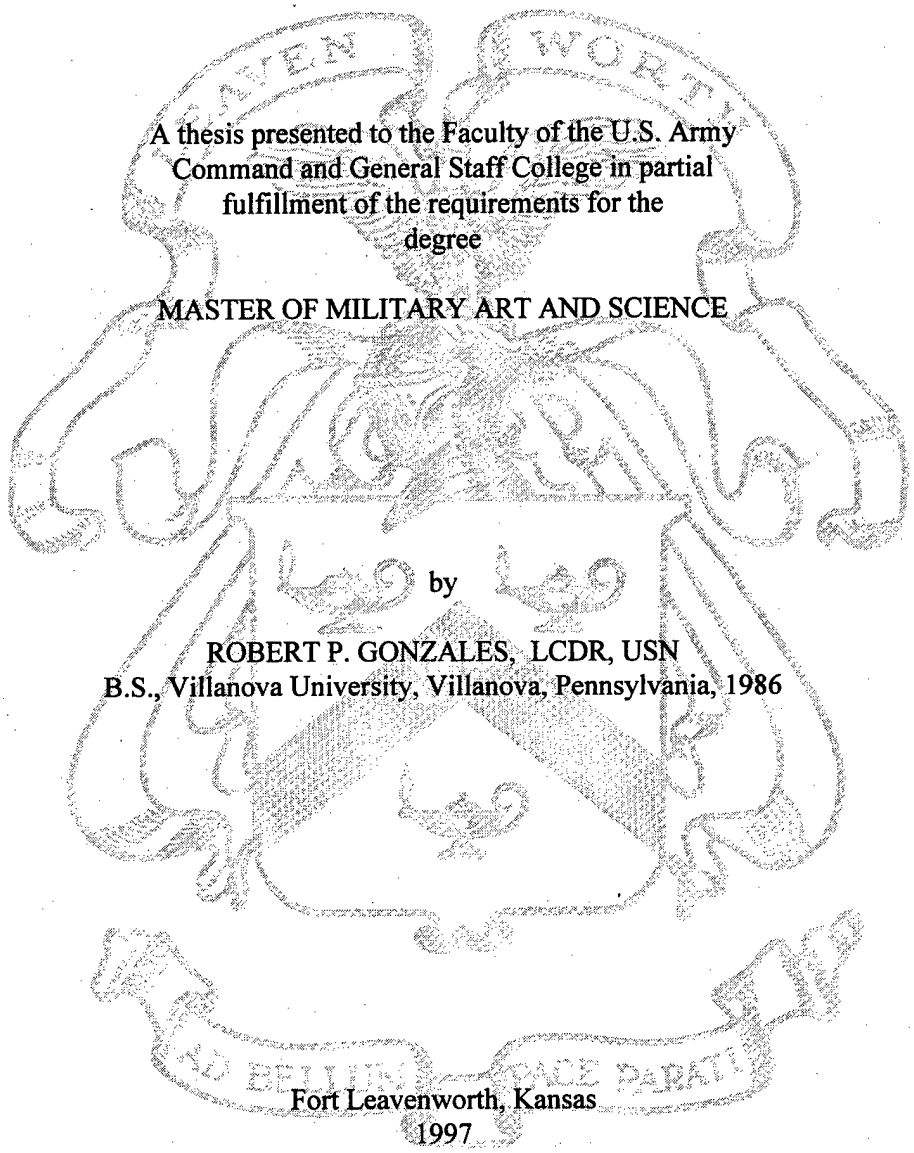
MANEUVER WARFARE--APPLICATION TO NAVAL BATTLE AND TACTICS



A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

ROBERT P. GONZALES, LCDR, USN
B.S., Villanova University, Villanova, Pennsylvania, 1986

Fort Leavenworth, Kansas
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This study explores maneuver warfare theory, naval tactics and if maneuver warfare influences or can be applied to naval tactics and battle. The concepts of attrition warfare and maneuver warfare are investigated. The study is presented from a naval perspective. To support this perspective, aspects of war at sea and war on land are discussed. This comparison of sea power helps develop the idea of naval maneuver warfare. Foundations of naval tactics are outlined and the uniquiness of naval battle is also explored.

Through historical and tactical examples, and discussions this study shows maneuver warfare theory and concepts apply to naval tactics and battle. Furthermore, maneuver warfare is addressed with respect to military culture, the developing concept of precision culture and other warfare theories including attrition warfare theory. Maneuver warfare strengths and limitattions are discussed.

The U.S. Navy has recently embraced maneuver warfare theory, perhaps too quickly. Quite a heavy maneuver emphasis has developed that does not fully appreciate other warfare theories. This study presents a balanced discussion and contributes to the current debate that is shaping U.S. Navy Doctrine.

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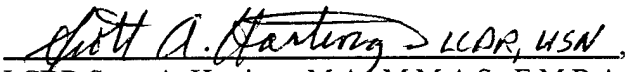 , Thesis Committee Chairman
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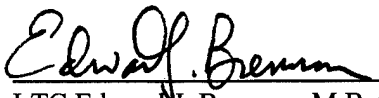 , Member
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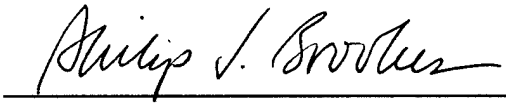 , Director, Graduate Degree Programs
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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

MANEUVER WARFARE--APPLICATION TO NAVAL BATTLE AND TACTICS by LCDR Robert P. Gonzales, USN, 93 pages.

This study explores maneuver warfare theory, naval tactics and if maneuver warfare influences or can be applied to naval tactics and battle. The concepts of attrition warfare and maneuver warfare are investigated. The study is presented from a naval perspective. To support this perspective, aspects of war at sea and war on land are discussed. This comparison of sea power helps develop the idea of *naval* maneuver warfare. Foundations of naval tactics are outlined and the uniqueness of naval battle is also explored.

Through historical and tactical examples, and discussions this study shows maneuver warfare theory and concepts apply to naval tactics and battle. Furthermore, maneuver warfare is addressed with respect to military culture and other warfare theories including attrition warfare theory. Maneuver warfare strengths and limitations are discussed.

The U.S. Navy has recently embraced maneuver warfare theory, perhaps too quickly. Quite a heavy maneuver emphasis has developed that does not fully appreciate other warfare theories. This study presents a balanced discussion and contributes to the current debate that is shaping U.S. Navy doctrine.

ACKNOWLEDGMENTS

In memory of the Airmen, Marines, Sailors and Soldiers that lost their lives in Iron Bottom Sound during the Solomon Island Campaign of World War II.

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INTRODUCTION

Topic

"Naval maneuver warfare applies to campaigns, not to battles . . . The aim of naval tactics . . . was, and still is, attrition."[1] These words were written recently by Captain Wayne Hughes, USN (Retired), naval historian, theorist, and member of the Naval War College Review Advisory Board. His words provide the genesis for this thesis: an exploration of maneuver warfare theory, naval tactics, and whether maneuver warfare influences or can be applied to naval tactics and battle.

Bloodshed, destruction, and material loss, typical of naval battles, clearly demonstrates an attrition nature. Contact with the enemy demands attrition, usually on both sides. This given must not be ignored. The military leaders, ship designers and those on the deck plates must be prepared to strike hard and counter a tenacious foe. Yet, can the U.S. Navy fight smarter? While accepting the attrition nature of naval battle, can the battle group commander or ship's commanding officer apply maneuver warfare concepts to naval tactics and battle to avoid and minimize attrition?

Since the end of the Cold War and the demise (at least marginalization) of America's nemesis, the Soviet Navy, the U.S. Navy has been aggressively redefining doctrine. As new doctrine has developed and emerges, the U.S. Navy has been quick to embrace maneuver warfare theory. Perhaps, like a sailor, fresh off the bow in an exotic liberty port, destined for a binge, the U.S. Navy has become intoxicated with maneuver warfare. Major General Edward Atkeson,

U.S. Army, has come to this conclusion and believes the U.S. Navy is under the spell of the "maneuver warfare siren song."[2] In part, this over exuberance is due to the U.S. Navy's relatively recent adoption of naval maneuver warfare theory. Naval maneuver warfare theory is so fresh that little has been written about it inside naval circles. The U.S. Navy's principal relevant warfare publications, Naval Doctrine Publication (NDP) 1, Naval Warfare, and Naval Warfare Publication (NWP) 3-20, Surface Ship Tactics, offer little beyond a general definition of maneuver warfare and a powerful assertion that maneuver warfare is the preferred and most effective method of warfare.[3]

U.S. Navy maneuver warfare theory is still maturing. The U.S. Navy's warfighting guide which firmly adopted maneuver warfare, NDP 1, Naval Warfare, was promulgated in the spring of 1994. The process of doctrinal change takes time to work through all levels. As new concepts come online there is both resistance and a learning curve to contend with. The U.S. Navy is working through these issues. Hughes accurately points out, that the U.S. Navy has yet to put the "flesh" on the "skeleton" of naval doctrine.[4] This thesis will address maneuver warfare's impact on and application to naval battle and tactics. At the same time, it is hoped it will contribute to the current debate that is shaping U.S. Navy doctrine.

Background

Warfare theories and concepts can be traced back to the origins of man. The first cave man that brandished a club to posture and drive away another was practicing the philosophy of Sun Tzu. Sun Tzu, whose writings date to 400 B.C., is one of the earliest recorded warfare theorists. Sun Tzu taught, "To win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the supreme excellence."[5] This is a basic belief of maneuver theorists. The cave man understood this; he knew he could not afford a

broken bone that might result from a fight, even a victorious fight. Conversely, the cave man soon discovered another advantage of the club: it enables one to dispatch or wear down the enemy more efficiently (attrition warfare). At times, no amount of posturing, rational or common sense can avoid the fight. Witness the Gulf War of 1990-91. Would a rational enemy have permitted the United States and Coalition forces time to move Fort Hood, Fort Bragg, Camp Pendleton, multiple aircraft wings and brigades, numerous ships, and supplies into striking range without any resistance. Would a rational enemy have suffered through weeks of aerial bombardment only to capitulate one hundred hours after being assaulted by ground troops. If enough is at stake or if one is foolish enough, the enemy will fight in desperation. The cave man helps illustrate the balance between maneuver warfare and attrition warfare theory. It has been historically common to transition between the two theories.

One is not the "good" type of warfare and the other "bad." Attrition warfare and maneuver warfare are two distinct styles of warfare. Sometimes only one style can be applied or is applicable, other times a choice must be made between the two. Depending on the circumstances or if the enemy commander has the initiative, he may decide which warfare style is employed. Furthermore, warfare is not limited to attrition warfare and maneuver warfare. For example, a third common warfare style is guerilla warfare. *Guerre de course* (commerce raiding) is sometimes considered its naval counterpart.

Sun Tzu has been followed by many great theorists and practitioners of warfare. Genghis Khan, Alexander the Great, Napoleon, Clausewitz, Mahan, Patton, William DePuy, to highlight only a few, have contributed to the understanding of warfare theory and tactics. Technology has provided further impetus. The longbow, gunpowder, steel, steam engines, mass production, airplanes, and computers have shaped battle space and warfare.

A contemporary understanding of naval warfare is mainly due to theorists like Alfred Thayer Mahan, Julian, Corbett and Raoul Castex. Bernard Brodie affirms this in A Layman's Guide to Naval Strategy. He writes, "The underlying value of the teachings of men like Mahan, Corbett and Castex is still largely intact."[6] Mahan and Corbett preceded Castex. They discuss some aspects and foundation of maneuver theory, but never defined the concept or singled it out. In his work Strategic Theories, Castex was the first to define naval maneuver warfare and develop a naval understanding of the concept. However, James Tritten, author of "'Maneuver' or *Manoeuvre* Warfare for the U.S. Navy?" who is lavish in his praise and admiration for Castex, warns that Castex's concepts are not ideally suited to the U.S. Navy. Castex, he notes, was "providing a doctrine for a second-ranking navy [France in the 1930s] and not one that would ever hope to challenge a first-rate fleet."[7]

Maneuver warfare theory moved into the forefront of American military thinking with the development of a "new operational view and tactics of battle tagged AirLand Battle," and the publication of U.S. Army Field Manual (FM) 100-5, Operations in 1982.[8] This firmly established maneuver warfare in American military doctrine and lexicon. The U.S. Marine Corps aggressively embraced maneuver warfare in 1989 with the publication of Fleet Marine Force Manual (FMFM) 1, Warfighting. These publications and subsequent writings have precipitated a lively debate and a critical analysis of all aspects of land and amphibious warfare. Furthermore, Desert Storm helped to validate aspects of both services' doctrine. While developing maneuver warfare doctrine, each service and academia have produced a rich litany of books, articles, and writing on land and amphibious maneuver warfare. By the mid-1990s the U.S. Navy would become a full participant in the debate.

In 1994, the U.S. Navy promulgated its vision of naval warfighting with the publication of NDP 1, Naval Warfare. The impetus for change was the collapse of the Soviet Union and end

of the cold war. Since the start of the cold war, in the late 1940s, through the late 1980s, the U.S. was actively containing communism and fixed on deterring war with the United Soviet Socialist Republic (USSR). The U.S. Navy conducted presence operations to the shore lines and backyard of the USSR. Operations were conducted in the North Sea and Baltic Sea, under the ice cap, and into the Soviet underbelly, the Black Sea. In the East, the U.S. Navy operated in the North Pacific and Sea of Japan. Embarrassed by their maritime unpreparedness in the early sixties, the Soviets developed a fleet approaching par with the U.S. by the late seventies and early eighties. To counter this "permanent foe," doctrine and tactics were developed. This doctrine served one purpose--to defeat the Soviet Navy. Some may call this short sighted; however, in the context of the time it was survival.

I will never forget, while serving on a destroyer, being overflown by Soviet Badgers while steaming in the Sea of Okhotsk during my first deployment in 1987; and despite a foggy and moonless night in the Sea of Japan, being denied permission to turn on the ship's alternate navigation radar when its primary radar failed. The alternate radar was the SPQ-9 radar, which was also the gunfire control radar. It was feared bringing up the SPQ-9 navigation and gunfire control radar might alarm Soviet destroyers that were operating close by. The U.S. Navy was consumed in forward presence operations against a capable, improving adversary.

The threat began to ease in the late eighties and early nineties with reforms in the Soviet Union. In 1991, following the collapse of the Soviet Union, the U.S. Navy found itself without peer or permanent adversary--for the near future. The "comforting certainties of the Cold War"[9] were over. In hand, the U.S. Navy's doctrine and tactics would soon be proven out of date. The end of the cold war found the U.S. Navy adrift (figuratively, not literally).

The U.S. Navy did not have to look far to prompt change. The Gulf War of 1990-91 demonstrated that the collapse of the Soviet Union did not change America's geographic position

or need for permanent maritime superiority. It also demonstrated that doctrine, tactics, command and control, weapons, and concept of operations were not suited to this "New World Order." According to Admiral William Owens, the Gulf War was the U.S. Navy's "midwife to change."[10] In High Seas: The Naval Passage to an Uncharted World, Owens discusses national strategy to fight in the deep blue ocean, bottle up the Soviet Navy and protect the Navy's sea lanes of communication (SLOC). Fighting was going to take place over long distances, at maximum range. The command and control system was designed to operate in a defensive mode and counter a doctrinal adversary. Owens recognizes that the maritime strategy and battle group tactics were products of the times. However, they proved "ill suited to the Gulf War" and likely scenarios for the future--the U.S. Navy had to adapt and change."[11]

With the lessons of the Gulf War of 1990-91 and the collapse of the Soviet Navy, the U.S. Navy quickly and deliberately instituted change. To stimulate and guide change, the Department of the Navy produced a white paper, titled " . . . From the Sea," in 1992, which charted a new course for the naval service. ". . . From the Sea" steered the naval service away from the blue water navy, open ocean maritime strategy dictated by the cold war. Recognizing the new challenges and changing world, it focused efforts toward development of naval expeditionary forces (NEF) and further integrating the Navy-Marine Corps team. Also, the service was to prepare for joint and multinational operations in the littoral.[12] Creation of the Naval Doctrine Command followed in the spring of 1993. Tasked with articulating naval doctrine, in 1994, the Navy Doctrine Command promulgated NDP 1, Naval Warfare. In its own words, NDP 1, Naval Warfare, is a "capstone document for Naval Warfare that translates the vision and strategy of ". . . From the Sea" into doctrinal reality."[13]

These changes were indeed far reaching--and continue today. In 1996 ". . . From the Sea" was updated and slightly modified and a new white paper, "Forward . . . From the Sea,"

was introduced. As a result of these white papers, the entire U.S. Navy's focus changed. Doctrine, concepts, procedures, battle group makeup and command and control structure were updated or modified. In conjunction with these movements, NDP 1, Naval Warfare, embraces maneuver warfare as "the preferable and more effective--albeit more difficult to master--fighting style."[14]

Scope

The scope of this thesis is limited to the study of naval maneuver warfare theory and practice and if it applies to naval battle and tactics. In the process, this work will explore key definitions, foundations of naval tactics and differences between land warfare and naval warfare. Naval maneuver warfare's influence on the operational and strategic levels of warfare will also appear within this study.

Significance

"This ship is built to fight . . . you'd better know how."[15] With these words as a challenge to the commissioning crew of USS *Arleigh Burke* (DDG 51), Admiral Arleigh Burke commissioned his namesake. The most capable guided missile destroyer in the world, ARLEIGH BURKE is the lead ship of the U.S. Navy's newest class of warships. These are tough words. Admiral Burke intended these words for the entire U.S. Navy. A war hero and brilliant tactician, he knew the importance of knowing your profession and craft. His craft kept him alive and enabled him to achieve exemplary success against the Japanese during World War II as a destroyer squadron commander.

In the spirit of Arleigh Burke's challenge, this thesis will explore aspects of U.S. Navy's craft and naval warfighting. This thesis will look at newly developed naval doctrine and explore the works of naval theorists. Specifically, this thesis will directly look at maneuver warfare,

naval tactics, and whether maneuver warfare influences can be applied to naval tactics and battle. Additionally, this thesis will highlight, to some degree, the following significant issues:

1. Many maneuver warfare practitioners, especially of naval maneuver warfare, believe maneuver warfare is only movement or mobility. This thesis will address this misunderstanding of maneuver warfare and demonstrate that maneuver warfare is more than glorified movement or mobility. An art and philosophy, maneuver warfare may include movement and mobility but, should not be limited to the non-linear battlefield. Maneuver warfare also seeks other avenues to exploit the initiative and defeat the enemy's will to fight.

2. Exploiting maneuver warfare on the battlefield is an earned right. The tactics, tempo, and technology--among other things--that the commander brings to a fight promotes maneuver warfare. Yet, freedom of maneuver cannot be imposed on the enemy; it must be wrested from the enemy commander. Despite his best efforts, a maneuver practitioner may have to rely in part on attrition tactics or actions.

