# Naval Doctrine Publication 1 Naval Warfare

# **DOCTRINE**

"The only satisfactory method of ensuring unity of effort lies in due preparation of the minds of the various commanders, both chief and subordinate, before the outbreak of hostilities. Such preparation comprehends not only adequate tactical and strategic study and training, but also a common meeting ground of beliefs as to the manner of applying principles to modern war."

— LCDR Dudley W. Knox, USN "The Role of Doctrine in Naval Warfare" U.S. Naval Institute Proceedings, 1915



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# **FOREWORD**

Naval doctrine is the foundation upon which our tactics, techniques, and procedures are built. It articulates operational concepts that govern the employment of naval forces at all levels. A product of more than 218 years of U.S. Navy and Marine Corps experience in warfighting, it incorporates the lessons of history, learned in both the flush of success and the bitterness of failure.

This publication outlines the principles upon which we organize, train, equip, and employ naval forces. It explains how naval forces attain both enduring and evolving national objectives, emphasizing our participation in joint and multinational operations. It presents broad guidance for the total Navy and Marine Corps team, active and reserve. Every naval professional must understand its contents.

C. E. MUNDY, JR. General, U. S. Marine Corps Commandant of the Marine Corps F. B. KELSO, II Admiral, U. S. Navy Chief of Naval Operations

# INTRODUCTION

The success of an organized military force is associated directly with the validity of its doctrine. Doctrine is the starting point from which we develop solutions and options to address the specific warfighting demands and challenges we face in conducting operations other than war. Doctrine is conceptual — a shared way of thinking that is not directive. To be useful, doctrine must be uniformly known and understood. With doctrine we gain standardization, without relinquishing freedom of judgment and the commander's need to exercise initiative in battle.

Naval doctrine forms a bridge between the naval component of our nation's military strategy and our tactics, techniques and procedures, such as those found in our Naval Warfare Publications and Fleet Marine Force Manuals. A commander, however, cannot operate solely under the guidance of broad strategy. Neither can he make appropriate mission decisions if guided only by tactics and techniques. Doctrine guides our actions toward well-defined goals and provides the basis for mutual understanding within and among the Services and the national policymakers. It ensures our familiarity and efficiency in the execution of procedures and tactics.

Naval Doctrine Publication (NDP) 1, <u>Naval Warfare</u>, provides a framework for detailed Navy and Marine Corps doctrine. It describes the character and employment of our naval forces, highlighting the distinctiveness of warfare in the maritime environment. Its concepts apply to all who serve in or work with the Naval Services.

The United States, the most powerful nation on earth, depends upon transoceanic links — commercial and military — to allies, friends, and interests. Our nation's maritime strength has enabled us to endure more than two centuries of global crisis and

NDP1 ii

confrontation that have reflected the world's unending religious, ethnic, economic, political, and ideological strife. Whenever these crises have threatened our national interests, our leaders traditionally have responded with naval forces.

This publication introduces who we are, what we do, how we fight, and where we must go in the future. It examines the importance of readiness, flexibility, self-sustainability, and mobility in expeditionary operations. It shows how these characteristics make naval forces inherently suitable for maintaining forward presence and responding to crises. NDP 1 outlines the varied missions naval forces routinely execute and the wide range of capabilities that naval forces possess.

Naval forces alone however, never were intended to have every military capability needed to handle every threat or crisis that our nation may face. Just as using complementary capabilities within our naval forces compounds our overall strength, combining the capabilities and resources of other Services and other nations in joint and multinational operations can produce overwhelming military power. In future conflicts and calls for major assistance, our nation will answer with joint forces in most cases. To be prepared for those challenges, we must maintain our ability to conduct day-to-day operations with other Services and other nations. NDP 1 emphasizes the importance of honing the teamwork needed to operate efficiently in the joint and multinational environment.

NDP 1 describes the ways naval forces accomplish their missions and execute their roles as part of the joint military team of the future. It reviews the principles of war from the naval perspective, and describes how naval forces focus their resources to attain operational superiority. The ultimate source of peacetime persuasive power, however, lies in the implied guarantee that both the intent and capability to protect our national interests are present just over the horizon, with the fortitude and staying power to sustain operations as long as necessary.

iii NDP1

This introductory publication is the first in a series of six capstone documents for naval forces that translate the vision and strategy of the White Paper "... From the Sea" into doctrinal reality. The top-down focus will help ensure consistency between naval and joint doctrine, increase fleet awareness and understanding, and provide standardization for naval operations. The full series is composed of the following:

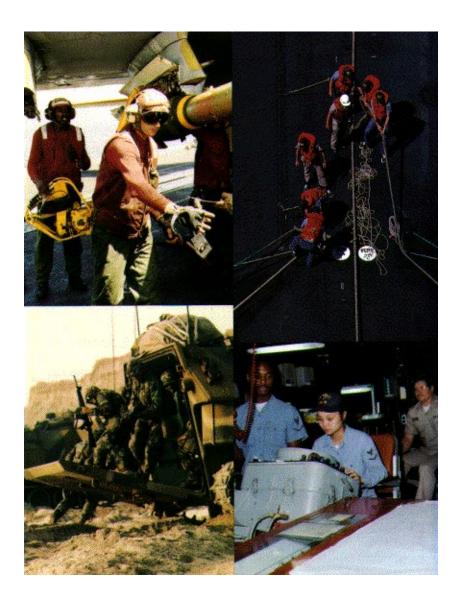
- NDP 1, Naval Warfare, describes the inherent nature and enduring principles of naval forces.
- NDP 2, Naval Intelligence, points the way for intelligence support in meeting the requirements of both regional conflicts and operations other than war.
- NDP 3, Naval Operations, develops doctrine to reaffirm the foundation of U.S. Navy and Marine Corps expeditionary maritime traditions.
- NDP 4, Naval Logistics, addresses the full range of logistical capabilities that are essential in the support of naval forces.
- NDP 5, Naval Planning, examines planning and the relationship between our capabilities and operational planning in the joint and multinational environment.
- NDP 6, Naval Command and Control, provides the basic concepts to fulfill the information needs of commanders, forces, and weapon systems.

Clearly, the uses of military force are being redirected toward regional contingencies and political persuasion, moving away from the prospect of all-or-nothing global war with another superpower. Nevertheless, a significant theme of this publication is that our Naval Services' fundamental missions have not changed. Our nation's continued existence is tied to the seas, and our freedom to use those seas is guaranteed by our naval forces.

NDP1 iv

# **Table of Contents**

Who We Are: The Nature of Naval Services	3
Establishment of the Naval Services	
The Character of Naval Forces	
CHAPTERTWO	
What We Do: Employment of Naval Forces	15
Deterrence	
Forward Presence	
Naval Operations — Other Than War	21
Sealift	
Joint Operations	24
Naval Operations in War	26
CHAPTERTHREE	
How We Fight: Naval Warfare	31
Two Styles of Warfare	
The Conduct of War	
The Principles of War	43
Preparation for War	
CHAPTER FOUR	
Where We Are Headed: Into the 21st Century	59
Command, Control, and Surveillance	
Battlespace Dominance	
Power Projection	
Force Sustainment	
CONCLUSION	71
GLOSSARY	72



# **CHAPTER ONE**

# Who We Are The Nature of Naval Services

"Whosoever can hold the sea has command of everything."

— Themistocles (524 - 460 B.C.)

economic interdependence, and a heritage inextricably tied to our geography. Routine intercontinental commercial flights and instantaneous worldwide communications have created new trade opportunities and brought nations closer together, yet we still rely on the oceans to serve as both a defensive barrier and a highway to commerce abroad. World economic stability depends upon vigorous transoceanic trade. Today, 90% of the world's trade and 99% of our import-export tonnage is transported on the sea. Although the U.S. economy, with vast industrial, technological, agricultural, and resource components, is one of the most powerful in the world, it is not self-sufficient. We depend on the continued flow of raw materials and finished products to and from our country. Ensuring that the world's sea lanes remain open is not only vital to our own economic survival; it is a global necessity.

# **Establishment of the Naval Services**

In both war and peace, the oceans and coastal waters of the world have been the lifelines of supply and communications. Recognizing the strategic importance of British resupply by sea during the American Revolutionary War, General George Washington initiated America's first sea-based offensive against the British. Washington's armed vessels provided significant support to colonial efforts, demonstrating the value of military operations at sea.

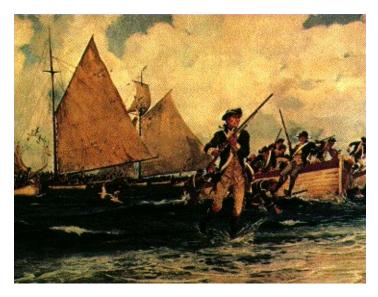
We assembled the initial continental fleet from converted merchantmen. As Congress continued to commission ships, notable leaders such as John Paul Jones helped to develop a proud and capable Navy. It was not long before that force was able to capture the world's attention by displaying its ability to carry the fight overseas, far from American shores.



Bonhomme Richard versus Serapis, 1779

In manning their early fleets, American commanders provided for Marines as part of their ships' crews. In essence, the first Marines were soldiers detailed for sea service. Convinced that crews with Marines could fight successfully at sea and also mount military

operations ashore, Congress passed an Act stating "That, in addition to the present military establishment, there shall be raised and organized a Corps of Marines." Congress continued to provide for Marines as long as there was one Navy ship still at sea. After the Revolutionary War, however, both the Continental Navy and Marine Corps were disbanded.



U.S. Marines Land at New Providence, Bahamas, 1776

The government of the United States soon recognized new threats to our young nation. Smuggling was diverting desperately needed tax money from our almost empty treasury. Alexander Hamilton, the first Secretary of the Treasury, proposed, and the Congress authorized in 1790, a fleet of "ten boats for the collection of revenue." It became commonly known as the Revenue Marine, precursor to the U.S. Coast Guard. Another threat was the seizure of U.S. merchant shipping by predatory French privateers and pirates from

<sup>&</sup>lt;sup>1</sup> The United States Coast Guard was established in 1915 as the functional successor to the Revenue Marine of the 1790s, which later had become known as the Revenue Cutter Service. The Coast Guard is a military Service and a branch of the armed forces at all times. It is also a federal maritime law enforcement agency that operates under the Department of Transportation. In time of war, or when the President directs, the Coast Guard operates as a Service in the Navy, reporting to the Secretary of the Navy and the Chief of Naval Operations as guided by wartime directives.

the Mediterranean's Barbary coast. In addition to their Treasury duties, the ten boats, or "Revenue Cutters," constituted the sole seaborne defense of the United States until Congress exercised its constitutional power and voted to "establish and maintain a Navy." For the next few years, struggling with postwar debts, the nation still was not united in supporting the costly venture. In 1794, however, Congress authorized the Department of War to construct six frigates, for the protection of American merchantmen against the Barbary corsairs. Four years later, in response to renewed aggression by France during its war against Great Britain, Congress finally established the Department of the Navy, authorized the Marine Corps, and began the first significant buildup of naval forces<sup>2</sup> as we know them today.

"The palpable necessity of power to provide and maintain a navy has protected that part of the Constitution against a spirit of censure which has spared few other parts. It must, indeed, be numbered among the greatest blessings of America that as her Union will be the only source of her maritime strength, so this will be a principal source of her security against danger from abroad."

— James Madison, The Federalist Papers, 1788

Our three maritime Services — Navy, Marine Corps, and Coast Guard — conduct operations in the world's oceans and littoral regions.<sup>3</sup> With such capable naval forces, we view the oceans not as an obstacle, but as our base of operations and our maneuver space, which we either can control or deny to an opponent. Whenever we face an adversary without a blue-water fleet, the oceans serve as barriers for our defense. As important though, the oceans provide the United States avenues of world trade and military lines of communication with allies and friends — when they are protected by our strong naval forces. To appreciate operations in the maritime environment, it is necessary to understand the distinctive character of naval forces.

 $<sup>^2</sup>$  Hereafter, the term *naval forces* will mean both the Navy and the Marine Corps, and when under Navy operational control, the Coast Guard.

<sup>&</sup>lt;sup>3</sup> The term *littoral*, as it applies to naval operations in this publication, is not restricted to the limited oceanographic definition encompassing the world's coastal regions. Rather, it includes that portion of the world's land masses adjacent to the oceans within direct control of and vulnerable to the striking power of sea-based forces.

# The Character of Naval Forces

We are, first, American fighting men and women. We take ships and submarines to sea, fly aircraft, land on foreign shores, stand watches around the clock and around the world and, when required, engage the enemy at sea and ashore. Our people are our most valued resource and provide the element of will against adversity, supply essential creativity amid the uncertainties of conflict, and combine inspiration, reason, and experience to achieve our national objectives in peace and in war.

Every day, dedicated Sailors and Marines make countless sacrifices while supporting our national objectives. At the heart of this selflessness are core values that drive personal standards of excellence and moral strength. Our nation places special trust and confidence in these men and women while giving them the sobering responsibility of properly exercising military power that is greater than any in history. This trust is warranted by our continued *competence* in carrying out roles, absolute *integrity* in actions and relationships, and personal *courage* that overcomes moral dilemmas and physical obstacles through an unyielding sense of duty and commitment. This professional ethic, shared by every member of our naval forces, enhances cohesion and promotes teamwork. It establishes an environment in which we are able to share and delegate responsibilities in working toward a common goal.

