

THE UNITED STATES NAVAL WAR COLLEGE

JOINT MILITARY OPERATIONS DEPARTMENT



NAVAL CLASSICAL THINKERS AND OPERATIONAL ART

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Modern operational warfare at sea emerged during the Crimean War (1853–1856), the American Civil War (1861–1865), the Spanish–American War of 1898, and the Russo–Japanese War of 1904–1905. However, the development of the theory of operational warfare at sea lagged behind practice. It was not until the early 1920s and in the 1930s that naval theoreticians in the West and in the former Soviet Union started with serious and systematic efforts to develop theories of various aspects of operational warfare at sea.

In the late nineteenth and until the mid-twentieth century, the most influential naval theoreticians were primarily concerned with the study of sea power as a whole and naval strategy in particular. None of them formally recognized the existence of that intermediate field of study and practice between strategy and tactics—today called operational art or operational warfare. Yet, some of their theories actually dealt with many important aspects of operational warfare at sea. For better or worse, the theories of naval classical theoreticians shaped the service culture and doctrine of many navies. These theoreticians need to be critically studied and understood; otherwise, one cannot really hope to fully understand the theory and practice of operational warfare today or in the future.

Blue-Water School Thinkers: American Rear Admiral Alfred T. Mahan (1840–1914) and the British naval historian and theoretician Sir Julian Corbett (1854–1922) were the leading naval thinkers of the so-called “blue-water” school. Both men had great influence on the development of modern naval strategy and naval construction. Mahan, “the father of modern naval history,”¹ had a greater and wider influence than Corbett, both during his lifetime and afterward. Mahan’s theories were heavily influenced by the writings of the Swiss-born French General Antoine-Henri de Jomini (1779–1869). Essentially, Mahan was not a naval theoretician but rather a historian of sea power. He did not use historical examples to illustrate a theoretical construct; instead, he used naval history to derive lessons that could be universally applied. While Mahan used the example of England’s rise as a sea power to urge his countrymen to emulate her example, Corbett was concerned primarily with the effectiveness of British sea power during conflict with a continental power such as imperial Germany. Corbett based his theories on war and the relationship between strategy and policy on the writings of the Prussian General Carl von Clausewitz (1780–1831).

Admiral Mahan: Mahan’s reputation as a naval historian rests on his two major works: *The Influence of Sea Power upon History, 1660–1783*, published in 1891, and the two-volume book *The Influence of Sea Power upon the French Revolution and Empire*, published a year later. Mahan’s last book, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land*, published in 1911, did not attract as much attention as his previous two major works; however, despite its title, his last book dealt with what is today considered operational warfare at sea.

Mahan was criticized for not being a systematic thinker. He failed, for example, to consider factors such as social and cultural conditions in the rise of sea power; the rise of the English middle class, American agrarian discontent, and the rise of Russia were ignored by Mahan. His writing style was easy and fluent, yet some critics argued that his language was

deplorable, schoolmasterish, and dogmatic. Unusual for a serious historian, he did not like the archives and tended not to rely on the use of primary sources in his work.²

Borrowing many concepts that were applied in land warfare, Mahan also adopted from Jomini three key ideas: the inherent value of a strategic central or interior position, the principle of concentration, and the close relationship between logistics and combat.³ Mahan wrote that the strategic value of any place depends upon three principal conditions: its position, or more exactly the situation; its military strength, offensive or defensive; and the resources of the place itself and of the surrounding country. He explained that a place may have a great strength, but its position in regard to strategic lines may be so low that it is not worth occupying it. Also, a place can occupy favorable position but possess little strategic value because of the lack of resources. He wrote that it is “power plus position that constitutes an advantage over power without position or, more instructively, equations of force are composed of power and position in varying degrees, surplus in one tending to compensate for deficiency in the other.”⁴

Like Jomini, Mahan emphasized the inherent value of holding a central position, yet Mahan did not go to the extreme and absolutize the value and importance of a central position in naval warfare. In his view, a central position is “contributory not principal, one element of a situation but not the only one, nor even the chief.” An interior position would “enable you to get there sooner but with that its advantage ends.” Also, such “a position does not give also the most men needed to complete the familiar aphorism. The position in itself gives no large numbers, and when left it serves only the defensive purpose of a refuge, a base of supplies, lines of communications. A central position cannot be carried to the field or as reinforcement.” He was correct in stating that a central position is of little use if the enemy on both sides is stronger than one’s forces are.⁵

Mahan insisted that a fleet should never be divided and that victory at sea is only possible by fleet concentration.⁶ He believed that fleet concentration was the most important principle in naval warfare. In his view, if the concentrated fire of the battle fleet is the principal means by which naval power is to be asserted, the preferred target of such fire is the enemy fleet.⁷ This exclusiveness of purpose means concentration of the will upon the object to the exclusion of others. For him, fleet concentration sums up in itself all other factors, the entire alphabet of military efficiency in war. Principle of concentration is equally applicable in naval strategy and tactics (he apparently, like most of his contemporaries, was unaware of the intermediate level—operations or operational art).

Mahan explained that the line between strategy and tactics was the point of contact between opposing forces. He insisted that whether engaged in strategic deployment or tactical maneuver, the correct course of action is to distribute one’s force as to be superior to the enemy in one quarter, while holding the enemy in check in other quarters and for long enough to allow one’s main attack to reach its full result. Operating from a central position, it is possible to mount a naval offensive along interior lines outward from the center, enabling the attacker to keep his enemy separated and therefore inferior by concentration against one unit while holding the other in check.⁸ He also noted that the physical concentration of one’s fleet forces cannot be successful unless accompanied the commander’s concentration of mental and moral outlook and resolution.⁹

For Mahan, proper naval bases and access to them by the fleet are essential ingredients to a successful maritime strategy. This became all the more necessary since the advent of steam power. He wrote that “obviously, no ship could steam for any considerable distance without

refueling. Hence, distant coaling stations became a necessity for a fleet if it had to move very far beyond its home waters, at least in time of war.¹⁰

Mahan paid much attention to the importance of sea communications. In his view, communications dominate war.¹¹ He explained that sea communications are the most important of all “strategic lines,” that is, those lines connecting what he called “strategic points.” Mahan defined sea communications “as a line of movement by which a military body is kept in living connection with the national power.” For Mahan, sea communications meant not geographical lines, like the roads an army has to follow, but those “necessaries, supplies of which the ships cannot carry in their own hulls beyond a limited amount. In order of priority, the most important logistical supplies are fuel, ammunition, and food.”¹²

Mahan consistently emphasized that navies must be used in offensive action, both tactically and strategically. This aspect of Mahan’s teaching is largely responsible for the neglect by many blue-water navies, and the U.S. Navy in particular, of so-called “defensive” tasks, such as defense and protection of merchant shipping and mine warfare. Mahan believed that coastal defense had minimal value, and he rejected the argument that the Navy should serve for coastal defense. For Mahan, defense of the coast was a defensive factor while the navy is the offensive factor.¹³ In his view, by defending ports one’s naval forces lock up offensive strength in a defensive effort. Such employment is also injurious to the morale and skill of seamen. By giving up the offensive, the Navy gives up its proper sphere.¹⁴ He wrote that any proposal to employ “a navy as an instrument of pure passive defense is found faulty upon partial examination and these various results all proceed to the one fundamental fact that the distinguishing feature of naval force is mobility while that of passive defense is immobility.”¹⁵