3. Attrition warfare cannot always be avoided. Contact, soldier versus soldier, ship versus ship, plane versus plane, even with overwhelming odds or technological advantage, may lead to attrition. Even in the best circumstances, contact exposes forces to a linear battlefield or two-dimensional aspect of warfare. Typically, someone will experience attrition, most likely on both sides.

4. "Maneuver warfare is good while attrition warfare is bad" is a frequently declared generalization. This conclusion is flawed. The relationship and dynamic are more complex. Yet, much of what is written relegates attrition warfare to a losing option. As stated above, leaders must understand that attrition warfare at times may be the only option. While maneuver warfare offers many advantages, an indirect approach may not initially exist in tactics or battles.

5. Land warfare and sea warfare are distinct disciplines. While some concepts overlap, their uniqueness must be recognized. Understanding these distinctions enables commanders to effectively apply land power and sea power.

6. Warfare theory is typically cast from a land warfare perspective. Yet, land warfare and sea warfare are unique. When applying warfare theory to naval warfare its uniqueness must be addressed. Ignoring these differences may lead to a misapplication of warfare theory.

Levels of Warfare

Today there are three generally recognized levels of war: strategic, operational, and tactical. Levels of war are a tool or model to link a nation's policy to military strategy to tactical actions. This model has evolved over the years. Clausewitz spoke of strategy and tactics.[16] Jomini introduced concepts, such as grand tactics and elementary tactics.[17] The current model is relatively recent and expands on many of these ideas. The term "operational level of war" or "operational art" became popular in U.S. military lexicon in the late 1970s. Adopted first by the Army, it was later incorporated into joint doctrine. By the late 1990s it began to appear in naval writings and is now fully incorporated in naval warfare publications (NWPs) and naval doctrine publications (NDPs).

It has long been recognized that military power and military action are instruments of a nation's power and an extension of policy. Both Clausewitz and Jomini concluded that military action is a means of achieving a nation's objectives. Influenced by the works of Clausewitz and Jomini, the great naval theorist Alfred Thayer Mahan echoed this conclusion and declared in 1879, "War is simply a violent political movement."[18] Figure 1 depicts the notional levels of a war model and helps show how this model links national policy to tactical actions.

War	**STRATEGIC**	NCA
Campaigns Major operations	**OPERATIONAL**	Theater, JTF, Fleet Commander, Task Force, Task Group, CVBG
Battle Engagements	**TACTICAL**	Task Group, Task Element, CVBG, SAG, SAU, Ship, Submarine

Figure 1. Notional Level of War Chart

Figure 1 is only a notional depiction of the model. In reality this model does not hold to strict boundaries or relationships. For example, tactical actions may have direct impact on strategic concerns and national policy. The Doolittle Raid serves to illustrate this point. In April 1942, sixteen B-25 medium bombers, led by James Doolittle, were launched from the USS *Hornet* (CV-8), against Tokyo and three other cities in Japan. They conducted a relatively minor tactical action--especially in the scope of the military actions that immediately followed the raid. (The Battle of Coral Sea (3 May 1942) would follow two weeks later, and Midway shortly after that.) Besides being tactically small, operationally it significantly hampered Admiral Chester Nimitiz's actions in the Pacific. With limited assets at his disposal, this raid dangerously dispersed his four available carriers. USS *Saratoga* (CV-3), Nimitz' fifth carrier in the Pacific during this period, had been crippled by a Japanese submarine torpedo and would be unavailable until after the Battle of Midway. With USS *Enterprise* (CV- 6) escorting *Hornet*, Nimitz only had two carriers available for other operations. As a direct result of the raid, only USS *Yorktown* (CV-5) and USS *Lexington* (CV-2) would be in the South Pacific for the Battle of the Coral Sea. Yet, this tactically insignificant raid and operational mistake was a top national and strategic priority for the United States. The strategic, political considerations were considered paramount;

it made the American people feel good and was perceived very positively in the press and considered a victory.[19]

The Doolittle Raid clearly illustrates the model. It also demonstrates a misapplication of military power. The Doolittle Raid was not tied to Admiral Nimitz's principal strategic military objectives of hold the Pacific, Europe first and operate as a raider or spoiler on the strategic defensive. Where aircraft carriers could have been more effectively positioned in the South Pacific, they were scattered over the Pacific.[20] The U.S. would address this early mistake at Midway. At Midway, the U.S. would align its national military strategy and tactical actions. Admiral Nimitz would be able to concentrate his carriers for the first time and deal a devastating blow to Japan.

The level of war model is not limited to general war. It applies to any execution of the military instrument of power in peacetime. Peacetime operations skew the model even more. USS *Vincennes'* (CG-49) minor skirmish with Iranian gun boats and the accidental shooting down of an Iranian civilian air liner was a tactical action. Yet, its ramifications were felt in the halls of the White House and Pentagon. The hostage rescue attempt, Desert One and sending aircraft carrier battle groups (CVBGs) into the Taiwan Straits are two more examples that blur the distinction between strategic, operational, and tactical levels of war. Yet, the model still applies. Decisions made by the National Command Authority (NCA) influence action down to the tactical level and tactical actions stretch back to the NCA. Failure results when actions are not properly linked. Successful execution of national goals and objectives demand that this relationship be understood and properly executed.

Levels of War--Defined

Acknowledging his debt to Clausewitz, Mahan stated in 1897, "It is not until this political determination [national objectives and goals] has been reached that the data for even starting military problems are in hand; for here, as always, the military arm waits upon and is subservient to the political interests and civil power of the state."[21] It is at the strategic level where military means are developed to meet Mahan's political determination; the execution of the military instrument of power is tied directly to achieving national goals and objectives at the strategic level. Typically, strategic policy is initiated by the NCA assisted by the National Security Council (NSC). Furthermore, at the strategic level, theater strategy and operational goals are developed. Theater strategies and operational goals link the strategic level to the operational level of war.

Operational level or operational art links the strategic and tactical levels of war. Commanders in Chief (CINCs) and Fleet Commanders conduct operational art. The NCA provides theater strategy and operational goals to the CINC. The CINC or fleet commander translates these into campaign plans and direct tactical action. This intermediate-level operational art and campaign planning is instrumental to ensure tactical actions come together and support strategic plans.

The tactical level of war deals with individual engagements and battles. Tactics is the art of fighting. Ship-to-ship or ship-to-submarine encounters and air strikes are tactical execution. CVBG and Amphibious Ready Group (ARG) actions are typically tactical execution. Tactics link back to operational art by supporting operational goals.

Attrition Warfare

"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 expand it by adding replacements numbering twice the losses suffered."[22] With these words, NDP 1, Naval Warfare, adeptly captured the essence of the Battle of the Atlantic during World War II. A daunting German submarine force, which expanded in the early war years and was difficult to find and destroy, menaced Allied SLOCs. These sea lanes were critical to Allied survival and could not be abandoned or bypassed. These, the Allies had to mass assets and resources to counter the German threat and keep the sea lanes open. Thus, the Battle of the Atlantic is an example of the classic attrition fight.

The Battle of the Atlantic displays the chief characteristics of attrition warfare: strength versus strength, systematic destruction of the enemy, and engagement and battle focus. Attrition warfare seeks to destroy the mass and physical force of the enemy. It is very costly and force ratios are extremely important. Critical to a successful attrition fight is destroying the enemy faster than he can recover. Employment of reserves and resources in greater numbers or faster than the enemy will swing the battle or war. Attrition warfare is often called linear warfare where neither side has freedom of maneuver. In addition to the Battle of the Atlantic, there are numerous other examples of attrition warfare.

In many ways, attrition warfare has been the dominant influence on the American way of war. Attrition warfare complements America's strengths: economic might, industrialization, and vast resources. Significant aspects of attrition warfare can be clearly seen in the Civil War, World War I, World War II, and Vietnam. In each case, the U.S. harnessed its economic power, industrial engine, and resources to bring machines, personnel, firepower, mass, and technology to bear. Wearing down the enemy, strength versus strength, and destroying the enemy faster

than he could destroy American or Allied forces characterized these conflicts. The cold war was another attrition fight. The West's massive force and nuclear arsenal were built up to deter the Soviets from becoming an aggressor. The posturing was mass versus mass.

During the cold war America identified the Soviet military--army, navy, air force and nuclear arsenal--as a source of strength and successfully countered it with overwhelming superiority of the U.S. and NATO. Attrition warfare is best suited when the enemies strength is his military. It may be the only option if friendly power cannot influence or get at his other sources of strength. Vietnam offers an example of where America's culture of attrition warfare was a liability. In Vietnam the U.S. military faced another type of warfare--distinct from maneuver warfare and attrition warfare--guerilla warfare. In On Strategy: A Critical Analysis of the Vietnam War, Colonel Harry Summers recalls an April 1975 conversation in which he remarked, " 'You know you never defeated us on the battlefield' to which his Vietnamese counterpart replied, 'That may be so, but also irrelevant.' "[23] The Viet Cong and North Vietnamese strength was not limited to their forces in the field. Where military mass is not the enemy's strength, attrition warfare is poorly suited. Moreover, attrition warfare does not target or exploit other enemy strengths or weaknesses other than military mass. On the other hand, maneuver warfare seeks to exploit an enemy's will, cohesion, and mass.

Developing Maneuver Warfare

Art and philosophy are the most common descriptive terms encountered researching the concept and definition of maneuver warfare. At least one, and, frequently both terms appear in most definitions of maneuver warfare. Since it is not an exact or hard science, maneuver warfare does not have a rigid list of theorems or formulas. As a result it is often difficult to explain, understand, and apply. In the Maneuver Warfare Handbook, William Lind bluntly states, "There

is no formula you can learn. When someone says, 'Cut all the bull about theory; just tell me what to do,' you can't. You can talk about how to think, and about some useful techniques."[24] Lind effectively captures the main point: maneuver warfare is very much a conceptual approach to warfare and painstaking to grasp.

Though it is not an exact science, like all philosophies, there are core beliefs that hold true. The core ideas of maneuver warfare will be explained below. In addition, maneuver warfare will be divided into two themes. Looking at maneuver warfare as two themes helps explain maneuver warfare theory development and defuse some confusion surrounding maneuver warfare.

Before exploring the core ideas of maneuver warfare, consideration of how maneuver warfare measures success illuminates its conceptual and more complex nature. In the attrition fight success is measured by tanks destroyed or ships sunk or aircraft shot down. Attrition warfare is focused on force ratios and mass versus mass. Success is easier to measure. By comparison, for the maneuverists, these measures of success frequently hold little value. The maneuverist must concentrate on the effect his actions and initiative have on the enemy will to continue. Often, the only measure of success for the friendly commander is mission accomplishment.

As discussed earlier, the origins of maneuver warfare philosophy date back to great Chinese military thinkers that predate Christ by hundreds of years. Aspects of maneuver theory were also displayed by the ancient Greeks, Romans, and Phoenicians. Maneuver warfare theory has continued to mature over the years. In The Art of Maneuver, Robert Leonard details the contributions of Sun Tzu, Genghis Khan, Napoleon, Liddel Hart, and others in the evolution of maneuver warfare theory.[25] The genesis for maneuver warfare theory was the realization that the will and cohesion of the enemy can be broken without destruction of his mass. He can be broken

even if he has a numerical advantage or his notional strength is greater. On land, outflanking an opponent to hit his vulnerable rear, massing forces at a point, and breaking his line are manifestations of this idea. During the age of sail, crossing the "T" or the tactic of doubling, where a column of ships would split to envelop an enemy column on both sides (figure 2)[26] cuts to this idea. Here is the chief difference between maneuver warfare and attrition warfare. Attrition warfare defeats an enemy by destroying his mass. Maneuver warfare defeats the enemy's will and cohesion by seeking a vulnerability and destroying mental, moral, or mass. (Again, maneuver warfare is not an alternative to attrition warfare. If no vulnerabilities or weaknesses exist, than mass versus mass--attrition--may be the only answer.)

Two themes emerge while studying maneuver warfare. Both themes have at their core defeating the enemy's will and cohesion, avoiding strength versus strength and exploiting weaknesses and vulnerabilities. These themes did not develop one after the other or separately; they developed together. The first theme is simpler and easier to understand. It is dependent on movement in relation to the enemy. The second theme is more complex as it looks beyond movement. This theme looks for a vulnerability that permits weakening the enemy's sources of strength and cohesion. These themes are not mutually exclusive, and aspects of both may appear in battle. However, they simplify explaining maneuver warfare.

The first theme can be labeled the basic theme or movement theme. The route to an enemy's cohesion is through his mass, not brute force (mass against mass) but exploiting movement. Movement in relation to the enemy increases friendly combat power. The enemy's cohesion is broken, largely, by pitting strength against weakness. Maneuver or movement is used to increase friendly fighting power relative to the enemy's.

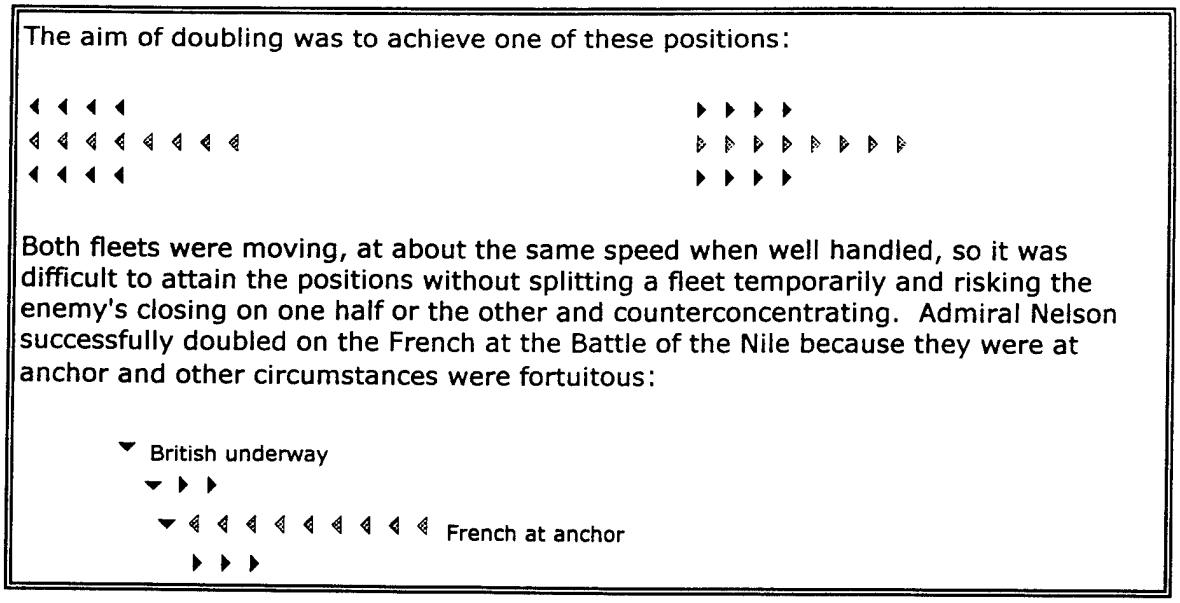

Figure 2. Doubling. Source: Wayne Hughes, Fleet Tactics: Theory and Practice (Annapolis, MD: Naval Institute Press, 1986), 45.

During the Battle of the Nile, August 1798, Admiral Lord Horatio Nelson displayed the basic theme of maneuver warfare theory. Falling, unexpectedly, on the French at Aboukir Bay, outside the mouth of the Nile River, he achieved a tremendous victory. Exploiting surprise, tempo and movement, the English decimated and humiliated a superior French force. Abandoning a rigid line formation from the outset, he intended to double on the French. As the British column approached the French van, he split some of his ships to the landward side of the French. This caught the French completely off guard and Admiral Nelson was able to double on the anchored French ships. As the Royal Navy column worked the French line it was always two or more ships against one. [27] Admiral Nelson exploited movement and mobility to increase his combat power in relation to the French.

It is from this basic theme that maneuver warfare gets its name. The basic theme is dependent on movement and mobility. However, maneuver warfare is more than movement and mobility. The expanded theme will illustrate this point. It is in the basic theme where much of

the confusion about maneuver warfare sets in. It is generated by its own name: maneuver warfare. Many cannot get beyond maneuver warfare being about movement or mobility.[28] The expanded theme below helps show maneuver warfare is more than movement or mobility.

The second theme can be considered the expanded theme. The key here is that there are other ways to break an enemy's cohesion besides increasing the combat power relative to his. In the basic theme, primarily through movement, friendly combat power is increased. This increase in combat power allows concentration against selected portions of his mass. In the basic theme mass still plays a key role. The expanded theme looks at decreasing the enemy's combat power. This is accomplished by balancing an enemy's strengths against his weaknesses and vulnerabilities. Strengths are not attacked. Nor are all weaknesses attacked. Only those weaknesses and vulnerabilities that directly reduce an enemy's strengths are attacked. In this way the enemy's internal strength and cohesion are broken.

American actions in the Solomons between July 1942 and August 1943 in defense of Guadacanal are illustrative. American local air superiority during daylight forced the Japanese to operate at night. The campaign centered on support for forces ashore and control of Henderson Field. At night the Imperial Navy would attempt to resupply land forces and shell Henderson Field. The American Navy attempted to deny the Japanese lines of communication. Deprived of aircraft due to darkness, these were ship-to-ship clashes. The source of Japanese strength was the Long Lance torpedo. They employed it with devastating effectiveness. Mounted on cruisers and destroyers, it outclassed the American torpedo in range and payload. The Americans were slow to appreciate its capabilities and initially fought the Japanese with brute strength and attrition, attempting to counter the Long Lance with gunfire and torpedoes. These tactics resulted in spectacular failures. Late in the campaign, American tacticians grasped the key to success: the Japanese did not possess radar and could not match American scouting

and antiscouting. By developing tactics that exploited this weakness, the Long Lance was marginalized. Essentially the Americans kept their guns silent until after they had closed with the enemy, fired their torpedoes, and hit their mark. The Japanese were surprised and unable to employ their torpedo effectively.

Melee and *Auftragstaktik*

Common to both the basic and expanded theme and a core belief of maneuver warfare theory is the idea of Melee and *Auftragstaktik*. These are, respectively, the British Royal Navy and the German Army. These terms embody the concepts of retaining initiative at all levels of command, mission orientated combat, and freedom of action for subordinates. Properly harnessing the concept ensures unity of effort without micromanagement or overreaching control by superiors. Commanders emphasize "end state desired" not "how to" and ensure junior leaders know the commander's intent and those of his superiors. Those closest to the action are empowered to take decisive action. Since each level is executing the commander's clearly stated intent, all parts of the force are working together. Rapid action results.