Naval forces reflect the partnership among our active, reserve, and civilian components. Our planning is predicated on each component contributing its part in day-to-day support operations, mobilization, and force augmentation. Our reservists and civilian employees share the same sense of dedication and purpose, and fill critical positions in carrying out our operations. Working and training together, the active, reserve, and civilian components permit naval forces to maintain readiness to respond effectively to a wide array of demands on short notice.

Naval forces have been organized for fighting at sea — or from the sea — for more than two thousand years. The qualities that characterize most modern naval forces as political instruments in support of national policies are the same as those that define the essence of our naval Services today. These qualities are *readiness*, *flexibility*, *self-sustainability*, and *mobility*. They permit naval forces to be expeditionary — that is, being able to establish and maintain a forward-based, stabilizing presence around the world. Naval expeditionary operations are offensive in nature, mounted by highly trained and well-equipped integrated task forces of the Navy and Marine Corps, organized to accomplish specific objectives. Naval expeditionary forces draw upon their readiness, flexibility, self-sustainability, and mobility to provide the National Command Authorities<sup>4</sup> the tools they need to safeguard such vital national interests as the continued availability of oil from world producers and maintenance of political and economic stability around the globe. Through these qualities, naval forces reassure allies and friends, deter aggressors, and influence uncommitted and unstable regimes.

# A Ready Force

"A man-of-war is the best ambassador."

- Oliver Cromwell, 1650

To be effective instruments of power, our naval forces must be available and credible — not just when crises occur but daily, wherever our allies and friends rely on our presence and wherever potential adversaries must perceive our firm commitment to defend our interests. Since the early 1800s, the United States consistently has made naval forces readily available to defend its vital interests abroad by maintaining a forward naval presence. Naval forces first deployed to South America, the Mediterranean, the Far East, and the Caribbean to protect our sea lines of commerce from pirates. Today, our national

<sup>&</sup>lt;sup>4</sup> Joint Publication 1-02 defines the *National Command Authorities* (NCA) as the President and Secretary of Defense together or their duly deputized alternates or successors. The term NCA is used to signify constitutional authority to direct the Armed Forces in their execution of military action. Both the movement of troops and execution of military action must be directed by the NCA; by law, no one else in the chain of command has the authority to take such action.

economic interests are still tied directly to sea-based commerce, and the United States accepts certain responsibilities with respect to the health of the global economy. Our ready force promotes regional stability and safeguards the flow of resources among trading partners, helping preserve our national well-being.

We are operational; in keeping with the National Military Strategy,<sup>5</sup> forward-deployed naval forces help deter conflict and attain a rapid, favorable end to hostilities if conflict should occur. A strength of our naval forces lies in their immediate availability to respond to contingencies through tangible readiness. Our deploying forces certify their proficiency in their advertised capabilities by demonstrating their ability to carry out specific tasks and missions prior to departure. When they arrive in the operating theater, they are ready to operate; trained and organized to function as a cohesive force. It is no coincidence that naval operations in war — especially in supporting roles such as construction, medical functions, and logistics — are similar to peacetime operations. To maintain our readiness, we design many peacetime operations to parallel wartime operations as closely as possible.

Operating in forward regions of the world enables us to maintain a situational awareness that is critical in gaining the upper hand during any conflict's early stages. By training in the places and climates where we expect to fight, we also gain familiarity with the operational environment and its effects on our people and equipment. Because the transition from peace to conflict in an unstable theater can occur quickly, the Commander-in-Chief's assets in the region are likely to form the core of the initial response. The readiness and presence of deployed naval forces provide the Commander-in-Chief the enabling force he needs to respond decisively and without the limitations of lengthy transit times.

<sup>&</sup>lt;sup>5</sup> The National Military Strategy conveys the advice of the Chairman of the Joint Chiefs of Staff, in consultation with the Joint Chiefs of Staff and the combatant commanders, to the President, the National Security Council, and the Secretary of Defense regarding how the military supports attaining national security objectives. It is combined with political, diplomatic, and economic strategies to support the National Security Strategy. The National Military Strategy is published "as needed," when changes in the strategic environment dictate.

Operating forward from the sea has long been a characteristic of the Navy-Marine Corps team. With limited overseas basing, naval forces become especially relevant in meeting national forward presence requirements. National policymakers rely upon forward presence to display U.S. commitment and resolve to allies and friends. This presence is called upon to deter aggression, to participate in regional coalition-building and collective-security efforts, to further regional stability, to promote U.S. access and influence over critical areas, and to provide initial crisis response wherever necessary. Forward deployed naval forces, including selected Coast Guard forces, demonstrate that the United States is involved and committed to shaping events in the best interests of itself, its friends, and its allies.

#### A Flexible Force

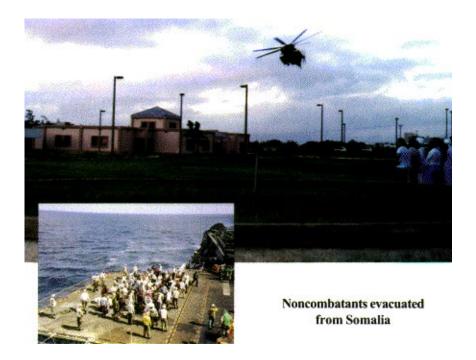
"The seas are no longer a self-contained battlefield. Today they are a medium from which warfare is conducted. The oceans of the world are the base of operations from which navies project power onto land areas and targets. The mission of protecting sealanes continues in being, but the Navy's central missions have become to maximize its ability to project power from the sea over the land and to prevent the enemy from doing the same."

— Timothy Shea: Project Poseidon, 1961

Naval forces have been on scene independently or as part of joint task forces time and again, assisting those in distress. Since 1945, U.S. naval forces have been involved in more than 280 crises, including 75 since 1976, and 80% of all post-World War II incidents. The flexibility of naval forces enables us to shift focus, reconfigure, and realign forces to handle a variety of contingencies.

We provide our commanders and decisionmakers a wide range of weapon systems and military options, supported by a core of trained professionals equipped as a sea, air, and land team. Capable of adapting to a variety of situations, naval forces can support the many challenges facing our theater Commanders-in-Chief. Our ability to fight other naval forces or land-based air forces, to conduct air strikes,

to battle ground forces inland, or to evacuate noncombatants creates uncertainty in the adversary's mind about what our naval forces might do in any given situation. The combination of a robust amphibious ready group integrated with a carrier task force, for example, provides both a perception and a potential for offensive action ashore without committing such forces.



Carriers, amphibious task forces, surface combatants, cutters, submarines, aircraft, and their associated Navy, Marine Corps, and Coast Guard equipment, vehicles, and personnel are the building blocks of our multidimensional operating capability. Naval forces provide the National Command Authorities the tools to respond to a full range of needs, from disaster relief and humanitarian assistance to forcible entry and strike operations. Naval flexibility — as shown in our forward deployed posture, mobility, and self-sustainability — enables us to control the seas and provide diplomatic leverage, in peace or time of crisis.

# A Self-sustaining Force

When we operate in forward areas at the end of long supply lines without a significant land-based supply structure, we need the ability to resupply at sea. Consequently, naval forces carry their own ammunition, spares, and consumables — as well as support and repair facilities for use early in a crisis or throughout a protracted conflict. This self-sustainability provides the National Command Authorities critical time to create an environment that will bring success. Our ships are designed to travel significant distances without replenishment. They carry the striking power of aircraft, guns, missiles, and Marine forces that can execute operations ashore immediately, without an assembly period or a lengthy logistics buildup. If conflict should continue over an extended period, naval forces can remain on station through augmentation and resupply by combat logistics ships. With provisions made for on-station replacement of personnel and ships, such operations can be continued indefinitely.

#### A Mobile Force

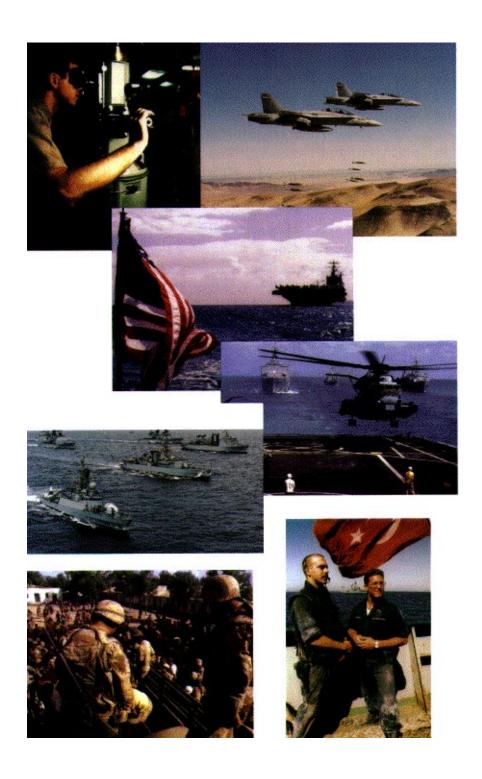
Naval forces, with their strategic and tactical mobility, have the ability to monitor a situation passively, remain on station for a sustained period, respond to a crisis rapidly, and maneuver in combat with authority. Naval forces can respond from over the horizon, becoming selectively visible and threatening to adversaries, as needed. If diplomatic, political, or economic measures succeed, our agility permits us to withdraw promptly from the area without further action or buildup ashore.

Mobility enables naval forces to respond to indications of pending crises by relocating rapidly from one end of the theater to another or from one theater to another, independent of fixed logistics. Operational speed is part of our flexibility. Maintaining control of the seas permits us to exercise our mobility in positioning naval forces to meet the crisis of the moment, then moving on to other potential crisis locations. Naval mobility ensures that an adversary cannot take offensive action with any confidence that the expanse of the oceans will protect him from the long reach of U.S. retaliation.

Our mobility makes naval forces difficult to target and severely taxes the enemy's ability to launch a credible attack. Mobility complicates the enemy's efforts to prepare adequate defenses because he cannot be certain of our attack axis. To cover all possibilities, the enemy may be forced to spread his defenses too widely, thus exposing vulnerabilities.

Mobility is a key to decisive naval operations. The ability to maneuver ships into position to strike vulnerable targets, or to threaten amphibious assault at multiple locations along an extended coastline, is a significant tactical and operational advantage. After we have launched our strikes, our ships can press the advantage, maneuver out of range, or reposition themselves for the next strike phase. In amphibious operations, we place troops in a position to attack the weakness of the enemy while avoiding his main strength. A landing force's ability to maneuver from attack positions over the horizon through designated penetration points — without a slowdown or loss of momentum — could be critical to the success of the landing. When the Marines have accomplished their mission ashore, they can backload to await the next contingency.

Supported by a rich maritime heritage, the strength of our naval Services continues to reside in our well-trained, high-quality people — active duty, reserves, and civilian. They remain at the heart of our force readiness and warfighting effectiveness. As a team, operating at sea and in the world's littorals, naval forces are able to shift quickly from low-profile, passive, forward-deployed operations to high-tempo crisis response. In this environment, we are expeditionary in character, a force whose readiness, flexibility, self-sustainability, and mobility is capable of deterring and, if necessary, winning regional battles, resolving crises, or serving as the naval component of joint task forces to protect our national interests.



# **CHAPTER TWO**

# What We Do Employment of Naval Forces

ongress assigns the armed forces of the United States specific roles. The basic roles of our naval forces are to promote and defend our national interests by maintaining maritime superiority, contributing to regional stability, conducting operations on and from the sea, seizing or defending advanced naval bases, and conducting such land operations as may be essential to the prosecution of naval campaigns. Naval forces accomplish these roles through deterrence operations and specific peacetime operations, while maintaining warfighting readiness through continuing forward deployed presence, exercising a robust sealift capability, and developing our interoperability with all Services.

Fundamentally, all military forces exist to prepare for and, if necessary, to fight and win wars. To carry out our naval roles, we must be ready to conduct prompt and sustained combat operations — to fight and win at sea, on land, and in the air. Defending the United

<sup>&</sup>lt;sup>6</sup> "Roles," "missions," and "functions" often are used interchangeably, but the distinctions between the terms is important. "Roles" are the broad and enduring purposes for which the Services were established in law. "Missions" are the tasks assigned by the National Command Authorities to the combatant commanders. "Functions" are specific responsibilities assigned by the National Command Authorities to enable the Services to fulfill their legally established roles. Thus, the primary function of the Services is to provide forces organized, trained, and equipped to perform a role—to be employed by a combatant commander in the accomplishment of a mission. The cited roles of the Navy and Marine Corps are a consolidation of Title 10 U.S.C, DOD 5100.1, Functions of the Department of Defense and its Major Components, and the Chairman of the Joint Chiefs of Staff Report on the Roles, Missions, and Functions of the Armed Forces of the United States, February 1993.

States and controlling its seaward approaches are the first requirements. Gaining and maintaining control of the sea and establishing our forward sea lines of communication are our next priorities. As we operate in littoral areas of the world on a continuing basis, naval forces provide military power for projection against tactical, operational, and strategic targets. In both peace and war, we frequently carry out our roles through campaigns. A campaign, although often used only in the context of war, is a progression of related military operations aimed at attaining common objectives. Campaigns focus on the operational level of war.



