129]Lautenschlager, Fall 1983, p. 5; Gorshkov, The Sea Power of the State, p. 253.

[130]For example, the Jeune Ecole, Germany in both wars and the USSR.

[131]Four, if one includes space.

with a requirement to use the sea extensively have usually opted for the battle fleet.[132]

Historically, the choice between battle and strike forces has not been as clear-cut as is implied above. Battle fleets are usually more expensive to design, procure, and operate than are strike forces by virtue of their capability for sustained offense and defense. Moreover, the ability of the capital surface ship to operate in all three media also means that it can be attacked by strike forces optimized for one. This has led to periodic warnings about the vulnerability of the battle fleet to less expensive strike assets. Indeed, a prominent characteristic of 20th Century naval development has been the ongoing competition between battle and strike forces.[133] The dominant naval vessel has been the one that combined state-of-the-art strike assets with defensive staying power.[134] Attaining and maintaining that offensive-defensive mix should be the major force planning goal of the battle fleet nation.

2. Strategic Requirements

The distinction between battle and strike provides some perspective on U.S. force planning options. As previously stated, the choice of what kind of fleet to build should be governed by its intended function. Several general conclusions can be drawn about future U.S. naval functions from the preceding sections on strategical and operational matters.

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[132]For example, England, Japan, and the United States.

[133]This is especially the case in the nuclear era. Many contend that the destructive power of nuclear weapons provides the strike fleet with a potentially decisive edge in the competition. See Gorshkov, The Sea Power of the State, p. 224. This study rejects that assertion.

[134]For example, the battleship, aircraft carrier and, potentially, the nuclear submarine.

* The U.S. will be more dependent on the seas in the future;

* Limited availability of naval assets (and other factors) will necessitate continued maritime forward deployment;

* The sea-based and land-based threat to U.S. naval forces will increase; and

* In order to accomplish strategic objectives at sea and ashore[135], U.S. naval forces will require the capability to establish working control of the sea in forward regions.

Essentially, future naval forces will be required to fulfill the functions traditionally accomplished by the battle fleet--control above, below, and on the surface of the ocean so that other objectives might be pursued. Meanwhile, the threat to that fleet continues to grow. The perceived vulnerability of the present U.S. battle fleet has caused many to question its future viability. Analyzing how that fleet functions and the principal threat to it may reveal some of the force planning issues that should be addressed in the future.

3. The Carrier Battle Group

Since the Second World War, the basic unit of the American battle fleet has been the aircraft carrier battle group (CVBG). The scope of naval warfare has so expanded over the last 50 years that no one ship can function effectively in any role without the support of others.[136] It is the battle group, not an individual warship, that is the basic fleet element.[137]

This distinction is important and is often overlooked in the debate about the future of the aircraft carrier. The value of the carrier to the battle fleet is

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[135]At a minimum, these objectives would include security of the SLOCs, reinforcements, and nuclear forces at sea.

[136]To some extent, this has always been the case; the battleship required cruisers for scouting and destroyers for screening. Today, however, the fleet is much more interdependent.

[137]Lautenschlager, Fall 1983, p. 31.

directly proportional to the importance of airspace in naval warfare. As man mastered aerial forms of reconnaissance and weapons delivery, the role of the carrier grew. However, the basic structure and purpose of the fleet preceded its rise. The carrier did not replace existing capabilities, it merely supplemented them.

Recall that the purpose of the battle fleet is to establish control above, below and on the surface of the ocean for other ends. This relationship can be expressed in terms of three concentric circles emanating outward from the fleet's operational center as depicted below.[138]

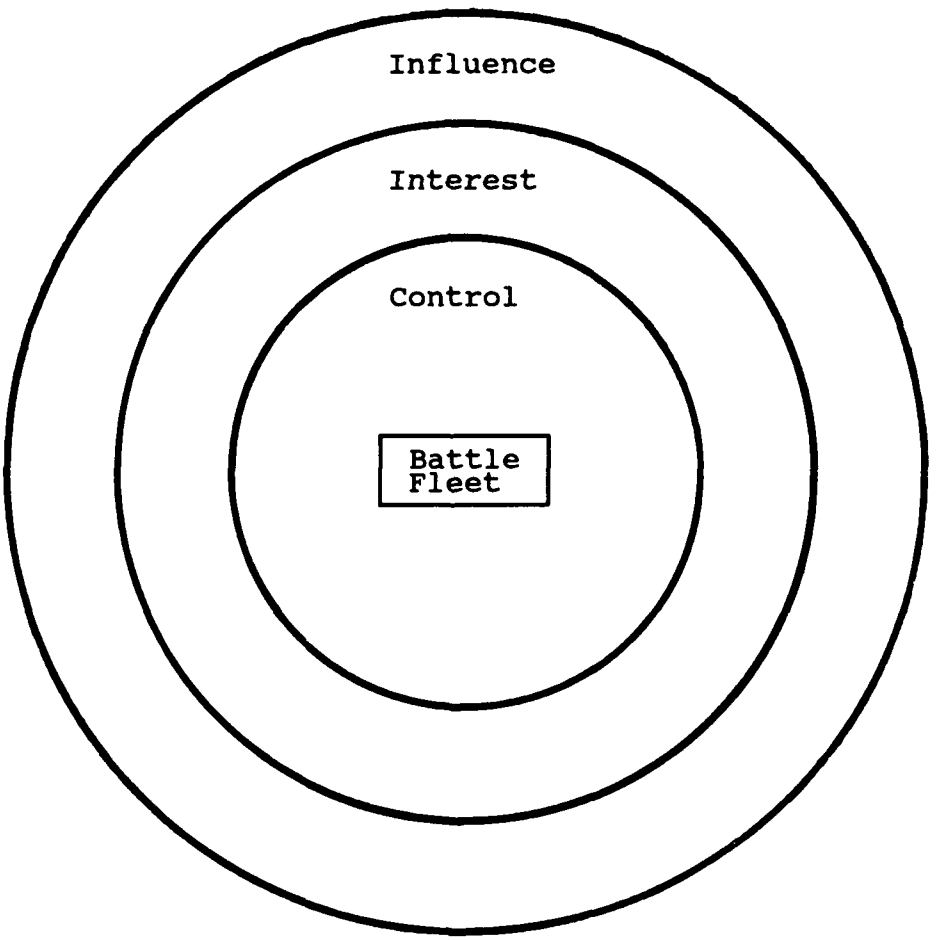

Figure 11 Sea Control Zones

[138]Adapted from Hughes, Fleet Tactics, p. 168.

