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IMPLEMENTING THE SEAPOWER STRATEGY

Captain Wayne P. Hughes, Jr., U.S. Navy (Retired)

An ideal of war—some would call it a principle—is to achieve perfect collaboration between all commanders, vertically and laterally.¹ But prosecution of war entails decentralized authority and responsibility, and so a corollary to the ideal of collaboration—or cooperation—is inevitable friction between willful military and civilian leaders who have different styles, outlooks, and intentions.

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Said another way, successful collaboration connects upward, laterally, and downward. Upward unity of purpose is difficult, because politics and warfare must arrive at a goal-driven, united logic while communicating with different grammars.² Lateral unity of action is difficult, because different services see the same problem through different lenses and aspire to different solutions. In our global world the collaboration between different services is difficult, because they are not just the American armed forces. Collaboration by the American sea services is uniquely critical, however, and most of what follows is intended to promote well coordinated actions within and among the U.S. Navy, Marine Corps, and Coast Guard.

Examples of friction from operations in Iraq are perhaps too close to us now, but there is a plethora of historical examples that show the ideal of cohesive action to be unattainable. World War II has spectacular cases

of willfulness. General Dwight Eisenhower's wartime genius was to foster cooperation and unity among disparate factions. He brought together fractious French leaders in North Africa. He worked with the navy and air force component commanders he was given for the D-Day landings. He neutralized the egos of Bernard Montgomery and George Patton during the Allied drive through France after the breakout from the Normandy beachhead. At all times he retained the confidence of Prime Minister Churchill, President Roosevelt, and the Joint Chiefs of Staff. Eisenhower is veritably the exception that proves the rule that collaboration is hard to achieve.

World War II is for two reasons an apt, neutral laboratory to study the challenges of collective action. The first is that the war is dissimilar to American circumstances today and cannot be parroted as a template. Both world wars are, in fact, precedents to be avoided in establishing ways and means to deal with our contemporary emerging peer, the People's Republic of China. Second, the two great wars illustrate the global reach of seapower. Neither war could have been won without achieving maritime dominance and exploiting operational maneuver from the sea.

A strategy has now been constructed in less passionate peacetime circumstances to foster collaboration. It has been vetted by the operational and sea service commanders who are affected by and must follow its tenets. The new maritime strategy serves as an agreed point of departure that will not eliminate contentiousness in the future but will be the cornerstone of implementation, of the determination of affordable resources, of training to carry it out with the forces in hand, and of the design of future sea service forces.

I refer to the pithy document recently promulgated by the Commandants of the Coast Guard and Marine Corps and the Chief of Naval Operations, entitled "A Cooperative Strategy for 21st Century Seapower." It is the result of a broadly based, collaborative effort to develop what was often referred to as "a new maritime strategy." This article elaborates on the document's great significance toward establishing a new Seapower Strategy to guide the nation's maritime operations, as well as what it does not say and the extensive work still to be done.

THE ACCOMPLISHMENTS

First in importance, the new Seapower Strategy restores the primacy of seapower in American security policy. Though the sea service leaders cannot proclaim a national maritime strategy, they have demonstrated the logic of seapower and its value in "fostering a peaceful global system comprising interdependent networks of trade, finance, information, law, people and governance." The three service leaders make the case that "United States seapower is

a force for good, protecting this nation's vital interests even as it joins with others to promote security and prosperity across the globe.”

In particular, the Seapower Strategy clearly implies that the two-major-regional-conflict force-shaping strategy of the 1990s is dead. The two-MRC strategy focused on fighting wars on the ground overseas. It was too narrow in scope to produce a robust, adaptive American military establishment. It reduced the role of the Navy to delivering ground-war capabilities and supporting them. Also, as recent events have demonstrated, the two-MRC strategy claimed a capability that was unachievable—that of two quick, conclusive operations against foes who would bend to our will in “shock and awe” in the face of American might.

The strategy of seapower emphasizes the natural advantage of maritime preponderance to “*influence* actions and activities at sea and ashore.” Below, described as four functions of navies, is an abridgement of the capabilities espoused in the sea services’ “Strategy for 21st Century Seapower.”