"Captains are to look to their particular Line as their rally-point. But, in case Signals can neither be seen or perfectly understood, no Captain can do very wrong if he places his Ship alongside that of an Enemy."[29] This famous quote from Admiral Lord Horatio Nelson's 1804 battle memorandum was written on his flagship, HMS *Victory*, prior to the Battle of Trafalgar. This splendid quote is representative of the Meleeist spirit. As Royal Navy tradition and experience developed in the late 1600s, two camps or schools of thought slowly emerged. The first school is sometimes referred to as the "Formalist." This school relied heavily on doctrine and fighting instructions. During the 1704 Battle of Malga an Anglo-Dutch fleet achieved victory with a well disciplined battle line. This school held that this was the key to victory.[30]

The second school was the Melee school or "Meleeist." For the Meleeist doctrine was a crutch or shield to hide behind. They felt circumstances and opportunity should dictate action. Commanders required a firm grasp of the basics, maneuver and tactics, but must be allowed freedom of action. "The maneuver-orientated Melee doctrine attracted some dashing English commanders who did not want to be bound by rule and had the skills to master the freedom of maneuver warfare."[31]

The most noted Royal Navy Meleeist is Admiral Nelson. He was a charismatic leader and highly skilled tactician. A Meleeist, Admiral Nelson did not rely on doctrine, formal signals, and tight control during battle. He relied on personal contact with his commanders. Routinely and, specifically, prior to battle, he held meetings and dinners with his commanding officers. At these prebattle meetings, Admiral Nelson assembled his "Band of Brothers" and "personally communicated his perception of the alternative courses the battle might take and the basic actions that were expected of each."[32] Admiral Nelson personally named his unconventional leadership style "The Nelson Touch." George M. Hall in The Fifth Star: High Command in an Era of Global War highlights the Nelson touch in a discussion of facets of leadership. The Nelson touch, he states, "describes a commander who predisposes his resources to favor a striking victory (the mechanics of war) and then inspires his subordinates to act as if they were an extension of himself while still exercising their own initiative to deal with circumstances as need be (leadership)."[33]

Auftragstaktik or "mission tactics" is very similar to the concept of Melee and The Nelson Touch. *Auftragstaktik* has been a guiding principle of the German Army throughout the 20th Century. The concept is formally defined and can be found in numerous works on warfare theory. It is more generally recognized than Melee. Like Melee it is a rather simple concept. It involves empowering a subordinate by telling him the result or "end state" one wishes him to

obtain. It is up to the subordinate to determine "how" and get it done. Orders specify output, not input. In order to be effective this must hold true at every level, from general to fire team and individual soldier and from admiral to commanding officers to tactical action officers to weapons console operators. To complete the empowerment, every level must know the commander's intent and end state desired two levels up.[34]

In 1914, Vice-Admiral Sir David Beatty, commander of the Royal Navy's Grand Fleet battle cruisers in the North Sea stated, "although time after time I have impressed . . . the necessity of always using . . . initiative and discretion--that my orders are expressions of intentions and they are *not* to be obeyed too literally. The Man on the Spot is the only one who can judge certain situations."[35] This demonstrates that the spirit of Admiral Nelson and the Nelson touch still influenced the Royal Navy. Yet, it is noteworthy that this statement is found in Admiral Beatty's critique of his failure to decisively engage an isolated German Imperial Navy cruiser force at Scarborough: "We were within an ace of bringing about the complete destruction of the Enemy Cruiser Force--and failed." While Admiral Beatty was an adherent to Melee and the Nelson Touch, he demonstrates how difficult it is to execute.

The main cause of the Royal Navy's failure at Scarborough was one of Admiral Beatty's subordinates, Commodore William Goodenough, commander of Admiral Beatty's light cruiser screen. Commodore Goodenough broke contact with enemy light cruisers when Admiral Beatty ordered a change in disposition of his screening forces. Admiral Beatty was unaware that Commodore Goodenough was in contact with three enemy light cruisers. If Commodore Goodenough had instead "keep in touch with [remained engaged] and reported the presence of the Enemy Cruisers," Admiral Beatty would have turned to support his light cruiser screening force and cut down, with overwhelming superiority, a German Imperial Navy light cruiser and battle cruiser force. As it was, by the time Admiral Beatty was informed of the engagement and

number of enemy cruisers he had moved the force too far to the west and, despite giving chase, was unable to overtake the enemy.

In his report Admiral Beatty focuses on one of the principal solutions for achieving *Auftragstaktik* and the Nelson Touch. "If I had only had the L.C. Squad'n [Light Cruiser Squadron] in peace I would have guaranteed those mistakes w'd [would] not have occurred,"[36] he states. Training and contact between juniors and superiors is critical. Commanders must clearly outline expectations and intent. How-tos must be avoided, and juniors allowed freedom of action. The principles of Melee and *Auftragstaktik* must be taught at every level and by every commander. However, Admiral Beatty does not discuss a second key point. Many commanders fear they will lose control. This is not a by-product of these concepts. Clearly, Nelson, Patton, and Rommel and other students of Melee and *Auftragstaktik* did not lose control. Hence, the key for commanders is they must *execute control through the actions of subordinates* vice *execution of control through their own actions*. Control is executed by *outlining expectations, intent and endstate* vice *micromanaging and telling how-to*. This is not easy; it is hard. It requires dynamic leadership, building trust, and hard work.

While Melee, the Nelson touch, and *Auftragstaktik* are core beliefs for maneuver warfare, these concepts are not limited to maneuver warfare. This concept can be applied--and should be applied--to all types and levels of warfare. NDP 1 recognizes this important distinction. NDP 1 adopts the term "commander's intent" to describe Melee, the Nelson touch, and *Auftragstaktik*. The concept is highlighted in NDP 1's definition of maneuver warfare: "emphasizes the need to give the commander freedom of action"[37] However, commander's intent is not tied exclusively to maneuver warfare. It is described in detail later in the publication's discussion of "The Conduct or War." NDP 1 concept of Commander's Intent is true to Melee, the Nelson Touch and *Auftragstaktik*. NDP 1, states, 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."[38]

Definition of Maneuver Warfare

While there are core beliefs for maneuver warfare theory, like any philosophy it is subject to interpretation. Some interpretations are highly selective, others overarching. The definition provided below is found in NDP 1. This definition was selected for several reasons. First, it is a standard definition presenting generally accepted concepts of maneuver warfare. It is not highly selective or overarching. Secondly, it is established U.S. Navy doctrine. This is a statement by the U.S. Navy of how it wants to fight. Furthermore, it promulgates a common language for articulating and critically analyzing naval doctrine.

> 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 warfare, maneuver warfare is a *philosophy*, rather than a formula--an approach, rather than recipe. Like attrition warfare, it has long served common doctrine for naval forces. It emphasizes the need to *give the commander freedom of action* 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 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 weakness and vulnerabilities that allow us to strike the source of his power--the key to his existence and strength as a military threat [author's italics].[39]

The NDP 1's definition of maneuver warfare puts forth five main points that address the core concepts of maneuver warfare (italicized above): (1) philosophy, (2) commander must retain freedom of action, (3) adaptability, (4) indirect approach, and (5) focus power on key weaknesses and vulnerabilities. These central themes, critical to understanding U.S. Navy maneuver warfare theory and practice, warrant further explanation.

The first point squarely accepts maneuver warfare theory as a philosophy. NDP 1 is true to the definition throughout the publication. It never attempts to codify maneuver warfare or provide rigid routines. The publication lays out broad ideas and concepts. The second point, the idea that the commander must retain freedom of action is true to the idea of Melee and Aufrtagstaktik. Discussed in the preceding section, these ideas center on mission orders and initiative--keeping it and allowing juniors to exercise it.

The third point pronounces that maneuver warfare is very adaptable. This is quite true; maneuver warfare can be applied to a variety of situations. However, here it is as important to understand what the definition says as what it does not say. Yes, maneuver warfare is adaptable to *many* situations. However, it is not adaptable to *all* situations. This thesis will illuminate this point several times. The fourth point embodies the second theme or expanded theme of maneuver warfare earlier in this chapter. Maneuver warfare looks for indirect ways, beyond mass and movement, to destroy an enemy's cohesion. The fifth point recognizes how this indirect approach is achieved, primarily, through exploiting the balance between strengths, weaknesses and vulnerabilities.

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[1]Wayne P. Hughes, "Comments Section," U.S. Naval Institute Proceedings, 122 (March 1996): 17.

[2]Edward B. Atkeson, "Maneuvering Past Maneuver Warfare," U.S. Naval Institute Proceedings, 122 (January 1996): 33-35.

[3]U.S. Navy, NDP 1, Naval Warfare (Washington, DC: U.S. Government Printing Office, 28 March 1994), 33.

[4]Hughes, 18.

[5]Sun Tzu, The Art of War, trans. Samuel B. Griffith (New York, NY: Oxford University Press, 1963), 112.

[6]Bernard Brodie, A Layman's Guide to Naval Strategy (London, U.K.: Oxford University Press, 1943), x.

[7]James Tritten, 'Maneuver' or *Manoeuvre* Warfare for the U.S. Navy?" Technical Report (Norfolk, VA: Naval Doctrine Command, July 1995), 7.

[8]John L. Romjue, American Army Doctrine for the Post-Cold War (Fort Monroe, VA: U.S. Army Training and Doctrine Command, 1997), 16.

[9]R.A.D. Applegate and J. Moore, "Warfare--an Option of Difficulties, An Examination of Forms of War and the Impact of Military Culture," RUSI Journal (Autumn 1990): 13.

[10]William A. Owens, High Seas: The Naval Passage to an Uncharted World (Annapolis, MD: Naval Institute Press, 1995), 5.

[11]Owens, 4.

[12]James Tritten, Naval Doctrine...From the Sea Technical Report (Norfolk, VA: Naval Doctrine Command, December 1994), 3.

[13]NDP 1, iv.

[14]NDP 1, 33.

[15]NWSA 1404 Navy Wire Service, "ADM Arleigh "31-knot" Burke Dies" (Navy Public Affairs Library, 2 January 1996), available from http://www.chinfo.navy.mil/nav.palib/people/cno/burkobit.txt; internet.

[16]Carl von Clausewitz, On War (Princeton, NJ: Princeton University Press, 1976), 75-79.

[17]Antoine-Henri Jomini, The Art of War (Philadelphia, PA: 1862 and reprinted Westport, CT: 1966), 12.

[18]Alfred Thayer Mahan, From Sail to Steam: Recollections of Naval Life (London and New York, 1907), 283.

[19]Frank Uhlig, How Navies Fight, The U.S. Navy and its Allies (Annapolis, MD: Naval Institute Press, 1994), 205-207.

[20]Ibid., 17.

[21]Alfred Thayer Mahan, Interest of America in Sea Power, Present and Future (Boston, MA: 1897), 180.

[22]NDP 1, 32.

[23]Joseph A. Gattuso, "Set and Drift: Warfare Theory," Naval War College Review, XLIX (Autumn 1996): 115.

[24]William S. Lind, Maneuver Warfare Handbook (Boulder, CO: Westview Press, 1985), 7.

[25]Robert Leonard, The Art of Maneuver: Maneuver--Warfare Theory and AirLand Battle, (Novato, CA: Presidio Press, 1991), 27.

[26]Wayne Hughes, Fleet Tactics: Theory and Practice (Annapolis, MD: U.S. Naval Institute Press, 1986), 45.

[27]Hughes, Fleet Tactics, 20.

[28]J. J. Tritten, Maneuver or Manouvre Warfare for the U.S. Navy? (Norfolk, VA: Naval Doctrine Command Technical Report, July 1995). Of note, to fully capture naval maneuver warfare's uniqueness, James Tritten proposed in "Maneuver or Manoeuvre Warfare for the U.S. Navy," that the U.S. Navy adopt the English and French spelling of maneuver: manoeuvre. Tritten felt this would highlight that maneuver warfare is more than movement and distinguish its uniqueness from land maneuver warfare. Also, this spelling would recognize Admiral Raul Castex's contribution to naval maneuver warfare theory. Naval Doctrine Command rejected his proposal and opted for the common spelling for NDP 1, Naval Warfare, and U.S. Navy doctrine. (Recognizing that one of the chief purposes and advantages of doctrine is establishing a common vocabulary, this thesis will defer to doctrine vice academia.)

[29]Bernard D. Claxton, John M. Gurtcheff, and Jeffery J. Polles, Trafalgar and Jutland: A Study in the Principle of War (Montgomery, AL: Maxwell Air Force Base, Air Comand and Staff College, 1985), 77.

[30]J. J. Tritten, Doctrine and Fleet Tactics in the Royal Navy (Norfolk, VA: Naval Doctrine Command Technical Report, November 1994), 4.

[31]Ibid.

[32]Ibid., 15.

[33]George M. Hall, The Fifth Star: High Command in an Era of Global War (Westport, CT: Praeger Publishers, 1994), 161.

[34]Richard D. Hooker, Jr., Maneuver Warfare An Anthology, (Novato, CA: Presidio Press, 1993), 11.

[35]Arthur J. Marder, From the Dreadnought to Scapa Flow, Volume II, The War Years: To the Eve of Jutland (London: Oxford University Press, 1965), 143.

[36]Marder, 143.

[37]NDP 1, 33.

[38]NDP 1, 38.

[39]NDP 1, 33.

CHAPTER TWO

LITERATURE REVIEW

Introduction

Many books, articles and professional works have been devoted to the study, history and application of maneuver warfare. However, most of these works approach maneuver warfare from an air/land battle or amphibious warfare perspective. Naval Doctrine Publication (NDP) 1, Naval Warfare brought the concept of *naval* maneuver warfare to the forefront, and exposed the limited writing available on the subject. Since its publication in 1994, the professional community has responded with numerous works addressing naval maneuver warfare. U.S. Naval Institute Proceedings and Naval Doctrine Command have precipitated a lively debate on the topic, including publishing articles and works on the subject. Many of these works are discussed in the following paragraphs. Also discussed below are the most noteworthy works that contributed to this thesis. A full bibliography is provided at the end of the thesis.

Books

Admiral Raoul Castex's classic study of naval warfare, Strategic Theories, first published in the 1930s has never been fully translated into English. The Naval Institute Press's English translation offers a large portion of the work. A French Navy admiral, Castex builds on the concepts and ideas of the great naval theorists. Furthermore, he offers the first major work that specifically addresses naval maneuver warfare. This work is an indispensable companion to Alfred Thayer Mahan and Julian Corbett.

Admiral Giuseppe Fioravanzo's Naval Tactical Thought, provides a concise, lively study of the history of naval strategy and tactics from the age of oar to the nuclear age. An Italian Navy admiral, his insights into the failures of the Italian Navy in the Mediterranean and U.S. success in the Pacific are refreshing.

Colin S. Gray's and Robert W. Barnett's work Seapower and Strategy is an anthology. The book's temperament truly reflects the Cold War. Reading the book returns a chill that has been too quickly forgotten since the demise of the Soviet Union. The first chapter "Seapower and Landpower," written by Colin S. Gray, presents a broad picture of the differences between seapower and landpower. The book does not address how advancing technology will change or blur the distinction between seapower, landpower and airpower. Most of the book deals with seapower's contribution to strategy.

General John R. Galvin's work Maneuver Warfare: An Anthology invites some of America's finest minds to explore the idea of maneuver based warfare. The book presents radical and opposing views on maneuver warfare. David A. Grossman's contribution, "Defeating the Enemy's Will: The Psychological Foundations of Maneuver Warfare" is superb and applicable to all warfare theories. The book is land warfare focused and does not address naval warfare or naval maneuver warfare. It is an excellent source for background information and analysis of maneuver warfare theory.

Captain Wayne Hughes' comprehensive study Fleet Tactics Theory and Practice is the most recent book available on naval tactics. As the title suggests, the book concentrates on tactics. The book lays a foundation with a historical review and some extensive analysis of World War II naval battles and tactics. Hughes' develops a list of tactical constants and applies them to the present (published 1986). Outside some vague references, Capt. Hughes does not address or define naval maneuver warfare.

The first half of Robert Leonard's scholarly study, The Art of Maneuver, is dedicated to the evolution and theory of maneuver warfare. This book provides excellent introduction material and background into maneuver warfare theory. Again, it is strictly land orientated.

Basil Liddell Hart's concise, masterful history of World War I, The Real War 1914-1918, contains an excellent study of the Battle of Jutland and the difference between naval and land warfare (pages 271-295).

William S. Lind's work Maneuver Warfare Handbook is an early contribution to the maneuver warfare debate within the American military. Published in 1985, he clearly develops and explains the theory of maneuver warfare. He devotes considerable space to explaining and applying the Boyd decision making model, (the OODA Loop: Observe, Orient, Decide, Act) to maneuver warfare. While he fills out his definition of maneuver warfare with other key points, they are overshadowed by his emphasis of the OODA Loop. His discussions apply directly to ground combat, and naval maneuver warfare is not addressed.

Alfred Thayer Mahan's most recognized works are The Influence of Sea Power on History, 1660-1783 and The Influence of Sea Power upon the French Revolution and Empire, 1793-1812. Masterful works, they often overshadow much of his later writings. Two later works, Interest of America in Sea Power and From Sail to Steam: Recollections of Naval Life, are more theoretical and project into the future. Also, they benefit from additional years of study and research.

Arthur J. Marder's definitive naval history of World War I, From the Dreadnought to Scapa Flow fills seven volumes. The work is outstanding; very detailed and authoritative. Volume II, The War Years: To the Eve of Jutland provided additional detail on the struggle between the Royal Navy and Imperial Navy in the North Sea. This volume supported many of Admiral Rauol Castex's conclusions in Strategic Theories. (Castex uses the North Sea during

World War I as a case study for his maneuver theories.) The outstanding work is extremely useful when conducting research on naval warfare during World War I.

Samuel Eliot Morison, a Harvard history professor, was commissioned a Lieutenant Commander in early 1942 with the assignment to write a naval history of World War II from the inside looking out. The product of his endeavor was a seven volume work titled, History of United States Naval Operations in World War II. Volume I, Battle of the Atlantic and Volume II, The Struggle for Guadalcanal provided excellent background information.

Admiral William A. Owens" informative book High Sea: The Naval Passage to an Uncharted World is true to the title. Published in 1994, he sets the stage with a discussion of the Cold War and the influence of the Gulf War on the U.S. Navy and naval doctrine. Admiral Owens' outlines the new dynamics and challenges facing today's navy. Also, the book proposes solutions and recommends a course for the future. Vice Chairman of the Joint Chiefs of Staff in the early nineties, he offers a highly qualified and unique perspective.

Peter Paret's anthology Makers of Modern Strategy from Machiavelli to the Nuclear Age provides a diversity of themes and broad perspective. The chapter on Alfred Thayer Mahan, "Alfred Thayer Mahan: The Naval Historian, " by Philip A Crowl, was particularly helpful. Crowl concisely captures Mahan's essence and contribution to naval warfare.

Frank Uhlig's work, How Navies Fight: The U.S. Navy and Its Allies, is centered around the U.S. Navy. It combines a historical record within critical analysis. This book is an excellent source for background and as an overview of U.S. Navy operations, does not directly discuss warfare theories.