Based on his study of naval history, Mahan contemplated two main methods in obtaining and maintaining command of the sea: decisive battle and blockade. He asserted that the primary mission of a battle fleet is to engage the enemy’s fleet. The one particular result that is the object of all naval actions is the destruction of the enemy organized force and the establishment of one’s control of the water. Control of the sea by reducing the enemy navy is the determining consideration in a naval war.¹⁶ Mahan firmly believed that acquisition and control of the sea’s communications could be obtained only in a decisive and clear-cut victory, which came to be known as the “decisive battle.”¹⁷ He wrote that “the success is achieved less by occupying a position than by the defeat of the enemy’s organized force—his battle fleet. The same result will be achieved, though less conclusively and less permanently if the enemy fleet is reduced to inactivity by the immediate presence of a superior force, but decisive defeat, suitably followed up, alone assures a situation.”¹⁸ Mahan’s emphasis on fighting decisive battles led many navies prior to 1914 and also afterward to overemphasize the importance of tactics and technology while operational warfare was either neglected or even ignored.

In Mahan’s view, a close blockade might succeed in keeping both merchant and naval vessels bottled up in their own harbors; however, in case the enemy’s fleet escapes from its base, then it must be pursued and ultimately destroyed.¹⁹ He realized earlier than many of his contemporaries that the advent of the torpedo and submarine would impose much greater stress on the blockading force. This, in turn, would force the attacker to keep the ships at a much greater distance from the enemy bases and ports. Expressed differently, a close blockade would be converted into a distant blockade. In his view, the new technological advances would not change of the principles of strategy or its application.²⁰

Mahan believed in the value of having a reserve in the conduct of war at sea. In his view, a numerically large reserve operating from a favorable position would “enable you at a critical

moment to be first on hand with the largest force—to concentrate, at the decisive period of a battle or of a campaign.²¹ Mahan obviously borrowed the concept of reserve from land warfare; however, even in Mahan's era the navies usually fought with all the ships they had in commission. In the modern era, the concept of reserve in naval warfare was generally applied in the conduct of major amphibious landing operations.

Mahan's neglect of the importance of the navy's support of friendly troops on the coast had a negative influence on generations of U.S. naval officers. In fact, Mahan warned his readers that "if the fleet is reduced merely to guarding one or more positions ashore, the navy becomes simply a branch of the army, whereas the true end of naval war is to preponderate over the enemy army and so control the sea by assailing enemy ships and fleets on all occasions."²² Mahan's neglect of the need for cooperation between the navy and the army was surprising because his study of England's rise as a sea power should have convinced him of the importance of such cooperation.

Mahan was cautious in treating maritime expeditions in remote waters or what is now called "power projection." He wrote that "as a rule a major operation of war across the sea should not be attempted, unless naval superiority for an adequate period is probable."²³ He was also dubious about any employment of naval forces against land. Supposedly, the experience of the Union ships' bombardments of Confederate fortifications during the Civil War (1861–1865) made Mahan skeptical as to the effectiveness of naval gunnery against coastal artillery positions and fortifications. Mahan mostly disregarded power projection as the navy's mission.²⁴ He also gave only passing attention to amphibious warfare and its place in naval warfare. This is somewhat surprising because Jomini devoted an entire chapter in his *The Art of War* on what he calls descents onto hostile shores. Also, Mahan was surely well aware of the role amphibious landings played in the British conduct of war at sea.

Mahan was not overly supportive of the war against enemy maritime commerce. He acknowledged that serious interference with its commerce would cause a distress to the enemy. He believed that an attack on the enemy commerce could not by itself bring a victory in war at sea. Moreover, such beliefs are not probably a delusion but a "most dangerous delusion." In Mahan's view, war against maritime commerce was not a good method to weaken the enemy's economic potential and bring about the enemy's economic strangulation." He was dogmatic in his belief that such an objective can be accomplished only "by engaging and defeating or alternatively by immobilizing his [enemy's] naval forces. Afterward, the sea could become untenable to his merchant shipping."²⁵ He also dismissed the importance of the attack on the enemy maritime commerce by a weaker side at sea by stating that "cruiser warfare such as the raiding of the enemy ports or sinking merchant ships far away from the likely center of the battle did not really count for much." Moreover, he failed to realize that attack on the enemy maritime commerce was conducted by both the stronger and weaker fleets during the entire duration of war at sea. For a stronger fleet, decisive defeat of the weaker fleet was never a prerequisite for a successful attack on maritime commerce. Mahan also failed to appreciate the central role of convoys in a protracted war and the profound effect the submarine, torpedoes, and mines would play in future naval war.²⁶

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Mahan's writings are perhaps a classic example of lessons that were not only uncritically accepted but also were followed dogmatically long after their utility had passed. Mahan's ideas on the superiority of capital ships, the decisiveness of major naval battles, and the irregular, inconclusive, and indecisive nature of commerce destruction were accepted almost without question as the foundations upon which to build navies. At the same time, Mahan's strong support for convoying as the most effective method for defense and protection of shipping was virtually ignored.²⁸

Mahan's interpreters and uncritical followers of his ideas on the importance of the battle fleet and the decisive battle are to blame for the consequences of their policies, not Mahan. As a result of the blind acceptance of Mahanian views on the prime importance of the capital ship, the major navies of the day believed that the outcome of war at sea would be decided through a decisive naval battle. Therefore, they believed that the number and capabilities of dreadnoughts would be decisive. The basis for this was Mahan's historical studies of the influence of sea power on history between 1660 and 1783 during which a decisive naval battle had the most important role in obtaining command of the seas. This linkage between a decisive battle and command of the sea was widely accepted. At the same time, the new strategic dimensions of a worldwide industrial war were not recognized.²⁹

The real test of Mahan's teachings was in World War I. Although Mahan never claimed that cruiser warfare and amphibious landings were useless, the Germans became so fascinated with the idea of the major battle that they barely paid attention to trying to attack British maritime trade and preventing the landing of British troops in France. They also did not make an effective use of their naval superiority against the Russians in the Baltic. The Germans forgot the most important element of Mahan's teaching: the critical value of maritime positions in successfully operating on the open ocean. The German ships were prevented from reaching the open waters of the Atlantic. German high seas traffic was stopped, and the fleet was incapable of preventing a British blockade.³⁰

In the aftermath of World War I, the U.S. Navy remained focused on the need to build and maintain a battle fleet. The majority of U.S. admirals and their civilian counterparts were materiel-oriented. They believed smaller surface ships, such as destroyers, could be constructed quickly in an emergency. The focus of the U.S. Navy's tactics was to prepare to fight a decisive battle with the Japanese fleet somewhere in the western Pacific. Consequently, the Battle of Jutland was studied in great detail at the Naval War College, and lessons learned were based on Mahan's teachings. The U.S. Navy's tactical doctrine envisaged using carriers to sink or disable enemy carriers, while carrier-based aircraft would be used as gun spotters for the battle line that would engage the Japanese battle fleet in a Jutland-like decisive battle. The Japanese navy had views almost identical to the U.S. Navy's about the nature of the potential conflict in the Pacific; high-ranking Japanese admirals were also disciples of Mahan. It was not surprising, therefore, that in the interwar years, capital ships remained a centerpiece of the Japanese navy. Aircraft carriers and submarines were considered auxiliaries to the battle fleet. In contrast to most Japanese admirals, Admiral Isoroku Yamamoto, commander-in-chief of the combined fleet, believed that the aircraft carrier was the ship of the future. He and a small group of believers were not influential enough, however, to change naval doctrine prior to the start of the war in the Pacific in December 1941.³¹