Fleet Admiral Chester W. Nimitz signs the acceptance of Japanese surrender on board *USS Missouri*, 1945.

The concept of "levels of war" can help us visualize the relative contribution of military objectives toward achieving overall national goals and offer us a way to place in perspective the causes and effects of our specific objectives, planning, and actions. There are three levels: tactical, operational, and strategic — each increasingly broader in scope. Although the levels do not have precise boundaries, in general

we can say that the tactical level involves the details of individual engagements; the operational level concerns forces collectively in a theater; and the strategic level focuses on supporting national goals. World War II, for example, a strategic-level and global war, included operational-level combat in the Pacific theater consisting primarily of U.S. led maritime, air, and supporting allied land campaigns. Within each specific campaign were a series of important and often decisive battles. At the tactical level, each contributed to the achievement of that campaign's objectives. The culmination of these campaign objectives resulted in overall victory in the Pacific theater.

The naval contribution in the Pacific in World War II exemplifies all the strategies of campaigning: protection of U.S. ports; maneuver warfare at sea to check the advance of the Japanese Navy; submarine warfare against Japanese shipping; war at sea to gain control of the sea; and amphibious assault of enemy-held islands, pushing the enemy back and forcing his final unconditional surrender. Campaigning is not an activity seen only in war. In peace, naval forces actively engage in forward presence and peace-support campaigns. Today, campaigns range from supporting economic sanctions imposed by United Nations and other international organizations, to maintaining a visible deterrent to regional aggression, and to efforts that stem the flow of illicit drug traffic.

# **Deterrence**

It is our nation's policy to deter aggression. Deterrence is the state of mind brought about by a credible threat of retaliation, a conviction that the action being contemplated cannot succeed, or a belief that the costs of the action will exceed any possible gain. Thus, the potential aggressor is reluctant to act for fear of failure, costs, and consequences. The presence of naval forces or their movement to a crisis area are two of the strongest deterrent signals we can send. They are unequivocal evidence that a fully combat-ready force stands poised to protect our national interests, and that additional force — whatever it takes — will be forthcoming. Our naval forces are the leading edge of the world's most capable military, and their well-understood ability to project power is a key factor in deterrence. Forward deployed naval

forces are available to respond quickly, require minimal support, and are not restricted in their movements. They are available for diplomatic, political, and economic deterrent actions that can influence, persuade or pressure uncooperative governments around the world to choose peaceful means of achieving their goals.

#### Nuclear Deterrence

Deterring nuclear war is a cornerstone of our national security strategy. Credible nuclear deterrence is based on adequate capability and the certitude that our nation can and will inflict unacceptable losses on any adversary that uses nuclear weapons to attack the United States or its allies. Although the risk of a global nuclear conflict has diminished significantly, proliferation of nuclear weapons is continuing, and the danger of attack from an unstable, hostile, and irresponsible maverick state or terrorist organization cannot be discounted. Since deterring nuclear attack remains the highest defense priority of the nation, we maintain a credible, survivable, sea-based strategic deterrent capability through continued deployment of ballistic-missile submarines.



#### Conventional Deterrence

The proliferation of weapons of mass destruction — including chemical and biological weapons — and other threats such as terrorism directed against U.S., allied, and other friendly nations' interests dictate that we maintain a full array of retaliatory capabilities. Our nation's clear willingness to employ its military might against adversaries who may consider employing such weapons will remain our primary deterrent to their use. Chemical or biological weapons are so repulsive to world society that most major countries are signatories to international treaties banning the production, storage, and use of such weapons. The United States is a party to these treaties. Yet, chemical and biological weapons already exist in many countries and they are still proliferating. Our nation's continuing involvement with friends, allies, and potential coalition partners is helping to dissuade further proliferation and buildup of these arsenals. By being able to depend on the strength and commitment of the United States, friendly nations should not feel the need to own weapons of mass destruction for their defense. Our continued regional naval presence is helping to provide assurance to our friends and is an important part of our nation's conventional deterrence.

Naval forces provide U.S. military presence around the world and can be tailored to meet these growing regional threats. Our nation's use or threatened use of our conventional military force in the past has contributed to deterrence by showing national interest, resolve, and capability to influence events. Naval forces can move rapidly to a specific area to influence political action. In such a show of force, we establish credibility by demonstrating our readiness to use force if necessary. A show of force can be particularly effective when conducted with allies to prove solidarity and resolve. Limited use of force includes counterterrorist operations, self-defense, retaliatory raids, rescue operations, or a direct attack to achieve a specific objective. In this sense, it is the employment of military force by the National Command Authorities without a formal declaration of war.

# **Forward Presence**

Overseas presence promotes national influence and access to critical global areas, builds regional coalitions and collective security, furthers stability, deters aggression, and provides initial crisis-response capability. Naval presence is more than the day-to-day operation of our forces in a forward region. Those operations have crucial significance, but governments, like individuals, react to change. The sortie of powerful forces such as the repositioning of a highly visible carrier battle group or an amphibious ready group sends a powerful signal to the political leaders of nations or regimes who might seek to press their temporary advantage against U.S. interests. Routine presence includes our permanently based forces overseas and periodic deployment of naval forces, as well as port visits and participation in a broad range of regional, bilateral, or multilateral training exercises. Crisis response, the emergent, timely dispatch of naval forces to a specific area, allows us to render assistance or exert military force. Forward deployed Navy ships, aircraft, and Marine forces are essential to permit the United States to act quickly in meeting any crises that affect our security. Such a forward presence enables us to support our security interests and is a critical element in encouraging regional stability and continuing world confidence in America's leadership.

Forward presence assures our nation that potential partners will join with us when the time comes. In addition to assured U.S. response, an adversary may be deterred from conducting hostile actions if he perceives that regional neighbors will actively oppose him. A strong balance of power in a region can isolate an aggressor. One way to establish this deterrent environment is through coalitions and alliances. Our nation promotes stability throughout the world by establishing supportive relationships with responsible nations to ensure that the balance of power discourages aggression. In the face of enemy threats, these allies and coalition partners need the assurance of knowing they are joining the side that will win. We establish and strengthen this assurance in our day to day relationships with these partners through a robust program of exercises and operations designed to enhance and improve our capability to work with them in that region.

NDP 1 20

# **Naval Operations** — Other Than War

"Sea power in the broad sense . . . includes not only the military strength afloat that rules the sea or any part of it by force of arms, but also the peaceful commerce and shipping from which alone a military fleet naturally and healthfully springs, and on which it securely rests."

— Captain Alfred Thayer Mahan, 1890

Our nation routinely calls upon naval forces — independently or as part of joint task forces — to exercise two fundamental elements of our national military strategy: forward presence and crisis response. Our operations include rendering assistance in such peacetime activities as providing disaster relief and assistance to civil authorities. We support U.S. law-enforcement agencies, as illustrated by the close cooperation between Navy and Coast Guard units in counterdrug operations. Additionally, naval forces may be tasked to conduct such contingency activities as shows of force, freedom-of-navigation operations, combat operations associated with short duration interventions, and post-combat restoration of security.



Under international law, nations have a right to use force for individual or collective self-defense against armed attack, and to help each other in maintaining internal order against insurgency, terrorism, and other threats. Naval forces operating under the direction of the National Command Authorities and unified commanders implement this international right to:

- Conduct contingency operations.
- Evacuate noncombatant personnel.
- Combat terrorism.
- Aid host nations through security assistance and foreign internal defense.
- Assist other nations in defending themselves.
- Enforce United Nations' economic sanctions.
- Participate in peace-support operations.
- Intercept vessels to prevent uncontrolled immigration.
- Plan and conduct disaster relief, humanitarian assistance, and civil support operations.
- Coordinate public health operations.
- Assist interagency counterdrug operations.

Naval forces are organized, trained, and equipped to defend our nation and its interests. We defend our nation by maintaining a visible and credible capability both to fight and to take that fight abroad. Application of our expertise in operations other than war also exercises many of our wartime capabilities and our ability to accomplish our Service roles in defense of our nation.

#### OPERATIONS OTHER THAN WAR

#### PEACEKEEPING OPERATIONS

Former Yugoslavia/Adriatic Sea, 1993/1994 - Supporting United Nations Security Council resolutions, NATO Standing Naval Forces and other U.S. and Western European Union naval forces in a cooperative effort join to form combined task forces. In the Adriatic Sea, destroyers, frigates, attack submarines, and support ships from 11 nations conduct maritime patrols for Operation Sharp Guard. In the airspace over the Republic of Bosnia-Herzegovina, five nations support Operation Deny Flight—enforcing a No-Fly Zone with shore and carrier-based fighter and attack aircraft.

#### NONCOMBATANT EVACUATION

**Liberia, 1990 -** Increasing internal unrest threatens U.S. diplomats and civilians. Elements of a Marine Expeditionary Unit embarked in the USS *Saipan* (LHA-2) amphibious ready group provide support to the U.S. Embassy and stood by to evacuate American citizens and others from 2 June to 5 August. They evacuate a total of 2,609 people between 5 August and 9 January 1991.

#### DISASTER RELIEF

Bangladesh, 1991 - A tropical cyclone sweeps a wall of water nearly 20 feet high across the coast of Bangladesh and three miles inland, killing as many as 140,000 and rendering 1.7 million people homeless. Within 24 hours of a request for support from the government of Bangladesh, Operation Sea Angel is launched, and advance teams from the III Marine Expeditionary Force arrive in country for initial liaison. A fifteen-ship amphibious task force composed of Amphibious Group 3 and the 5th Marine Expeditionary Brigade, homeward bound from five months of operations in the Persian Gulf, is diverted to the Bay of Bengal to assist. Over the next month, 6,700 Navy and Marine Corps personnel working with U.S. Army, Air Force, and multinational forces, provide food, water, and medical care to nearly two million people.

#### **COUNTERDRUG OPERATIONS**

United States, 1989 and ongoing - Congress declares illicit drug trafficking a threat to national security. The Department of Defense takes the lead in federal detection and monitoring efforts against illegal drug traffic into the United States. Joint task forces are formed that include U.S. Navy and Coast Guard ships, aircraft and personnel, dedicated to stop the influx of illegal drugs into our country. Naval forces continue to provide surveillance of smuggling routes and to assist in the search of suspect vessels and seizure of illegal drugs.

# Sealift

Sealift is a national asset, providing the majority of support for large-scale deployment, reinforcement, and resupply. As military operations have progressed, sealift has accounted historically for 90 - 95% of the total cargo delivered over their duration. To meet these requirements, strategic sealift forces include ships in three broad categories:

- Prepositioning This capability allows us to place sustainment supplies — e.g., large quantities of petroleum products, ammunition, and fleet hospitals — near crisis areas for delivery to contingency forces. (The Maritime Prepositioning Force is not considered a part of sealift. It consists of complete equipment sets to support Marine Corps operations in theater. The Maritime Prepositioning Force is discussed in Chapter Four as a power projection asset.)
- Surge The initial deployment of U.S.-based equipment and supplies in support of a contingency, transported in rapid-reinforcement shipping.
- Sustainment Shipping that transports resupply cargoes to stay abreast of force consumption rates and to build up theater reserve stock levels.

# **Joint Operations**

"Campaigns of the U.S. Armed Forces are joint . . . Modern war fighting requires a common frame of reference within which operations on land and sea, undersea, and in the air and space are integrated and harmonized . . ."

— Joint Pub 1, Joint Warfare of the US Armed Forces, 1991

We are committed to full partnership in joint operations. The value of naval forces operating and fighting in concert with our Army and Air Force has been underscored throughout the 20th century from the Allied invasion of Normandy in 1944 to the 1991 liberation of Kuwait in Operation Desert Storm. By routinely operating with other Services, we establish common procedures and

mutual credibility, reinforcing bonds of partnership. The many successes achieved by joint forces in carefully planned and intricate operations remind us not only of the importance of interservice cooperation, but also of the inherent complexities involved in coordinating such major efforts.



In refining our ability to operate as a completely integrated force we face many challenges, but we remain committed to achieving success in conducting the full range of joint operations. To bring this about in a confluence of complex warfighting needs, we focus on standardization and improving our interoperability with other Services. This may require rethinking our force organization and even our warfighting methodologies. Members of each Service — from warfighter to planner — must be thoroughly trained to gain expertise in each other's doctrine and capabilities. Training, education, and experience developed in frequent joint operations and exercises where we explore and develop innovations and new doctrine — advance our understanding of ways to work with each other efficiently. This knowledge permits us to integrate basic warfighting principles properly and to support effectively the Joint Force Commander's intent and focus of effort. Success in joint warfare depends on mutual understanding and cooperation. Coherent joint doctrine is the catalyst for this essential cooperation between Services. Our naval doctrine must fully support and be a logical extension of joint doctrine.

# **Naval Operations in War**

Control of the sea is fundamental to accomplishing our naval roles. It supports directly our ability to project power ashore by encompassing control of the entire maritime area: subsurface, surface, and airspace, in both the open oceans and the littoral regions of the world. Control of the sea allows us to:

- Protect sea lines of communication.
- Deny the enemy commercial and military use of the seas.
- Establish an area of operations for power projection ashore and support of amphibious operations.
- Protect naval logistic support to forward deployed battle forces.