Service Manuals and Publications

Field Manual (FM) 100-5 Operations, Fleet Marine Force Manual (FMFM) 1 Warfighting, Naval Doctrine Publication (NDP 1) , Naval Warfare, and Naval Warfare Publication (NWP) 3-20, Surface Warfare Tactics give simple, broad definitions of maneuver warfare, attrition warfare and concepts and principles of war. Their definitions of maneuver and attrition warfare are compatible. Disturbingly, their definitions, concepts and principles do not always mesh.

NDP 1, Naval Warfare is superb. Well written and very concise it captures the essence of naval warfighting in short order. Most of the work is applicable to all warfare, not only naval warfare. The section "The Conduct of War," presents ideas very clearly." NDP 1 is an excellent primer for study of naval warfare and warfare in general. It avoids jargon and its message is effectively complemented by short historical vignettes.

Naval Warfare Publication (NWP) 3-20, Surface Warfare Tactics is classified CONFIDENTIAL. Definitions and principles of war portions of the publication are UNCLASSIFIED.

Joint Pub 3-0, Doctrine for Joint Operations is a definitive resource for U.S. Military doctrine, terms and definitions. Again, it does not always agree with other service publications. However, it has the advantage of being the final say when it comes to how the U.S. Military conducts business.

Articles

Major R.A.D. Applegate's and J. R. Moore's informative article, "Warfare--an Option of Difficulties," offers concise definitions of forms of warfare. They do not restrict themselves to

generally accepted categories and propose some interesting arguments. Their discussion of evolution of military culture and conclusions are unique and refreshing.

General Edwin Atkinson's article, "Maneuvering Past Maneuver Warfare," is very thought provoking. He questions the U.S. Navy's embrace of maneuver warfare theory. He feels that the U.S. Navy's exuberance will be tempered with reality, a better understanding of the true definition of maneuver warfare and an appreciation of its limitations.

General William E. DePuy's article, "Infantry Combat," is an edited version of a speech he gave to the U.S. Army Infantry Officer Advance Course in October 1989. The speech is centered around the importance of freedom of maneuver. He very clearly discusses how freedom of maneuver is critically important and an earned right that must be wrestled from the enemy. The speech also provides keen insight into U.S. military culture through out this century.

Captain Wayne Hughes, USN, gives a powerful defense of attrition warfare in the "Commentary and Discussion" section of *Proceedings*. This short letter is a response to General Atkinson's article discussed above. In this letter Captain Hughes supports General Atkinson's assertions and clearly illustrates that attrition warfare cannot always be avoided.

Unpublished Dissertations, Thesis and Papers

Dr. James Tritten has been very prolific and produced many outstanding works on naval warfare and naval maneuver warfare. Many of his works have been developed for Naval Doctrine Command. His inside seat and naval maneuver warfare perspective have been particularly helpful. "Manouevre Warfare at Sea" provides excellent background and depth into the concept of naval maneuver warfare. "Is Naval Warfare Unique" and "Doctrine and Fleet Tactics in the Royal Navy" also provided a wealth of information.

Timothy Fisher and Matthew Kohler explore naval maneuver warfare from an operational and strategic view. Their respective works, "Maneuver: Where Does it Fit in Operational Art" and "Maneuver by the U.S. Navy in the 20th Century Blue-Water Operations: Selected Historical Examples" provided background information and bibliographic sources. Contributing to the developing concept of naval maneuver warfare, they highlight how maneuver warfare concepts and theory fold into the strategic and operational level of naval warfare.

CHAPTER THREE

RESEARCH DESIGN

The first step in the construction of a ship is laying the keel. Often accompanied by pomp and circumstance it is the birth of a ship. Rising from the keel are frames. Along with the keel, the frames form the skeleton of the ship. Decks, platforms, superstructure and equipment rely on the keel and frames for strength and support. This skeleton dictates the shape, beam, size, etc, of the ship. A ship's keel and frame are influenced by many factors including the type of material. Mine sweeper's, for example, in the past were limited to all wood construction. Wood introduced certain limitations. Today mine sweepers use glass reinforced plastic (GRP) along with wood. This change of material has influenced a whole new generation of mine sweepers. Similarly, the newest destroyers are constructed with high grade (HY 80) steel. Again, this material influences the final design and outcome of a destroyer. Influences are not limited to material, another factor which influenced frames was the shift from rivets to welding when working with steel. Numerous other examples of influences on keel and frame design and outcome are available.

Consider naval tactics as a ship. Foundations of naval tactics make up the keel and frame of this ship. If maneuver warfare theory influences the foundations of naval tactics, our keel and frames, then maneuver warfare will influence our ship design and naval tactics in battle. This analogy is the basis for my research design or method. By exploring the foundations of naval tactics, and seeing if maneuver warfare affects these foundations, this work will determine if maneuver warfare theory influences naval tactics and battle. Furthermore, this model will

illuminate where maneuver warfare concepts influence naval tactics and to what extent. Conversely, it may also show where maneuver warfare theory does not influence naval tactics and battle.

Chapter One, Introduction, establishes the key definitions in support of the research question and research design. It also builds necessary background. The literature and resources which contributed to this thesis are reviewed in Chapter Two, Literature Review. Only the most significant sources are highlighted. All sources, of course, are listed in the bibliography.

Chapter Four, War at Sea and Naval Tactics, will look at land warfare, air warfare and naval warfare. Military culture, the focus of each service and differences between war at sea and war on land will be explored. This will provide insight into the realities of U.S. Army, U.S. Navy, U.S. Marine Corps, and U.S. Air Force culture and highlight the uniqueness of naval warfare. Often ignored by warfare theory, it is important to understand these differences. Naval warfare is very distinct and cannot be studied from a strictly land warfare point of view.

The second half of Chapter Four will be devoted to the construction of the keel and frames or foundations of naval tactics. Predominately, the foundations of naval tactics will be developed from Hughes' Fleet Tactics, Fioranzo's Naval Tactical Thought and NWP 3-20 Surface Ship Tactics. A consensus will be developed from these works.

Chapter Five, Application of Naval Maneuver Warfare, will explore if maneuver warfare theory influences some of these foundations. This analysis will determine if maneuver warfare theory influences naval tactics, where and to what extent. In exploring the foundations of tactics, this thesis will look for historical examples that support this work's analysis. In some cases, a discussion of contemporary naval doctrine and tactics may best illuminate how maneuver warfare theory influences the principle.

My final chapter, Chapter Six, Conclusions and Recommendations, will state the conclusions and discoveries that emerge from an analysis of the research evidence. Direct conclusions and interpretations will be provided. Also, some indirect conclusions, building on research evidence, will be explored. Furthermore, recommendations for application of the research and further research questions will be included in this chapter.

CHAPTER FOUR

WAR AT SEA AND NAVAL TACTICS

Introduction

"Perhaps one explanation . . . was that the admirals exercised their command in the forefront of the battle and generals from headquarters far in the rear. . . . [while] some generals were as ready to risk their own lives as their men's, . . . others undoubtly gained moral courage through physical remoteness."[1] Liddell Hart expressed this thought in his concise, masterful study of World War I, The Real War 1914-1918. He was looking for solutions, reasons for the gulf he observed between the conduct of war by the generals and the admirals. Major sea battles were few during the war. Yet, on land, World War I saw great carnage and waste. The conduct of the generals was marred by foolish initiatives and unsound offensives. Admirals and generals displayed a fundamental difference in the execution of the war. Admirals would not initiate battle unless they had reasonably determined an initial advantage. On the other hand, generals were typically ready to take the offensive regardless of the disadvantages.[2] The difference in the execution of the war by the admirals and generals can be largely attributed to differences in military culture among the services, the unique nature of sea, air and land warfare and the practice and approach to the art of warfighting by each service.

These observations are not limited to World War I. Military culture, the unique nature of sea, land, and air warfare, and the practice and approach to the art of warfighting significantly impact the interpretation and practice of warfighting theory. Appreciating these issues is important to understanding why and how each service fights. With respect to maneuver warfare,

it is critical. Maneuver warfare theory is typically cast with respect to land warfare. Its lexicon reflects land warfare. Naval maneuver warfare, while based on the same core ideas, is significantly different than land maneuver warfare.

The first half of this chapter will address these issues. Military culture, each service's focus and the differences between war at sea and war on land will be investigated. This study is necessary to set the stage for developing the foundations of naval tactics and exploring if maneuver warfare influences naval tactics. Particularly, since warfare theories are typically discussed from a land perspective it is important to develop a sea perspective.

Military Culture

The scope of this thesis precludes a detailed investigation of differences in military culture. However, it is important to appreciate that there are true, justified differences in military culture. Aspects of military culture directly influence how "the military" thinks and its mark can be seen on doctrine. Some military culture is bound in tradition and custom and, perhaps, parochial and out of touch. Most is a result of the uniqueness and different missions and roles of each service. A few examples will serve to illustrate military culture.

Execution of leadership is different in each service. It is not a result of tradition or custom but, hard fact, reflecting the different roles and missions of each service. In the U.S. Air Force, the officers, the best and brightest, go off to fight in combat. Today's U.S. Air Force fighters and bombers are manned exclusively by officers. The officers go into battle, not the airmen, crew chiefs or maintenance men. The enlisted bury the officers. Also, motivating airmen has a different sense of urgency. Airmen are not motivated to go into battle but, support in the rear. In the Army, battle is the purview, primarily, of junior officers and enlisted soldiers. Senior and mid-grade officers are frequently behind the main engagement area. Leadership now

demands motivating junior officers and soldiers to fight, defend and, at times, charge into the enemy. Modern technology and an extensive logistics tail, at times, blur the distinction between front lines and the rear. The nature of leadership at sea is once again different. Everyone on the ship shares the same fate. The admiral, the captain, the quartermaster, the cook and the engineman are exposed equally to the battle. In a battle group there is no rear; a hit on a ship does not distinguish who's who. Clearly, these different circumstances influence leadership styles and desired traits in each service. The driving factor is not tradition or parochialism; these are hard realities that are a direct result of the nature and uniqueness of each form of warfare.

Command offers another window into military culture. In the U.S. Army, officers take command as junior officers. Opportunity for command continues as they progress through the ranks. Yet, at each level they are under close supervision and scrutiny of superiors and peers. Almost instant feedback and direction is available from superiors. Frequently, superiors are only a tent away or a short vehicle ride. Command in the U.S. Navy is very different. There are very few junior officer commands. Outside these minor exceptions, command falls on senior leaders. With command at sea the Captain dominates the scene. He is directly responsible for everything that occurs on the ship a soveign piece of U.S. territory. His oversight by superiors is very indirect compared to the U.S. Army. Even today it is common to go days or weeks and in some cases months without face-to-face contact with superiors. Modern radio and satellite communications have reduced the isolation of battle group commanders and ship commanding officers. Yet, physical separation and the limits of these systems ensure that the CO retains control in routine matters. Furthermore, during high tempo operations or crisis these systems quickly become saturated and only the most critical communications are permitted. Command at sea entails lots of independence. The U.S. Air Force also offers limited command opportunity for junior officers. Furthermore, U.S. Air Force commanders are typically in close proximity

and in direct contact with superiors. As a result, U.S. Army, U.S. Navy and U.S. Air Force officers have different approaches to command. Again, these are not artificial differences; they are hard realities.

Leadership and command are only two examples. The nature of operations--fixed, objective orientated for the U.S. Army, presence, mobile orientated for the U.S. Air Force and U.S. Navy; the nature of the rear; and the combat arms or fighters vs non-combat arms or support personnel in each service are other examples. All these issues, and, many more, impact the way services think and act. Military culture is real, unavoidable (to a large extent) and must be understood or at least acknowleged. It offers a valuable window into the actions and thought process of each service.

Focus and Execution of Art of Warfighting

Liddell Hart's observation of generals in the rear and admirals in the van and the thick of battle leads some to hypothesis that generals would focus on strategy, while admirals would focus on tactics. Liddell Hart concludes, "Actually, the reverse occurred." He continues and explains, "the paradox would seem to lie in the different experience of peace training, wherein the soldier serves in small garrisons and exercises in cramped areas, while the sailor traverses the wide oceans and learns navigation as the staple of his craft. For him, geography precedes gunnery."[3] This is more evident today than in 1914. The company frontage of an infantry or tank company has increased dramatically since World War I. Where once the U.S. Army could place a division in a training area, today the largest U.S. Army training area is barely large enough for a brigade (plus) sized unit. By comparison, the vast ocean serves as a training area that swallows up a battle group. Every six months, on each coast, the U.S. Navy conducts a Joint Training Exercise (JTX). These exercises involve at least two carrier battle groups (CVBGs) and an amphibious ready group (ARG), plus an assortment of other ships and aircraft. On the west

coast, they may stretch from Mexico's Baja Peninsula to the Straits of Juan de Fuca and the Canadian border. In Military Strategy, Rear Admiral J. C. Wylie expounds on this idea:

> Where the sailor or airman thinks in terms of an entire world, the soldier at work thinks in terms of theaters, in terms of campaigns, in terms of battles. And the three concepts are not too markedly different from each other.
>
> Where the sailor and the airman are almost forced, by the nature of the sea and the air, to think in terms of a total world or, at the least, to look outside the physical limits of their immediate concerns, the soldier is almost hemmed in by his terrain[4]

U.S. Navy, U.S. Army and U.S. Air Force officers approach their art of warfighting differently. Lack of mobility and geographic considerations keep soldiers looking at their feet. They tend to think in terms of *tactics or perhaps operational art*. Due to their inherent mobility and vast geographic footprint, sailor and airman think big. *Strategic art* is their focus. Gray sums up, "...they [sailors and soldiers] wage different, if complementary, forms of war and, as often as not their practitioners have different perspectives on the conduct of war."[5]

Sea Powers' Bond to the Land

"Everything, and we mean everything is secondary to the infantryman."[6] While these words are proclaimed by many generals and military historians, the author here is an Italian Navy officer, Admiral Giuseppe Fioravanzo. He exclaimed these words in his lively work, A History of Naval Tactical Thought. His thoughts are shadowed by an American naval historian and theorist, Captain Wayne Hughes. He states, very succinctly, "The seat of purpose is on the land."[7] In his chapter "The Sea Versus the Land," Admiral Raoul Castex, of the French Navy, rejoins, "Sea power is valuable only to the extent that it contributes to victory onland. . . . "[8] These words are also echoed by Corbett.[9] All these theorists tie sea warfare to land warfare, specifically to objectives ashore. Great naval theorists are not jumping ship and running to the

U.S. Army's camp. They recognize a natural preeminence. Namely, as long as man lives on land, the focus and purpose of war at sea will be land.

The roots of how sea power supports land power is evident in a basic comparison of sea power and land power. In his discussions on seapower and landpower, Colin Gray cautions that the difference between land warfare and sea warfare can be exaggerated. However, he still allows, ". . . it is true to claim that armies most often have occupation (or possession) goals, while navies have use or denial-use goals."[10] The basic goal of sea warfare and land warfare is different. Through the conquest of territory, armies apply pressure directly on the enemy to achieve unconditional surrender or conditional peace. Besides being an avenue to victory, conquest or occupation of land (unlike oceans) has an " . . . absolute value in its own right."[11] Ownership or occupation gives the right to administer laws and regulations over populations. With ownership people are controlled and opponents can be neutralized or destroyed.[12] Invasion, conquest and occupation (or at times, a credible threat of invasion) produce absolute value. As discussed below, oceans have an indirect value in relation to land: they do not have value in and of themselves. Gray notes that the German occupation of Belgium and Northern France throughout the First World War had the consequence of compelling the Allies to ". . . assume the tactical offensive in that region, virtually regardless of broader strategic considerations."[13] Similar parallels can be drawn with the Iraqi occupation of Kuwait in 1990.

"In contrast to the land, the sea is a medium for movement. It cannot be occupied and fortified. Navies cannot 'dig in' at sea, or seize and hold ocean areas that have great intrinsic value."[14] War at sea is fought over sea lines of communication (SLOCs) and immediate access to land. The goal is to use the sea to one's own advantage. While, at the same time, denying the use of the sea to the enemy. Sea warfare and control of the oceans do not directly produce absolute value. Control of an ocean or sea lane of communication (SLOC) is only valuable to

the extent it influences land operations. This indirect relationship is born of man living on land and using the sea as a medium. Sea warfare or sea power is a means to an objective ashore. Sea warfare ultimately only supports land warfare.

This does not mean sea power is not instrumental. When the war's objectives are a conditional peace or limited objectives, sea power may be the means to that end. Naval and Air Force air strikes against Libya in the 1980's forced her to change her behavior. Reflagging Kuwaiti tankers and limited strikes against Iran's Navy in the late 1980's also achieved conditional objectives. Iraq illustrates this point from a different angle. It highlights the limitation of sea power (or air power) alone. Kuwait was liberated by reoccupation. She has remained free due to the expulsion of Iraqi troops and her continued self determination. Iraq, on the other hand, continues to be a rogue state. Brief occupation of Southern Iraq forced a conditional peace. A continued sea and air blockade has not ensured victory or prevented her reemergence as a regional power. Sea power (and air power) can force conditional peace, it does not directly produce absolute value.

Sea power can be critical to winning wars. Indeed it was critical and absolutely necessary in the Napoleonic Wars, the Kaiser's War and Hitler's War. These wars clearly illustrate how war at sea influences victory. Mastery of the sea was necessary to achieve victory. However, sea power could not do it alone. In each case, coalitions and projection of power ashore was the final determining factor. While being a great sea power is instrumental to victory, it does not ensure or seize victory. The generation of absolute value by projecting power on land (or the creditable threat of projecting power on land) was required to achieve unconditional surrender and victory.

The fact that sea battles are not fought for their own sake is shown by a study of history. Throughout history the most common naval battles are amphibious operations/landings,

supporting operations ashore, and the protection of sea lanes of communication. Fleet battle is rare. Even more striking, all the great decisive sea battles between fleets are connected with events on land--not as an aside, usually in an immediate, direct obvious way.[15]

Admiral Nelson's two greatest battles, the Battles of the Nile and Trafalgar, both were directly tied to land. The Battle of the Nile was precipitated by Napoleon's invasion of Egypt. In a bold, audacious move Admiral Nelson fell on the French fleet in a secure anchorage and destroyed it in a spectacular night engagement that truly demonstrated his acumen. This battle irreparably cut Napoleon's sea lanes of communication and he was forced to abandon Egypt and thousands of troops. The Battle of Trafalgar, similarly, preserved the Royal Navy's mastery of the seas and prevented an invasion of England.

All the great naval clashes of World War II are tied to land. The Battle of Coral Sea--Japanese drive to Port Moresby; the Battle of Midway--Japanese invasion attempt on Midway Island; the Battle of the Philippine Sea--U. S. landing on Saipan; the Battle of Leyte Gulf--U.S. landings on Leyte; and the Battle of the Atlantic--SLOCs to England are all representative examples. Each one is tied directly to results or operations on land.

Clearly there is a relationship between sea power and land power. They are not mutually exclusive. Nor is one better than the other. To be a great power, a nation must possess and appreciate the uniqueness, strengths and weaknesses of each discipline.