Sir Julian Corbett: Corbett was the only blue-water naval thinker who was a civilian. He was a lawyer by training and a novelist before he embarked on a methodical study of naval history. Corbett's most important works prior to 1914 were the two-volume *England in the Mediterranean: A Study of the Rise and Influence of British Power Within the Straits, 1603–1713*, published in 1904, and *Some Principles of Maritime Strategy*, published in 1911. Corbett was the first blue-water naval theoretician who tried to delineate a possible strategy for a maritime power engaged in war with a superior continental power. He was also the first naval strategist who thought seriously about the direct contribution that maritime strategy could make to a war on land.

In his study of maritime strategy, Corbett made a distinction between what he called *major strategy* (or grand strategy) and *minor strategy*. The first deals with the purpose of war, including international relations and economic functions. In contrast, minor strategy is concerned with particulars about waging war, including planning army, navy, or combined operations.³² He also differentiated between maritime and naval strategy. In Corbett's view "a paramount concern of maritime strategy is to determine the mutual relations of one's army and navy in a plan of war." Afterward and not till then, "a naval strategy can begin to work out the manner in which the fleet can best discharge the function assigned to it."³³ Corbett asserted that "naval strategy is but that part of it which determines the movements of a fleet when maritime strategy has determined what part the fleet must play in relation to the actions of land forces." Obviously, he confused naval strategy with what is in today's terms understood as operational warfare at sea. In contrast to other naval theoreticians of the day, Corbett correctly observed that "it is almost impossible that a war can be decided by naval action alone; unaided naval pressure can only work by a process of exhaustion. Its effects must always be slow, and so galling both to our own commercial community and to neutrals, that the tendency is always to accept terms of peace that are far from conclusive."³⁴

Corbett insisted that the object of naval warfare must always be to secure the command of the sea or to prevent the enemy from securing it, either directly or indirectly.³⁵ In his view, command of the sea means "nothing but the control of maritime communications, whether for commercial or military purposes." To Corbett, maritime communications and their maintenance constituted the essence of naval influence. To keep open lines of operation and lines of communications offered the strategic objective for which the navy would function. Supply lines running from bases to theaters of operations, lateral lines linking theaters, and lines of retreat—that is, supply lines in reserve—were the venues for war.³⁶

Corbett wrote that maritime communications are not analogous to military communications in the ordinary use of the term. The latter refers solely to the army lines of supply and retreat, while maritime communications have wider meaning. For the most part, maritime communications are common to both belligerents. On land, each belligerent possesses his own and his own territory. Corbett wrote that this means that at sea strategic offensive and defense tend to merge in a way that is unknown ashore. Because maritime communications are common, we as rule cannot attack those of the enemy without defending our own. In military operations on land the converse is the rule. Normally, an attack on our enemy's communications tends to expose our own.³⁷ In his view, the object of naval warfare is the control of communications and not, as in land warfare, the conquest of territory. This is the most fundamental difference between the two." He wrote that one cannot "conquer the sea because it is not susceptible of ownership, at least outside of territorial waters. One cannot reduce it into

possession because the neutrals cannot be excluded from it. In contrast, the neutrals cannot be excluded from the territory one conquers. One cannot subvert his armed force upon it [command of the sea] as you can upon enemy's territory."³⁸ Corbett asserted that even if local control existed, the fleet would eventually be obliged to seek out and destroy the enemy's fleet. But even a general command of the sea is not essential to all overseas expeditions; and as long as the weaker fleet remained in existence it would try to avoid a major clash with the stronger fleet.³⁹

The purpose of the "control of the sea would depend upon the political conditions under which the control was instituted in the first place. By obtaining a decision [through a major battle] and by establishing a blockade or both, command of the sea—that is, control of communications—could be secured." He stated that not only offensive but also defensive actions, such as protection of friendly shipping, must be taken to accomplish these objectives.⁴⁰ Corbett wrote that command of the sea is disputed by using fleet-in-being and by conducting minor tactical actions. Command of the sea is exercised by conducting defense against an enemy's invasion, attack on and defense of maritime commerce, and by support of one's military expeditions.⁴¹ Corbett clearly mixed the navy's tasks in exercising command of the sea with those conducted in both offense and defense. For example, defense of the coast and attack on and defense of maritime commerce are conducted by both the stronger and weaker fleet throughout the entire duration of a war at sea. Yet defense and protection of one's shipping is not only a defensive but also an offensive task. For example, the threat to one's shipping can be considerably reduced, if not eliminated, by attacking and destroying a major part of the enemy's fleet.

Corbett wrote that command of the sea does not mean the occupation of territory as in land warfare. Essentially, it means one's ability to move across the sea without significant hindrance or opposition while at the same time preventing the enemy from doing the same. He wrote that it is an error to believe that if one side loses command of the sea then it would pass to the other side. In his view, the most common situation in a war at sea is that neither side has the command. Hence, in most cases the state of uncommanded sea prevails.⁴² Expressed differently, Corbett believed that in a war between the two strong opponents, command of the sea will be in dispute. It is this state of dispute with which naval strategy is most nearly concerned, for when the command is lost or won, pure naval strategy comes to an end.⁴³

In contrast to Mahan, Corbett had a much more refined understanding of the command of the sea. He wrote that for the purpose of framing a plan of war or a campaign, it must be assumed that command of the sea may exist in various states and degrees. He differentiated between general or local and permanent or temporary command of the sea. A general command may be permanent or temporary. In his view, "mere local command, except in very favorable geographical conditions, should hardly ever be regarded as more than temporary, since normally it is always liable to interruption from other theaters so long as the enemy possesses an effective naval force." Even permanent general command of the sea can be in practice absolute. In his view, "no degree of naval superiority can ensure one's communications against sporadic attack from detached cruisers or even raiding squadrons if they be boldly led and be prepared to risk destruction."⁴⁴

Corbett explained that general and permanent control of the sea does not mean that the enemy can do nothing, but that he cannot interfere with one's maritime trade and overseas operations to seriously affect the war's outcome. Additionally, the enemy cannot conduct trade and operations without the risk of failure. In other words, the "enemy can no longer attack one's lines of passage and communications effectively and that he cannot use or defend his own."