The area within the circles can be defined as follows:

* Zone of Control--Working control established; own forces have relative freedom of action; adversary operates at great risk.
* Zone of Influence--Disputed control; own forces capable of minimum action; both sides operate at risk.
* Zone of Interest--Disputed or enemy working control; own forces capable of surveillance only.

The zones can be thought of as invisible bubbles that move with the battle fleet. Their exact dimensions vary over time as a function of the threat, environmental conditions and other factors. Obviously, the objective is to expand one's zone of control at the expense of the adversary.

The warfare tasks associated with sea control can be divided into four categories; anti-submarine warfare (ASW); anti-surface warfare (ASUW); anti-air warfare (AAW); and strike ashore. Figure 12 juxtaposes these tasks with the units usually designated to accomplish them.[139] The diagram makes apparent the primary contribution of the carrier--expansion of the battle fleet's zones of control, influence and interest into more distant areas. The oft-cited charge that the carrier has a monopoly on offensive power applies only if one regards conventional strike ashore as the fleet's primary mission. However, if one believes that the proper mission emphasis is "sea control with a power projection capability," the current mix seems relatively balanced. The important point is that the carrier exists to support the fleet and not vice versa.

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[139]Adapted from James L. Holloway, "The U.S. Navy - A Functional Appraisal," Oceanus, Summer 1985, p. 6.

WARFARE TASKS	CARRIER	SURFACE	SUBMARINE
ASW			
Distant	X		X
Close	X	X	X
ASUW			
Distant	X		X
Close	X	X	X
AAW			
Surveillance	X	X (AEGIS)	
Distant	X		
Close	X	X	
Strike Ashore			
Nuclear	X	X	X
Conventional	X		

Figure 12 Naval Platforms vs Warfare Tasks

The principal threat to the U.S. battle fleet is the anti-ship cruise missile (ASCM). The ASCM is the premiere naval strike weapon of this century. It is based upon the same principles as the Japanese Kamikaze raids in the waning days of World War II. The ASCM attempts to overwhelm opposing defenses through a combination of speed, accuracy and numbers. When launched from traditional strike platforms (e.g., the stealthy submarine or speedy aircraft), it is even more difficult to counter. Finally, the ASCM can be equipped with either a standard or nuclear warhead.

The conventional wisdom is that the ASCM has made the U.S. battle fleet overly vulnerable. It is argued that the ASCM is the "first weapon of the post-war era that has the capability to defeat the carrier in a conventional engagement...[It has] forced the hunter to become the hunted."[140] Such statements are usually followed by a reference to the Israeli destroyer ELATH, sunk in 1967 by

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[140]L.P. Brooks, "The Impact of Technology on Fleet Structure," USNI Proceedings, February 1981, p. 47.

Egyptian KOMAR patrol boats firing STYX missiles.[141] More recently, the example of the HMS SHEFFIELD, sunk by an EXOCET missile during the Falklands conflict, has been used to illustrate surface ship vulnerability to the weapon.

There is little doubt that the ASCM presents a formidable challenge to surface units. Importantly, the weapon's long range and lethality could decrease the battle group's zones of control, especially close to land. However, it is not at all apparent that the threat is insurmountable. In an article about technology's influence on naval warfare, Karl Lautenschlager writes of the historical tendency to overestimate the effectiveness of strike forces in peacetime. He includes the submarine, torpedo boat, airplane and anti-ship cruise missile in the analysis:

> [E]very decade or so...it becomes popular to declare that the novel weapon can make battle fleets obsolete....[I]n most of these cases, when technology has been employed to produce a small, inexpensive device that can sink a capital ship, the mere possibility of sinking those big ships is often assumed to make them immediately obsolete.[142]

Lautenschlager's point warrants further examination. The mere fact that ships have been sunk by the weapon does not make all ships vulnerable. In fact, the sinking of the ELATH and SHEFFIELD reveals little about the vulnerability of U.S. battle forces. The ELATH "foolishly appeared within range of the harbor from which the missiles were fired, heedless of her position and the possibility of being fired on."[143] The SHEFFIELD was attrited in the course of supporting a successful amphibious assault. In peacetime, it

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[141]For example, see U.S. Congress, Joint Senate-House Armed Services Subcommittee on CVAN-70 Aircraft Carrier (Washington: Government Printing Office, 1970), p. 160.

[142]Lautenschlager, Fall 1983, p. 16.

[143]Jurgen Rohwer, "Naval Warfare Since 1945," USNI Proceedings, May 1978, p. 74.

is often forgotten that naval warfare is attrition-based.[144] While losses should not be dismissed, they still must be expected. Finally, neither ship was supported by a battle fleet capable of controlling the airspace in the area of operations.[145]

These examples arbitrarily equate possibility with probability: what has happened once will always happen. Lautenschlager stresses that:

> Probability, as opposed to theoretical possibility, brings the operational utility of novel weapons into question because probability depends on numerous factors related to the operational conditions, fleet defenses, and tactics.[146]

Thus, it was theoretically possible for Egyptian and Syrian craft to sink a sizable portion of the Israeli Navy in one afternoon during the 1973 Yom Kippur War. However, probability, in the form of skilled Israeli tactics, thwarted Arab efforts. The Israeli's decoyed or destroyed all 55 of the longer-range STYX missiles fired at their forces. They then closed to sink five of the adversary's ships.[147]

4. Assessment

The purpose of the preceding discussion was to establish a general frame of reference to facilitate further tactical analysis. Some of the key issues are summarized below. An essential element to be considered in determining

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[144]Hughes, Fleet Tactics, p. 7.

[145]In the South Atlantic, the British had no airborne early warning aircraft. Moreover, HARRIER on station time was limited to 20 minutes. The HARRIERs performed admirably under the circumstances, shooting down 31 Argentine aircraft. However, they by no means achieved control of the airspace over the operating area.

[146]Lautenschlager, Fall 1983, p. 16.