Currently, absolute value can only be generated by armies and land power. There is no substitute for a foot soldier and occupying real estate. One day, in the distant future, satellites may be able to see through buildings and deep into the ground. They will be able to track and "zap" individuals at will. In addition, levitating orbs, the size of soccer balls, will travel freely among populations. Controlled by operators far away they will monitor and watch a society. These orbs will fight or punish populations. Societies will be monitored and controlled by leaps

in technology. When technology advances to this stage, armies may no longer be required to occupy land and towns or tread among conquered peoples. Sea power, air power, space power and land power will blend (a process already taking place). However, regardless of the instrument, land will be the focus of all power.

War on Land Versus War at Sea

The differences outlined in the proceeding section are generally a strategic outlook. These broad strategic differences are important. There are also important differences at the tactical level or on the battlefield. Many historians and tacticians tackle this question. However, in Fleet Tactics: Theory and Practice, Captain Wayne Hughes provides a comprehensive, concise list which cuts to the chase. This splendid list is repeated below as Table 1. Hughes compares T.N. Dupuy's, "Timeless Verities of Combat" and develops naval counterparts for each.[16]

Hughes' comparison highlights key differences between war on land and war at sea. Many are very noteworthy. It is significant that reserves, indispensable to warfare on land, hold little meaning at sea. Ships are not held in reserve during naval battle. Also, indispensable to land warfare is terrain. Terrain gives decisive tactical advantage. There is no high ground at sea. While seizure of a strait or forward operating base or airfield are valuable contributions to sea denial, they are examples of the importance of land. Another important distinction is the idea of flank or rear. These do not exist at sea. During the age of oar and sail a slight comparison could be made. Battle today is no longer defined by meeting the enemy. Sea battle today is out of sight and over the horizon (OTH). Flanks and rears do not exist at sea in a land sense.

This list and comparison are very instructive. It does display one failing. While the table recognizes friction, it leaves out any mention of fog or luck as a bedrock principle. This is

Table 1. Land Battle Versus Sea Battle

Land Battle	Sea Battle
1. Offensive action is essential to positive combat results.	This is true of sea battle
2. Defensive strength is greater than offensive strength	Defensive is usually weaker
3. Defensive posture is necessary when successful offense is impossible	Defensive posture is inherently risk prone and subject to incommensurate losses.
4. Flank or rear attack is more likely to succeed than frontal attack.	Attack from an unexpected quarter is advantageous, but the concept of envelopment has no parallel with land tactics.
5. Initiative permits application of preponderant combat power.	The power of initiative is especially valuable at sea.
6. A defender's chance of success are directly proportionate to fortification strength.	Defensive power is solely to gain tactical time for an effective attack or counterattack.
7. An attacker willing to pay the price can always penetrate the strongest defense.	This is true of sea battle, given the wherewithal.
8. Successful defense requires depth and reserves.	At sea, Setting aside reserves is a mistake.
9. Superior combat power always wins, if one takes into account the value of surprise, relative combat effectiveness, and the advantages of defensive posture as elements of strength.	When the appropriate qualifications are considered, it is possible to say that superior force will always win at sea. However, it is better to say that when two competitive forces meet in naval combat, the one that attacks effectively first will win.
10. Surprise substantially enhances combat power.	This is true of sea battle.
11. Firepower kills, disrupts, suppresses, and causes dispersion.	This is true of sea battle.
12. Combat activities are slower, less productive, and less efficient than anticipated [from peacetime test, plans, and exercises].	While this is often true, there are many examples of naval engagements in which the results come more swiftly than expected. Perhaps there is less friction at sea than on land.
13. Combat is too complex to be described in a simple aphorism.	This is true of sea battle.

Source: Wayne F. Hughes, Jr., Fleet Tactics: Theory and Practice (Annapolis, MD: Naval Institute Press, 1986), 143.

particularly surprising for point nine. Point nine, for both land and sea battle, essentially says; if everything goes right, the superior combat power wins. DuPuy caveats his statement with "if one takes into account" and lists everything that must be done right. Hughes caveats his with the operative word "effectively." In the review of history, one can always find something that "was not taken into account" or was "ineffective." It is best to acknowledge up front: luck and fog are a reality of warfare. An outstanding naval battle that highlights the play of luck and fog (and bravery) is Midway. It should be noted that number 13 lets both DuPuy and Hughes off the hook.

Another point that is not addressed here is logistics. Armies and navies view logistics during battle (and campaigns) differently. Armies tend to be tied directly to the logistics train, even during battle. Tactical units in contact have a limited duration without constant resupply. Fuel and ammunition endurance is measured in hours. Navies fight as is, resupplying only when the environment is relatively benign. At sea food endurance is measured in weeks. Fuel endurance is measured in days or weeks (years for nuclear powered ships and submarines). Ships and submarines can operate independently for days. Modern ammunition is the most limiting factor during battle. To a large extent ammunition is measured as a "one shot deal." Most missiles can only be loaded in port. Tomahawks and Harpoon missiles, for example, are generally only loaded in port or alongside a tender. For those missiles, bombs and shells that can be loaded at sea, it is a time-consuming process that, again, requires a benign environment. Naval battle is not tied to logistics. What a ship or submarine brings to the battle is all that is available until the battle is over. In part this leads to Huhges' central theme of naval battle, "Attack effectively first."[17] Only a finite amount of ammunition is available. Use it effectively, or lose it.

A final distinction of war at sea is summed up by Admiral Fioravano. In Naval Tactical Thought he states, "*The impossibility of there being an engagement if one side does not want it* (that is, battles at sea are *by mutual consent*). . . . battle cannot take place if the *determination to commit oneself fully is lacking* [author's italics]."[18] Typically, fleets can choose when and where they want to fight. Fleets are relatively free to maneuver and wait until they perceive the tactical advantage. Admiral Fioravano attributes this to the lack of terrain at sea, "*The impossibility of preparing for battle in advance*, as can be done in land warfare, where terrain gives decisive strategic-tactical indication [author's italics]."[19] When a navy sails it is not forfeiting the high ground. Where sea battle has been forced, it is directly tied to land campaigns. The Battle of Midway is an example. Admiral Chester Nimitz could not afford to cede Midway to the Japanese. He was compelled to dispatch his available forces to prevent the Japanese from seizing the islands. Midway--land--was too valuable. However, once Admiral Frank Jack Fletcher and Admiral Raymond Spruance had decimated the Japanese carrier force and Midway was safe, the tide shifted. The Japanese fleet was no longer a threat to Midway. But, as night fell and the aircraft carriers could not provide air cover, the cruisers covering the American force were no match for Admiral Isoroku Yamamoto's battleships and cruisers. Admiral Fletcher and Admiral Spruance did not risk a night fight. They ceded blue water to the Japanese and maintained a safe distance from the Japanese fleet. Admiral Yamamoto could not force a fight and could not capitalize on his battleship and cruiser advantage.

A more contemporary example of the inability to force naval battle at sea occurred during the two and half month Anglo-Argentine War over Falkland (or Malvinas) Island. The war began 2 April 1982 when Argentina invaded and captured Falkland Island. One month later, a British battle force arrived and "sought to draw the Argentine fleet and air force into battle."[20] Rear Admiral John F. Woodward, Commander of the British Force, attempted to lure the

Argentine's into battle by conducting air raids and naval bombardment of the islands and posturing for a counter invasion. Yet, despite closing to within 180 nm of each other, the battle could not be forced. Rear Admiral Gualter Allara, Commander of the Argentine Fleet chose not to fight. He was hampered by poor weather and insufficient wind to launch bomb laden carrier aircraft.[21] The battle could not be forced.

In contrast, the British invasion of Falkland Island reinforces how land forces naval battle. A number of issues dictated the British not postpone a landing. They included approaching winter, concern popular homefront support would wane and the constraints of supporting troops at sea so far from Britain. On 18 May amphibious landings were conducted in Falklands Sound. Naval forces were committed in the Sound to protect amphibious ships and landing craft. Since Royal Navy aircraft carriers could only provide limited air cover, Royal Navy ships were very vulnerable to Argentine air attacks. Five ships were lost protecting and supporting the invasion.[22] Falkland Island dictated and forced naval battle.

Foundations of Naval Tactics

Constants and generally accepted foundations of naval tactics emerge while researching naval warfare. Most of the differences encountered are a matter of terminology, emphasis and aspect. While a principle or concept may not make an author's top ten list, it is given consideration and credit in due course. The execution of warfare and tactics is an art. Art is a conscious use of skill; art is creative imagination. Art requires thinking. Execution of art is in the hand of the executioner. Naval officers and warriors should not demand rigid maxims and dogma. The execution of warfare and tactics requires personal interpretation of generally accepted ideas and core principles of warfare. The true skill is not laying the canvas, arranging the paint or selecting the brush. True skill is painting the picture, which may require leaving

some paint on the floor and/or expanding the canvas. While, each author had an individual twist, a foundation did emerge.

The primary sources for developing a foundation of naval tactics were Captain Hughes', Fleet Tactics: Theory and Practice; NWP 3-20.6, Surface Ship Tactics; and Admiral Guiseppe Fioranvano's, Naval Tactical Thought. Figure 1provides their key principles or characteristics of naval tactics and battle. In the context of each work differences are slight. For example, Hughes and Fioranvano both single out technology. Hughes states, "To know tactics, know technology."[23] Fioravanzo's multiformity of action includes, "[taking into consideration] one's . . . weapon characteristics and capacity to withstand attack."[24] While technology did not make NWP 3-20.6's list, it does dedicate considerable space to discussing the importance of sensor employment, weapon employment and knowing system capabilities and limitations.[25] Across the board, each publication addresses to a significant extent all the points in Table 4-2. However, it is clear, their critical considerations differ.

When reviewed from a common vantage point a consensus or foundation emerges from the works cited in table 2. Listed below is that consensus. This list includes only the points that directly apply to naval battle and tactics. Some themes presented in table 2 are more appropriate for an operational or strategic discussion and have been left out. Remaining are foundations of naval tactics; (1) leadership, (2) scouting and anti-scouting, (3) firepower, (4) survivability, (5) command and control, (6) mobility and movement, (7) technology, and (8) fog of war.
In the next chapter some of these foundations will be examined to see if they can be influenced by naval maneuver warfare concepts and theory.

Table 2. Key Principles and Characteristics of Naval Tactics

Fleet Tactics	**NWP 3-20.6**	**Naval Tactical Thought**
Five Cornerstones: - Men Matter Most - Doctrine is the Glue of Tactics - To Know Tactics, Know Technology - The Seat of Purpose is Land - Attack Effectively First The Great Constants: - Maneuver - Firepower - Counterforce - Scouting - C2 and C2CM	Tactical Procedures: - Planning - Search - Engagement - Support Tactical Employment: - Logistics - Intelligence - Communications - C2 - Formation - Maneuver - Achieve Tactical Position - Concentrate Fire Power	Characteristics of Naval Engagement: 1. Uncertainty as to position of adversary. (security, reconnaissance) 2. The impossibility of there being engagement if one side does not want it. 3. The impossibility of preparing for battle in advance. 4. The multiformity of action (mobility, offensive power, weapon characteristics, survivability) 5. Instability of situations. 6. Rapidity of action. 7. Fogginess of battle area.

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[1]B. H. Liddell Hart, The Real War 1914-1918 (New York: Little Brown and Co., 1964), 272.

[2]Ibid.

[3]Ibid., 273.

[4]J. C. Wylie, Military Strategy (Westport, CT: Greenwood Press, 1980), 49.

[5]Colin S. Gray and Roger W. Barnett, Seapower and Strategy (Annapolis, MD: Naval Institute Press, 1989), 10.

[6]Giuseppe Fioravanzo, Naval Tactical Thought (Annapolis, MD: Naval Institute Press, 1979), 27.

[7]Wayne P. Hughes, Jr., Fleet Tactics: Theory and Practice (Annapolis, MD: Naval Institute Press, 1986), 33.

[8]Raoul Castex, Strategic Theories (Annapolis, MD: Naval Institute Press, 1994), 394.

[9]"Because men live on the land and not at sea, the outcomes of great wars among nations have always resulted, except in very rare cases, either from what one army managed to do to the territory or national life of the enemy or from fear of the possibilities which a fleet could give to the army against the same territory or national life." Corbett, Principles quoted in Castex, 394-395.

[10]Gray, 11.

[11]Ibid.

[12]J. J. Tritten, "Is Naval Warfare Unique?" Technical Report (Norfolk, VA: Naval Doctrine Command, July 1995), 9.

[13]Gray, 11.

[14]Ibid.

[15]Hughes, 33.

[16]Hughes, 143.

[17]Hughes, 34-39.

[18]Fioravano, 181.

[19]Ibid.

[20]Frank Uhlig, How Navies Fight, The U.S. Navy and Its Allies (Annapolis, MD: Naval Institute Press, 1994), 367.

[21]Uhlig, 368.

[22]Larry H. Addington, The Patterns of War Since the Eighteenth Century (Indianapolis, IN: Indiana University Press, 1994), 313.

[23]Hughes, 32-33.

[24]Fioravanzo, 182.

[25]NWP 3-20, 6.

CHAPTER FIVE

APPLICATION OF NAVAL MANEUVER WARFARE

Introduction

The analysis presented in this chapter shows that maneuver warfare theory and concepts do influence selected foundations of naval tactics. The foundations of naval tactics examined are technology, firepower, scouting/anti-scouting, mobility/movement, and leadership. Through the historical examples and tactical discussions detailed below maneuver warfare's influence on technology, firepower, scouting/anti-scouting and mobility/movement is apparent. A brief discussion of leadership highlights its unique position with respect to maneuver warfare. Foundations fog, survivability and command and control have not been investigated.

Technology

The Battle of the Atlantic during both World Wars was an example of the classic attrition fight. The Germans attempted to cut Great Britain's vital resupply and raw material link to the New World. The principle weapon in their quest to cut the SLOCs was the U-boat. The Allies' primary solution was mass and overwhelming firepower. Losses were replaced and enormous resources were dedicated to the effort. NDP 1 (which uses the Battle of the Atlantic during World War II as a primary example of attrition warfare) recounts, "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."[1] This classic attrition

struggle pitted mass versus mass and strength versus strength. The Allies overwhelming industrial power, resources and mass are largely credited with winning the Battle of the Atlantic.

This text book example of an attrition campaign also presents an example of how technology offered a maneuver solution to the battle. Exploiting this technological edge, a small group of ships negated the submarine threat and crossed the Atlantic unimpeded. Exercising the acme of maneuver skill, these ships knocked submarines out of the fight without fighting.

The short range and speed of German World War II torpedoes limited their effectiveness as a victim's speed increased. When high speed was combined with frequent course changes or zig zagging, U-boat commanders could not develop a firing solution. The target was beyond their limited capabilities. However, few ships could obtain speeds fast enough to capitalize on the U-boats' shortcomings. Even fewer ships had the endurance to maintain this speed for long periods. Furthermore, in order to maintain the integrity of a convoy, the convoy's speed was limited to that of the slowest ship. The typical convoy could only muster 11-13 knots, ". . . a speed too meager to give effective anti-submarine protection."[2] These convoys could not exploit speed, nor could their escorts. They required heavy anti-submarine warfare (ASW) screens.

However, a small group of ships possessed a technological edge and was able to use speed as protection and defense. They were the great ocean liners. Designed for the Atlantic passenger trade, they were big and built for speed and endurance. Quick voyages across the Atlantic, before the war, translated into large profits and prestige. This speed and endurance were put to the test beginning in August of 1942. The French S.S. *Pasteur*, *Canadian Empress of Scotland*, *British Queen Mary*, *Queen Elizabeth* and *Aquitania* were pressed into service as troop carriers. After Pearl Harbor the American cruise liner S.S. *Mariposa* joined the fight. The largest could transport 15,000 troops. Their speed precluded escorts from keeping up and they sailed alone, unescorted, except in coastal waters and approaches. Between August 1942 and

June 1943 these great liners made 30 eastbound voyages. The Naval Historian, Samuel E. Morrison sums up the cruise liners' success: " 'Mary' and 'Lizzie' [Queen Mary and Queen Elizabeth] were able to steam an average of 26.5 knots for the entire voyage and to make a British port in less then five days from New York; the others too were fast enough to baffle U-boats, whose anxiety to catch them may be gauged by frequent German claims that they had been sunk."[3] Throughout the war not a man was lost crossing the Atlantic in these majestic ships.

Clearly, the Battle of the Atlantic would have taken a different shape if every convoy could have exceeded 20 knots as they crossed the Atlantic. However, this was beyond the technological and industrial base of the Allies and only a few ships were available. Yet, this simple example does demonstrate at the tactical level how technology influences tactics and how use of maneuver warfare affected what was essentially an attrition clash, the Battle of the Atlantic.

Firepower

The Solomon Island Campaign helps illustrate the expanded theme of maneuver warfare in Chapter 1. Here a more thorough study of this bloody struggle and how maneuver warfare applied at the tactical level and negated Japanese firepower will be conducted. A principle source of strength of the Japanese Navy during the Solomon Island Campaign was firepower, specifically the Long Lance torpedo. The use of this weapon was or could not be solved with more firepower; instead a maneuver solution had to be developed. The U.S. countered this source of strength by exploiting Japanese Imperial Navy weaknesses in screening. Technology coupled with innovative tactics by U.S. naval forces exploited this Japanese weakness and

marginalized their firepower advantage, negating their source of strength, the Long Lance torpedo.

"Solomon Island has had the distinction of being the scene of numerous pitched battles and the occasion for six major naval engagements within . . . [the first four months]. In addition, there were some half a hundred ship-to-ship and air-sea fights . . . in this superabundance of heavy slugging"[4] Samuel Eliot Morison captures the extent of the struggle in his multi-volume history of the U.S. Navy's fight during World War II. The Solomon Island Campaign was a slugfest, initially over control of Guadacanal Island and subsequently, allied advances through the remainder of the Solomon Islands and New Guinea. Air fields and air cover dictated the basic terms of the Solomon Campaign's naval engagements. The vast majority would be at night. Once Henderson Field on Guadacanal was secured by the Marines, the allies enjoyed local air superiority during daylight hours. Without adequate air cover from Rabaul, the Japanese air base over 500nm to the north, the Japanese could not venture into the Slot--a strip of sea bounded by the Solomon Islands. Even after establishing an air base on Buka Island, 170nm closer, on the approaches to the Slot, the Japanese could not operate deep inside the Slot during day light hours--overhead time for Zeros was too short. Conversely, U.S. forces could not chase Japanese ships too far north in the slot. As dawn approached they had to be well south of Japanese air bases at Rabaul and on Buka Island.[5] Captain Wayne Hughes captures the scene, "But when the sun set air power lost its grip, and surface combatants met and fought once more."[6]

The Japanese Imperial Navy and the U.S. Fleet clashed over beachheads and convoys. By day Allied forces would resupply its beachheads and troops ashore. By night the Japanese ships, nicknamed the "Tokyo Express," steamed into the slot to resupply their troops and occasionally bombard Henderson Field on Guadacanal.[7] The Allies were determined to stop the

Tokyo Express and sortied repeatedly into the Slot. This precipitated numerous engagements. Soon, the Slot earned the nickname "Ironbottom Sound" and Morison challenges, "You may search the seven seas in vain for an ocean graveyard with the bones of so many ships and sailors"[8]

The Japanese Navy's sources of strength during the Solomon Island Campaign were adept night tactics and fire power, namely, the Long Lance torpedo. This work will focus mainly on firepower and the Long Lance torpedo. However, a brief discussion of the Japanese tactical advantage is noteworthy. The Japanese proved well trained and adept as night fighters. In part, this was because they trained extensively in night tactics and squadrons maintained cohesion. The Americans were unprepared to fight at night. They had emphasized daylight tactics prior to the outbreak of World War II. Also, U.S. task groups were hastily organized and poorly trained during the initial months of the campaign.[9] For Morison this was evident at the Battle of Tassafaronga, which was a U.S. failure. He concludes, "It must be remembered that the United States force . . . had never before steamed together, even in daylight, and that is was strictly a 'scratch team;' while Tanaka's [Japanese] force had been well trained and long practiced under the same commander."[10] American tactical development would prove a bumpy ride, but improve with experience and ascent of commanders like Arleigh Burke and Frederick Mooseburger.