When the command is in dispute, general conditions may give a stable or an unstable equilibrium; the power of neither side preponderates to any appreciable extent. It may also be that command lies with the enemy. Such preponderance will not depend entirely on actual relative strength, either physical or moral, but will be influenced by the interrelation of naval positions and the comparative convenience of their situation in regard to the object of war or campaign.⁴⁵

Corbett believed that the principal methods for securing control of the sea are by obtaining a decision and by conducting a naval blockade. In contrast to Mahan, he argued that to accomplish command of the sea it is not always necessary to fight a decisive battle. He wrote that “under certain conditions, therefore, it may not be the primary function of the fleet to seek out the enemy’s fleet and destroy it, because general command may be in dispute, while local command may be with us, and political or military considerations may demand for us an operation for which such local command is sufficient, and which cannot be delayed until we have obtained a complete decision.”⁴⁶

Corbett had a very different view than Mahan on the value and importance of fleet concentration. Corbett correctly observed that a war cannot be successful unless one takes high but prudent risks, and the greatest and most effective of such a risk is a division or dispersal of one’s fleet. Corbett was more accurate in saying that the wars at sea are won by what he called “strategical” combinations, which as a rule entail at least apparent dispersal. In distinguishing between concentration and mass, Corbett wrote that the “essential feature of strategic deployment which contemplates dispersal with a view to a choice of combinations is flexibility and free movement. The characteristic of an army massed of a blow is rigidity and restricted mobility. The one sense of concentration we contemplate a dispersal of force which will conceal our intention from the enemy and will permit us to adapt our movements to the plan of operations he develops; in the other strategic concealment is at an end.”⁴⁷ Experience shows that without a division of one’s fleet, no strategic combinations are possible. Theoretically, it is wrong to put one’s fleet in such a position that would prevent it from “falling back to its strategic center when it is encountered by a superior force.” Such retreats would always depend in some measure on the skill and resources of the opposing commanders and on the weather. But such risks must be taken; if one risks nothing, he would rarely accomplish anything. Once a mass is formed, concealment and flexibility end, too. In his words, the “further from the formation of the ultimate mass we can stop the process of concentration, the better designed it will be.” Also, “the less we are committed to any particular mass and the less we indicate what and where our mass is to be, the more formidable our concentration.” The idea of division is essential, as is the idea of concentration.⁴⁸

Protection of one’s own commerce cannot be ignored; in fact, the task of the fleet is to protect friendly maritime commerce. Corbett stated that it is more profitable to declare that the only sound way to protect your commerce is to destroy the enemy’s fleet. In his words, “what are you to do if the enemy refuses to permit you to destroy his fleets? You cannot leave your trade exposed to squadronial or cruiser raids while you await your opportunity and the more you concentrate your forces and efforts to secure the desired decision the more you will expose your trade to sporadic attack.” Even in the best days of the Anglo–Dutch Wars, when England’s entire plan was based on ignoring the enemy commerce as an objective, we found ourselves at times forced to protect our own trade with seriously disturbing results.⁴⁹

Continental School: The main representatives of the so-called “continental school” of naval strategy were French Vice Admiral Raoul Castex (1878–1968) and German Vice Admiral Wolfgang Wegener (1875–1956). Castex, whose ideas on naval strategy were broader and more universal, was a more methodical and deeper thinker than Wegener. Wegener’s focus was too narrow because his main and almost sole concern was Germany’s unfavorable geostrategic position at sea and how that situation could be improved in a future major conflict on the continent.

Vice Admiral Raoul Castex: Castex borrowed Mahan’s historical method on the centrality of sea power and the primacy of the battleship fleet. However, in contrast to Mahan, Castex’s work was focused on strategy as a whole, not solely on naval strategy.⁵⁰ He was a prolific writer. His main work was the five-volume *Theories Strategiques (Strategic Theories)*, published between 1927 and 1935.⁵¹ The immediate impact on the French Navy was rather insignificant. Only many years afterward, French naval officers realized the true value and importance of Castex’s strategic ideas. His work was widely respected and accepted in many navies of Latin America and in the Mediterranean. Abbreviated versions of his works were published in Yugoslavia, Greece, and Soviet Russia.⁵²

Castex wrote that in addition to land and naval strategy, there is also what he called general strategy (*strategie generale*) (or in today’s U.S. terms, national security strategy), which transcends and coordinates them. In his view, general strategy unites the actions of armies and fleets whenever the two types of forces must work together.⁵³ Castex correctly explained that strategy, like a war, is an art not a science. In his view, “science evokes an element absolute certainty, of relations of cause and effect crystallized into rules so invariable and rigid that they become veritable laws, governing everything and impossible to escape. A scientific law asserts that the same scientific observation will always give rise to the same result, just as mathematical formula generates the same answer whenever the same numbers are used.” In his view, “the simple principles that govern strategy are not chains but flexible guides leaving free play to the creative imagination and to the human spirit in situations that are themselves enormously variable. Precisely here lies the essential character of art—which never entirely breaks free of principles not even of rules but still manifests itself in an unlimited variety of ways.” He was right in stating that art has not country and that the “artistic point of view allows us to behold the great strategic writings regardless of their time or place or origin, with admiration and envy.”⁵⁴

Castex held highly contradictory views on the proper relationships between strategy and tactics (he did not recognize operational art as a component of military art). To Castex, strategy was “nothing other than the general conduct of operations, the supreme art of leaders at certain level of the hierarchy and of the general staff that serve them. Strategy prepares the battles striving to bring them about under the best conditions to bring about the best results.” Castex clearly confused strategy and operational art. He wrote that strategy “links the battles together, controlling and coordinating them in accordance with the general inspiration of the campaign while reacting also to events.” He also argued that strategy dominates tactics prior to, during, and in the aftermath of a naval battle. He explained that [naval] tactics start “only at the beginning of gunfire of the first cannon or torpedo, but one can hardly subtract from tactics all of the movements preliminary to the battle on the pretext that they belong to strategy.”⁵⁵

Castex asserted that “strategy is everywhere at every level. It cannot be isolated as governing certain parts but is intermingled in the totality of war itself. There is no longer a strategic operation, since all military activity qualifies.” In his view, a commander is acting

strategically when he conceives of an operation. However, since his orders must also prescribe the dispositions for the execution of these orders, he is performing tactically at the same time. Likewise, the subordinate who acts tactically in executing orders must also act strategically in conceiving their execution. In contemplating dispositions for executing his plan, the supreme commander acts tactically. In making a fire plan to suit a particular case, a ship's gunnery officer thinks strategically. Yet this definition leads in practice to the unworkable thesis that everyone at every level of command is simultaneously a strategist and a tactician.⁵⁶

Castex, like Mahan and Corbett, firmly believed that the main objective of, in his words, "maritime operations" was to obtain or at least to dispute the mastery of the sea, that is, the control of the essential surface communications. The objective of naval war was to preserve freedom to use communications and deny the same to the enemy or "at least, not to be entirely excluded by the enemy from their use."⁵⁷ In his view, control of maritime communications has offensive and defensive aspects. Whoever controls sea communications preserves its links with overseas. At the same time, control of maritime communications gives protection of one's coast against major enemy actions.⁵⁸ He recognized the great economic importance of having control of maritime communications for the continuous functioning of a nation's commercial and industrial activity. He pointed out that the struggle for mastery of the sea is strongly related to the attack on and defense of communications. Castex wrote that the attack on and defense of maritime communications cannot be considered separately; they are closely intertwined and constantly affect each other. In his view, the [battle] fleet including even the air force, supports and sustains those parts of the navy tasked to conduct the attack on or defense of maritime communications. It is thanks to "the [battle] fleet that they can operate without excessive hindrance of the enemy." Moreover, the struggle for control of maritime war cannot be treated as "a separate operation divorced from the rest of the military effort." However, it cannot at the same time replace the struggle against the enemy battle fleet. In a clear rebuttal of the French Navy's traditional fascination with *guerre de course*, Castex warned that "one must not harbor the illusion that the attack on (the enemy maritime) communications will by itself and without any other operation lead to a decisive victory."⁵⁹