Control of the sea can be accomplished through decisive operations by:

- Destroying or neutralizing enemy ships, submarines, aircraft, or mines.
- Disabling or disrupting enemy command and control.
- Destroying or neutralizing the land-based infrastructure that supports enemy sea control forces.
- Seizing islands, choke points, peninsulas, and coastal bases along the littorals.
- Conducting barrier operations in choke points that prevent enemy mobility under, on, and above the sea.

By establishing control of the sea in every dimension, thus ensuring access to an adversary's coast from the sea, we open opportunities for power projection, insertion and resupply. Control of the sea, however, has both spatial and temporal limits. It does not imply absolute control over all the seas at all times. Rather, control of the sea is required in specific regions for particular periods of time, to allow unencumbered maritime operations.

#### War From the Sea

Control of the sea is usually a prerequisite for larger strategies involving a land-based objective. Our national well-being may require that we direct military power or threaten its use against an adversary's vital interests or homeland. War from the sea is the extension of our naval influence through power projection over the shore. Amphibious assault capability is an integral component of our overall naval forces. Maritime forces provide not only sea lines of communication to bring men and materiel to the area of concern, but also mobile bases from which to conduct military operations. Naval forces may be tasked to spearhead joint and multinational power projection operations, as part of a larger sea-air-land team.



Power projection takes the battle to the enemy. It means applying high-intensity, precise, offensive power at the time and place of our choosing. We provide commanders with a full range of power projection options that include: employment of long range, accurate cruise missiles; Marines conducting high-speed maneuver across the shore and inland aided by naval surface fire support; and a great variety of weapons released from naval strike aircraft.

In some cases, power projection by naval forces alone may be sufficient to meet national objectives. But, the teamwork and diversity that enable naval forces to dominate all dimensions of the battlespace simultaneously while conducting strike operations also facilitate the addition of joint, multinational, or coalition forces. Arriving at the scene of a crisis with a flexible command and control structure already in place and operating, a naval forces commander can command a Joint Task Force afloat or shift command ashore, depending on the tactical situation. When acting as an "enabling force," the naval component may conduct operations initially to seize a hostile port facility or airfield as a precursor to the arrival of airlift, sealift, and prepositioned assets. After achieving maritime and air superiority, naval forces can continue to operate as an integrated part of a larger joint organization or disengage to respond to another need for their presence.

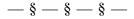
#### War at Sea

War at sea is the application of decisive offensive force to achieve control of the sea. It conjures visions of classic struggles for dominance between battle fleets armed with short-range weapons and maneuvering within sight of each other — relics of a past when the most heavily armed ship was the arbiter of national power. Today, the accuracy, lethality, and range of modern weaponry favor the force that first detects its enemy, launches an effective strike, and counters incoming weapons. Battles between heavily armed and armored battle lines have given way to short, sharp, and usually decisive engagements which may have been preceded by periods of increasing tension and substantial diplomatic effort.

<sup>&</sup>lt;sup>7</sup> The term *enabling* refers to our ability to respond rapidly to a crisis and take the action necessary to control its escalation, while facilitating the introduction of a larger joint force. This may include establishing a lodgment or seizing usable ports and airfields.

The ability to engage the enemy at sea decisively will always remain paramount to our naval forces. Dominating the enemy at sea permits our forces to maintain a forward presence and is the first step in establishing our superiority in any region. War at sea emphasizes the offensive, bringing to bear information, intelligence, and tactical initiative against an adversary. It requires appropriate and well-understood rules of engagement at the brink of war to win the first clash of arms. But offensive action is incomplete without full consideration of defensive requirements. Success in engagements at sea demands preparation to counter an adversary's gunfire, missiles, torpedoes, and mines. Additionally, we must thwart the enemy's information base — his capability to control his forces and to locate and target ours — while enhancing our own. War at sea involves fully integrated offensive and defensive tactics that span the subsurface, surface, air, space, and electromagnetic environments.

In accomplishing our assigned roles, naval Services prepare to fight and win wars. We also play an important role in preventing them. Routine forward presence establishes and maintains regional, economic and political stability and deters aggression. We further strengthen positive relations with our world neighbors day-to-day by providing humanitarian assistance and supporting operations other than war. Naval presence is an important factor in minimizing regional conflict, but, when hostilities threaten U.S. interests, naval forces can provide the initial crisis response, projecting decisive military power from the sea to land if necessary, and an enabling capability to support follow-on joint forces. These daily, on-going operations significantly promote the world's confidence in America's leadership.





War Gaming conducted at the Naval War College - 1914



War Gaming conducted at the Naval War College - 1990's

## **CHAPTER THREE**

## How We Fight - Naval Warfare

"The last thing that an explorer arrives at is a complete map that will cover the whole ground he has traveled, but for those who come after him and would profit by and extend his knowledge, his map is the first thing with which they will begin. So it is with strategy... It is for this reason that in the study of war we must get our theory clear before we can venture in search of practical conclusions."

— Sir Julian Corbett, 1911

ar is an instrument of a nation's power, initiated to achieve national objectives when other means to resolve differences have failed. Our fundamental military purpose is to attain national policy objectives through our capacity to wage war successfully. How well we in the Naval Services accomplish our mission depends on how thoroughly we understand both the nature and the conduct of war and learn war's many lessons. Only through such understanding can we prepare ourselves for its tests.

## Two Styles of Warfare

Naval forces have followed several styles or philosophies of warfare throughout history. Two specific types — attrition and maneuver — have evolved in response to particular needs and force capabilities. Although they vary significantly in efficiency, flexibility, and decisiveness, each type of warfare has its own utility, depending on circumstances, and both types are conducted today.

#### THE BATTLE OF THE ATLANTIC

#### **Using Attrition Warfare**

In World War II, allied naval forces engaged in attrition warfare by employing their resources against the German undersea fleet. Analyzing the effectiveness of submarine warfare, the former Soviet Union Admiral of the Fleet, Sergei Gorshkov, noted in his study of this period that German submarines nearly ended the war through the rapid destruction of the allied merchant fleet. German forces, especially U-boats, were credited with sinking more than 2,800 merchant ships -68% of all tonnage sunk by Nazi Germany in the war. So devastating was this weapon that, at the height of the allied counteroffensive, for each German U-boat, there were 25 U.S. and British warships and 100 aircraft in pursuit. For every German submariner at sea, there were 100 American and British antisubmariners. A total of six million men, 5,500 specially constructed ships, and 20,000 small craft were dedicated to the antisubmarine war. As the allies pressed their offensive, Germany's losses exceeded its war industry's capacity to keep pace. At the same time, the allies were able to replace their damaged merchant fleet and even expanded it by adding replacements numbering twice the losses suffered. In the Battle of the Atlantic, the threat of the U-boat was checked by overwhelming allied response. This resourceintensive, time-consuming effort was an effective use of attrition warfare.



## Attrition Warfare

A key difference between attrition warfare — the wearing down of an enemy — and maneuver warfare — a high tempo, indirect philosophy — is our method of engaging the enemy. In the days of sail, fleet "line" tactics were much less involved. Ships in single lines exchanged heavy broadsides against an enemy similarly arrayed, all within sight of each other. Their simple doctrine called for sailing directly to the enemy's location and systematically engaging his fleet. Attrition warfare is the application of our strength against an enemy's strength. It is typically a "linear" or two-dimensional style of fighting that is frequently indecisive and inherently costly in terms of personnel, resources, and time. When success in war on the operational and strategic levels depends on our ability to destroy or deny the enemy crucial resources faster than he can recover, we are employing classic attrition warfare techniques. We attrite the enemy through systematic application of overwhelming force that reduces his ability or capacity to resist.

## Maneuver Warfare

Naval forces also have used the preferable and more effective—albeit more difficult to master—fighting style known as maneuver warfare. Closely associated with the writings of Sun Tzu and used by the great practitioners of expeditionary, naval, and land war, maneuver warfare is a philosophy, rather than a formula—an approach, rather than a recipe. Like attrition warfare, it has long served as common doctrine for naval forces. It emphasizes the need to give the commander freedom to deal with specific situations. Maneuver warfare is further characterized by adaptability and is not limited to a particular environment. Though enhanced by a variety of technologies, it is not dependent upon any one of them.

Maneuver warfare emphasizes the indirect approach — not merely in terms of mobility and spatial movement, but also in terms of time and our ability to take action before the enemy can counter us. Maneuver warfare requires us to project combat power. Unlike attrition warfare, however, this power is focused on key enemy weaknesses and vulnerabilities that allow us to strike the source of his power — the key to his existence and strength as a military threat.

#### **INCHON - SEOUL**

Using Maneuver Warfare

"The Navy and the Marines have never shone more brightly than this morning."

— General Douglas MacArthur, 15 September 1950

The amphibious operation at Inchon in the Korean War was a classic example of how the naval Services have employed maneuver warfare. Prior to the operation, the North Korean Peoples' Army had driven the U.S. and allied forces into a constricted corner of South Korea and threatened to push them from the peninsula altogether. Even though his forces were in dire straits, General Douglas MacArthur, Supreme Commander of the United Nations forces in Korea, recognized that the naval Services in his command had the ability to reverse dramatically the tide of the battle. A landing on the Korean peninsula north of the enemy lines, he reasoned, would allow his forces to sever the critical north/south rail and road supply lines running through nearby Seoul that provided vital support to the North Korean siege of the Pusan perimeter. By 15 September 1950, U.S. Navy surface combatants and carrier air squadrons, along with shorebased Marine and Air Force air units, had cleared Korean waters and air space of North Korean opposition. Thus protected and concealed from the enemy, Vice Admiral Arthur D. Struble's nine-navy, 260-ship, Joint Task Force Seven transported Army and South Korean ground units and the amphibious-trained 1st Marine Division to the strategically important port of Inchon, north of enemy lines. These troops stormed ashore via lanes cleared of obstructions by naval underwater demolition teams and behind the gunfire of four cruisers, eight destroyers, and the aircraft of six carriers. Amphibious support ships soon brought in reinforcements and the supplies needed to maintain and expand the beachhead. This bold, surprise maneuver severed the lines of communications to 90% of the enemy's ground forces positioned far to the south opposite the UN's Pusan perimeter. By the end of September, faced with entrapment and almost certain destruction, the North Korean Peoples' Army fled the Republic of Korea, a nation they had invaded so eagerly only a few months before.

NDP 1 34

### The Conduct of War

"Hold the attention of your enemy with a minimum force, then quickly strike him suddenly and hard on his flank or rear with every weapon you have."

— General A.A. Vandegrift, USMC Battle Doctrine for Front Line Leaders, 1944

Success in war often is the result of decisive action that destroys the enemy's will or capacity to resist. Because protracted war can cause high casualties and unwanted political and economic consequences, the rapid conclusion of hostilities is a key goal. Maneuver warfare, based on the twin pillars of decisiveness and rapidity, is our preferred style of warfighting. It is as applicable today in the maritime environment as it has been in traditional land warfare. Modern maneuver warfare requires integration and understanding of four key concepts — center of gravity, critical vulnerability, focus of effort, and main effort. We convey these concepts in context to our forces using a mechanism called the commander's intent.

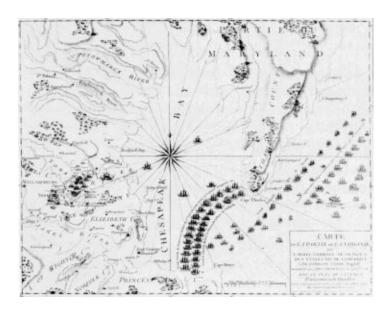
## Center of Gravity and Critical Vulnerability

The center of gravity is something the enemy must have to continue military operations — a source of his strength, but not necessarily strong or a strength in itself. There can only be one center of gravity. Once identified, we focus all aspects of our military, economic, diplomatic, and political strengths against it. As an example, a lengthy resupply line supporting forces engaged at a distance from the home front could be an enemy's center of gravity. The resupply line is something the enemy must have—a source of strength—but not necessarily capable of protecting itself. Opportunities to access and destroy a center of gravity are called critical vulnerabilities. To deliver a decisive blow to the enemy's center of gravity, we must strike at objectives affecting the center of gravity that are both critical to the enemy's ability to fight and vulnerable to our offensive actions. If the object of a strike is not critical — essential to the enemy's ability to stay in the fight — the best result we can achieve is some reduction in the enemy's strength. Similarly, if the object of a strike is not vulnerable to attack by our forces, then any attempts to seize or destroy it will be futile.

#### YORKTOWN

#### **Exploiting A Critical Vulnerability**

During the Revolutionary War, British forces in North America depended on free use of the adjacent seas to move and resupply their ground troops. This became especially critical to the British ability to continue fighting in August 1781, on the peninsula between Virginia's York and James Rivers, when American land forces successfully severed the British Army under General Lord Cornwallis from their ground-based resupply. At this location, British resupply by sea was vulnerable because access to the Yorktown port could be denied by controlling entry at the mouth of the Chesapeake Bay. The French West Indian Fleet under Rear Admiral François de Grasse positioned itself at this strategic location in advance of the British fleet. When British Admiral Thomas Graves arrived to support Cornwallis, de Grasse maneuvered his ships to engage the enemy outside the bay. His actions not only denied Cornwallis his needed support, but permitted another French squadron sailing from Rhode Island to enter the bay and reinforce American and French land forces. As aresult, the British succumbed at Yorktown surrendering their entire Army of 7,600 men. The Franco-American alliance was effective in blocking British access to and from the sea and thereby exploiting this critical vulnerability. Losing their ability to sustain their forces by sea doomed the British war effort in North America.