[147]William J. Ruhe, "Anti-Ship Missiles Launch New Tactics," USNI Proceedings, December 1982, p. 60. The Israeli's accomplished a similar feat against Syrian surface to air missiles (SAM) in 1982. Most of the Syrian's highly-rated Soviet SA-6's were either decoyed or destroyed on the ground. The IAF then shot down 89 Syrian aircraft, whose tactics relied heavily on the destroyed SAMs.

the character of a future force is the distinction between battle and strike. Battle forces are able to engage in sustained, forward operations by virtue of their combined capability for offense and defense. An implicit assumption underlying the battle fleet concept is that destructive capacity alone is not sufficient to assure control. Strike forces rely on stealth, speed and/or numbers to generate a decisive pulse of firepower. In practice, the difference between the two is a matter of degree.

The decision on whether to develop a battle fleet or a strike fleet should be based upon its intended function. Projected U.S. strategic requirements indicate that future forces will have to fulfill traditional battle fleet functions. The current U.S. battle fleet consists of 12-15 aircraft carrier battle groups. Each CVBG is capable of establishing zones of control so that other operations might be accomplished.

The principal threat to the CVBG is the anti-ship cruise missile (conventional or nuclear) launched from surface, subsurface or airborne strike platforms.[148] The range and lethality of the ASCM threatens forward deployed battle forces. The weapon presents a formidable challenge to surface units, as demonstrated by recent naval actions. However, the evidence from these actions is ambiguous. It has yet to be determined whether the ASCM will prove to be more effective than previous strike weapons, whose actual performance failed to match perceived potential. Nonetheless, the ASCM is likely to be the major impediment to battle fleet operations in the future.

Obviously, a central U.S. force planning issue is whether or not ASCMs have wrought such a dramatic change in naval warfare as to render the battle fleet obsolete. Based on the historical record cited above, this study maintains

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[148]The weapon can also be launched from shore facilities.

that they have not.[149] The prevailing U.S. tactical theory--a battle fleet of multiple CVBGs--is sound in relation to U.S. strategic requirements. The perceived vulnerability of the fleet is more a function of the rise of an opposing navy that has adroitly exploited (and exported) new technology than doctrinal flaws.

From 1945 until around 1970, the U.S. Navy enjoyed almost total freedom of action at sea.[150] The rise of the Soviet Navy challenged U.S. sea supremacy. The Soviets built a strike fleet of missile-firing surface, subsurface and airborne units. This fleet fulfilled their strategic requirements of denial at sea and destruction ashore. Moreover, by choosing this direction of development, they avoided an analogous response to the U.S. sea-based threat. Had the Soviets decided to construct a carrier-based battle fleet, they would have consistently lagged behind U.S. developments in the field.[151] As a result of their foresight, the current Soviet Navy presents a fairly formidable challenge at sea.

During the same period, the lack of substantial opposition at sea caused the U.S. Navy to focus on over-the-shore power projection capabilities. The Korean and Vietnam Wars provided further impetus to pursue this course. In both those wars and the multiple crises to which forces have responded since 1945, the fleet has operated with relative impunity offshore. The net result is that current CVBG

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[149]See also Hughes, Fleet Tactics, Chapter 4 for an analysis of how surface units adapted to the last decisive strike weapon--the airplane. Hughes maintains that by 1944, surface combatants had "redressed the balance of power they had lost to naval aircraft." The inability of Japanese aircraft (except for the Kamikaze raiders) to effectively penetrate shipboard AAW suites lends credibility to his conclusion.

[150]In 1971, the Soviet Navy counteracted U.S. naval presence during the Indo-Pakistani War. By the 1973 Yom Kippur War, the extent of Soviet naval opposition was such that some questioned the ability of U.S. forces to prevail had hostilities erupted.

[151]Eberle, p. 30.

capabilities may be more geared toward unopposed power projection than opposed war-at-sea operations.

In summary, the prevailing U.S. tactical theory is sound in relation to strategic requirements. However, it is viewed to be somewhat lagging with respect to trends in naval warfare. In order to help fulfill strategic objectives, the Navy must be capable of sustained, forward sea control operations. The continued proliferation of the ASCM could directly challenge its ability to do so. For this reason, a major U.S. force planning goal should be to redress the potential imbalance brought on by the ASCM. In developing future systems and platforms, planners must strive to attain the optimum offensive-defensive mix that is essential for a battle fleet to function effectively. The model presented below suggests one method of conceptualizing that problem.

C. A TACTICAL MODEL

Any model purporting to simulate naval warfare at the tactical level must do so at a relatively high degree of abstraction. Naval combat is a complex process in which several events usually must occur before the tactical objective--destruction of the opposing force--is realized. Fortunately, an abstract model can be useful to the planner provided it focuses on these events rather than particular forces. The planner is concerned with developing a network of systems capable of defeating the adversary in a force-on-force engagement. The specific capabilities of individual units are important only to the extent that they contribute to that overall system. The proper planning perspective is on total force capability in which, for example, ordnance delivery capacity is only one aspect.

In an article about forecasting future naval forces, Charles D. Allen wrote that:

> There are and always have been more far-reaching linkages that operate across the whole span of naval warfare and technology....[They are] more difficult to identify, but they are the key to forecasting the future shape of the Navy.[152]

Allen stressed the importance of analyzing how forces interact in combat. This analysis would reveal various linkages which, according to Allen, could aid in the development of new systems capabilities.

In a recent book titled Fleet Tactics: Theory and Practice, Captain Wayne P. Hughes, Jr., USN (Ret.) skillfully uncovered these tactical linkages. Hughes wrote that "the key to fruitful study of tactics is an appreciation of how battles transpire in time and space."[153] He then proposed several processes to describe the tactical milieu. In his book, these processes provided a backdrop for examining historical trends, constants and contexts in naval warfare. This study contends that Hughes' processes can also aid in force planning. They accurately describe the network of functions that the basic naval element should be capable of performing.[154]

1. The Tactical Processes

Naval warfare is attrition-based: "whereas armies have historically armed and supported man, navies have essentially manned and supported the arm."[155] Destroy or neutralize the arm (i.e., the naval vessel) and the tactical task is complete. Therefore, the first tactical process is

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[152]Charles D. Allen, "Forecasting Future Forces," USNI Proceedings, November 1982, p. 76.

[153]Hughes, Fleet Tactics, p. 145.

[154]Recall that the basic naval element is, for example, the CVBG, not an individual ship.