Castex wrote that "whoever wants to defeat the enemy fleet by combat must necessarily take the offensive without concern for its inherent risks. We need to concentrate as many forces as possible on the principal objective so as to have every possible advantage." Only the offensive can definitely break the equilibrium to produce a decision. Only when accompanied with an offensive executed elsewhere can the defensive lead to a decision and the end of the *status quo*. The decisive character is the virtue of "genuine offensive and only offensive capable of bringing about decisions are worthy of the name." He disagreed with the views of those who believed that attack on the enemy maritime commerce alone would lead to the decision. He asserted that the *guerre de course* has never achieved significant results unless preceded or accompanied by a naval offensive. To achieve the decision, *guerre de course* requires support by the *guerre militaire*. Such actions cannot be decisive and hence cannot be properly called an offensive at all. He wrote that the same observation applies to attacks on the enemy coast and territories.⁶⁰ However, attacks on the enemy coast are actually the result of the stronger fleet's success in achieving command of the sea, and they can be decisive provided that the fleet provides effective support to friendly troops on the coast.

Castex agreed with Mahan that the enemy "fleet must be defeated in order to obtain command of the sea." He wrote that one should direct all his actions against the enemy fleet because its destruction "will very probably irreparably compromise the rest of the enemy's

organization.” The best method of disposing the enemy fleet is to wage a decisive naval battle. In case the enemy chooses to “shut himself up in port then he has to be blockaded more or less tightly to prevent his emergence or to force him to battle as soon as possible if he does.” After having dealt with the enemy fleet, the stronger fleet can exercise command of the sea by conducting other operations. Castex warned that the stronger fleet should not exercise command of the sea prematurely because that might undermine the freedom of action essential to the destruction of the enemy fleet. For him, the fleet and decisive naval battle “constitute the cornerstone, the foundation upon which we will construct our plans.” Command of the sea is “a military struggle between the belligerent’s fleets, that is to say, between the ensemble of their combat resources, including both naval and air forces under a single chief.”⁶¹

Castex considered what he called “strategic maneuver” (actually combination of strategic deployment and operational maneuver) as the centerpiece of his strategic theories. In referring to what is commonly understood as strategic deployment, he wrote that the French navy should accept [decisive] battle only after using maneuver to create a favorable shift in the naval balance.⁶² At the same time, strategic maneuver was for Castex a key element in the conduct of an operation. Thus, he clearly confused strategic maneuver with strategic deployment/redeployment. He wrote that strategic maneuver is a method used by strategists to “improve the conditions of the struggle [at sea], to multiply the return on her efforts and to obtain the greatest results, whether in the duel between the principal forces themselves or to the benefit of particularly important non maritime requirements.” In referring to what is an operational maneuver, Castex wrote that “movement is the primary element of manoeuvre—it is the movement to achieve desired dispositions. Then it is the movement of the principal and secondary forces to exploit the situation thus created and to execute the manoeuvre.” Castex observed that strategic maneuver “above all demands space.” However, because the “advent of new machines has compressed both linear dimensions and time, manoeuvre now finds new obstacles.” Strategic maneuver can be conducted only in a large sea/ocean area offering sufficient space for a maneuver; elsewhere, maneuver is notably more limited though not absolutely impossible. Castex wrote that the “logical result of manoeuvre can only be to affirm superiority at the chosen point.” When the maneuver is directed from the outset against the enemy fleet, the purpose is nothing other than battle, which is in his words “the summit of the edifice.”⁶³

Unlike Mahan, Castex clearly recognized that in some situations even an offensive plan must provide for a possibility of conducting a defensive in a certain part of a maritime theater. Except in a situation where one’s naval strength is overwhelming, it is simply impossible to be “superior at a chosen point without being weaker, and therefore on the defensive elsewhere.” The defensive is often combined with the offensive in time as well as in space.⁶⁴ Castex correctly observed that in a war between the two continental states bordering the sea, “mastery of the sea is, at least in theory, no longer even a necessary condition, since the issue of the hostilities will finally depend on the result of the combat between the land armies.” Yet “command of the sea will most often have a serious effect on the operations of these armies and it will be useful to the power that holds it.”⁶⁵

Like Corbett, Castex believed that there is no such thing as total command of the sea. The maritime theater of operations, unlike the area of land operations is “constantly traveled by strangers to the conflict.” Command of the sea “is not absolute but relative, incomplete and imperfect. In spite of crushing superiority, the dominance of communications has never completely prevented his enemy from appearing on the water.” Even relative mastery of the sea

cannot be exercised at all points of the globe at the same time because even the strongest power lacks sufficient force. There has never been general control of sea communications but only local control over specific parts of the theater or fewer in number, to a greater or smaller extent, and depending upon one's resources. Sometimes geography and the distribution of fleets shifted local control of the sea to the benefit of the weakened navy. Castex asserted that freedom to use the sea for one's purposes "confers opportunities for coastal raids, seizures on the high seas and conditions permitting old-fashioned blockade." By achieving sea mastery, the stronger side can "paralyze or at least restrict the enemy's links with foreign countries. It can attack the enemy's coast and exploit the advantages offered by conduct of "combined" [actually multi-service or joint] operations and dictate the enemy intercourse with neutrals in the conflict."⁶⁶

Castex wrote that the very term command of the sea "gives the impression that its beneficiary enjoys the marvelous privilege of having to himself the immense expanse of the oceans or building a sort of barricade whose keys put in his pocket these totally banning peacetime users. This is misleading. It is utopian. All of the world's united fleets would not suffice to achieve it everywhere. Nor would neutrals easily allow themselves to be cut off from trade." In his view, one's strategic command of the sea very often requires a forced decision about attacking or even invading the enemy's coast. The term command of the sea is less meaningful than in the past, and it is more precise and less pretentious to speak henceforth only of the mastery of the surface, but in a restricted sense, as we think to master the sea. It is a new dilution, another step on the road to relativity.⁶⁷

Castex had unfavorable views of the fleet-in-being concept as a means of contesting command of the sea by a weaker navy. He explained that it is "excessive temerity for the inferior party to sail out into battle and destruction one cannot found great hopes of the method of the fleet in being against an active, enterprising adversary who is knowledgeable of his profession." He agreed with Mahan's view and disagreed with Corbett on the usefulness of the fleet-in-being concept. Castex asserted that the errors of the integral doctrine of the fleet-in-being concept consist of the belief that the mere existence of such a fleet suffices to produce an effect, even if said fleet is moribund, and that it will necessarily paralyze a superior enemy who is master of the sea.⁶⁸