The appearance of critical vulnerabilities depends entirely upon the situation and specific objective. Some — such as electrical power generation and distribution facilities ashore or the fleet oilers supporting a task group — may be obvious. On a strategic level, examples may include a nation's dependence on a certain raw material imported by sea to support its warfighting industry, or its dependence on a single source of intelligence data as the primary basis for its decisions. Alternatively, a critical vulnerability might be an intangible, such as morale. In any case, we define critical vulnerabilities by the central role they play in maintaining or supporting the enemy's center of gravity and, ultimately, his ability to resist. We should not attempt to always designate one thing or another as a critical vulnerability. A critical vulnerability frequently is transitory or time-sensitive. Some things, such as the political will to resist, may always be critical, but will be vulnerable only infrequently. Other things, such as capital cities or an opponent's fleet, may often be vulnerable, but are not always critical. What is critical will depend on the situation. What is vulnerable may change from one hour to the next. Something may be both critical and vulnerable for a brief time only. The commander's challenge is to identify quickly enemy strengths and weaknesses, and recognize critical vulnerabilities when they appear. He must rapidly devise plans to avoid the strengths, exploit the weaknesses, and direct the focus of effort toward attacking the critical vulnerabilities so that he can ultimately collapse the enemy's center of gravity.

## Focus of Effort and Main Effort

The focus of effort is the paramount objective to be accomplished by the force and is therefore always on the critical vulnerability that will expose the enemy's center of gravity. Since we concentrate all our resources and energy on that objective, designating the focus of effort is an important decision requiring the acceptance of risk. Responsibility for attaining the focus of effort lies with the main effort. A commander unifies the force toward the focus of effort by assigning one unit or group as the main effort.

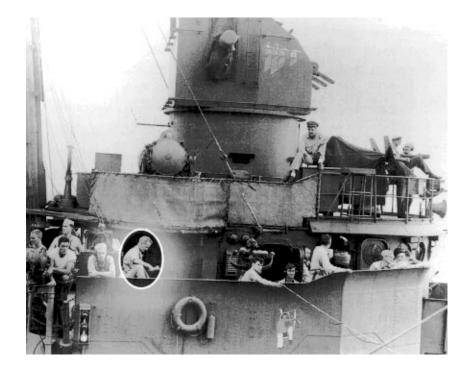
The main effort is supported directly and indirectly by all parts of the force. When all elements of the force are focused, the strengths of each element can be brought to bear on the enemy effectively. There is only one main effort at a time and it is always directed against the focus of effort. Designating a main effort does not imply that the offensive is limited to a single attack or series of attacks. A commander may shift designation of the main effort as necessary and that designation may assign the bulk of the force or only a small fraction of the resources available. Whatever the size, designation as the main effort means that this element is central to the complete success of the operation and supporting units are obligated to do everything they can to ensure that the main effort succeeds. Supporting units, guided by the commander's intent, choose actions aimed at doing all they can to support the main effort.

#### Commander's Intent

Decisive action requires unity of effort — getting all parts of a force to work together. Rapid action, on the other hand, requires a large degree of decentralization, giving those closest to the problem the freedom to solve it. To reconcile these seemingly contradictory requirements, we use our understanding of the main effort and a tool called the commander's intent.

The commander's intent conveys the "end state," his desired result of action. The concept of operations details the commander's estimated sequence of actions to achieve this end state and contains essential elements of a plan — i.e., what is to be done and how the commander plans to do it. A commander issues the concept of operations as part of a formal operation plan or order. The commander's intent differs from the concept of operations; a significant change in the situation that requires action often will alter the concept of operations, but the commander's intent is overarching and usually remains unchanged. The commander's intent reflects his vision and conveys his thinking through mission-type orders, in which subordinates are encouraged to exercise initiative and are given the freedom to act independently.

Mission-type orders define the contract that the commander's intent establishes between the delegating commander and his subordinates. We achieve unity of effort by promulgating the commander's intent, designating a focus of effort, and training subordinates to think in terms of the effect of their actions "two levels up" and "two levels down" in the chain of command. Since stereotyped actions are inherently predictable and thus easily countered, commanders must tailor their actions to the situation at hand, using initiative, imagination and experienced judgment.



CAPT Arleigh A. Burke, Commander of Destroyer Squadron 23, reading on the bridge wing of his flagship, USS *Charles Ausburne* (DD-570), 1943

Effective commanders at all levels neither expect nor attempt to control every action of their subordinates. Nor do they profess to foresee or attempt to plan for each contingency. Two great commanders in naval history, Admirals Horatio Nelson and Arleigh Burke, rarely issued detailed instructions to their subordinate

commanders. Instead, they frequently gathered their captains to discuss a variety of tactical problems. Because of these informal discussions, the captains became aware of what their commanders expected to accomplish and how they planned, in various situations, to accomplish it. Thus prepared, they later were able to act independently, following their commanders' intent, even though formal orders either were brief or nonexistent.

The commander's intent is particularly important in cases where the situation that gave rise to orders has changed and, as a result, the original orders are no longer applicable. In such cases, subordinates can structure their decisions by asking such questions as "What would my commander want me to do in this situation?" and "What can I do to help my commander attain the objectives?"

## Tempo

Using the philosophy of maneuver warfare, we destroy or eliminate an adversary's center of gravity indirectly by attacking weaknesses or vulnerabilities that are vital to his source of power. One method of indirect attack is to create a dilemma, by putting the enemy in a situation where any step taken to counteract one threat increases his vulnerability to another. This is an indirect approach. Through rapid high-tempo actions, we present him with a series of unexpected situations and developments, each of which demands a response. In the ideal situation, the enemy would find that his best counter in one situation puts him at unacceptable risk in another — a no-win situation.

A powerful enemy can protect his critical vulnerabilities. A skillful enemy may disperse them. In each case, there is little chance of striking a decisive blow unless such an enemy can be forced to expose one or more of his critical vulnerabilities. One way of doing this is to exploit the dynamics of warfighting by maintaining a high tempo. Tempo is the pace of action — the rate at which we drive events. A rapid tempo requires that commanders be provided timely, accurate intelligence to find enemy weaknesses, enough decentralization to allow subordinate commanders to exploit opportunities, and clearly understood and well-rehearsed procedures at the lowest levels.

NDP 1 40

The decision cycle is a vital aspect of tempo. Forces with rapid decision cycles enjoy an advantage over those whose leaders need more time to gather and process information before making decisions. Tempo is more than a means to employ weapons better; it is a weapon itself. Directed against an enemy with a slower decision cycle, a series of rapid and unexpected attacks on critical vulnerabilities can be overwhelming, depriving him of his power to react effectively and ultimately destroying his center of gravity.

As in the martial art of judo, the objective in fighting with a high tempo is to take action that sets in motion a series of actions and reactions, each of which potentially exposes — if only for a brief time — a critical vulnerability. In such a contest, we achieve victory by making the most rapid and unpredictable moves specifically selected to catch the enemy in a vulnerable position long enough to deliver a decisive blow. It is an aggressive style of warfare in which we gain advantage by observing the enemy, orienting ourselves to these surroundings, deciding on a move, and acting more rapidly than the enemy.

On a tactical level, this warfighting technique, formally noted in the extraordinary success enjoyed by U.S. pilots during the Korean War,<sup>8</sup> also served as the root of success in similar experiences of naval aviators during the latter stages of the Vietnam War.

<sup>&</sup>lt;sup>8</sup> A discussion of air-to-air combat in the Korean War can be found in Boyd, John R. Col. USAF (Ret.), "Patterns of Conflict," an unpublished lecture cited in William S. Lind, <u>Maneuver Warfare Handbook</u> (Boulder, Co.: Westview Press, 1985), pp 4-6.

#### AIR COMBAT MANEUVERING

#### Tactical Use of Tempo

During the early stages of the Vietnam War, our aircraft exchange rate in combat was only two to one. Air-to-air missiles, thought to be the technological answer to future aerial combat, were ineffective in many cases. Our pilots needed to develop close-in maneuvering skills and proficiency in the use of their missiles as well as newly installed guns to counter the principal communist fighters, the MiG-series.

In several traditional measures of aircraft performance the MiG was superior to the U.S. F-4. However, following the lessons taught at Top Gun—the Navy Fighter Weapons School established to study and improve air combat maneuvering skills—fighter crews improved the kill ratio sixfold in the skys over Vietnam. The F-4 crew forced its opponent into a series of tactical actions designed to gain and maintain advantage after each maneuver. The F-4 crew quickly saw how the situation changed and immediately followed with new actions. With each change, the MiG's actions became more inappropriate, until it gave the F-4 an acceptable firing opportunity. Occasionally, the MiG pilot realized what was happening to him, panicked, and ultimately made the F-4 crew's job that much easier. Success resulted from conducting a series of sudden unexpected moves to which the enemy could not adjust.



Because tempo is so important in maneuver warfare, commanders must have the freedom of action to make decisions and execute them without any externally imposed delay. Commanders must be allowed to seize the initiative and respond to rapidly changing situations. Response time is a key to maneuver warfare. Activity at the operational level must contribute directly to the military strategic aim. Such aims, broadly set, demand that the operational commander have wide-ranging independence to exercise creativity and originality. Such freedom allows him to gain and retain the initiative and adapt to the developing situation. Mission-type orders, specifying a result but leaving open the methods of attaining that result, allow the decentralization necessary for local rapid response.

Success in war depends upon properly implementing our overall warfighting philosophy which includes understanding the commander's intent and the concepts center of gravity, critical vulnerabilities, focus of effort, and main effort. Additionally, we must correctly apply the basic tenets or principles of war? The principles of war are based on hard-won and often bitter experience gained in conflict. These important lessons emphasize its nature and form the basis for our warfighting doctrine.

## The Principles of War

An important issue throughout military history has been the way a military organization addresses the qualities that war demands from its participants. Military leadership has dealt best with the intractable problems of war as a form of military and naval art. In the maritime environment, with its distinctive factors, we fight using the principles that apply to combat everywhere. Wisdom gained from study of the basic principles of war underscores that war is not the business of managers with checklists; it is the art of leaders.

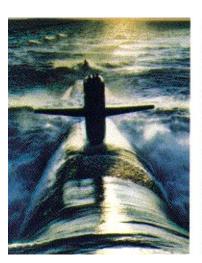
<sup>&</sup>lt;sup>9</sup> Nine principles of war are discussed in such authoritative publications as Joint Publication 0-1 "Basic National Defense Doctrine," Joint Publication 1 "Joint Warfare of the U.S. Armed Forces," FM 100-5 "Operations," and FMFM 1 "Warfighting."

- **Objective**. *Direct every military operation toward a clearly defined, decisive, and attainable objective*. The naval Services focus their operations to achieve political purposes defined by the National Command Authorities. With national strategic purpose identified, we can select theater military objectives and form operational and tactical objectives based on specific missions and capabilities. Whether the objective is destroying an enemy's armed forces or merely disrupting his ability to use his forces effectively, the most significant preparation a commander can make is to express clearly the objective of the operation to subordinate commanders.
- Mass. Concentrate combat power at the decisive time and place. Use strength against weakness. A force, even one smaller than its adversary, can achieve decisive results when it concentrates or focuses its assets on defeating an enemy's critical vulnerability. A naval task force, using the sea as an ally, can compensate for numerical inferiority through the principle of mass. Mass further implies an ability to sustain momentum for decisive results.



NDP 1 44

• Maneuver. Place the enemy in a position of disadvantage through the feasible application of combat power. Use of maneuver (mobility) capitalizes on the speed and agility of our forces (platforms and weapons) to gain an advantage in time and space relative to the enemy's vulnerabilities. Whether seen in historic warships "crossing the T," or modern ground forces enveloping an enemy, or forcing the tempo of combat beyond an adversary's ability to respond, maneuver allows us to get ahead of the enemy in several dimensions. Our advantage comes from exploiting the maneuver differential — our superiority in speed and position relative to our adversary.

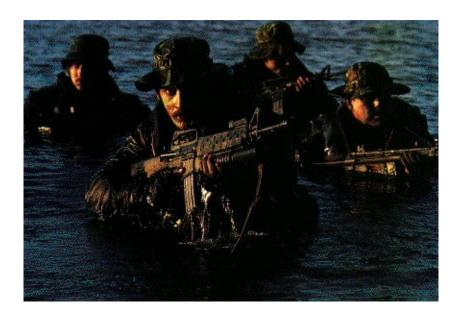




• Offensive. Seize, retain, and exploit the initiative. Since the days of sail — racing an opponent for the upwind advantage to take the initiative — offensive action has allowed us to set the terms and select the place of confrontation, exploit vulnerabilities and seize opportunities from unexpected developments. Taking the offensive through initiative is a philosophy we use to employ available forces intelligently to deny an enemy his freedom of action.