[155]Lautenschlager, Fall 1983, p. 5.

firepower: "the capacity to destroy the enemy's ability to apply force."[156]

In land warfare, geographical factors such as terrain limit the commander's range of choice on the disposition and employment of forces. There are few such restrictions at sea. The uniformity of the ocean surface (and subsurface/airspace) provides the naval commander with a wide range of employment options. Therefore, detection and localization of opposing forces becomes a key tactical task. This is the process of scouting:

> Acts of search, detection, tracking, targeting and enemy damage assessment, including reconnaissance, surveillance, signals intelligence....Scouting is not accomplished until the information is delivered to the commander being served.[157]

Naval forces must be directed in order to accomplish their objectives. This is the process of command and control (C2). C2 includes assessment of scouting information, decisions on employment of assets and dissemination of those decisions.[158] As the focus here is on force planning, a word of caution about C2 systems is warranted. Clausewitz wrote that a large part of the information in war is contradictory, false or of doubtful character: "what is required of an officer is a certain power of discrimination which only knowledge of men and things and good judgment can give."[159] While it is certainly possible to envision systems to improve the command process, in the final analysis, the quality of C2 is a function of the commander and staff.

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[156]Hughes, Fleet Tactics, p. 145.

[157]Ibid., p. 288.

[158]Ibid., p. 287.

[159]Clausewitz, p. 162.

The actions taken by the commander do not occur in a vacuum. The remaining three processes are the result of war's dual nature:[160]

> Counterforce--The capacity to reduce the effect of enemy firepower. The aggregate of defensive force (hard or soft kill of weapons) and staying power (capacity to absorb damage).
>
> Antiscouting--Actions taken to destroy, diminish or preclude enemy scouting effectiveness (destroy, deceive, jam or interfere).
>
> Command and Control Countermeasures (C2CM)--Actions taken to defeat or delay the effectiveness of the enemy's C2.

Hughes reduced the objective to which all tactical activity is geared to three words: attack effectively first. An effective attack is one that eliminates the enemy's capacity to apply force. To summarize:

> A concentration of force against force is always the best way to grasp the essence of tactics; effective scouting is the key to delivery of firepower; and C2 directs...decisions regarding force, counterforce, scouting and antiscouting measures employed against an enemy who is taking similar measures to strike first.[161]

The tactical processes are useful in conceptualizing future force requirements for two reasons. First, they account for the dual nature of war. In a force-on-force engagement, every action is subject to an enemy reaction. The objective is to maximize one's opportunities to apply force and to minimize, impede or degrade the opportunities open to the adversary. It is not sufficient to design a future unit solely around firepower considerations, especially if it is to be part of a battle fleet.

Second, the processes are general enough to be applicable to a wide range of tactical activity. In many respects, the division of warfare tasks into discrete categories such as ASW or AAW is dysfunctional. The tendency

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[160]Definitions from Hughes, pp. 287-289.

[161]Ibid., p. 15.

is to associate specific units with a particular category (e.g., a frigate is an ASW platform or the F-14 is an AAW asset). Platform capabilities are then maximized for that warfare task.

However, the measure of effectiveness of an individual platform is its overall contribution to the battle group. Perhaps a more prudent approach to planning would be to design forces around the concepts that guide their employment. In combat, forces act as an interdependent network of systems controlled by the battle group commander. The key word here is "systems." For example, the F-14, AEGIS cruiser and shipboard point defense missiles form one type of counterforce system. Based on information from his scouting system, the tactical commander employs these assets to diminish the effect of enemy firepower. While performing the counterforce role, these units may also contribute to the scouting, antiscouting and firepower systems. The important point is that, in combat, most units are capable of performing a range of activities that transcend traditional warfare categories. The individual responsible for making the whole operation mesh is the battle group commander. He is concerned with total capability: the synergistic effect of properly employed subsystems from various platforms. In this view, forces should be planned from the perspective of the battle group commander. Hughes' tactical processes are much more representative of how a commander views the battle than are specific warfare categories.

2. The Engagement Time Line

The second half of the tactical force planning model is the engagement time line. Whereas the tactical processes describe the various activities that may occur during a force-on-force encounter, the engagement time line arranges these activities into a logical sequence of events. This is depicted in Figure 13.

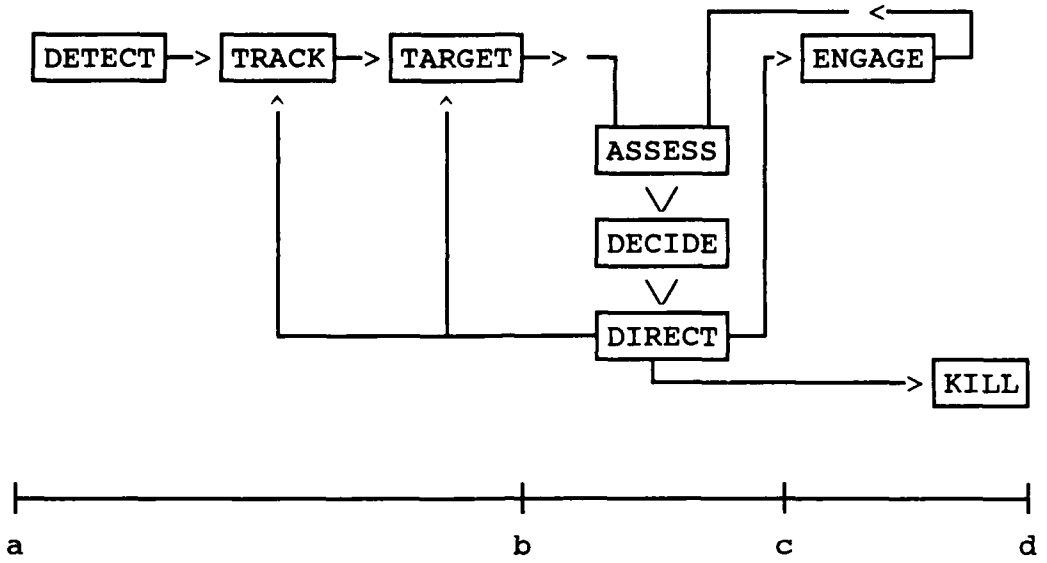

Figure 13 Engagement Time Line

There are several limitations to the engagement time line. First, the diagram only shows one side of the action. Obviously, the adversary has its own line. Second, actions taken by the adversary to impede our movement along the line are not depicted. Finally, the figure represents a snapshot in time. It only illustrates one engagement during one particular period of time. In reality, the tactical environment would be characterized by multiple engagements progressing at various rates along the line against an adversary attempting the same.