"No one in authority in the South Pacific seemed to understand what the Japanese had, although, since the beginning of the Tokyo Express runs down the Slot the Japanese had scored *victory after victory by using torpedoes*."[11] The Long Lance torpedo was a devastating weapon and gave the Japanese Navy a distinct fire power advantage. The torpedo was twice as powerful as its American counterparts. It had a range of 22,000 yards at 49 knots; 44,000 yards at 36 knots.[12] On 4 July 1943 a group of U.S. destroyers, conducting naval gunfire bombardments, spooked some Japanese destroyer transports that were attempting to resupply Central Solomon

Island. The Japanese destroyers were alerted by the American muzzle flashes. The U.S. destroyers caught a brief glimpse of the Japanese destroyers on radar at 25nm as they fled. Exercising a tactic that would prove devastatingly effective, the Japanese destroyers immediately fired Long Lance torpedoes at the muzzle flashes before executing radical maneuvers and fleeing. When a torpedo slammed into one of the destroyers, USS STRONG, it was believed it was a submarine torpedo, not, ". . . a destroyer torpedo fired from a distance impossible for an American destroyer to duplicate."[13]

Morison, Hoyt and Hughes detail spectacular U.S. failures in the period August 1942 through July 1943, during the Solomon Island Campaign. At one point, only four months into the Solomon Island Campaign, Morison feels it necessary to issue a caution in his book. After splendidly detailing the American failure during the Battle of Tassafaronga, 30 November 1942, he warns, "So, reader if this tale has seemed repetitious with shock and gore, exploding magazines, burning and sinking ships and plummeting planes--that is simply how it was."[14]

The U.S. task force commanders were extremely brave and daring. They were following sound pre-war tactics. Frequently cruisers were matched against destroyers. Here the range and fire power advantage of the cruisers' bigger guns *should* have taken the day. This firepower solution came up short, the cruisers also fell victim to the Long Lance, which matched their gun range. In a number of the engagements the Americans were able to cross the "T," a clear fire power multiplier. Again, U.S. task forces fell victim to the silent Long Lance.

Part of the solution would result from more experience and better tactics. This was largely hampered by the "scratch teams" mentioned earlier. The key to the solution was exploiting a weakness and vulnerability that reduced the Japanese source of strength. The American's screening and scouting advantage provided by radar proved to be that key. This should have been recognized much earlier; U.S. commanders knew early on they had a radar

advantage.[15] An account of the sinking of the Japanese destroyer MURASAME brings home the point: "Her captain still did not know what he faced. He had seen the enemy only as a few pinpoints of light and he didn't know what sort of ships he faced or how many. He never got a chance to find out, because the radar shifted to his ship . . . the cruisers began to fire on him. . . . in three minutes he was dead in the water."[16] In short order the *Murasame* was sunk. Radar gave the Americans a distinct scouting advantage. During the black nights of the South Pacific, the Americans knew where the enemy was first. Yet, without tactics to support this advantage and exploit the Japanese weakness, it was lost and Japanese firepower continued to rule the night.

The means to exploit the Japanese vulnerabilities came with ascendancy of Commander Mooseburger, Admiral Merrill and Captain Burke. After a year of fighting in the Solomons a "new breed" of "American captains had come to age."[17] These men benefited from improved unit cohesion and combat experience. Commander Mooseburger would initiate the final successes of the Solomon Campaign with the Battle of Vella Gulf on 6-7 August 1943. (Three more battles remained after Vella Gulf. Two would be successes for the Americans, one a set back.) The credit for the battle plan goes to Captain Arleigh Burke.[18] Hughes sums up: "The U.S. Navy had found the tactics to match its radar advantage and neutralize the enemy's torpedo advantage. Good sensors and scouting could overcome better firepower. . . . Hit and move was the answer, not crossing the T; units had to be nimble rather than fixed in sturdy, steady, cohesive--and suicidal--column."[19] Accepting NDP 1's definition of maneuver warfare and the expanded theme of maneuver warfare, this is clearly a maneuver solution to a tactical problem.

The setback would be the very next fight, the Battle of Vella Lavella on 6-7 October 1943. Captain Frank Walker, in his first fight, with a scratch force of three destroyers faced six Japanese destroyers. His failure actually validated Captain Burke's and Commander Mooseburger's new tactics. Captain Walker's ships fired fourteen torpedoes, at seven thousand

yards, using radar on an unsuspecting enemy. Then he violated the main spirit of the new tactics. He did not maintain surprise and the radar advantage. Commander Mooseburger, and later Admiral Merrill and Captain Burke, held their gunfire until after their torpedoes hit their mark. Then they would conduct a radical maneuver to avoid any counter fire. This night, Captain Walker remained broadside to the enemy and opened fire with his guns as his torpedoes were running. The alert Japanese destroyers, maneuvered and fired counter-fire torpedoes. Only one Japanese destroyer was hit and sunk. However, two U.S. destroyers were torpedoed, and the third collided into one of the victims: three U.S. destroyers were out of action.[20] Captain Walker sacrificed his advantage when he opened fire before his torpedoes struck home.

These mistakes were not made again in the last two battles of the Solomon Campaign. The Battles of Empress Augusta bay and Cape St. George were victories. Captain Burke fought at both battles. He fought under tactical command of Admiral Merrill in the first engagement; for the second he was in tactical command--the Battle of Cape St. George. Fought on Thanksgiving night 1943, the Battle of Cape St. George pushed the Japanese Imperial Navy out of the Slot for good. Captain Burke's five destroyers encountered five enemy destroyers, split into two groups. Having the radar advantage, the U.S. destroyers fired fifteen torpedoes at the first group of two Japanese destroyers. The U.S. destroyers remained undetected until their torpedoes hit the enemy destroyers. Both Japanese destroyers were hit and dead in the water. Captain Burke left two destroyers to finish these off and gave chase to the second group of three Japanese destroyers. During a two-hour chase, he sank one more and avoided a large salvo of enemy torpedoes. He broke off the chase as dawn approached; he was dangerously far north and closing on the Japanese air base at Rabaul. Hoyt summarizes, "The Burke force got off scot-free in what was to that point the cleanest and most effective multi-ship action of the war. Not a man was hurt, not a scratch administered to an American ship, and three Japanese destroyers had gone

down."[21] Captain Burke had displayed a Nelson Touch. He tossed out old procedures and failed tactics and developed tactics which exploited a weakness that reduced the enemy's combat power in relation to his. He was a charismatic leader and avoided detailed instruction preferring to, ". . . [gather his] captains to discuss a variety of tactical problems."[22] Captain Burke provided a maneuver solution to a tactical firepower and attrition problem.

Scouting and Anti-Scouting

German Imperial Navy strategy and tactics developed on the North Sea during World War I manifested many core ideas of naval maneuver warfare theory. Raoul Castex and Julian Corbett support many of their theories and draw conclusions directly from these operations. The North Sea struggle between Great Britain and Germany was the foremost naval campaign studied in the 1920s and 1930s. Castex's study of German and British experience in North Sea is particularly illuminating and concise.[23] The Germans applied their maneuver concepts to scouting and anti-scouting; they sought an "indirect approach" and to focus on "key enemy weaknesses and vulnerabilities."[24] Maneuver warfare theory influenced their approach to scouting and tactics.

Background--Imperial Navy Offensive in the North Sea, 1914-1916. "The High Seas Fleet ought not to be engaged," was the principal order from the Kaiser Wilhelm II in the Summer of 1914.[25] The Kaiser, along with the majority of the German Naval Staff, suffered from a malaise or inferiority complex. In the face of the Royal Navy, they forsook any thought of an offensive. Yet, some of the officers of the High Seas Fleet (German Imperial Navy fleet, stationed in the North Sea) would challenge naval circles and attempt to seize the initiative by exploiting technology and developing innovative scouting and anti-scouting tactics. These officers would introduce aspects of maneuver warfare.

The Imperial Navy entered World War I entrenched in Admiral Alfred von Tripitz' famous "Risk Theory." In 1900 this theory was codified by the Reichstag as the Second Navy Law. The Second Navy Law refereed to Great Britain and the Royal Navy as "a great naval power," "a substantially superior sea power," "an enemy who is more powerful at sea," and most tellingly, "the greatest naval power."[26] The bill inferred the Imperial Navy will always be an inferior force and stated its purpose was through *defeat* to "so substantially weaken the enemy that, in spite of a victory he might have obtained, his own position in the world would no longer be secured by an adequate fleet."[27] Admiral von Tripitz was a proponent of this attritionist view and felt Great Britain would never *risk* an engagement with the Imperial Navy, since it would leave the Royal Navy at the mercy of Russia and France. By 1914 the theory was woefully out of date; it did not account for British shipbuilding capability or the changing alliance structure.

The principal result of the "Risk Theory" was to initiate a naval arms race, increase tensions between Germany and England, and draw France and England closer together. However, it also institutionalized in the Imperial Navy a sense of inferiority and pessimism, suffocated morale and innovation. This malaise reached all the way to the Kaiser. A strong proponent of the navy, he nevertheless felt the Imperial Navy was impotent against the larger, more powerful Royal Navy. His initial operating orders to the German Naval Staff and High Seas Fleet, as hostilities began, stressed preserving the fleet and waiting for the Royal Navy to move. Mine laying operations and submarine warfare would be conducted to equalize the fleets.

The Kaiser's strategy, approved by the German Naval Staff, of preserving the Imperial Navy would ensure control of the Baltic Sea and neutrality of the Scandinavian States. Also, he felt preserving the navy would be instrumental in peace negotiations. Considered in hand with the general feeling of impotence, his preservation orders are clear.

Admiral Friedreich von Ingenohl would be one of the first officers to challenge these orders and the general sense of impotence. He would attempt to seize the initiative through innovative plans and tactics. Perhaps--surprisingly--the seed for their thought was contained in the Second Navy Law of 1900: "... it is not absolutely necessary that the German Battle Fleet should be as strong as that of the greatest naval power because a great naval power will not, as a rule, be in a position to concentrate all its striking forces against us."[28] This clearly acknowledged that a superior force is vulnerable if dispersed or unable to "concentrate" or mass its forces. While others may have seen aspects of maneuver warfare theory here, it was lost on the principal author of the law, Admiral von Tripitz. At the outbreak of the war he stated, " . . . we, the navy, can do very little, and that makes our situation very painful."[29] Admiral von Tripitz was resigned to defeat and his early prediction of a battle of attrition in which destruction of the High Seas Fleet would be the only outcome.[30]

Admiral von Ingenohl was the Commander of the Imperial Navy High Seas Fleet when war was declared. Constrained by the Kaiser's orders, he achieved limited success equalizing naval forces through mining and submarine warfare during the Summer of 1914. Early successes of mining and submarine operations, which included sinking four British armored cruisers and one of England's newest battleships, began to wane as the Royal Navy improved procedures and became adept at repelling mine laying operations. Equalization was further hampered by the adoption by the British of a distant blockade. Instead of blockading the German coastline, the Royal Navy blockaded the accesses to the North Sea. Furthermore, with no threat from the Imperial Navy, the Royal Navy retained the initiative and sortied on its own terms into the North Sea. In August of 1914 a Grand Fleet (title of the Royal Navy's North Sea fleet) task force surprised the Imperial Navy with a thrust deep into the North Sea. Three cruisers and a destroyer were quickly lost. Admiral von Ingenohl believed the restriction on

protecting light forces with battleships and battle cruisers of the High Seas Fleet doomed any chance of success.

In this changing situation, Admiral von Ingenohl proposed Battle Cruiser raids supported by the High Seas Fleet. Convinced that equalization could not be achieved by mine operations and submarines alone, he petitioned the Naval Staff for use of the High Seas Fleet's capital ships (battleships and battle cruisers). He proposed equalizing forces, ". . . by taking the initiative oneself and sorting with united forces, to obtain success against parts of the British Fleet. . . . "[31] This request to regain the initiative is an early crystallization of maneuver warfare theory and innovative tactics.

The Naval Staff rejected Admiral von Ingenohl's proposal. However, events would force a shift. In October, 1914, Admiral von Ingenohl declared he could no longer conduct mine laying operations. British counter-mine operations were too effective. Unless German mine operations were supported by heavy forces, Admiral von Ingenohl felt he could not continue. This was a blow to the strategy of achieving parity through minor actions. Modifying his earlier proposal, he proposed the High Seas Fleet support mine operations.[32] The Kaiser and the Naval Staff approved his plans. Mine laying operations graduated to raids against the British Coast. Although they inflicted minimal damage, they did cause some public panic. In response, the Royal Navy dispersed some ships along the coast. (This was an unintended benefit.) Establishing a coastal defense force contributed to an already dispersed force. Royal Navy commitments included: channel blockade, forces detached to protect England from a channel invasion, Scottish Straits blockade and now protecting the coast from raids. Continuing the blockade was critical. However, an invasion scare was a small threat[33] and coastal raids were relatively insignificant. More importantly, the best way to eliminate both troubles was to concentrate on destroying the High Seas Fleet. Dispersion improved the situation for the

Germans. Throughout this period (1914-1916), the Royal Navy had difficulty unifying forces efficiently--a maneuver success for the Imperial Navy.

On 16 December 1914, Admiral von Ingenohl missed his chance to commit his "unified force" against "part" of the Grand Fleet. Admiral von Ingenohl was steaming the High Sea Fleet in support of a cruiser raid against the English coast. In response to the German raid, the Grand Fleet sortied. Intelligence informed the British of the impending cruiser raid. However, they believed the bulk of the High Sea Fleet was in port. Poorly dispersed, a Grand Fleet Battle Cruiser Squadron and Destroyer Squadron became sandwiched between a much larger Imperial Navy force; the advance guard of the High Seas Fleet and the main force of the High Seas Fleet. The remainder of the Grand Fleet was well to the north. However, when the engagement began, Admiral von Ingenohl broke off, believing he had encountered the entire Grand Fleet, missing just the chance he sought. Compounding his error, when the High Seas Fleet broke the engagement and headed home, Admiral von Ingenohl left the cruiser raid isolated and unsupported. Only a sudden turn in the weather and chance signal error among Royal Navy ships saved the German force.[34]

"'Here at last . . . were the conditions for which the Germans had been striving since the outbreak of the war. A few miles away on the port bow of the High Sea Fleet, isolated, . . . was the most powerful . . . battle squadron of the Grand Fleet, the destruction of which would . . . [have placed the fleets] on precisely even footing."[35] This is how a Royal Navy Staff monograph summed up the encounter. Admiral von Ingenohl's offensive initiative and maneuver tactics worked and did draw out and isolate part of the Grand Fleet. Though the opportunity was lost, it validated his ideas. As it became apparent that Admiral von Ingenohl had created and blundered this opportunity, he won numerous converts who also criticized his actions in battle. When a

month later he would leave some of his cruisers unsupported and lose a cruiser, Admiral von Ingenohl was relieved.

1915 was a year of waiting and inactivity under Admiral Hugo von Poll, Admiral von Ingenohl's replacement. While critical of Admiral von Ingenohl's actions on 16 December, Admiral von Pohl was a convert to his maneuver ideas. But, he was unable to take the risk. (The risk of sailing sorting an inferior force (High Seas Fleet) against a superior force (Grand Fleet), in an attempt to engage a slice, was indeed dangerous.) The High Seas Fleet remained in port for the entire year. In January 1916, Admiral von Pohl became ill and was replaced by Vice Admiral Reinhard Scheer.

Introduction of Zeppelins and Submarines as Scouts. Admiral Scheer was energetic and dynamic. He was a true convert to the new tactics and maneuver idea. He would argue, "The present disparity of forces forbids us from seeking out decisive battle. . . . Our conduct of operations ought therefore to ensure that a decisive battle not be imposed upon us by the enemy. . . . The many ways we have of attacking the enemy give us the advantage, even given our inferior forces, *of always being aggressors*."[36] Admiral Scheer was bent on pursuing a bolder offensive. Again, like his predecessors, his primary goal was to achieve equalization before a "stand-up, give-and-take fight to the finish with the British Fleet."[37]

Admiral Scheer would organize three major tactical offensive operations: 24-25 April (Lowefest Raid), 30 May-1June (Jutland), and 19 Aug 1916. These were coordinated operations specifically designed to battle portions of the Grand Fleet in order to ensure an unfair fight--in favor of the High Sea Fleet--and equalize forces. In the process of each operation he would develop innovative tactics. Chief among these was using submarines and Zeppelins in a reconnaissance and security role.

Admiral Scheer recognized if Admiral von Ingenohl had known he was facing only part of the Grand Fleet, he would have surely pressed his attack on 16 December 1914. A lack of effective scouting was a failing of both fleets. Admiral Scheer's new scouting tactics would fix an Imperial Navy weakness and target a Royal Navy vulnerability. They would initially evolve around the Zeppelin.

The Royal Navy soon developed a respect for the Zeppelin. "If we saw them sailing about overhead," stated Admiral Sir William Milburne James, of the Royal Navy, "we could do nothing but swear at them."[38] Prior to their first employment in a direct fleet scouting role Admiral of the Fleet 1st Earl Jellicoe, Commander in Chief of the Grand Fleet, observed, ". . . I think the Zepps raids are pure revenge, and also for reconnaissance of the southern part of North Sea." He continued, "Those who opposed the building of Zeppelins in this country 3 years ago have a heavy responsibility now."[39] Admiral Scheer had clearly identified a weakness of the Royal Navy. His challenge now was to properly employ this advantage and execute his maneuver idea.