- Economy of Force. Employ all combat power available in the most effective way possible; allocate minimum essential combat power to secondary efforts. With many more available targets than assets, each unit must focus its attention on the primary objectives. A successfully coordinated naval strike at an enemy's critical vulnerability for example, knocking specific command-and-control nodes out of commission can have far more significance than an attempt to destroy the entire command-and-control system.
- Unity of Command. Ensure unity of effort for every objective under one responsible commander. Whether the scope of responsibility involves a single, independent ship at sea or the conduct of an amphibious landing, we achieve unity in forces by assigning a single commander. After he expresses his intent and provides an overall focus, he permits subordinate commanders to make timely, critical decisions and maintain a high tempo in pursuit of a unified objective. The result is success, generated by unity in purpose, unit cohesion, and flexibility in responding to the uncertainties of combat.
- Simplicity. Avoid unnecessary complexity in preparing, planning, and conducting military operations. The implementing orders for some of the most influential naval battles ever fought have been little more than a paragraph. Broad guidance rather than detailed and involved instructions promote flexibility and simplicity. Simple plans and clear direction promote understanding and minimize confusion. Operation Order 91-001, dated 17 January 1991 summarized the allied objectives for the Desert Storm campaign into a single sentence: "Attack Iraqi political-military leadership and command and control; sever Iraqi supply lines; destroy chemical, biological and nuclear capability; destroy Republican Guard forces in the Kuwaiti Theater; liberate Kuwait." These objectives were succinct, tangible, and limited.

• Surprise. Strike the enemy at a time or place or in a manner for which he is unprepared. Catching the enemy off guard immediately puts him on the defensive, allowing us to drive events. The element of surprise is desirable, but it is not essential that the enemy be taken completely unaware — only that he becomes aware too late to react effectively. Concealing our capabilities and intentions by using covert techniques and deceptions gives us the opportunity to strike the enemy when he is not ready.



• Security. Never permit the enemy to acquire unexpected advantage. Protecting the force increases our combat power. The alert watchstander, advanced picket, or such measures as electronic emission control all promote our freedom of action by reducing our vulnerability to hostile acts, influence, or surprise. Tools such as gaming and simulation allow us to look at ourselves from the enemy's perspective. We enhance our security by a thorough understanding of the enemy's strategy, doctrine, and tactics.

#### **MIDWAY**

#### The Principles of War Applied at Sea

After the Battle of the Coral Sea, 4-8 May 1942, Admiral Chester W. Nimitz, Commander in Chief, U.S. Pacific Fleet, learned from signals intelligence that a large Japanese naval force, led by Admirals Isoroku Yamamoto and Chuichi Nagumo, would attack Midway, a strategic atoll west of the American fleet base at Pearl Harbor, Hawaii. Other enemy forces would make a feint toward the Aleutian Islands in the North Pacific. The priceless advantage afforded by intercepting Japanese communications gave the Americans unprecedented knowledge of enemy intentions and force dispositions.

Every available carrier and escort the United States could muster was assigned to the operation — including the carrier *Yorktown*, which made a hasty sortie after repairs thought impossible by the Japanese Naval Staff. Nevertheless, the U.S. force was numerically inferior to the Japanese striking group. Nimitz assigned Rear Admiral Frank Jack Fletcher, a veteran of battle who had recently faced Japanese carrier forces at Coral Sea, as the officer in tactical command. Nimitz's *objectives* were clear and *simple*: "hold Midway and inflict maximum damage on the enemy by strong attrition tactics." Nimitz further added "In carrying out the task assigned ... you will be guided by the principles of calculated risk." Fletcher had *unity of command* and broad latitude in executing his tasks. He directed Rear Admiral Raymond A. Spruance,





Admiral Frank Jack Fletcher

Admiral Raymond A. Spruance

Commander Task Force 16, to attack the enemy carriers as soon as the ships were located. Fletcher, embarked in the carrier *Yorktown* with Task Force 17, would follow soon afterward. Early in the battle, when enemy air attacks placed his flagship out of action, Fletcher transferred that unity of command to Spruance who retained tactical control for most of the fight.

Knowledge of the Japanese plan allowed Nimitz to invoke economy of force by deploying minimal forces in front of a Japanese diversion toward the Aleutian Islands while massing his most effective combat power — his three aircraft carriers — against the main enemy thrust at Midway. Also, knowing that the Japanese would use submarines and long-range flying boats to determine if the U.S. fleet had sortied from Pearl Harbor, Nimitz used maneuver to frustrate the operation of these enemy units. With our intelligence advantage,

NDP 1 48

the U.S. carriers were able to deploy and were in place well in advance of the enemy fleet. To retain their advantage, U.S. units maintained security through radio silence and darken-ship procedures at night. The fact that the U.S. carriers had departed the base before the battle was not known to Yamamoto. The Japanese were also conscious of the need for security and surprise. In contrast, however, excessive emphasis on security and surprise actually worked against Yamamoto and Nagumo. Convinced that the invading force would catch the island of Midway unprepared, the Japanese admirals failed to assess fully the size and location of their opposing forces. Complete reconnaissance would have shown that the U.S. Navy did not have adequate fleet strength at the time to win in a direct at-sea confrontation. The Japanese could have concentrated their efforts against Fletcher's and Spruance's forces and then attacked the lightly defended Midway later.

On the morning of June 4, 1942, Nagumo launched a routine, limited dawn air search, convinced that the Americans could not be in the vicinity. He then followed with his initial attack against Midway, opposed only by the relatively few ground-based Navy, Marine Corps and Army Air Corps search, attack, and fighter aircraft on the island. By the time Japanese reconnaissance aircraft did discover the presence of the American force, it was too late. After the Japanese aerial assault, Spruance and his staff reasoned that Yamamoto's force might be in the process of recovering their aircraft and preparing for additional land attacks. Seizing the initiative, Fletcher and



Admiral Isoroku Yamamoto

Admiral Chuichi Nagumo

Spruance immediately attacked the Japanese carriers with every aircraft available. Although outnumbered, Fletcher and Spruance maintained an aggressive *offensive*. Japanese combat air patrol intercepted the U.S. attack, but became preoccupied with low-flying torpedo planes. When the dive bombers from Yorktown and Enterprise arrived at the battle site, the fight was taking place at low altitude, allowing them to attack Yamamoto's force unimpeded. In fact, the American air strike didsurprise the Japanese carriers in an exceptionally vulnerable situation — with unstowed ordnance and bomb- and torpedo-laden planes on deck being refueled. In the fighting that followed, the Japanese lost the carriers *Hiryu*, *Soryu*, *Akagi*, and *Kaga* and their scores of veteran aviators. Deprived of air cover, Admiral Yamamoto canceled the planned invasion of Midway Island. The Japanese never regained the initiative in the Pacific.

The principles of war have been proven effective in preparing for combat, but the complexities and disorder of war preclude their use as a simple checklist. Instead, we must be able to apply these principles in war's turbulent environment, to promote initiative, supplement professional judgment, and serve as the conceptual framework in which we evaluate the choices available in battle. These principles provide a solid basis for our warfighting doctrine, that complements the experience and operational skill of our commanders by describing a flow of action toward objectives, rather than prescribing specific action at each point along the way. In a chaotic combat environment, doctrine has a cohesive effect on our forces, while enabling us to create disorder among our adversaries. It also promotes mutually understood terminology, relationships, responsibilities, and processes, thus freeing the commander to focus on the overall conduct of war.

## **Preparation for War**

Success in naval warfare is founded on properly applying sound doctrine and understanding the principles of war. With a foundation established and reinforced through a continuing education and training program, we are able to plan our operations and readily adapt when situations change.

#### Doctrine

Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application.

— Joint PUB 1-02, DOD Dictionary of Military and Associated Terms

Doctrine is the heart of naval warfare. It governs our actions beyond the ordered execution of military operations, but is not prescriptive. Within the broader guidelines of national strategy, doctrine provides the basis for mutual understanding and trust within our naval Services as well as with other Services and our national

NDP 1 50

leaders. It is not a set of concrete rules, but rather a basis of common understanding throughout the chain of command. Composed of "shared convictions" that guide naval forces as a whole, it fuses our Service-unique tactics, techniques, procedures, and warfighting philosophies.

Tactics is the art of selecting the right tools for the job. A technique describes a way systems or units can be employed in combat. Our choice of specific techniques — as well as ways we might combine them — depends on many factors, including the overall operating situation and surrounding environment. Techniques specify ways to use various systems. Procedures provide us with instructions for specific systems and equipments. Techniques and procedures are tools a commander employs in his tactics. For example, procedures tell us how to maintain a particular weapon system; a technique describes ways to employ it against an enemy threat; and tactics is the art of choosing the right systems and techniques for the situation. Doctrine is the underlying philosophy that guides our use of tactics and weapons systems to achieve a common objective.

Naval doctrine forms a bridge between the naval component of our nation's military strategy and our tactics, techniques and procedures, such as those found in our Naval Warfare Publications and Fleet Marine Force Manuals. A commander, however, cannot operate solely under the guidance of broad strategy. Neither can he make appropriate mission decisions if guided only by tactics and techniques. Doctrine guides our actions toward well-defined goals and provides the basis for mutual understanding within and between Services and our national policymakers. It ensures our familiarity and efficiency in the execution of procedures and tactics.

Our training and education are based on doctrine. Within this common framework of understanding, we maintain readiness for war by tasking forces with day-to-day missions and exercising our tactics, techniques, procedures, and planning.

#### Training and Education

"It cannot be too often repeated that in modern war, and especially in modern naval war, the chief factor in achieving triumph is what has been done in the way of thorough preparation and training before the beginning of war."

> — President Theodore Roosevelt, Graduation address at the U.S. Naval Academy, 1902

The primary means for improving and displaying our readiness to fight and win is training, which includes basic military, skill-specific, and weapons-specific training (both hardware and tactical), as well as formal education. We train at each level of employment: individual, unit, task force, and joint or multinational force.



Training and education build proficiency, cohesion, and teamwork while providing opportunities to supplement limited combat experience. In this post-Cold War era, naval professionals may never experience general war. A realistic training program is the best means,

short of actual combat, of preparing our force and generating confidence in and knowledge of our plans, tactics, and procedures. Through large-scale free-play exercises, including war gaming, and command-post exercises — enhanced by simulation — we involve all elements of naval forces and connect people to their missions before they are actually employed. We focus our training and education on maintaining a capability to fight, as if war were imminent. This goal should not change when naval forces are involved in operations other than war. The same organizational structure, procedures, command and control, equipment, and thinking apply. The keys to combat effectiveness are realistic training and relevant education.

Training provides us with skills, abilities, and a base of knowledge that supports our development of tactics. It should provide all members of our naval forces an understanding of the roles of each group and of how each group supports the force. Naval training does not seek to turn Marines into capable Sailors, nor does it seek to prepare those who operate our ships to land across a beach; but within limits, training is fundamental to achieving unity of effort. We master ways to employ our basic skills, abilities, and knowledge through professional military education.

Education hones our thinking and ability to make decisions. The foundation of knowledge developed early in a career supports the leader — officer or enlisted — in applying experience and understanding to the complex relationships of our naval forces as a whole. Professional military education focuses on the science and art of warfighting. Such art challenges the professional to analyze, reaffirm, and perhaps rethink truths; to seek innovations through new and varied application of conventional guidance that has been successful in the past; and to recognize the cases when the paths taken in history no longer apply. Education refines our ability to see more than the final statistics of a conflict or operation. It enables us to see war's lessons and the thinking of its masters, as well. The refined tools of education may be provided by the experience of instructors in an academic environment, but can be advanced only by individual commitment and self-discipline.

## Naval Warfare Planning

When military action is one of the potential responses to a situation threatening U.S. interests, a plan is prepared using either the joint deliberate-planning process or crisis-action procedures. Although military flexibility demands a capability to conduct short-notice crisis planning when necessary, U.S. military strength is best enhanced by deliberate peacetime analysis, planning, and exercises.

An operation plan is a commander's complete description of a concept of operation. It is based on the commander's preparation of the battlespace, <sup>11</sup> a formal evaluation, supported by intelligence, that integrates enemy doctrine with such factors as physical and environmental conditions. From this evaluation, the commander identifies the forces and support needed to execute the plan within a theater of operations. Naval forces operation plans are integrated into the complete inventory available to the Joint Force Commander. For execution, plans become operation orders. Operation plans include: the theater strategy or general concept and the organizational relationships; the logistics plan shows ways the force will be supported; and the deployment plan sequences the movement of the force and its logistical support into the theater. Elements of planning that produce a concept of operations include the commander's estimate, deciding possible courses of action, preparation of the mission statement and its execution strategy, situation analysis, and formulation of the commander's intent. These elements are applicable up, down, and across chains of command.

Effective deliberate and crisis-action planning is essential and should be complementary at all levels in the chain of command. For example, where a joint campaign plan coordinates all available land, sea, air, space, and special-operations forces, each component of those

<sup>&</sup>lt;sup>10</sup> Joint Publication 5-0, "Doctrine for Planning Joint Operations" (Washington, D.C.: Joint Chiefs of Staff, 1993) has additional discussion of joint planning.