Castex gave much attention and thought to the effect airpower would have on the conduct of war at sea. He was perhaps one of the first theoreticians who believed in the possibility of employing aircraft against enemy maritime commerce and commercial ports. Such attacks will "constitute a much greater novelty than air attack on commerce at sea."⁶⁹ In his view, air mastery is even more relative than mastery of the sea, and the master of the air cannot hope to forbid it completely to his enemy by any permanent occupation of its three dimensions. The mastery of the air is even at a further disadvantage in this regard than the master of the sea because he can never prevent the airplanes of even the weakest adversary from conducting reconnaissance or even bombardments and then disappearing as quickly as they come.⁷⁰

Castex wrote that the employment of "the airplane against [maritime] communications will vary completely depending on whether they act against convoys or against isolated ships." In his view, escorted convoys can be attacked "without hesitation, as a military formation because they leave no uncertainty as to their nationality. He was highly pessimistic as to the ability of a convoy to defend itself against an attack from the air. He asserted that the ships in a convoy are usually large, slow and unmaneuverable, and lacking antiaircraft protection." Castex properly observed that if used, convoys would require strong air cover.⁷¹ "There are no sufficient resources to provide too many convoys with the necessary protection." In his view, the number

of convoys must be reduced to minimize the number of aircraft required for their defense. At the same time, a “system of huge and infrequent convoys is unworkable and the necessary concentration of air escorts can be managed if one has the initiative of operations. Castex properly observed if used, convoys would require strong air cover.”⁷² The Allied experience in World War II in the Mediterranean and in the Arctic proved the validity of Castex’s views on the use of convoys in the face of the threat posed by the land-based aircraft.

Castex was more optimistic in the chances of merchant vessels surviving an air attack by sailing singly. He stated correctly that aircraft would be unable to force a ship to stop and identify itself, yet he wrongly believed that “an airplane can easily be deceived by false signals, false flags, and camouflage” and that a blacked-out [merchant] ship would have a good chance of escaping the airplane at night. In his view, there “does not seem to be any compromise between large convoys and the individually sailing merchant vessels.”⁷³ World War II proved wrong Castex’s view on the viability of using merchant vessels sailing singly not only in the littorals but on the open ocean as well.

In contrast to Mahan but like Corbett, Castex firmly believed in the need for close cooperation between the navy and the army. He explained that the “relationship between the army and the navy must be as between infantry and artillery. As is infantry the queen of battle so the army is the queen of general strategy. Everything has to be subordinated to it because its success means the success of the general strategy. The navy is often to the army as the artillery is to the infantry; an indispensable support that allows it to accomplish its objectives.” He correctly stressed that the success of land operations is, after all, what matters the most. Only victory on land permits the occupation of the enemy territory and would convince the enemy that he is defeated. For Castex, the importance of sea power is directly related to its contribution to the victory on land. Only in exceptional cases can sea power achieve complete victory by itself.⁷⁴

Castex highlighted importance of geography or physical environment on the conduct of war at sea. He wrote that an attack on and defense of sea communications is heavily affected by geography. Geography provides or withholds positions from which commerce raiders can base their action. It also provides a means of establishing a blockade. In the littorals, hydrography can serve the defender by protecting his coastal communications and hiding them from the actions of the attacker. The outer islands belonging to the defender constitute positions of defense behind which coastal traffic can circulate in more secure conditions; the defender also possesses internal channels or navigable canals, reefs and shallow water. In Castex’s view, the influence of geography on maritime operations is not constant but evolves with technological advances. For example, the water depth affects strategy (actually more accurately naval tactics and to some extent operational art) because of the “consequences of employing submarines, mines and underwater obstacles.”⁷⁵

Castex’s main contribution to naval theory was his insistence on the need to have the conceptual foundations in order to have a sound naval strategy. Such foundations must be transparent and resilient; otherwise, they would not endure under the changing conditions. Castex believed that the absence of a coherent, historically grounded understanding of strategy “prevented the smooth assimilation during Great War of events that instead created in many minds a profound and unnecessary upset.” Like Mahan, he believed in the validity of the historical method in developing a naval strategy. At the same time, in contrast to many of his contemporaries, he recognized that Mahan’s prescriptions must be modified to fit specific national circumstances and materiel conditions. Castex believed that historical principle was the best but not the only source of truth, and that advocates of materiel made an error in their single-

mindful focus on technology. Yet at the same time, they also offered a useful corrective to the historians' tendency to think at a level of abstraction that avoided actual discussion of the conduct of war. He firmly believed that naval strategy must acknowledge both historical principles and materiel conditions.⁷⁶

Vice Admiral Wegener: Wegener was the most important German naval strategist in the interwar years. His main work, *The Naval Strategy of the World War*, was published in 1929. This book was in fact an enlarged version of his memorandum "Reflections on Our Maritime Situation," written in February 1915. Wegener was one of the most radical and vocal critics of Admiral Alfred von Tirpitz's (1849–1930) naval policy and so-called "risk theory" strategy. He firmly believed that Germany's policy of building a large battle fleet without securing free access to the open waters of the Atlantic was essentially useless. Wegener was influenced by Mahan and Clausewitz. Hence, his ideas had much greater intellectual depth than those propounded by his many critics.⁷⁷

In his memorandum "Naval Bases Policy and Fleet," written in August 1915, Wegener criticized Tirpitz's naval construction program. He wrote that the Germans had a force—High Seas Fleet (*Hochseeflotte*)—sufficiently powerful to pose a real danger to English sea control. However, Germany's geographical position in the North Sea in relation to the oceanic sea lanes prevented the employment of its fleet's offensive strike capability with any prospect of success. He pointed out that Germany built a fleet without considering geographical conditions under which its ships must operate and concurrently failed to extend its base of operations as the fleet was expanded. Tirpitz's "risk fleet" was conceived in purely military terms. Naval warfare was considered simply for the sake of naval warfare. The High Seas Fleet was established to fight for command of the sea, yet its geographical foundations were capable of supporting only a coastal defense fleet. Wegener proposed to counter a British blockade by waging so-called "small war" (*Kleinkrieg*) until the equalization of forces had been achieved and thereafter "to offer England a fleet engagement under conditions favorable to us; the war has shown that an equalization of forces cannot be attained by way of the *Kleinkrieg* given the distant blockade."⁷⁸

Wegener emphasized that a decisive naval battle was meaningful to the war only if it removes obstacles that block the accomplishment of the strategic objective in a war at sea. He explained that war at sea consists of a tactical and a strategic part. The tactical part is the action, while the strategic part is the effect. If the strategic part is lacking as it was in the North Sea during World War I, then the effect is also lacking and only tactical part remained. If the strategic objective is lacking, the battle ceases to be a means. The battle becomes "purposeless, and therefore, an end in itself. For Wegener, a naval battle was means toward an end, not an end in itself. It has the value only if it inflicts damages on the enemy and then allows "us to advance step-by-step along the road toward exercising sea control." Obviously, a major battle, even a naval victory, will not be commensurate with the objective "if we purchase victory with the destruction of a considerable part of our fleet. After the major battle we would lack the fleet to exploit the victory and further follow the road to sea control."⁷⁹