On 25 April 1916 Admiral Scheer conducted a similar operation to Admiral von Ingenohl's raid of 16 December 1914. There were two principal differences. First Admiral von Ingenohl operated in support of the cruisers and on a "chance" meeting with the portions of the Grand Fleet. In contrast, Admiral Scheer planned this operation from the onset to engage a portion of the Grand Fleet. The other major difference was Admiral Scheer's employment of Zeppelins as scouts.

For the Lowestoft operation, Admiral Scheer employed nine Zeppelins. Three were in direct support and positioned from the outset to provide intelligence on the Grand Fleet. Six others were assigned scouting stations after they finished their bombardments over England. Admiral Scheer achieved his objectives with the Lowestoft raid. Once again he faced a

dispersed, disorganized Grand Fleet. Marder sums up, "The condition of the [plan] had been met: he had drawn an important detachment of the Grand Fleet into waters favorable for action. . . ."[40] The outcome? Royal Navy history accurately states, "He [Admiral Scheer and Imperial Navy Fleet] did not wait even to glimpse the masts of Admiral Beatty's light cruisers on the horizon, much less the appearance of Admiral Beatty or the Commander-in-Chief. . . . [Admiral Scheer conducted] a speedy retreat into the Bight."[41] In part this was due to erroneous reports from the Zeppelins. Also, inexplicably, Admiral Scheer detached them early! When they could have been of the best value, they were on the way home. The Lowestoft raid proved another Imperial Navy missed opportunity and failure.

The same day Admiral Scheer returned from the failed Lowestoft raid, the German Naval Staff informed him submarines would have to conduct attacks in accordance with international law. Namely, ships had to be warned before fired on and survivors rescued. (This abandonment of unrestricted submarine warfare was to appease the United States.) These were unacceptable conditions for continuing the submarine campaign and Admiral Scheer recalled all the boats. "Henceforth, the submarine would collaborate with the High Seas Fleet in the North Sea, aiding in both security and battle, and its contribution to Manoeuvre would be a genuine innovation."[42]

Admiral Scheer wasted little time exploiting the freshly released U-boats. He planned, "A bombardment of Sunderland . . . [which] would cause Beatty [and the British battle cruisers] to race out of the Forth to engage Hipper. The later would lead the British force . . . to the German battle fleet. . . . [Which] would polish off Beatty before Jellicoe [and the Grand Fleet] could arrive on the scene."[43] For this operation Admiral Scheer planned to deploy the U-boats as a screen and guard force outside major British naval bases. The U-boats would report and attack as able. In addition, once again Zeppelins had a major role. Marder states, "This plan depended

on extensive airship reconnaissance . . . to ensure Jellicoe was not engaged in a sweep down the North Sea when the plan was launched."[44]

The plan originally scheduled for 17 May 1916, was delayed until 29 May due to engineering and repair problems among Admiral Scheer's larger ships. By 29 May repairs were complete and the submarines were on station. However, strong winds prevented the Zeppelins from taking off. Scheer delayed one more day. Due to the limited endurance of his submarines, he could delay no more. On 30 May the strong winds prevailed and precluded the use of Zeppelins. Admiral Scheer modified his plan and sailed anyway, without the Zeppelins, a key element of his original plan and his main source of scouting.

Admiral Scheer sailed the High Seas Fleet into the Battle of Jutland. Forsaking the Zeppelins would prove his undoing. Unknown to Admiral Scheer, alerted by signal intelligence, Admiral Jellicoe and the Grand Fleet were underway conducting a sweep down the North Sea. When Admiral Scheer received spot reports of British warships from his submarines, he believed he was up against small groups of British ships.[45] On paper the Battle of Jutland can be considered a German victory, albeit small: 254 ships involved, Grand Fleet 14 lost (110,980 tons), High Seas Fleet 16 lost (62,233 tons).[46] It was a lost opportunity for the Grand Fleet. Unclear signals and misunderstandings critically hampered the Grand Fleet.[47] While a tactical victory for the High Seas Fleet, the Battle of Jutland was a strategic defeat for the German Imperial Navy. An American newspaper summed up: "The German Fleet has assaulted its jailer; but it is still in jail."[48] The Battle of Jutland broke the morale of the High Seas Fleet. Already suffering from an inferiority complex and having spent the majority of the war in port, Jutland reinforced their second rate status and inferiority.

The High Seas Fleet would attempt one more major sortie after the Battle of Jutland on 19 August 1916. Framed after Admiral Scheer's previous sorties into the North Sea, it was his

first opportunity to use both U-boats and Zeppelins. The sortie was inconclusive and an engagement did not result. Even before this sortie, Admiral Scheer began to lobby for a return to unrestricted submarine warfare. By returning the submarines to the Atlantic, he was depriving himself of a vital screen and resigning to spend the remainder of the war in port.[49]

Admiral von Ingenohl and Admiral Scheer of the German Imperial Navy exercised maneuver warfare concepts and tactics. Admiral Scheer did not limit himself to a strategic maneuver approach. Identifying an indirect approach to scouting, he used submarines and Zeppelins to scout and screen his forces in a bid to isolate and destroy portions of the British Grand Fleet. Repeated failure can largely be attributed to poor execution and coordination and the underlying sense of German Navy inferiority. These tactics exercised maneuver concepts, strengthened the Imperial Navy's hand and targeted Royal Navy vulnerabilities.

Mobility and Movement

"The fundamental tactical position is no longer defined by the *geometric* relationship of the opposing formations, but by an *operational* element: the early detection of the enemy [authors italics]."[50] From the Age of Oars to World War II tactics were driven by geometric relationships, mobility and movement. Ramming, positioning windward or leeward, doubling, crossing the "T", etc. dictated tactical advantage and held preeminence. Today operational factors hold tactical advantage and preeminence. Battle space, security, scouting, screening, etc. hold the day. This change has largely been driven by technology. Yet, to this day, in undersea warfare mobility, movement, speed and relative position are still vital.

Anti-submarine weapon and hull mounted sonar ranges are best measured in yards vice miles. When a surface ship is searching for or prosecuting a submarine, even when using a towed array sonar, geometric relationships are paramount. Anti-submarine helicopters and

airplanes have pushed out search and attack ranges and eased the geometric relationships. Submarine anti-ship and anti-submarine weapons have longer ranges then their shipboard cousins. Also, their sonars have greater ranges. However, they are still affected by mobility and movement constraints. Speed is their crutch. As submarine speed increases, submarine noise increases and their sonar sensitivity is reduced. This is particularly acute for nuclear submarines. Diesel submarine speed is further hampered by the limited capabilities of underwater non-nuclear propulsion systems.

Exploiting mobility and movement offers a maneuver solution to a formidable anti-submarine warfare problem: diesel submarines in the littoral. Diesel submarines are very quiet and difficult to find in the noisier (compared to blue water) undersea environment in the littoral. They pose a significant threat. Diesel submarines have some weaknesses. They are slow (both underwater and surfaced), must surface periodically to recharge batteries and have limited endurance.

In 1993, Admiral William Owens proposed a solution to the littoral diesel submarine problem that is quite simple: find out where they are and don't go there. Specifically he said, "It may be enough to know where the other submarines are. As long as they are not interfering with our primary mission, all we need to know is where they are and how to avoid them. Then they pose no threat to us and we can get on to more important things."[51] This concept is not new. During the World War II Battle of the Atlantic, exploiting Ultra secrets and cryptanalysts, the Allies routed convoys around German U-boat and Wolf Pack locations. (As the war progressed, and assets could be devoted to offensive submarine operations, hunter/killer groups were sent to these off limits ocean areas)[52]

This tactic of avoiding submarine waters is well suited to a renewed conflict on the Korean peninsula. North Korea poses a significant submarine threat. They possess a large diesel

submarine force. Many are very old and only marginally capable or obsolete. However, they have over 20 boats which are a Chinese version of the Soviet's ROMEO class submarine. The oldest of these ROMEO boats is 23 years old. The bulk of the ROMEOs have been built in North Korea with the latest commissioned in 1994.[53] The ROMEO boat is quite capable and North Korean submariners have demonstrated some proficiency in undersea operations. As the Falklands War, between Great Britain and Argentina, demonstrated, even a few submarines can be a significant drain on resources.[54]

North Korean submarines are vulnerable to being simply "avoided." They are very much a coastal force and have limited blue water capability. Furthermore, due to America's and South Korea's quick dominance of the air, the North Korean submarine support infrastructure would soon collapse. Command and control facilities should be targeted early on. Port and shore support facilities would follow soon after. In view of North Korea's poor equipment readiness and limited endurance, many of her submarines would be non-mission capable quickly. Hence, a campaign of heavily defending key ports and convoy routes, while avoiding invested areas is advantageous to the U.S. Furthermore, pulling North Korean boats out of the littoral to blue water also promotes U.S. Navy strengths.[55]

A question may come up, "How does the U.S. Navy measure success if it is not sinking submarines?" As mentioned in Chapter I, this is frequently looked at as a maneuverist problem. The answer is simple: by mission accomplishment. If the mission is resupply South Korea and if the North Korean or Chinese submarines can be avoided and supply ships are reaching South Korean ports unmolested, mission accomplished. Success is measured by the number of ships that safely reach port.

Even though the U.S. Navy completely dominates the North Korean Navy it may not be necessary to run in and sink every North Korean submarine. This would be an attrition solution,

which the U.S. Navy would win. Yet, an indirect approach may be less costly, retain the initiative and achieve the same mission results. As detailed above a maneuver solution is available.

Leadership

Despite maneuver warfare's emphasis on initiative, Melee and *Auftragstaktik*, maneuver warfare cannot seize these concepts as its own. Initiative, Melee and *Auftragstaktik* are not the sole domain of maneuver warfare. These ideas cross all theories of warfare. Maneuver warfare proponents and theorists deserve a lot of credit for pronouncing these critically important concepts. However, no one theory can call these concepts their own. Maneuver warfare influences leadership by emphasizing the importance of leadership and promoting sound leadership theories.

The appropriate relationship is warfare theory is the tool of the leader. The leader must select the right theory of combinations of theories to apply. Given circumstances demand different applications of theory. Leadership impacts theory, not the other way around.

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[1]NDP 1, Naval Warfare (Washington, DC: U.S. Government Printing Office, 28 March 1994), 40.

[2]Samuel Eliot Morison, History of United States Naval Operations in World War II, Volume V, The Struggle for Guadalcanal (Boston, MA: Little, Brown and Company, 1984), 331.

[3]Ibid., 329.

[4]Ibid., 3.

[5]Frank Uhlig, How Navies Fight, The U.S. Navy and its Allies (Annapolis, MD: Naval Institute Press, 1994), 217.

[6]Wayne P. Hughes, Jr., Fleet Tactics: Theory and Practice (Annapolis, MD: Naval Institute Press, 1986), 118.

[7]Ibid.

[8]Morison, 4.

[9]Hughes, 123 and Morison, 315.

[10]Morison, 315.

[11]Edwin P. Hoyt, The Glory of the Solomon (New York: Stein and Day Publisher, 1983), 135.

[12]Ibid., 113.

[13]Ibid., 135.

[14]Morison, 315.

[15]Hughes, 119 and Hoyt, 42-43.

[16]Hoyt, 43.

[17]Ibid., 296-7.

[18]Hughes, 124. "According to E.B. Potter, Mooseburger used Arleigh Burke's battle plan." E. B. Potter, ed. Sea Power: A Naval History (Annapolis, MD: Naval Institute Press, 1981), 313.

[19]Ibid., 127.

[20]Ibid.

[21]Hoyt, 296.

[22]NDP 1, 40.

[23]Raoul Castex, Strategic Theories, trans. Eugenia C. Keisling (Annapolis, MD: Naval Institute Press, 1994), 127-183.

[24]NDP 1, 33.

[25]Castex, 135.

[26]Robert K. Massie, Dreadnought (New York: Random House, 1991), 181.

[27]Ibid.

[28]Ibid.

[29]Castex, 133.

[30]Arthur J. Marder, From the Dreadnought to Scapa Flow, Volume II, The War Years: To the Eve of Jutland (London: Oxford University Press, 1965), 43. Marder paints a slightly different picture of Von Tripitz. Quoting Von Tripitz' post-war memoirs he credits Von Tripitz with promoting a "...policy of 'continual activity' and 'minor successes'" to force the Grand Fleet (Royal Navy) to seek out the High Seas Fleet.

[31]Castex, 140.

[32]Ibid., 138.

[33]Marder, 60-64.

[34]Ibid., 138-139.

[35]Ibid., 136.

[36]Castex,156.

[37]Marder, 420.

[38]Ibid., 46.

[39]Ibid., 423.

[40]Ibid., 425.

[41]Ibid., 426.

[42]Castex, 164-165.

[43]Marder, 444-5.

[44]Ibid., 445.

[45]Castex, 168-9.

[46]Larry H. Addington, The Patterns of War Since the Eighteenth Century (Indianapolis, ID: Indiana University Press, 1994), 152.

[47]Bernard D. Claxton, John M. Gurtcheff, and Jeffery J. Polles, Trafalgar and Jutland: A Study in the Principle of War (Montgomery, AL: Maxwell Air Force Base, Air Command and Staff College, 1985), 39-43, 66.

[48]Ibid., 53.

[49]Castex, 173-174.

[50]Giuseppe Fioravanzo, Naval Tactical Thought (Annapolis, MD: Naval Institute Press, 1979), 209.

[51]Joseph Lodmell, "It Only Takes One," Proceedings 122 (Annapolis, MD: U.S. Naval Institute, December 1996), 33.

[52]Uhlig, 158-61, 185.

[53]Lodmell, 30.

[54]Uhlig, 369-370 and Lodmell, 30.

[55]Lodmell, 33.

CHAPTER SIX

CONCLUSIONS

Maneuver warfare theory and design can be applied to naval tactics and battle; naval battle is not the solely in the domain of attrition warfare. Maneuver warfare goes beyond mass and attacks an enemy's will and cohesion. This is accomplished primarily by either using movement and mobility to increase your combat power in relation to the enemy's, or by identifying the enemy's sources of strength, his weaknesses and attacking his vulnerabilities. In Chapter One these themes were developed as the basic and expanded themes of maneuver warfare.

Despite leaps in technology, such as over-the-horizon targeting and weapons, the basic theme of maneuver warfare still applies to today's naval tactics--although typically over a broader area. *Friendly combat power can be increased in relation to the enemy by mobility and movement.* This is apparent in surface clashes as well as undersea battle. Movement and mobility, at the tactical level, may isolate part of an enemy force away from adequate support or perhaps the cover of shore based protection--missiles or aircraft. Regarding submarine warfare, the basic theme is even more potent. Anti-submarine warfare is still a "close" fight. Effective reconnaissance and screening will identify the threat and enable high value units to be vectored out of danger. Avoiding dispersion and concentrating fire power, facilitated by movement and mobility, are also key elements of naval tactics. These are only a few examples. Aspects of the basic theme, movement and mobility and increasing your combat power in relation to the enemy, occur throughout naval tactics.

In today's tactical environment the expanded theme of maneuver warfare offers the most potential. Technology has been a significant impetus in promoting this theme. The expanded theme, the search for an indirect approach and seeking to reduce the enemy's combat power is indispensable. As with the idea of Melee and *Auftragstakik,* this concept is not limited to maneuver warfare. Identifying an enemy's strengths, vulnerabilities and weaknesses can be applied throughout the spectrum of warfare theory. It is this maneuver concept--determining strengths and searching for weaknesses and vulnerabilities--that tells a maneuverist when he must resort to attrition warfare or even guerilla warfare.

Specifically, the expanded theme can be applied to naval tactics. At the tactical level the naval commander can evaluate enemy sources of strength, vulnerabilities and weaknesses. This is precisely what Captain Arleigh Burke did in the South Pacific. He exploited an enemy's weaknesses and vulnerabilities, reduced their combat power, and defeated him. *Enemy combat power can be reduced by determining his strengths and exploiting his weaknesses and vulnerabilities.*

Maneuver warfare is another tool the naval commander brings to the fight. It applies to all levels of naval warfare, strategic and operational,[1] as well as the tactical level. While the attrition nature of contact with the enemy is unavoidable, maneuver warfare cannot be overlooked. It allows the commander to fight smarter. Warfare is very much an art. The successful commander must know his tools, and be prepared to exploit each to the fullest. Maneuver warfare is a powerful tool that can contribute to the strategic, operational and tactical fight.

This thesis has identified several important themes. Frequently, throughout the work maneuver warfare's relationship to other theories has been addressed. The following recurring themes appeared: (1) maneuver warfare may not be the only answer or solution, (2) maneuver

warfare does not always apply, (3) maneuver warfare is an earned right, and (4) the relationship between maneuver and attrition is more complex than good versus bad.

It is critical to understand these very important themes. In many ways they help define the limits of maneuver warfare.

Attrition warfare is the most basic form of warfare. Slugging it out--mass against mass--is the base form of combat. When facing a much weaker opponent it is very effective. Overwhelming force typically carries the day. As odds even or when facing a stronger opponent, the limitations become apparent.

As stated earlier, maneuver warfare goes beyond mass and attacks an enemy's will and cohesion. What if friendly forces cannot exploit movement of mobility to increase their combat power? What if friendly forces have no means of getting at an enemy's sources of strength, of exploiting the enemy's weaknesses and vulnerabilities? Maneuver warfare demands freedom of maneuver or an ability to get at the enemy's vulnerabilities and sources of strength. When two evenly matched opponents square off, these conditions may not exist. Even when forces are not evenly matched, as in the Atlantic during World Wars I and II, mass versus mass may be the only avenue to victory.

The appreciation of the limits of each type of warfare facilitates the conclusion that *one type is not good while the other is bad.* Clearly, each warfare theory has strengths and weaknesses. Maneuver warfare can be declared a "better" form of warfare or even more efficient. NDP 1 draws that specific conclusion: "Naval forces . . . have used the preferable and more effective--albeit more difficult to master--fighting style known as maneuver warfare."[2] Yet, this does not make maneuver warfare good while other theories, specifically attrition warfare, are bad.

General William DePuy illuminates the relationship between maneuver warfare and attrition warfare. He relates his experiences in World War II in a speech presented to the U.S. Army Infantry Officer Advance Course in October 1989. He captures how the Allies broke out of Normandy, and for a month and a half and enjoyed freedom of maneuver. However, ". . . they ran out of gas (literally), the Germans rallied, and the war returned to the attrition mode."[3] Here he pauses to balance attrition warfare against maneuver warfare, ". . . [attrition vs. maneuver warfare] is not an intellectual choice. The same generals who so brilliantly dashed across France were suddenly forced back into conducting attrition warfare. Nobody doubts that General George Patton preferred maneuver warfare, but maneuver warfare is not a doctrinal choice; it is an earned benefit."[4]

Perhaps, the most important aspect here is that maneuver warfare is an earned right. A commander cannot simply choose maneuver. He must impose his will on the enemy and wrestle the right of freedom of maneuver from the enemy commander.