On the Seas

To ensure the safety of goods and services. A navy protects the *movement* of shipping and means of war on the oceans, and it safeguards *stationary* forces, to include nuclear-powered ballistic missile submarines (SSBNs), blockading forces, coastal patrols, and ships fixed on station for theater ballistic-missile defense. Currently the American sea services have a worldwide role of sweeping breadth.

To deny safe movement by the enemy. A seapower’s navy must have the visible means to prevent movement of enemy shipping and means of war. The denial of *stationary* enemy forces such as SSBNs is a less clear-cut capability, but the symmetry holds in principle.

From the Seas

To deliver goods and services. A navy puts land forces ashore to seize and hold territory and delivers air and missile strikes for a variety of purposes. This was the Navy’s principal role for the regional contingencies in the two-MRC strategy. The ability to project power overseas abides, but it is more diffuse and global in the new strategy.

To prevent enemy delivery of goods and services. A navy and coast guard protect the homeland from every threat. For many states, this has been the foremost function of their coastal forces. Until recently, the need for American homeland defense was nonexistent, because of maritime superiority. But the “Cooperative Strategy for 21st Century Seapower” makes clear that the threat of terrorist attacks has promoted the importance of this function.

The military object of a continental power is usually to gain or hold territory.³ There has been nothing like ownership of the sea until recently. Ground operations are about geographic nodes of value. Maritime operations have been about the “arcs” that connect countries and their vital nodes on land. The Seapower Strategy says that this truism no longer holds. The increased value of ocean ownership—accompanied by many recent claims of ocean sovereignty—is a visible trend in world affairs. Going beyond long-standing disputes over fishing rights, in recent years the competition for seabed mineral resources has led to broad claims of ocean “ownership” that increasingly will threaten freedom of navigation and breed maritime confrontation.

THE CONDUCT OF OPERATIONS

Constitutional authority to employ the American armed forces is vested in the commander in chief, the president of the United States. An elected commander in chief creates a dilemma for the Department of Defense. The dilemma is particularly severe for the U.S. Navy and Marine Corps, with their global responsibilities, but it is unmentioned in the Seapower Strategy.

Its full complexity is best left for experts. But here are two examples. After the collapse of the Soviet Union and throughout the 1990s the United States had no peer competitor, diplomatic, economic, or military. The new strategy points out the need to be prepared for war but asserts that peaceful *influence* of another major power is coequally important and much preferred. While no peer is named in the strategy, and arguably the People’s Republic of China has not yet attained that status, American relations with China are illustrative. Past and future administrations have at various times attempted to influence China and its neighbors through cooperation, competition, and occasionally confrontation.

As I have written elsewhere and the Seapower Strategy implies, it would be folly to threaten a war on the ground with China.⁴ Hence a role for the Navy and Air Force must be constructed within a *maritime* strategy. It should demonstrate to China and its neighbors (stretching from Japan to India) an unflagging primacy of American interest in East and South Asia for the foreseeable future. The expression of our interest—variously economic, diplomatic, and military—will change with commanders in chief and their national security advisers. It will be no easy matter for the U.S. Navy and Air Force to design a capability to support alternating policies of cooperation, competition, and confrontation.

The second example of presidential power of decision lies at the other end of the spectrum, in what may be called “small wars” and “constabulary operations” made possible through American seapower, to include humanitarian operations in countries suffering from failed governance or natural disasters. The new Seapower Strategy emphasizes deterrence of conflict by peacekeeping presence,

notwithstanding that deadly conflicts will sometimes ensue. But the Navy cannot be everywhere. It must be able to go anywhere with, as the strategy stresses, a global reach and preponderant force, but where and when it is employed depends on policy choices made by future administrations.