Despite these limitations, it is possible to visualize a tactical encounter using the model. Bearing in mind once again that this is a static depiction, the activity that occurs between "a" and "b" is scouting and antiscouting. Own forces are taking actions to detect, track and target the opposition; they are also attempting to impede the adversary's targeting process. The

scouting/antiscouting phase concludes when the information is received by C2.

C2 and C2CM activities occur between "b" and "c". The mass of information obtained by scouts must be filtered through the assessment-decision-direction loop. Decisions must be made and promulgated on whether to continue monitoring or to engage the target. Moreover, after initial and/or subsequent engagement, an assessment must be made on whether or not the contact has been eliminated. The C2/C2CM phase is by far the most complicated part of the engagement. C2 is affected both by countermeasures aimed at the command process and, indirectly, by antiscouting and counterforce measures aimed at reconnaissance, targeting and firepower assets.

Firepower and counterforce activities occur between "c" and "d." The effectiveness of firepower is a function of weapon range, speed, accuracy and lethality. Protection against firepower is afforded by counterforce, the aggregate of defensive force and staying power. Defensive force attempts to eliminate either the platform, prior to weapon release, or the weapon, prior to impact. Staying power is a measure of survivability after absorbing hits. Given the lethality of modern weapons, the trend since the late 1950's has been to emphasize defensive force over staying power. It should be noted that the engagement is not over at weapons release or even at impact. Some means must be available to assess damage so that a re-attack may be directed if required.

The model establishes the objective: to reach point "d" before the adversary. More importantly, however, it illustrates that there are numerous ways to improve one's ability to achieve this objective. While "ordnance on target" is the overriding goal, the means to attain it are more varied than simply building bigger or better bombs.

For example, one alternative might be to design systems that reduce the time required to accomplish each process: longer range scouting/firepower systems or C2 systems that process data faster. Another possibility could be systems that combine two or more processes--what the Soviets have recently labelled as "reconnaissance-strike complexes."[162] A third option might be systems designed to lengthen the adversary's time line via the antiscouting, C2CM or counterforce processes. The possibilities are legion and limited only by the imagination. The model aids in the conceptualization process by framing the problem in its entirety.

3. Utility of the Model

The utility of this tactical model is that it approximates the events that occur during an actual engagement. Moreover, it gives due consideration to all of the processes that contribute to attaining the tactical objective. It crosses various warfare specialty lines and depicts the problem in much the same manner as a tactical commander might look at it. The reason why this kind of approach is considered important in force planning is outlined below.

The basic content of national military strategy, especially as it applies to naval forces, has not varied greatly since World War II. As was shown in the section on projected strategic requirements, this trend is likely to continue. Essentially, the U.S. will require a battle fleet capable of forward sea control operations for the foreseeable future. At the same time, fiscal constraints and the escalating cost of shipbuilding will no doubt limit the

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[162]These systems have the capability to detect, track, target, engage and assess damage almost simultaneously. The Soviet concern is with the Joint Surveillance Target Attack Radar System (JSTARS), the Joint Tactical Missile System (JTACMS) and the Precision Location Strike System (PLSS), all under development as part of the AIRLAND Battle concept. See Ramon Lopez, "The AIRLAND Battle 2000 Controversy," International Defense Review, November 1983, p. 1551-1556.

future size of the combatant Navy to between 200-300 ships and 1000-2000 aircraft. Given constrained resources and relatively stable strategic requirements, the most important naval force planning task will be to maximize the capabilities of the systems on board this fixed number of platforms.

The efficacy of a particular strategy is determined by the war-fighting qualities of the forces that support it. The efficacy of the forces is determined by their ability to function as a coherent unit and defeat the adversary. Therefore, it follows that naval force planning should be guided by the same considerations that govern how the forces will be employed. In a recent Naval War College Review article, Frank Uhlig commented on the impact that long-range sensors and weapons have had on naval tactics:

> The tactician of today must...widen his horizons to those of his sensors and his weapons. It is they, more often than his ships, that he must manipulate. Assuming forces of similar power, the commander who best does this is the one likely to win.[163]

If today's tactician must adopt a "systems" approach in order to effectively fight his forces, then so too should those responsible for future force planning. This study maintains that the tactical model presented above is well-suited to that end.

D. APPLICATION TO THE FORCE CONCEPT

It was previously determined that the force concept to guide future planning would be a battle fleet capable of sustained, forward operations. Because the U.S. has global interests and responsibilities, that fleet would be subdivided into a specific number of semi-autonomous battle groups (or task forces). Each group or force would be capable (with assistance from others in particularly hostile

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[163]Frank Uhlig, "Naval Tactics: Examples and Analogies," Naval War College Review, March-April 1981, p. 104.

areas) of forward engagement of the adversary's naval and air assets to accomplish its assigned mission.[164] Fleet operations would be conducted in support of one or more of the projection purposes previously described. The exact purpose(s) would depend upon the circumstances of the war.

It is no coincidence that this force concept is similar to the existing structure of the fleet. Strategic requirements, tempered by operational considerations, dictate that U.S. naval forces be capable of attaining maritime superiority over any potential adversary. The current and projected future mix of surface, subsurface and air assets provides the basic ingredients to that end. The rise of the Soviet Navy, with the accompanying proliferation of long-range anti-ship missiles, has not wrought such a dramatic change in naval warfare as to warrant scrapping U.S. naval doctrine. However, these factors do indicate that a reorientation in planning may be necessary. In the future, the in-house force planning debate should not be over specific platforms. Rather, the focus should be on tactically integrating new and existing systems on and among proven platforms.

The following discussion examines some possible directions for future research and development. As the focus of this study has been on proposing a framework for force planning, the analysis is by no means either comprehensive or in-depth. Although these ideas are subdivided by process, the planning objective would be to integrate them into an interactive network of systems. Finally, in ascertaining the proper mix of systems, planners would do well to recall that the difference between the offense and defense in naval warfare is determined by the objective. If one desires a battle fleet capable of forward offensive operations, then

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[164]This does not mean that a battle group would necessarily rush forward at the outbreak of hostilities. However, it does mean that forces should be capable of eventually operating forward as the enemy is driven back.

that fleet should also be configured for sustained defense. Though often neglected in the past, counterforce, antiscouting and C2CM systems are likely to be increasingly important in the future.