In discussing the fleet-in-being concept in his memorandum "Can We Improve Our Situation" on 12 July 1915, Wegener wrote that "if we [Germans] cannot interdict the economic lifeline of our adversaries from the Heligoland Bight, only purely tactical sorties remain for the High Seas Fleet. He stressed the need to apply an active fleet-in-being concept (or in modern terms, tactical offensive) in the North Sea so that the "enemy" [British Grand Fleet] feels more or less threatened." He dismissed the importance of offensive mining as part of German fleet

actions. In his words, “if the entire fleet goes out on minelaying operations, it does not do so to demonstrate its role as fleet-in-being to the enemy, but only to accord the minelayers the necessary protection.” In addition to the nighttime employment of the German torpedo boats, the only options open to the High Seas Fleet to “convincingly demonstrate its activity to the enemy” was “a brief war on trade in the Skagerrak and the bombardment of [the British] coastal areas.”⁸⁰

A strong proponent of the need to have an offensive strategy, Wegener wrote that strategy on land is changeable and flexible. Offensive strategy can have no other objective than attaining a geographical position from which to initiate the battle for the commercial arteries of maritime traffic. One must first be able to come within reach of the trade routes; only then can one fight for them.⁸¹ In his view, naval strategy is tied to the configuration of the coast. He erred in his view that naval strategy is primarily determined by one’s geostrategic position in relation to the enemy’s sea communications. Wegener almost absolutized the importance of geography in the development of naval strategy. He wrote that “naval strategy extends over wide areas and cannot—without denigrating itself—be held back in check at territorial frontiers that accidentally have been drawn upon geographical charts in the course of history.”⁸²

Wegener pointed out that because of Germany’s unfavorable geostrategic position, no tactical offensive is capable of transforming a defensive operational plan into an offensive one since an offensive operations plan has for its purpose not the maintenance, but the changing, of a strategic position. A strategic offensive “serves to change the strategic position while a strategic defensive serves to adhere and to stagnate in the strategic position.” In Wegener’s view, the German fleet could undertake “as many sorties from the Heligoland Bight as it like but that would not change the fact that it would remain on the strategic defensive.” The biggest weakness of German’s maritime position was that the navy’s largest base of operations in the Heligoland Bight was located far away from any important maritime trade route. In fact, “the Scotland–Norway trade route lay so far distant that sorties there remained only tactical operations that, lacking lasting effect, could never aspire to control.” Scotland’s position dominated all international trade routes, including the German routes, while the German position in the Heligoland Bight commanded nothing. Hence, a strategic defensive aimed to preserve “a worthless strategic position” was useless. Wegener insisted that the main purpose of having control of any strategic position is to exercise command of the sea, that is, control of trade routes from that position.⁸³

Wegener wrote that a maritime operation plan is dependent solely upon strategic position and not upon the relative strengths of the fleets. He believed (erroneously) that both strategic position and operation plans are essentially determined by geography and, therefore, removed from human willpower. Irrespective of mutual fleet strengths, strategic position, and operation plan, the ultimate objective of a naval strategic offensive is to achieve equality of geographical positions. Naval strategy is always geographical [by nature], tied to the geostrategic position.⁸⁴

For Wegener, naval strategy was the science of geographic position, its changes and its stagnation with regard to trade routes. Offensive strategy is the acquisition of a superior geographical position, while defensive naval strategy aimed to preserve what he called “positional stagnation.” Wegener wrote that every war at sea revolves around freedom of the seas for one’s own shipping. Therefore, “one could fight all the battles in the North Sea that one wanted to—provided they were offered—but geography upon which everything depended, will not be altered in the slightest, and freedom of the seas would remain far beyond our reach.” He insisted that no fleet action in the North Sea can be decisive. In his view, “one cannot alter

geography—what is lost through battle may be regained only by battle. But what is lost through geography can only be regained through geography.”⁸⁵

Because of his ideas and persistence in pursuing them, Wegener was a highly controversial naval figure in the interwar years. He encountered strong criticism to his views on Germany’s naval strategy by many admirals, but particularly from the Navy’s commander-in-chief Admiral Erich Raeder (1876–1960). Yet his ideas found acceptance among two generations of students of the German Naval Academy. Many of his opponents also grudgingly acknowledged the validity of his main ideas. His work as a naval strategist was not officially acknowledged by the German Navy until 1955. Wegener’s ultimate legacy was “his summons to the naval officer corps to lead German people and their leaders out of their continental tradition and toward maritime considerations.” Wegener cannot be compared in the quality of his thinking with Mahan, Corbett, and Castex, yet he correctly highlighted the need to possess a favorable geostrategic position for a successful naval strategy. Unlike Mahan, he rejected the simplistic belief in the paramount importance of a decisive battle. Like other naval strategists of his era, he did not recognize the existence of operations or operational art as an intermediate field of study and practice between strategy and tactics.⁸⁶

Conclusion: Most naval classical thinkers were primarily concerned with highlighting the role and importance of sea power in the rise and prosperity of maritime nations. Another area of their study was naval or maritime strategy. They also paid great deal of attention to naval tactics because the principal means of obtaining and maintaining command of the sea was so-called decisive naval battle. The theoreticians of the blue-water school of naval strategy focused on the need to have a big fleet composed of big ships. They also tried to impress on politicians and the public at large that the navy operates independently. Their emphasis was on offensive naval strategy and decisive battle as the chief method of achieving command of the sea. In contrast, theoreticians of the continental school of naval strategy recognized the interdependence and need for close cooperation between the navy and army. Continental School theoreticians had a generally more nuanced view of command of the sea and the ways of achieving it. They considered naval strategy as an integral part of what is today called national strategy. They recognized that the success in a war ultimately depends on the outcome of the struggle between the opposing armies.

None of the naval classical thinkers formally recognized the existence of operations or operational art as an intermediate field of study and the practice between naval strategy and tactics. However, each of them described and analyzed many aspects of the war at sea that properly belong to the domain of operational art. Some of their ideas are obsolete due to the passage of time, while some were not accurate even in their own time, yet that does not diminish the need to read and understand their works. Taken together, their theories offer a wealth of information and knowledge on various aspects of naval warfare. For better or worse, naval classical thinkers influenced generations of practitioners and theoreticians. The navies’ culture, way of warfare, and doctrine cannot be fully understood without a thorough understanding of the ideas of the great and lesser naval thinkers.

Notes

¹ Kenneth L. Moll, "A.T. Mahan: American Historian," *Military Affairs*, Vol. 27, No. 3 (Autumn, 1963), p. 132.

² Cited in *ibid.*, pp. 138-39.

³ Philip A. Crowl, "Alfred Thayer Mahan: The Naval Historian," in Peter Paret, editor, *Makers of Modern Strategy. From Machiavelli to the Nuclear Age* (Princeton, NJ: Princeton University Press, 1986), p. 456.

⁴ Alfred T. Mahan, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land* (Boston: Little, Brown, and Company, 1911), pp. 132, 176, 53.

⁵ *Ibid.*, pp. 31-32, 55, 53.

⁶ Barry M. Gough, "Maritime Strategy: The Legacies of Mahan and Corbett as Philosophers of Sea Power," *RUSI Journal*, Winter 1988, p. 56.

⁷ Crowl, "Alfred Thayer Mahan: The Naval Historian," p. 458.

⁸ Cited in Crowl, "Alfred Thayer Mahan: The Naval Historian," pp. 457-58.