Implications for naval force planning are twofold. First, a responsive navy must be composed of smaller, more numerous building blocks that can be scaled up or down to the circumstances. Peacekeeping and peacemaking tend to be long-drawn-out affairs that do not indefinitely require the massive striking power of a carrier battle group. Second, the command structure will be a mess of confusing authority, with extensive civilian participation, including private, nongovernmental organizations (NGOs). The many competing influences—and lack of coherence—in these operations will be, as they have been, ones over which the Navy has limited control. The Seapower Strategy gives high priority to improved integration and interoperability. It says that the need for proficiency is as much a matter of human skills in collaboration—General Eisenhower’s talent writ small—as it is a matter of technological links. The central element of an effective network is its people. The new strategy emphasizes that these skills are difficult to master.

The need for force components to assist in small wars and constabulary operations is explicit in the Seapower Strategy. But the American navy is not yet designed to respond effectively and efficiently to all calls for peacemaking missions.

RESOURCES AND AFFORDABILITY

Without the means of war—the resources—a strategy is an aspiration. Resources provide capabilities. Capabilities come from money and skilled military personnel. The Seapower Strategy is to some extent cost conscious, but its implementation will depend on affordability, which will take intense thought by defense analysts. A maritime capability with global reach is not cheap, and no one will accept the strategy’s aspiration until its costs in defense budget and people are specified.⁵

With a few provisos, the Seapower Strategy is flexible enough—that is to say, scalable in terms of force elements—to be put into effect. But we must assume that some provisions are rhetorical. Two examples.

The introduction says, “The United States Navy, Marine Corps, and Coast Guard will act across the full range of military operations to secure the United States from direct attack.” It would be better to temper this aspiration by inserting “insofar as possible.” The difference is between investing resources to build an impenetrable Maginot Line around North America and an affordable capability the value of which is weighed against other needs.⁶

The “Maritime Strategic Concept” says, in the third paragraph, “United States seapower will be globally postured to secure our homeland and citizens from direct attack and to advance our interests around the world.” Later this unqualified ambition is tempered with, “While this strategy advocates a wide dispersal of networked maritime forces, we cannot be everywhere, and we cannot act to mitigate all regional conflict.” Just so. The intention, I believe, and as I have asserted above, is to maintain sea services that can *go anywhere* at the call of the commander in chief but not *be everywhere*.

Affordable seapower will require the nicest sense of balance to achieve this global reach within a budget envelope. Balance is a matter of the right emphasis. Readiness to influence and head off a “major power war” looks more affordable if the other major power is not an abstraction. Our planning would be sharpened by regarding China as the major power of interest. Moreover, our positive influence must extend to China’s neighbors as well. Then the strategy can be more affordably specific about partnerships, bases, and focused intelligence in East Asia.

The Seapower Strategy is salutary in promoting more attention to the two ends of the spectrum, with overdue emphasis on capabilities designed for small wars and constabulary operations. But nowhere do we find the relative weight of resources to devote to each end. The two capabilities are not mutually exclusive, nor by any means will the global American navy be two separate fleets, but close examination shows there is little overlap. The hard part will be to create a balance between the two ends.

Here is an example. When Britannia ruled the waves with a global navy to protect the empire, Sir Julian Corbett specified three components of the Royal Navy: the battle fleet to defeat any challenge to command of the sea; “cruisers” to patrol the sea lanes and protect British trade; and “the flotilla” of small combatants capable of fighting inshore, where battleships, with all their offensive firepower, could not venture because torpedo boats, submarines, and mines threatened cheap kills.⁷ Upon the rise of the German High Seas Fleet in the decades before World War I, the first sea lord, Admiral Sir John Fisher, found himself between two unpalatable prospects. On one hand Great Britain saw a growing threat to sea control in the North Sea, while guaranteeing free trade and policing the empire. On the other hand, Fisher was under severe pressure from a Liberal government that wanted to transfer naval budget to social programs and an army that wanted more money for home defense against a German invasion. Collaborating with the prime minister in cutting the Royal Navy’s budget was far from Fisher’s Machiavellian mind, but working out a new Royal Navy composition while simultaneously scheming to effect it is a story that is pertinent for today.⁸

Some critics might worry that a bimodal force to influence China and fight small wars in many places abandons Navy capabilities to deal with “wars in the middle.” These concerns are groundless. The present U.S. Navy is designed for such conflicts, and we are supporting them now. No one may infer that the Seapower Strategy would scrap existing combat power to buy and man a new fleet. Whatever the force implications of the new strategy may be, the forces in hand will remain with us for several decades in the future.