1. Firepower

Firepower considerations are usually well represented in the force planning process. However, one issue related to future developments is worth noting--the relationship between quality and quantity in weapon systems. Advances in propulsion and guidance technologies continue to increase the range, accuracy and lethality of modern missile systems. Current trends indicate that future systems may incorporate some of the following concepts:

* Multiple sensor weapons for guidance redundancy and resistance to countermeasures (e.g., a radar, infrared, optical mix);
* Autonomous missile guidance systems to facilitate "launch and leave" tactics and highly precise strikes;
* Conversion of aircraft from a close-in strike asset to a stand-off delivery platform;
* Low observable (Stealth) missiles; and
* Non-projectile weapons based on laser technology or other physical principles.

To the extent that these systems improve overall firepower capability they should (and will) be pursued. However, high quality systems exact a price that the planner should not overlook.

State-of-the-art weapon systems usually come at a high unit cost. This not only means that fewer numbers are affordable, but also that the net cost of a system may eventually exceed the value of its target. Furthermore, modern missiles have a relatively short half-life. Improved versions often reach the testing stage even before an existing model is fully integrated in the fleet. The combination of high unit cost and short half-life provides little incentive to stockpile existing models in large

quantities. In the long run, fleet magazines could contain a dangerously low number of the very best missiles. Conventional wisdom notwithstanding, history illustrates that the victor in war is the winner of the last salvo, not the first.

The planner naturally consults the future for firepower solutions. Nonetheless, he should never forget that a future fleet may be called on one day to fight. Modernization should be balanced with readiness, both present and future. One possibility for improving net firepower capability might be adopting a Hi-Lo mix of weapons:

* Balance state-of-the-art with lower quality systems;
* Design weapons for longevity even at the expense of capability;
* Ensure new platforms are compatible with older weapons; and
* Keep "out-dated" systems active (e.g., guns or earlier model missiles)

Regardless of how the quality versus quantity issue is resolved, the firepower process will probably receive the majority of the planner's attention. However, it is only one of the factors that contributes to total force capability.

2. Scouting

Scouting has always been one of the most important aspects of naval warfare. Its importance is likely to increase in the future. Modern weapons have the potential to place forces at risk at unprecedented ranges. Capitalizing on that potential, however, requires scouting systems capable of detecting, tracking and targeting the adversary at even greater ranges. This information must also be delivered to C2 in a timely manner for it to be tactically significant. Given weapons of equal capability, even a small scouting advantage could be decisive.

Lautenschlager contends that the next major evolutionary change in naval warfare will be the result of improvements in scouting systems. He believes that the proper mix of sensors will make possible the "tactical integration of the oceans."[165] From a practical standpoint, however, fully realizing this goal could take years of development. Moreover, the cost of such a system might exceed its tactical value.

A more feasible planning objective might be to seek tactical integration of the battle group's zone of control or influence. Such a system would require a wide range of scouting platforms equipped with multiple and redundant sensors.[166] Platforms would include all battle group assets, but with emphasis on off-board units such as aircraft, remotely piloted vehicles, satellites and towed/anchored arrays. While on-board systems would still be equipped with emitting sensors (e.g., radar and sonar), the long range goal would be a passive-sensor fleet (e.g., infrared, optical and electronic sensing). On-board passive data could then be collated with off-board active information. The objective would be to establish a scouting system capable of detecting, tracking and targeting any adversary movement (including weapon launch) within the group's zone of control. At the same time, the use of passive sensors on surface platforms would help to deny similar information to the opponent.

3. C2

It is almost impossible to discuss scouting improvements without including the C2 process in the analysis. Information collected but unusable is worthless.

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[165]Lautenschlager, Fall 1983, p. 6.

[166]In the past, the Navy has had great success improving scouting capabilities simply by adding existing inexpensive sensors onto fleet platforms. Airborne examples include the Forward Looking Infrared System (FLIR) on attack and ASW aircraft and the Television Camera System (TSC) on fighter aircraft.

Future C2 systems must be capable of integrating large amounts of diverse data and presenting it in a manner that facilitates timely tactical decisions. Candidate technologies include advanced computer-based data processing systems incorporating artificial intelligence subroutines. Research and development in this field is progressing rapidly. For example, it is now feasible to match a discrete infrared, radar or sonar signature to a specific platform. These and other new systems could afford a commander the ability to ascertain the exact composition, direction of movement and hostile actions (i.e., weapon launch) of opposing forces at greatly increased distances.

An area of particular concern in the future should be the "direction" stage of the C2 process. Communications systems must be capable of securely and accurately relaying information even in the presence of enemy countermeasures. Based on the assumption that it is not feasible for the adversary to jam every frequency simultaneously, it is possible to envision anti-jam radio and data-link systems that automatically switch to a clear circuit at a certain threshold of interference. Another most important area for development is a reliable ship-to-submarine and submarine-to-submarine communications system.

Although new hardware and software may improve the assessment and direction stages, the effectiveness of the C2 process ultimately depends on the decision-maker and his staff. The future commander's role will be more complicated, not less. He must understand how these high-technology systems function. He must ensure that machine output does not replace human judgment. Finally, if the systems fail or are subjected to enemy countermeasures, the commander must be prepared to step in and do things the "old-fashioned" way.

4. Counterforce

Soviet military theorists often write of the dialectical relationship between the offense and defense. At any particular period in time, one may appear to dominate the other. This often results in a flurry of activity to redress or even tip the balance toward what was the weaker of the two. Unfortunately, it is difficult in peacetime to accurately assess the status of the relationship.

This study contends that the ASCM has the potential to seriously impede battle fleet operations in the future. It also argues that the U.S. would have great difficulty fulfilling strategic requirements without a battle fleet. Therefore, force planners should devote increased attention to developing systems to counter or defeat the ASCM threat.[167] It is said that the best defense is a well directed fire from our own guns. Though this be true, in the age of 300-plus mile missiles, some of our fire may have to be redirected at weapons rather than platforms.

Modern radar technology is rapidly approaching the scan, frequency and processing rates necessary to reliably track and target even the most capable tactical missiles. Moreover, future hypersonic missiles will be able to outperform their quarry in all phases of the intercept. Nonetheless, designing a missile to target another missile is not a long-term solution to this problem.

Just as firepower systems are evolving toward the non-projectile weapon, so too must counterforce. Initially, in fact, this technology might be best employed as a counterforce system. Current lasers have demonstrated the capability to shoot down airborne drone targets. Coupled with a high-speed fire control system, the laser might prove to be an effective anti-missile defense.