<sup>&</sup>lt;sup>11</sup>**Commander's Preparation of the Battle<u>field</u>** is a term used by the Marine Corps and Army. In a naval context, we use battlespace to mean analysis of the physical and environmental characteristics of a geographic area and its effects on our ability to establish superiority in every dimension of this space. It includes a detailed study of enemy capabilities, vulnerabilities, and probable enemy courses of action.

forces must plan for its particular assets to support the focus of effort. Additionally, commanders must account for the operational limits of logistics and transportation and the associated risks to their units.

By its nature, the uncertainty of war invariably involves the acceptance of risk. This is especially true when we employ high-tempo operations characteristic in maneuver warfare. High tempo involves risks when all possible information is not available at the time decisions must be made and executed. We are sometimes placed in a position of weighing certainty in outcome against the benefits of taking prompt action. We have seen how prompt, decisive action can have significant advantages in keeping ahead of the enemy's decision-andaction cycle. The risk of uncertainty in our decisions must be balanced by the gains of striking during a fleeting window of opportunity. Every commander can expect to be faced with accepting a certain level of risk in conflict. We assess risk to the overall mission and to the individuals involved in the task continuously during execution as well as during formal advanced planning.

Risk management and risk assessment are formal, essential tools of operational planning. Sound decisionmaking requires the use of these tools both in battle and in training. Naval commanders evaluate risk by using combinations of real-time, deliberate, and indepth assessments to determine the cumulative effect on the mission and seek ways to eliminate or control unnecessary hazards to their forces. Go/No-Go criteria are one form of evaluating our tolerance to risk. A mission may not be initiated, for example, if the base of operations is in jeopardy or would be unprotected when the force departed. Because risk is often related to gain, leaders weigh the risks against the benefits to be obtained from an operation, recognizing that unnecessary risk can be as great a hindrance to mission success as enemy action. On the other hand, carefully identifying the risks, analyzing and controlling as many factors as possible, and executing a supervised plan that accounts for these factors have contributed to the success of some of the greatest military operations in history.

#### **NORMANDY**

#### Accounting for Risk in Warfare

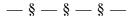
An excellent application of risk assessment and risk management is illustrated in the largest amphibious operation ever conducted — the Allied landing at Normandy, June 6, 1944. Operation Overlord was one of the most intricately planned invasions in history. One uncertainty however, the weather, threatened its success. General Dwight Eisenhower, the Supreme Commander, Allied Expeditionary Forces, recognized that high winds, low clouds, and heavy seas converging in the objective area presented unacceptable risk to his forces. He therefore delayed the operation, despite the realization that this might upset the precise timing of the enormous military undertaking. Carefully monitoring the situation, Eisenhower sought a balance where the advantage of attacking under adverse physical conditions, which might surprise the enemy not expecting him to take this risk, would offset the hazards associated with the poor weather itself. After 24 hours the weather had only moderately improved, but Eisenhower felt he had found that balance. With the risk now warranted, he made his irrevocable decision, launching a force of more than 5,000 vessels, 11,000 aircraft, and 700,000 men, in one of the most significant joint and multinational operations of the war.

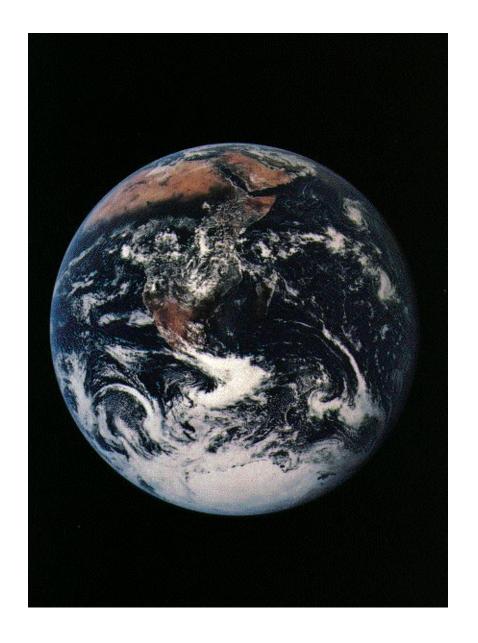


How well we fight depends upon how we think about fighting. Our thinking is shaped and reinforced by a continuing professional military training and education process drawing upon:

- Sound military doctrine the framework and philosophy for our approach to fighting, which complements the principles of war.
- The principles of war precepts developed from experience that, when applied with judgment, have led to success.
- Planning formal, detailed analysis of options and contingencies for known situations.

But theory alone does not win battles. Our ability to fight is also dependent upon the physical means we have to fight —making the best use of our technology and having the ability to sustain our forces in conflict and day-to-day operations — and our ability to lead and motivate our forces to fight as a team. Leadership, the foremost quality of command, enhances our physical ability to fight by inspiring unit cohesion and sense of purpose. It is the means by which we draw upon the courage, fortitude, and dedication within our people. Confident in our ability to fight and win as a team with the Army and Air Force, we are ready to carry out our assigned roles supporting our nation's objectives into the 21st century.





## **CHAPTER FOUR**

# Where We Are Headed - Into the 21st Century

he United States is and will remain a maritime nation, relying on the day-to-day forward presence of strong naval forces that can project power as required to execute national policy. Our extensive security commitments and vital global interests will not diminish in the next century. Presence forces, both deployed periodically and permanently stationed, are essential elements in extending U.S. influence, enhancing stability, promoting interoperability among allies and potential coalition partners, deterring aggression and providing rapid response to crises. The challenge facing U.S. defense planners today is to provide forces that are flexible, capable, and able to dominate in a broad array of scenarios.

While naval forces are built to fight and win wars, perhaps as important, is their contribution to deterring conflict. They are significant contributors to this aim because they represent a credible, survivable, and timely crisis response capability on a daily basis in critical regions of the world. "... From the Sea," published in September 1992, forms the basis of the naval input to the National Military Strategy. Its philosophy replaces the "Maritime Strategy" and sets the direction

<sup>&</sup>lt;sup>12</sup> The Maritime Strategy/Amphibious Warfare Strategy was, for the 1980's, our "White Paper" — that is, an official statement of policy — on how naval forces, in combination with other Services and the forces of our allies, would prepare for, fight, and terminate war on favorable terms. The U.S. Naval Institute published an unclassified version of these strategies as a special supplement to <u>Proceedings</u> in January 1986.

of naval forces in the 1990s by reemphasizing their expeditionary role. It is a shift from the global struggle envisioned under the Cold War maritime strategy — which called for independent blue-water, openocean naval operations on the flanks of the Soviet Union — to preparation for regional challenges. Though we retain our Service roles of deterrence, sea superiority, and the protection of maritime trade, our naval focus has shifted to the world's unstable regions holding critical and vital interests of the United States, placing a new emphasis on littoral operations. Naval expeditionary forces play a central role in safeguarding national interests. To maintain a strong peacetime forward presence capable of projecting sustainable power from the sea, these forces possess a full range of naval combat capabilities.

Naval expeditionary forces are cohesive, self-sustaining, and tactically and strategically mobile. These task-organized, forward deployed teams can execute a broad range of options initiated from the sea. The specific composition of naval expeditionary forces is tailored by operational need to become one of the basic building blocks for maritime joint and multinational options ordered by the National Command Authorities. Such options range from what has become our day-to-day peacetime employment — forward presence, humanitarian, and peacekeeping operations — to fighting in regional conflicts.

Naval expeditionary forces can respond to crises unilaterally or provide the initial enabling capability for joint and multinational operations. These forces capitalize on the expanding capabilities of modern naval forces to project power in an increasingly sophisticated and lethal environment. Our continuing challenge is to enhance U.S. naval warfare superiority and contribute to our nation's campaigns, through teamwork and cooperation — particularly in joint and multinational operations. Our nation's interest in remaining engaged with other nations of the world forges special bonds with regional leaders. Naval presence is used to provide a regional stabilizing influence, foster strong alliances, and encourage multinational friendships. This spirit of cooperation is desirable in deterring or confronting crises.

NDP 1 60

In most contingencies, naval forces complement the capabilities and resources of the Army and Air Force, and possibly forces of other nations. Although we have many inherent capabilities that can be used independently, naval forces simply cannot perform independently every military function that our nation may require. However, the critical operational capabilities naval expeditionary forces can provide include:

- Command, Control, and Surveillance
- Battlespace Dominance
- Power Projection
- Force Sustainment

## Command, Control, and Surveillance

Command, control, and surveillance encompasses the gathering, processing, and distribution of information vital to the conduct of military planning and operations. It forms the foundation of unity of command and is essential to the decision process at all levels. In peacetime, command, control and surveillance systems permit us to monitor situations of interest, giving us indications and warnings that allow us to position our forces when necessary. In humanitarian relief and other support operations, our command and control system becomes part of the overall network by tying together diverse government and non-government agencies, as well as the many international and interservice forces that may join the operation.

Warfare in every dimension of the battlespace — and even within many weapon systems — requires external information. Commanders and their forces have many requirements for information such as navigation, meteorology/oceanography, mapping/charting, communications, and evaluated information — intelligence. Because "command, control, communications, computers, and intelligence" (C<sup>4</sup>I) is so important, commanders also seek to degrade or interrupt an adversary's information support systems and structure. At the same time, operations security is essential to deny the enemy knowledge of our capabilities and intentions. It also contributes to our

ability to exercise the element of surprise. Intelligence identifies key enemy information vulnerabilities and can allow the commander to focus his resources against the enemy's center of gravity.

Good intelligence results from collection, processing, integration, analysis, evaluation, and interpretation of available information concerning potential adversaries. It produces timely indications and warnings, locations, identifications, intentions, technical capabilities, and tactics of potential enemies and other countries of interest. Current and relevant intelligence permits commanders to make decisions based on accurate estimates of the enemy's forces, capabilities, and intentions.



Intelligence is central to the decisionmaking process. Proliferation of technology increases the complexity of joint battlespace information management, and compresses the time cycle for decisionmaking. Space systems rapidly collect and distribute large volumes of information. They also provide services that link widely separated forces and provide an important advantage to naval forces in all areas of the world. Intelligence estimates, disseminated in a timely fashion, center on the focus of effort, identify critical vulnerabilities, and enhance combat effectiveness.

Integrating global C<sup>4</sup>I systems that directly link and support naval forces and joint forces will provide us an accurate picture of the battlespace. Some C<sup>4</sup>I operational capabilities include: enhanced battle management systems; fully interoperable, user centered, multimedia (voice, video, and data) links; embedded cryptographic security; and the ability to collect, evaluate, disseminate, and receive near-real-time, all-source, fused intelligence and surveillance data.

Technologically advanced equipment is available to any nation or individual that can afford to pay for it. It presents our potential adversaries with new capabilities through off-the-shelf information-management systems, global navigation, and commercial communications. Nevertheless, these capabilities, though modern, are still vulnerable to exploitation through information warfare. Control of information exploitation is so important that it has become a warfare objective in its own right. Battlespace dominance and projection of power ashore are intricately linked with and dependent upon effective C<sup>4</sup>I capabilities.

## **Battlespace Dominance**

Modern battlespace is multidimensional. Navy and Marine Corps operations encompass air, surface, subsurface, land, space, and time. Dominance of these dimensions continues to be an important factor in the survival and combat effectiveness of our force. Command and control integrates ships, submarines, aircraft, and ground forces, so their full range of capabilities can be extended effectively throughout our battlespace.

The battlespace in which naval forces operate is neither fixed in size nor stationary. We can visualize it as zones of superiority, surrounding one or more units or even the entire force, that are shifted as the situation requires. The zones are regions in which we maintain superiority during the full period of our operations by detecting, identifying, targeting, and neutralizing anything hostile that enters or passes through. The battlespace is our base of operations that we position over any area of concern and from which we can

project power. We can establish multiple zones of superiority as specific task forces are separated from the main force. All these zones are regions into which we receive information and support from outside sources, and from which we project power. Theater commanders may direct naval forces to conduct a mission independently if the size of the battlespace they can dominate adequately covers the region of concern. By combining complementary capabilities of units working together — including the U.S. Army and Air Force, allied, or coalition capabilities in joint or multinational operations — we effectively extend the range and geographic influence of our battlespace.

What distinguishes naval forces among armed forces is the combination of operational readiness and agility that creates these zones of superiority. These zones, based on the capabilities of our sensor and weapon systems, can reach out for hundreds of nautical miles and protect other entities such as convoys, amphibious groups, and land masses. We maintain our protective zones of superiority around us, establishing them not just upon arrival, but enroute to our objective area. The battlespace moves with the force. By extending zones of superiority over landing forces, naval commanders protect those forces while they are accomplishing their missions and establishing their own defensive zones. This concept applies both in war and in operations other than war.

## **Power Projection**

Our ability to project high-intensity power from the sea is the cornerstone of effective deterrence, crisis response, and war. In peacetime, the recognized and credible capacity to project power underpins our nation's ability to influence events, deter potential aggressors, promote regional stability, and provide, in conjunction with friends and allies, a means of collective security. In war, the capacity to develop sustained and lethal power rapidly stems from the use of combined arms to generate concentrated offensive power at the time and location of our choosing. Combined arms include, but are not limited to: bombs, bullets, missiles; the synergy of sea, ground, and air

operations; electronic warfare operations; deception and ruses; psychological operations; and special warfare operations. The ability to take the fight to the enemy is a strength enjoyed by naval forces and has always been one of our nation's primary objectives in war.