Chapter four briefly explored each service's military culture. Similar to service cultures, military forces have a collective culture. This collective military culture defines a nation's military. Military culture is a product of a nation's history, success and failures, size, geography and the nation's culture, among other stimuli. Military culture is based on hard realities and tradition. It is difficult to always distinguish where hard realities and traditions diverge. Typically, they develop hand in hand. Hard realities and/or traditions include: maritime vice continental nation, large populations vice small, western vice eastern influences, land locked vice ocean access, industrialized vice agrarian, neighboring bullies vice isolated, history of victory or failure, etc. All these issues and many more feed a nation's military culture.

The dominant U.S. military culture from the Civil War through Vietnam was an attrition oriented culture. Today a maneuver oriented culture is most prevalent. Table 6-1 summarizes and compares these two cultures.

It is very important to recognize that maneuver warfare and attrition warfare are common to both cultures. In many ways, the transition from an attrition culture to a maneuver culture has been a developing relationship between attrition warfare and maneuver warfare theory. The primary difference between the two cultures is a matter of emphasis--attrition culture is attrition warfare based, while maneuver culture is maneuver warfare based. Both warfare theories have influenced America at war. Examples of maneuver warfare can be found in the Spanish-American War, World War II and Korean War, though America's dominant culture during these conflicts was attrition based.[5] Similarly, attrition and maneuver aspects are present in the Gulf War of 1990-91, which was fought under a professed maneuver culture.

Table 3. Attrition Culture Versus Maneuver Culture

Past	Today
Attrition Culture	**Maneuver Culture**
- Attrition warfare based	- Maneuver warfare based
- Accepts maneuver warfare	- Recognizes attrition warfare
- Capitalizes on U.S. strengths	- Concept of center of gravity, source of
strength,	
- Economic power	weaknesses and vulnerabilities critically
important	
- Large country	- Suits advances in technology
- Industrialized	- Impetus includes:
- Recognized limits of technology	- Approaching parity with USSR in '80's
- Mass and firepower emphasis	- Difficulties of limited wars
	- Post Cold-War downsizing
	- Failure in Vietnam

In the past the general trend was attrition, despite brilliant theorists and practitioners of maneuver warfare. An attrition culture suited the U.S. well. The U.S. capitalized on its strengths with an attrition culture: strong national will, economic powerhouse, industrialized giant, large population, firepower oriented forces, etc. Also, within the limits of past technology, it was difficult to fully exploit maneuver theory. Maneuver warfare still played an important role and frequently was exploited at all levels of war--tactical, operational and strategic. However, mass vs. mass and attrition best characterized past conflicts.

Maneuver oriented culture moved to the forefront toward the end of the Cold War. The Cold War itself was part of the impetus to change. As the USSR approached parity or superiority with U.S. and NATO forces, changes in doctrine and tactics were necessary to counter the Soviet threat. Also, technology was a significant driving factor. Advances in technology expanded battlespace dramatically and new weaknesses and vulnerabilities began to appear and could be targeted. Another impetus to change was losing the Vietnam War and a resulting search for answers. In turn, the end of the Cold War and the rise in importance of Limited Wars and Military Operations Other Than War (MOOTW) demanded new solutions and also supported a shift to maneuver culture. The old attrition culture was not suited to and could not stand up to this changing environment. Concepts central to maneuver warfare--indirect approach, sources of strength, weaknesses and vulnerabilities--were adopted and promoted by the military. U.S. military culture shifted to a maneuver based idea.

As U.S. military culture has evolved, fads and passing trends have challenged military culture and been an impetus to change. Shortly after World War II an atomic culture challenged the attrition culture. The atomic culture forsook conventional warfare. Proponents declared the mighty A-bomb and strategic bombing were all the United States needed. The atomic culture won many converts and influenced military development, acquisition and doctrine. As a direct

result the United States was unprepared for the Korean War.[6] The atomic culture did not recognize conventional warfare and was shortsighted and a failure.

Maneuver culture faces a new challenger: precision culture. Table 4 compares maneuver culture with a developing school of thought--precision culture. Precision culture is based on maneuver warfare with heavy emphasis on technology, mass and firepower. The chief

Table 4. Maneuver Culture Versus Precision Culture

Present	**Challenger**
Maneuver Culture	**Precision Culture**
- Maneuver warfare based	- Maneuver warfare based
- Accepts attrition warfare	- Does not fully recognize attrition, accepts mass and firepower
- Concept of center of gravity, source of strength, approach, weaknesses and vulnerabilities critically important	does not accept protracted attrition
- Suits advances in technology	- Heavy emphasis on technology, mass and firepower
Impetus includes:	- Key limiting casualties and damage
- Failure in Vietnam	Impetus includes:
- Approaching parity with USSR in '80's	- Gulf War success
- Post Cold-War downsizing	- Western values
- Difficulties of limited wars	- Technological advances
	- Perceived weak public will

differences are assumptions. Precision culture assumes technology is the prime answer and America will only stomach short battles with limited casualties and damage. Attrition warfare is only partially accepted. Precision culture supports attrition warfare patterns of mass vs. mass and heavy firepower, yet only for a *short* duration. Long attrition conflicts are discounted. Furthermore, precision culture also reflects western values i.e. the sanctity of human life and the idea that war is bad and must always be avoided.

The precision culture's heavy reliance on technology suits America's military technology advantage over the rest of the world. The Economist magazine recently published an article on the current technology and information revolution affecting military affairs. The article concluded, "America is likely to maintain its huge lead, at least until or unless a richer China or a revived Russia pushes itself into competition. . . . Either way, the military [technology and information] revolution will greatly expand American power in the years ahead."[7] The danger is relying too heavily on technology and not recognizing its limitations. Similar to the limitations of atomic weapons, technology has limitations. While technology allows America to dominate the battlefield, it cannot solve every problem. For example, when a communications node is a soldier on a donkey, intelligence satellites and ground stations cannot intercept communications and electronic jammers cannot jam it or shut it down. When facing low tech armies or insurgences, high technology may not have answers or solutions.

Proponents of the precision culture feel that America will not support a long, costly attrition struggle. They point to the bombing of the U.S. Marine barracks in Beirut, Lebanon or the U.S. Army Rangers debacle in Somalia. High casualties, they contend forced America out. The lessons from Beirut and Somalia are more-complex. American national will did not erode solely because of the loss of life. National will eroded because U.S. military involvement could not effectively be tied to American national interests. Americans could not answer "why are my sons and daughters in harm's way?"

In 1987 thirty-seven sailors were killed in the Arabian Gulf, when their frigate, USS *Stark*, was struck by an Exocet missile fired by a careless Iraqi pilot.[8] Eleven months later another frigate patrolling in the Arabian Gulf, USS *Samuel B. Roberts*, was struck by a mine and severely damaged. In 1996 seventeen airmen were killed when a terrorist detonated a bomb outside an American military complex in Saudi Arabia. While these incidents precipitated an

evaluation of America's continued presence in the Middle East, America did not pull out. The American people could answer the question "why are my sons and daughters in harm's way in the Arabian Gulf?" American presence was tied directly to vital national interests. America's national will remains strong where U.S. vital national interests are at stake.

In addition to over fifteen years of active and highly visible presence in the Arabian Gulf,[9] America has demonstrated her strong national will in other struggles. Examples include, the Cold War and the continued presence of American troops--in harm's way--in South Korea. Both these struggles stretch back more than a generation. The Cold War ended in 1991, while the Korean conflict continues. Again, vital national interests were (and still are in Korea) at stake. American national will can stomach the long haul, again, when vital national interests are involved. This counters the argument, often presented by supports of precision culture, that Desert Storm has conditioned the American public to expect a short, limited casualty war. Desert Storm was a quick and startling success; undeniably, future success and failures will be measured in the shadow of Desert Storm. However, when justifiable, the American public will support the long haul and an attrition struggle.

This leads to the most serious fallacy of the precision culture. The precision culture does not accept the long attrition struggle. Precision culture holds that wars must be short, with limited casualties and damage. These are very admirable goals. But similar to the quest for freedom of maneuver, the enemy has a say. A tenacious, determined foe may continue to fight regardless of our technological advantage in smart weapons and precision munitions. Furthermore, this determined foe may transition to an unconventional war.

The shortcomings of a precision culture are very serious. Many of its assumptions are faulty. Despite America's huge military advantage, protecting and preserving vital national interests may require a protracted attrition struggle.

Understanding maneuver warfare theory and attrition warfare theory is indispensable to executing the profession of arms. These theories apply to all levels of naval warfare, including the tactical level. They also illuminate broader issues such as military culture.

Future Research Questions

Can we always choose our fight and avoid the attrition battle? This question deserves further research and effects all the services. The U.S. Army, U.S. Marine Corps and now the U.S. Navy have all grasped maneuver warfare as their favored style of warfare. It is implied and frequently stated that the U.S. military will execute maneuver warfare. However, is it that simple? Is execution of maneuver warfare always the purview of the friendly commander? Does the enemy have a say on whether we conduct maneuver warfare and how successful it will be? Exploring the Battle of the Atlantic and General George Patton's drive across Europe would illuminate this subject. The Battle of the Atlantic is the classic attrition fight. Would we have fought it differently with a maneuver approach to warfare? General Patton was clearly a advocate of maneuver warfare. Yet, he spent months locked in an attrition fight or linear battle field during World War II. Why was he unable to impose maneuver on the enemy?

Does maneuver warfare represent a transitional form, an elevated stage of warfare apart from attrition warfare? Is attrition warfare a subset of maneuver warfare? Where does precision culture fit?

What is the impact of service (USAF, USMC, USN and USA) culture on joint operations and jointness? As demonstrated in Chapter 4, many aspects of service culture are a result of hard realities. Tradition and parochialism can be dealt with; however, the hard realities of military culture cannot be avoided. How do they influence joint operations and jointness? Are they understood and properly addressed in today's environment?

Is technology diminishing the distinction between landpower, seapower, spacepower and airpower? What will be the future implications? How do the differences today affect joint operations? And where do the new terms and concepts information warfare or information operations fit in?

A maneuver study of the Solomon Campaign may prove very enlightening. Hughes, Leanord and Fisher all conclude that maneuver warfare is best suited for operational art or the operational level of war. Yet, at the operational level, the Solomon campaign was clearly an attrition battle. Perhaps, there were maneuver solutions yet, preliminary research suggests they eluded Admiral Gormly and Admiral Halsey. However, at the tactical level maneuver warfare actions are clearly present. Hughes concludes (without addressing maneuver warfare) that, in part, the Solomon Campaign was won when, "The U.S. Navy found the tactics to match its radar advantage and neutralize the enemy's torpedo advantage." He continues, "Good sensors and scouting could overcome better firepower."[10] Accepting the expanded definition of maneuver warfare, this is clearly a tactical maneuver warfare solution. The Solomon Campaign would prove a very interesting maneuver study at the tactical and operational level. What better salute to the gallant men that gave their lives in that bloody campaign but, to learn from their sacrifice.

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[1]Timothy A. Fisher, "Maneuver: Where Does it Fit in Operational Art," (Newport, RI: Naval War College, 1996) and Matthew J. Koler, "Maneuver by the U.S. Navy in the 20th Century Blue-Water Operations: Selected Historical Examples." (Masters Thesis, USACGSC, Fort Leavenworth, KS, 1996).

[2]U.S. Navy, NDP 1, Naval Warfare (Washington, D C : U.S. Government Printing Office, 28 March 1994), 33.

[3]DePuy, William E. "Infantry Combat," Infantry 80, no. 3 (Fort Benning, GA: U.S. Army Infantry School, March-April 1990), 9.

[4]Ibid.

[5]An example of maneuver warfare during the Spanish-American War is not dispersing the fleet to defend a poorly defended U.S. coast line and ports. It was feared Spain might send her fleet to attack the U.S. coastline and ports. Many politicians and leaders called for a cruiser in every port. Instead, under Captain Alfred Thayer Mahan's direction on the War Board, the U.S. postured to send a powerful fleet to Spanish waters. Spain, whose own ports were poorly defended, abandoned any idea of threatening U.S. ports. Admiral Dewy's action in the Pacific, quickly destroying the Spanish Pacific fleet in Manila was a maneuver stroke. He destroyed the fleet before it finished war preparations and while it was vulnerable in Manila Bay. World War II examples include bypassing islands in the pacific and General Patton's drive across Europe. Inchon is an example of maneuver warfare during the Korean War.

[6]Peter Paret, Makers of Modern Strategy from Machiavelli to the Nuclear Age (Princeton, NJ: Princeton University Press, 1986), 735-778.

[7]"The Future of Warfare: Select Enemy, Delete," Economist (London: 8 March 1997), 18.

[8]Frank Uhlig, How Navies Fight, The U.S. Navy and its Allies (Annapolis, MD: Naval Institute Press, 1994), 382.

[9]America has maintained a military presence in the Arabian Gulf since the 1940s. However, it was not until the fall of the Shah of Iran that this presence became highly visible and active. The announcement of the Carter Doctrine, the Iran-Iraqi war, the Quasi-war with Iran and the Gulf War have ensured American interest remains high.

[10]Wayne Hughes, Jr., Fleet Tactics: Theory and Practice (Annapolis, MD: Naval Institute Press, 1986), 127.

BIBLIOGRAPHY

Books

Addington, Larry H. The Patterns of War Since the Eighteenth Century. Indianapolis, ID: Indiana University Press, 1994.

Brodie, Bernard. A Layman's Guide to Naval Strategy. London, UK: Oxford University Press, 1943.

Castex, Raoul. Strategic Theories. Annapolis, MD: Naval Institute Press, 1994.

Fioravanzo, Giuseppe. Naval Tactical Thought. Annapolis, MD: Naval Institute Press, 1979.

Gray, Colin S. Seapower and Strategy. Annapolis, MD: Naval Institute Press, 1989.

Hall, George M. The Fifth Star: High Command in an Era of Global War. Westport, CT: Praeger Publishers, 1994.

Hooker, Richard D., Jr. Maneuver Warfare An Anthology. Novato, CA: Presidio Press, 1993.

Hughes, Wayne P., Jr. Fleet Tactics: Theory and Practice. Annapolis, MD: Naval Institute Press,
1986.

Leonhard, Robert. The Art of Maneuver. Novato, CA: Presidio Press, 1991.

Liddel Hart, B.H. The Real War 1914-1918. New York: Little, Brown and Company, 1964.

Lind, William S. Maneuver Warfare Handbook. Boulder, CO: Westview Press, 1985.

Mahan, Alfred Thayer. From Sail to Steam: Recollections of Naval Life. London and New York: 1907.

_____. Interest of America in Sea Power, Present and Future. Boston: 1897.

Marder, Arthur J. From the Dreadnought to Scapa Flow, Volume II, The War Years: To the Eve of Jutland. London: Oxford University Press, 1965.

Massie, Robert K. Dreadnought. New York: Random House, 1991.

Morison, Samuel Eliot. History of United States Naval Operations in World War II, Volume I, Battle of theAtlantic. Boston, MS: Little, Brown and Company, 1984.

_____. History of United States Naval Operations in World War II, Volume V, The Strugglefor Guadalcanal. Boston, MS: Little Brown and Company, 1984.

Owens, William A. High Seas: The Naval Passage to An Uncharted World. Annapolis, MD: Naval Institute Press, 1995.

Paret, Peter. Makers of Modern Strategy from Machiavelli to the Nuclear Age. Princeton, NJ: Princeton University Press, 1986.

Sun Tzu. The Art of War. Trans. Samuel B. Griffith. New York: Oxford University Press, 1963.

Uhlig, Frank. How Navies Fight, the U.S. Navy and its Allies. Annapolis, MD: Naval Institute Press, 1994.

Weigley, Russel F. The American Way of War. Bloomington, IN: Bloomington University Press, 1973.

Government Publications

Department of Defense. Doctrine for Joint Operations. Washington, DC: 1 February 1995.

U.S. Army. Field Manual 100-5, Operations. Washington, DC: Department of the Army, 1 July 1993.

U.S. Marine Corps. Fleet Marine Force Manual 1, Warfighting. Washington, DC: Department of the Navy, 1989.

U.S. Navy. . . . From the Sea. Washington, DC: Department of the Navy, 1994.

_____. Forward . . . From the Sea. Washington, DC: Department of the Navy, 1996.

_____. Naval Doctrine Publication 1, Warfighting. Washington, DC: Department of the Navy, 1994.

_____. Naval Warfare Publication 60, Surface Warfare Tactics. Washington, DC: Department of the Navy, 1989. (Superceded by NWP 3-20.)

_____. Naval Warfare Publication 3-20, Surface Warfare Tactics. Washington, DC: Department of the Navy, 1996.

Articles

R.A.D. Applegate and J. Moore. "Warfare--An Option of Difficulties, An Examination of Forms of War and the Impact of Military Culture." RUSI Journal 135 (Autumn 1990): 13-20.

Atkinson, Edward B. "Maneuvering Past Maneuver Warfare." U.S. Naval Institute Proceedings 122 (January 1996): 33-35.

DePuy, William E. "Infantry Combat." Infantry 80 (March-April 1990): 8-13.

Economist. "The Future of Warfare: Select Enemy, Delete." (8 March 1997): 18-23.

Gattuso, Joseph A. Jr. "Set and Drift: Warfare Theory." Naval War College Review XLIX (Autumn 1996): 112-123.

Huges, Wayne P. "Commentary and Discussion." U.S. Naval Institute Proceedings 122 (March 1996): 16.

Lodmell, Joesph. "It Only Takes One." U.S. Naval Institute Proceedings 122 (December 1996): 30-33.

Tritten, James J. "Manoeuvre Warfare at Sea." U.S. Naval Institute Proceedings 121 September 1995): 52-54.

Unpublished Dissertations, Thesis and Papers

Claxton, Bernard D., Gurtcheff, John M., and Polles, Jeffery J. "Trafalgar and Jutland: A Study in the Principle of War." Air Comand and Staff College, 1985.

Fisher, Timothy A. "Maneuver: Where Does it Fit in Operational Art." Naval War College, 1996.

Kohler, Matthew J. "Maneuver by the U.S. Navy in the 20th Century Blue-Water Operations: Selected Historical Examples." Masters Thesis, U.S. Army Command and General Staff College, Fort Leavenworth, KS, 1996.

Romjue, John L. "American Army Doctrine for the Post-Cold War." U.S. Army Training and Doctrine Command, 1997.

Tritten, J. J. "Doctrine and Fleet Tactics in the Royal Navy." Naval Doctrine Command Technical Report, Norfolk, VA, November 1994.

_____. "Is Naval Warfare Unique?" Naval Postgraduate School, August 1988.

_____. "Manouevre Warfare at Sea." Naval Doctrine Command Technical Report, Norfolk, VA, July 1995.

_____. "'Manuever' or Manoeuvre Warfare for the U.S. Navy?" Naval Doctrine Command Technical Report, Norfolk, VA, June 1995.

_____. "Naval Doctrine...From the Sea." Naval Doctrine Command Technical Report, Norfolk, VA, December 1994.

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