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[167]The deployment of AEGIS was a major step in this direction. That missiles are the primary mode of nuclear weapons delivery should provide an added incentive to pursue this course.

The final counterforce issue concerns staying power. Current trends indicate that many future weapons will be precision-guided with conventional warheads. It may be the time to readdress the question of ship survivability. Studies could be commissioned to determine if armor plating significantly diminishes the effect of anti-ship missiles. New composite materials might be developed that offer armor protection without a corresponding weight penalty. Given precision guidance, it seems likely that the probability of a missile impacting certain parts of a ship would be higher than in other areas. If such a correlation does exist, the more vulnerable sections could be reinforced with conventional or perhaps even reactive armor.[168]

5. Antiscouting

There are two kinds of antiscouting--passive and active. Passive antiscouting denies the adversary information through emission control and similar measures. Contrary to popular myth, it is still possible to move covertly on the surface of the ocean, radar and satellite surveillance systems notwithstanding. A ship travelling a 25 knots can be anywhere in an area of 54 square miles after 10 minutes, 490 square miles after 30 minutes.[169] However, a ship emitting electronic energy is easier to detect. For this reason, passive scouting sensors also function as anti-scouts. While a totally passive-sensor fleet is probably not feasible, future active systems should be located off-board or operate in short bursts.

Active antiscouting attacks the material base of modern weapons and sensors--the electromagnetic spectrum. The objective is to lengthen or disrupt the enemy's engagement time line by jamming, interfering, deceiving or

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[168]Reactive armor is used to counter anti-tank weapons. The armor is bolted on the vulnerable areas of a tank. When struck, the reactive armor explodes outward, destroying the weapon.

[169]Lautenschlager, Fall 1983, p. 47.

destroying its scouting or firepower systems. Commonly called electronic warfare (EW), active antiscouting is an underdeveloped process. This is because it is difficult to gage the effectiveness of EW short of actual war. However, the recent experiences of the Israeli's in 1973 and 1982 and U.S. forces off Libya in 1986 indicate that properly employed EW can have a decisive impact on the outcome of operations.

It is difficult to classify specific systems as anti-scouts (the exceptions are the EA-6B aircraft, anti-radiation missiles (ARM) and chaff-like expendables). Perhaps the proper planning focus is simply to recognize the crucial importance of this process in war. This would ensure that antiscouting capability be considered in the design of every unit.

Finally, as every fighter pilot knows, the highest priority targets after the outbreak of hostilities are the adversary's reconnaissance aircraft. At some point, planners will have to consider developing a weapon to counter a reconnaissance craft that currently operates with impunity--the satellite.

6. C2CM

All of the aforementioned processes can be employed against the adversary's C2. Scouting targets it. Antiscouting deceives it. Firepower destroys it. Counterforce confounds its battle damage expectations. How well we counter the adversary's command process is a direct function of the quality of our own. To be most effective, C2CM should be centrally controlled. It is one thing to inadvertently deceive the enemy. It is quite another to deceive him, know what he is seeing and then exploit this opportunity.

Forces can only be designed for C2CM indirectly. The planner's concern is with providing units the capability to perform all of the other processes effectively. Each process

contributes to the total capability of the force. This solves one-half of the problem. The second half--how well the forces are actually employed--can only be determined later. In the final analysis, effective C2CM is the end toward which all actions in war should be directed:

> The object in war is to exercise control over the enemy by reducing the enemy to a state where he is neither able to prosecute effective warfare operations nor willing to resist. This control can be exercised either through the destruction of the enemy's military power...or by causing the enemy to view his goals as unattainable.[170]

E. SUMMATION

The purpose of this section of the study was to develop a tactical context for the force planning process. The tactical context is the third and final part of this theory of naval strategic planning. Projected strategic requirements determine future naval roles in national military strategy. Operational considerations impart meaning to these roles by analyzing them in terms of naval theory and missions. At the tactical level, the planning challenge is twofold: (1) to develop force concepts that fulfill strategic requirements; and (2) to ensure that these concepts are attuned to the changing nature of naval warfare.

The tactical context consists of three parts: derivation of the force concept; development of a tactical model; and application of the model to the concept.

1. Derivation of the Force Concept

Strategical and operational considerations guide the derivation of the force concept. The distinction between battle and strike provides some perspective on planning options. Projected U.S. strategic requirements dictate that future forces be capable of fulfilling traditional battle fleet functions--control above, below and on the surface of

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[170]Gene E. Layman, "C3CM--A Warfare Strategy," Naval War College Review, March-April 1985, p. 33.

the ocean to facilitate other ends. Naval theory informs us that these functions necessitate integral surface, subsurface and air assets capable of sustained, forward operations.

The basic element of the U.S. fleet since the Second World War has been the aircraft carrier battle group. The CVBG is capable of establishing zones of control, influence and interest in its area of operations. These zones can be employed to support projection tasks elsewhere (by tying down enemy forces) or as a base for CVBG power projection. The CVBG is the force concept selected to guide future development.

The principal threat to the U.S. battle fleet is the anti-ship cruise missile launched from traditional strike platforms. The range, accuracy and lethality of the ASCM could severely impede CVBG operations in the future. A central U.S. force planning goal should be to redress this potential imbalance.

2. The Tactical Model

The tactical model aids in force planning by identifying and ordering the factors that describe the tactical milieu. It simultaneously accounts for the dual nature of warfare and depicts the problem in much the same manner as a tactical commander might view it. The centerpiece of the model is Hughes' tactical processes: firepower, scouting, command and control, counterforce, antiscouting, and command and control countermeasures. When coupled with the engagement time line, these processes can be useful in conceptualizing force planning options.

3. Application of the Model

Constrained resources and relatively stable strategic requirements are likely to limit the future size of the Navy. Therefore, the focus of force planning should be on tactically integrating new and existing systems on and among a fixed number of platforms. The model aids in this

process by depicting the tactical problem in its entirety (i.e., both offense and defense; own and adversary's forces). It provides a basic framework for analyzing the utility of future systems in terms of total force capability.