Naval expeditionary forces provide the National Command Authorities with the operational depth of naval power projection, independently or as part of a joint or multinational operation, by using:

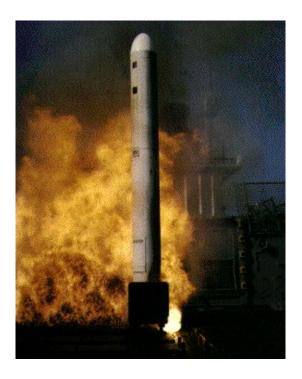
 Carrier-based Strike Aircraft. These tailored air wings are equipped with heavy payloads of advanced precision-guided munitions, capable of long-range strikes over hundreds of nautical miles. They provide a variety of power projection and crisis response options.



 Marine Air-Ground Task Forces. These forces, the most capable of their kind in the world, are task-organized, self-sustaining, rapidly deployable air, ground, and logistic units. They provide a wide range of power

projection options from short-duration raids to largescale forcible-entry operations. Amphibious forces provide the ultimate conventional demonstration of power by landing on an adversary's sovereign territory.

Long-Range Sea-launched Cruise Missiles. These
precision-guided munitions launched by our surface
ships and submarines are a key element of power projection and provide a flexible and powerful application
of force at ranges to nearly a thousand nautical miles.



• Special Warfare Forces. These forces, capable of operating clandestinely, are task organized to provide advance-force operations, hydrographic and near-shore reconnaissance in advance of a landing, direct-action missions, combat search-and-rescue missions, and the ability to degrade enemy lines of communications.

- Naval Surface Fire Support. This support provides accurate, all-weather fire support responsive to the task force commander, augmenting air-delivered strike munitions in the destruction of enemy emplacements, systems, and personnel.
- Command and Control Warfare. This warfare discipline provides the capabilities and organization needed to disrupt, neutralize, and deceive the enemy's command and control systems while protecting our own. A classic example is the suppression of enemy air defenses through overt electronic warfare.
- Maritime Prepositioning. These forces, while often thought of as force sustainment, are integral to our operational power projection and provide the United States with a rapid, sustainable, global-response capability. By employing maritime prepositioning ships that are maintained in-theater, naval expeditionary forces can travel directly to conflict areas, joining with these ships to build a potent fighting force.

Power projection takes the battle to the enemy. This is best done before the enemy's influence can become established, developed, or expanded. Even if no offensive action is planned, naval forces can be used as a credible show of force that can influence a potential adversary's actions by providing unequivocal evidence that a fully combat-ready force stands poised to inflict unacceptable losses upon him.

## **Force Sustainment**



Sustained naval and joint operations are made possible by a logistic support system that has two major components: fleet-based sustainment assets and strategic sustainment assets. Fleet-based sustainment assets include replenishment ships of the combat logistics force providing direct fleet support, combat service support units, mobile repair facilities, and advanced logistic support hubs. Strategic sustainment is provided by air and sea assets that are shared by all Services. Successful global response to contingencies depends upon our ability to project and sustain U.S. forces in all theaters of operations. Integrated support resources in the form of fleet-based sustainment assets and strategic assets provide naval expeditionary forces and joint and multinational forces the ability to operate in peacetime and in war wherever and whenever our national interests demand. Our ability to move and sustain forces at great distances from our shores is critical to the forward presence component of our military strategy.

NDP1 68

The same sustainment system that makes it possible for us to conduct operations in war also allows our nation to extend its influence in the form of credible U.S. presence in operations other than war. Naval forces can provide critically needed support personnel and relief supplies in the earliest stages of need.

Sustainment starts with combat-ready forces that are provided with effective, reliable and maintainable weapon systems, trained operators and maintenance personnel, and the necessary consumable supplies, spare parts, and facilities to be operationally self-sufficient. Naval forces bring a significant organic logistic capability — afloat with the Navy's Combat Logistics Force ships and ashore with the Marine Corps' force service support groups — providing a task-organized combat service support element. Our naval logistical support systems are built around six areas of operational logistics:

- **Supply.** From the producer to the user, the supply system provides our forces with the requisite material for conducting naval operations.
- Maintenance. From normal upkeep to damage repair to updating and upgrading capabilities, maintenance activities afloat and ashore keep equipment operating. Private and public shipyards, aviation depots, and logistic bases form the core of our industrial support.
- Transportation. Coordinated transportation is required to get personnel, equipment and supplies from point of origin to destination. The Navy is responsible for the management, operation, and protection of all strategic afloat assets.
- General Engineering. Such specialized units as Marine Corps engineer support battalions and naval construction battalions construct temporary or permanent facilities such as roads, airfields, and port facilities to support combatforces operations.

- Health Services. Afloat and ashore, the Navy provides medical and dental care for the naval Services to maintain, preserve, or restore personnel combat readiness. Assets include fleet hospitals, hospital ships, and organic Marine Corps assets.
- Other Services. Filling the administrative, security, and personnel-support requirements of combatant forces is necessary to keep them fully operational.

Logistic support provides assured delivery of the materiel required for U.S. forces to remain on station, combat ready, for as long as necessary. These forces are served by a support organization that begins at the loading dock of the manufacturer in the United States and ends when the needed materiel is put in the hands of the user. Their delivery depends upon our ability to maintain open sea lanes of communications to ensure the unimpeded flow from origin to destination.

As we move forward into the 21st century, naval forces will continue to play a significant role in providing peacetime influence and safeguarding our nation's interests around the globe. Alone or as part of a joint or multinational force, naval forces provide critical operational capabilities that include:

- Command, Control, and Surveillance
- Battlespace Dominance
- Power Projection
- Force Sustainment

These capabilities will be increasingly relevant in facing future regional threats and challenges to U.S. interests. They allow naval forces to maintain a strong forward presence to deter and react effectively to armed aggression with the ability to project sustainable power from the sea in time of crisis.

NDP1 70

## CONCLUSION

NDP 1, <u>Naval Warfare</u>, describes our warfighting philosophy, distinctive characteristics, capabilities, and basic missions. Our warfighting philosophy incorporates the principles of war while making the best use of the inherent characteristics and advantages of our naval forces. The enduring characteristics of readiness, flexibility, sustainability, and mobility make us uniquely suited to be our nation's first response to crises of all sizes at sea and along the world's littorals. Through the effective employment of sensors and weapons, and supported by a comprehensive intelligence and logistics infrastructure, naval forces dominate the battlespace from which we project power ashore.

The intent of this introductory publication is to reaffirm the reader's sense of identity and purpose in the naval Services. The varied seniority, experience, and employment of its readers influences what each person will gain from its concepts. For some, NDP 1 may prompt a search for essential elements of our warfighting philosophy — such as identification of the commander's intent — in their review of operation orders and procedures. For others, it might suggest a review of other Service doctrines. If it stimulates discussion, promotes further study, and instills in readers a feeling of ownership as contributing members of a coordinated Navy/Marine Corps team, then NDP 1 will have properly served its purpose.

Our naval forces contribute decisively to U.S. global leadership and are vital to shaping an environment that enhances our national security. A strong naval team — capable of deterrence, war at sea and from the sea, and operations other than war — is essential to that effort. Our forward presence, timely crisis response, and sustainable power projection provide naval and joint force commanders a broad and flexible array of combat capability.

## **GLOSSARY**

**Area of Influence**: A geographical area in which a commander is directly capable of influencing operations by maneuver or fire support.

Area of Interest: That area of concern to the commander, including the area of influence, areas adjacent, and areas extending into enemy waters or territory to the objectives of current or planned operations. This also includes areas occupied by enemy forces that could jeopardize the mission.

**Attrition Warfare**: The application of overwhelming combat power that reduces the effectiveness of an enemy's ability to fight through his loss of personnel and materiel.

**Battlespace**: All aspects of air, surface, and subsurface, land, space, and the electromagnetic spectrum that encompass the area of influence and area of interest.

**Battlespace Dominance**: The degree of control over the dimensions of the battlespace that enhances friendly freedom of action and denies the enemy freedom of action. It permits power projection and force sustainment to accomplish the full range of potential missions.

**Center of Gravity**: That characteristic, capability, or location from which enemy and friendly forces derive their freedom of action, physical strength, or will to fight.

**Coalition Force**: A force composed of military elements of nations that have formed a temporary alliance for a specific purpose.

**Combined Arms**: The use of several arms or branches of one military Service together in an operation such as Marine Corps infantry, armor, artillery, and aviation.

NDP1 72

**Crisis Response**: The ability to maintain the forces and agility to respond quickly and decisively to regional crises with a range of options.

Focus of effort: The most important task to be accomplished by the force. It is the critical vulnerability we have chosen to exploit, the paramount objective we desire to accomplish. All our actions should be oriented on that task. If we focus our effort on the destruction of an enemy capability, then the destruction of that capability becomes our "focus of effort."

**Force Sustainment:** Capabilities, equipment, and operations that ensure continuity, freedom of action, logistic support, and command and control.

**Forward Presence**: Maintaining forward deployed or stationed forces overseas to demonstrate national resolve, strengthen alliances, dissuade potential adversaries, and enhance the ability to respond quickly to contingency operations.

**Joint**: Activities, operations, or organizations in which elements of more than one Service of the same nation participate.

**Lines of Communication**: The routes (sea, air, and land) that connect a military force with a base of operations and along which military forces and logistics support move.

**Littoral**: Those regions relating to or existing on a shore or coastal region, within direct control of and vulnerable to the striking power of naval expeditionary forces.

**Main Effort**: The friendly unit or group (controlled by a single designated commander) that constitutes the principle means by which we will accomplish an objective. The commander ensures the success of the main effort by providing it the preponderance of the support and by alerting supporting units to reinforce — or, if necessary, assume — the main effort.

**Maneuver Warfare**: A philosophy that seeks to collapse the enemy's cohesion and effectiveness through a series of rapid, violent, and unexpected actions that create a turbulent and rapidly deteriorating situation, with which he cannot cope.

Marine Air-Ground Task Force: A task organization of Marine forces (ground combat, air, and combat service support elements) under a single command and structured to accomplish a specific mission. The MAGTF will also include Navy support elements.

**Multinational**: An alliance, coalition, or other international arrangement.

**Multi-Service**: Two or more Services in coordination.

**National Command Authorities**: The President and the Secretary of Defense or their duly deputized alternates or successors. Commonly referred to as the NCA.

Naval Special Warfare: A designated naval warfare specialty that conducts operations generally accepted as being unconventional in nature and, in many cases, covert or clandestine in character. These operations use specially trained forces to conduct unconventional warfare, psychological operations, beach and coastal reconnaissance, operational deception operations, counterinsurgency operations, coastal and river interdiction, and certain special tactical-intelligence-collection operations, in addition to intelligence functions normally required for planning and conducting special operations in a hostile environment.

**Naval Surface Fire Support**: Fire provided by Navy surface gun, missile, and electronic-warfare systems in support of a unit or units on land.

**Power Projection**: The application of offensive military force against an enemy at a chosen time and place. Maritime power projection may be accomplished by amphibious assault operations, attack of targets ashore, or support of sea control operations.

NDP 1 74

## SUGGESTED FOLLOW-ON READING

- O'Keefe, Sean, Frank B. Kelso, II, and Carl E. Mundy, Jr. "... From the Sea: Preparing the Naval Service for the 21st Century." (Washington, D.C.: Department of the Navy, 1992).
- Joint Publication 1, "Joint Warfare of the U. S. Armed Forces" (Washington, D. C.: Joint Chiefs of Staff, 1991).
- Joint Publication 3-0, "Doctrine for Joint Operations" (Washington, D. C.: Joint Chiefs of Staff, 1993).
- Fleet Marine Force Manual 1, "Warfighting" (Washington, D. C.: Department of the Navy, 1989).
- Fleet Marine Force Manual 1-2, "The Role of the Marine Corps in the National Defense" (Washington, D. C.: Department of the Navy, 1991).
- Field Manual 100-5, "Operations" (Washington, D. C.: Department of the Army, 1993).
- Air Force Manual 1-1, "Basic Aerospace Doctrine of the United States Air Force" (Washington, D. C.: Department of the Air Force, 1992).
- Clausewitz, Karl von. <u>On War.</u> Ed. and trans. Michael Howard and Peter Paret. (Princeton, NJ: Princeton University Press, 1976).
- Corbett, Sir Julian S. <u>Some Principles of Maritime Strategy</u>. (Annapolis, Md: Naval Institute Press, 1988).
- Liddell Hart, B. H. <u>Strategy</u> 2nd Revised Edition. (New York: Dutton, 1991).

Wylie, Joseph. C. Rear Admiral, USN (Ret.) <u>Military Strategy:</u> <u>A General Theory of Power Control</u>. (Annapolis, Md: Naval Institute Press, 1989).

Mahan, Alfred Thayer. <u>Mahan On Naval Strategy</u>. Ed. J.B. Hattendorf. (Annapolis, Md: Naval Institute Press, 1991).

Sun Tzu. <u>The Art of War.</u> Ed. and trans. Samuel. B. Griffith. (New York: Oxford University Press, 1988).

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