⁹ Mahan, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land*, p. 6.

¹⁰ Crowl, "Alfred Thayer Mahan: The Naval Historian," p. 460.

¹¹ Mahan, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land*, pp. 164, 166.

¹² Cited in Crowl, "Alfred Thayer Mahan: The Naval Historian," pp. 459-60.

¹³ Cited in *ibid.*, pp. 458-59.

¹⁴ Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land*, p. 153.

¹⁵ *Ibid.*, p. 132.

¹⁶ Cited in Crowl, "Alfred Thayer Mahan: The Naval Historian," p. 458.

¹⁷ Gough, "Maritime Strategy: The Legacies of Mahan and Corbett as Philosophers of Sea Power," p. 56.

¹⁸ Mahan, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land*, p. 176.

¹⁹ Crowl, "Alfred Thayer Mahan: The Naval Historian," p. 459.

²⁰ Mahan, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land*, p. 3.

²¹ *Ibid.*, p. 8.

²² Cited in Crowl, "Alfred Thayer Mahan: The Naval Historian," p. 460.

²³Mahan, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land*, , p. 218.

²⁴ Cited in Crowl, "Alfred Thayer Mahan: The Naval Historian," pp. 460-61.

²⁵ Ibid., p. 459.

²⁶ Gough, "Maritime Strategy: The Legacies of Mahan and Corbett as Philosophers of Sea Power," pp. 56-57.

²⁷ Cited in Crowl, "Alfred Thayer Mahan: The Naval Historian," p. 460.

²⁸.Alfred R. Bowling, *The Negative Influence of Mahan on the Protection of Shipping in Wartime: The Convoy Controversy in the Twentieth Century* (Ann Arbor, MN: University Microfilms International, unpubl. Ph.D. dissertation, University of Maine, 1980), p. 2.

²⁹.Martin Kutz, *Operative Fuehrung als Denkfigur und Handlungskonzept der Heeresfuehrung der Bundeswehr. Politische und militaerfachliche Implikationen und Gefahren der aktuellen Diskussion* (Hamburg: Fuehrungsakademie der Bundeswehr, Fachgruppe Sozialwissenschaften-Beitraege zu Lehre und Forschung, February 1989), p. 8.

³⁰.Anthony E. Sokol, "Wechselnde Konzeption der Seekriegfuehrung," *Wehrforschung* 3 (March 1971), p. 81.

³¹.Bowling, *The Negative Influence of Mahan on the Protection of Shipping in Wartime: The Convoy Controversy in the Twentieth Century*, pp. 308–11.

³² Gough, "Maritime Strategy: The Legacies of Mahan and Corbett as Philosophers of Sea Power," p. 58.

³³ Julian S. Corbett, *Some Principles of Maritime Strategy* (London: Longmans, Green and Co., 1918), p. 12.

³⁴ Ibid., pp. 11-12

³⁵ Eric Grove, *The Future of Sea Power* (Annapolis, MD: Naval Institute Press, 1990), p. 12.

³⁶ Gough, "Maritime Strategy: The Legacies of Mahan and Corbett as Philosophers of Sea Power," p. 59.

³⁷Corbett, *Some Principles of Maritime Strategy*, p. 86.

³⁸ Ibid., pp. 78-80.

³⁹ Gough, "Maritime Strategy: The Legacies of Mahan and Corbett as Philosophers of Sea Power," p. 59.

⁴⁰ Ibid., p. 59.

⁴¹ Corbett, *Some Principles of Maritime Strategy* p. 149.

⁴² Grove, *The Future of Sea Power*, p. 12.

⁴³ Corbett, *Some Principles of Maritime Strategy*, p. 77.

⁴⁴ Ibid., pp. 90-91.

⁴⁵ Ibid., p. 91.

⁴⁶ Cited in Gough, "Maritime Strategy: The Legacies of Mahan and Corbett as Philosophers of Sea Power," p. 59.

⁴⁷Corbett, *Some Principles of Maritime Strategy*, pp. 120, 115-16.

⁴⁸ Ibid., pp. 120, 117.

⁴⁹ Ibid., p. 144.

⁵⁰ Introduction by Eugenia C. Kiesling, in Raoul Castex, *Strategic Theories*. Translated and edited by Eugenia C. Kiesling (Annapolis, MD: Naval Institute Press, 1994), p. xxxi.

⁵¹ Vol I: *Generalities about Strategy*; Vol II: *Strategic Maneuver* (1930); Vol III: *External Factors in Strategy* (1931); Vol IV: *Internal Factors in Strategy* (1933); and Vol V: *The Sea Against the Land* (1935).

⁵² Raoul Castex, *Strategic Theories*; Selections translated and edited with an introduction by Eugenia C. Kiesling (Annapolis, MD: Naval Institute Press, 1994), p. xl.

⁵³ Ibid., p. 45.

⁵⁴ Ibid., pp. 21-22.

⁵⁵ Ibid., pp. 11, 21, 10.

⁵⁶ Ibid., pp. 8-9.

⁵⁷ Ibid., p. 357.

⁵⁸ Ibid., pp. 30, 35.

⁵⁹ Ibid., pp. 359-60.

⁶⁰ Ibid., pp. 73-74, 312, 316-17.

⁶¹ Ibid., pp. 72-74, 359.

⁶² Introduction by Kiesling, in Castex, *Strategic Theories*, pp. xvii-xxxi.

⁶³ Castex, *Strategic Theories* (1994), pp. 110-11, 117.

⁶⁴ Ibid., pp. 336-37.

⁶⁵ Cited in *ibid.*, p. 48.

⁶⁶ Ibid., pp. 55, 41, 35.

⁶⁷ Ibid., pp. 53, 43, 57.

⁶⁸ Ibid., pp. 341, 343.

⁶⁹ Ibid., pp. 378-79.

⁷⁰ Ibid., p. 58.

⁷¹ Ibid., p. 377.

⁷² Ibid., p. 377.

⁷³ Ibid., p. 378.

⁷⁴ Ibid., pp. 45, 43.

⁷⁵ Ibid., pp. 280-81.

⁷⁶ Introduction by Kiesling, in Castex, *Strategic Theories*, pp. xvi-xviii.

⁷⁷ Holger H. Herwig, "Wolfgang Wegener and German Naval Strategy from Tirpitz to Raeder" (Introduction), in Wolfgang Wegener, *The Naval Strategy of the World War*; translated and with an Introduction and Notes by Holger H. Herwig (Annapolis, MD: Naval Institute Press, 1989), p. lii.

⁷⁸ Wolfgang Wegener, *The Naval Strategy of the World War*; translated and with an Introduction and Notes by Holger H. Herwig (Annapolis, MD: Naval Institute Press, 1989), p. 188.

⁷⁹ Ibid., pp. 39-40, 189.

⁸⁰ Ibid., pp. 167-68.

⁸¹ Ibid., p. 30.

⁸² Ibid., p. 31.

⁸³ Ibid., pp. 21-23, 26.

⁸⁴ Ibid., pp. 30-31.

⁸⁵ Ibid., pp. 31, 37-38.

⁸⁶ Herwig, "Wolfgang Wegener and German Naval Strategy from Tirpitz to Raeder" (Introduction), pp. lii-liv.