4. Conclusion

In assessing the future of naval warfare, Hubert Moineville identified five areas of increasing importance:[171]

* Search, Reconnaissance and Antiscouting;
* Electronic and Acoustic Warfare;
* Missile Technology;
* Active and Passive Sensing Systems; and
* Anti-Missile Systems

As these trends indicate, naval warfare has progressed to the point where systems and the integration of systems are more important than platforms. The measure of effectiveness of a platform is its contribution to total force capability. If we desire to fight our forces as a battle group, then we should also plan them from that perspective. Adopting a "systems" approach to the force planning process is a step in that direction.

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[171]Moineville, pp. 98-99.

V. CONCLUSIONS

The purpose of this study was to propose a theory of naval strategic planning for programming. The objective was to identify and describe those factors that should influence how the Navy plans for its long-range future. A central and underlying theme was that, given an increasingly hostile environment at sea, there is a "need to establish a more common ground between tactical thought and strategic planning."[172] This could be accomplished, it was argued, by adopting a three-pronged approach to the planning process: future force requirements would be determined based upon strategical, operational and tactical considerations.

The focus of the work was on in-house naval planning. For this reason, the study is incomplete. Recall that a distinction was made early-on regarding the "measures required to sell a program and those that led to its development in the first place." This study has emphasized the latter. In doing so, it has neglected an important (but hopefully not overriding) variable in the strategic planning equation: the political context. The political context concerns matters relating to how the Navy articulates its requirements within the Executive department and to the Congress. The author believes that the approach outlined herein might also prove useful in the political arena. However, the issue was not directly addressed.[173] With this point in mind, some general conclusions are considered below.

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[172]Hughes, Naval War College Review, p. 17.

[173]Future research might focus on the political context. An excellent case study would be a comparison between Sea Plan 2000 and the Maritime Strategy. Although separated only by four years and based upon similar assumptions, the latter was successful, at least in part, because of political reasons.

1. Naval Strategic Planning

The central objective of the naval strategic planning process is to provide future forces with the capability necessary to support projected strategic requirements. As a non-aggressor nation, the United States cannot predict with any certainty the character, scope, duration or location of a future war. Nonetheless, the efficacy of our strategy is directly dependent upon the present and future capabilities of the forces that support it. It therefore follows that, within the broad context of national military strategy, the naval planning process should focus upon force capabilities. In essence, naval strategic planning is future force planning. It should be guided by strategical, operational and tactical considerations.

2. The Strategic Context

The strategic context describes how the maritime component of national power fits into the overall structure of U.S. strategy. It provides the basic framework from which naval-related strategic requirements can be projected. The relative importance of maritime power is determined by juxtaposing the six uses of the sea (i.e., prevent or secure usage for transport, resources or projection) with national interests and objectives. This establishes the rationale underlying naval roles in national military strategy. It is then possible to project future requirements based upon changes in the uses of the sea, national military strategy and naval roles in that strategy respectively. The objective is to articulate, in general terms, what roles future naval forces will be required to perform. This study projected that the role of maritime forward deployment will be increasingly important in the future, while the risks associated with forward operations will continue to grow.

3. The Operational Context

The operational context links projected strategic roles with the tactical trends in naval warfare. It describes how forces accomplish their assigned functions. It is based upon a sound understanding of the naval combatant missions--sea control and power projection. Naval warfare is fundamentally different from war on land (and similar to air warfare). Naval theory, from which the missions are derived, simultaneously explains and accounts for this uniqueness. Therefore, a mission orientation assures that force planning decisions are compatible with the nature of operations at sea.

From a planning perspective, the most crucial (and often overlooked) aspect of naval theory is that sea control and power projection are directly interrelated.[174] One is rarely possible without the other in the modern maritime environment. Given U.S. strategic requirements, geographic position and limited naval assets, theory informs us that future forces should have the capability to establish working control of the sea in forward areas. This would help to ensure the security of reinforcements, supplies and nuclear projection forces at sea (i.e., sea control in support of power projection). In order to operate forward, however, forces also require the capability to project power ashore (i.e., power projection in support of sea control). Sea control and power projection are complementary capabilities. The ideal naval fleet incorporates units optimized for both.

4. The Tactical Context

The tactical context provides a means to evaluate future force concepts in terms of the tactical milieu. This kind of analysis helps to ensure that the concept is both

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[174]Recall that power projection includes nuclear strike, movement of reinforcements/supplies, commerce interdiction, amphibious landing, and naval gunfire/missile/tactical air support.

capable of fulfilling strategic requirements and attuned to the changing nature of naval warfare. It is based upon the assumption that, because tactical considerations guide force employment options, they should also be influential in the force planning process.

Strategic requirements, tempered by operational factors, dictate that future U.S. naval forces be capable of fulfilling traditional battle fleet functions. This study does not foresee a situation within the next several decades that would warrant changing the basic character of the U.S. fleet. The current balance of forces--a surface, subsurface and sea-based air mix--is compatible with both strategical and operational considerations. In the presence of a growing threat at sea, however, the tactical context of planning will become increasingly important in the future.

The model developed in the previous section suggests one method for conceptualizing the tactical environment. It provides a means to evaluate future concepts in terms of total capability (i.e., both offense and defense; own and adversary's actions). Naval warfare has progressed to the point where systems and the integration of systems are more important than individual platforms. Success or failure in a future naval engagement will depend upon the ability of individual units to function as a coherent whole. Capability in this area can be improved through training and, as this study contends, force planning. The U.S. Navy routinely deploys and operates its forces in their basic fighting formations.[175] This kind of training should impart an initial advantage over an adversary that does not operate in this manner. That advantage could be heightened by ensuring that the same factors which govern force employment are more fully considered in the force planning process.

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[175]With the possible exception of multi-CVBG operations.

The first task of planning is to guide an organization into an uncertain future. It must identify those factors which can be used to determine future force requirements. The resultant concepts can then be further developed as required by the organization's overall needs. The theory presented herein suggests one method for conceptualizing those requirements. It argues that the focus of naval planning should be total force capability. As the U.S. Navy approaches the 21st Century, the tactical integration of various platform capabilities into a coherent fighting system should be a major force planning goal.

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50. Library and Information Directorate 1
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53. Library 1
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60. Library - Bldg 420 1
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65. Library 1
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68. Army Library 1
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69. Long Range Planning Division 1
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70. Deputy Director for Planning Integration 1
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71. Library 1
Air War College
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72. Library 1
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73. OP-603 1
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74. OP-009 1
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75. OP-009B 1
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76. OP-06 1
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77. OP-06B 1
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78. OP-60 1
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79. OP-602 1
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