THE COMPOSITION OF FORCES

A new strategy is easier to construct than a suitable set of forces to carry it out. Existing forces will have to apply combat power in adaptive ways to meet the new strategic needs for the immediate future. Here are three examples from the American navy.

World War II. Between the Japanese attack at Pearl Harbor on 7 December 1941 and the beginning of the fleet’s majestic sweep across the Central Pacific in November 1943 with the amphibious landing at Tarawa, every class of warship changed its function, excepting minesweepers. We achieved the changes by training to new ways of fighting. New methods of employment were just as great in the Atlantic theater, but with many differences to fight German U-boats and conduct amphibious assaults in Europe. We also installed component technologies, like hundreds of 20 mm and 40 mm antiaircraft guns, the VT fuse, radar, IFF, and the CIC.⁹ We had the luxury of spending money and adding personnel almost without limit, a situation not likely to happen again. We made these sweeping adjustments—a true transformation of naval capability—in just two short years, by cutting a lot of red tape and with help from a Congress that was sympathetic to the task and did not attempt to overcontrol the budget process with “efficiencies.” The Army, Army Air Force, Marine Corps, and Coast Guard also developed massive new capabilities, but theirs resulted during buildups from very small bases, whereas the Navy had entered the war with a substantial fleet that had to transform itself.

The Korean War. In June 1950, when North Korea came south, President Truman and his secretary of defense woke up overnight to the value of the Navy’s sea-based air and amphibious assault capabilities, the special combat value of the Marine Corps, and the indispensable role of the merchant fleet. The Navy had been drastically cut, and its commissioned warships were being manned with half-crews. In this instance World War II ships were actually better suited for the “old fashioned” Korean war than were the air-delivered nuclear bombs of Secretary of Defense Louis Johnson’s parsimonious strategy to contain the Soviet Union. For Korea, the nation needed the old Navy. It got it, because Navy

leadership had had the prudence to mothball hundreds of warships and merchant ships that could be brought back in a hurry. Trained personnel came from a Naval Reserve that was only six years out of date.

Vietnam. The fleet of the Vietnam War comprised ships designed to fight the Soviet Union. The ships in coastal MARKET TIME patrols were ill-suited misfits. Carrier aircraft had to learn new techniques for strike and ground support. The riverine force had to be built from scratch, and its hastily designed sensors, boats, and helicopters had many deficiencies.

In 1971, when the war in Vietnam was winding down, Admiral Isaac C. Kidd was commander of the First Fleet. His father having been killed at Pearl Harbor, everywhere Kidd went he preached “readiness now.” He believed that training for deployment to Southeast Asia was preparing for the last war. He said we could not confront the Soviet Union with requirements for new systems in paperwork sent to Washington. He trained the fleet to fight with what it had by workarounds and self-help fixes. He wanted to be able to fight today, not next year. (That Ike Kidd had a different side, with a longer time constant, is best illustrated by his many productive years as Chief of Naval Material, when his Chiefs of Naval Operations, Admirals Elmo Zumwalt and James Holloway, were trying to reshape the Navy in the money-scarce post-Vietnam years.)

Therein lie three lessons. First, the Navy is a long-lead-time service. When strategy changes and new kinds of demands are imposed, we cannot scrap the fleet and start over. We retool it with some new technology and matching tactics—cutting red tape as we are allowed—but in most respects will operate for quite some time with the same ships and aircraft, as well as with the existing space satellites and communications networks, which have their own forms of inflexibility. In the short term, we adapt.

Second, we will not look as good—for example, in dealing with inshore combat operations or working with our partners in the “thousand-ship Navy”—as we could with time and budget to design systems expressly for the strategy.¹⁰

Third, we succeeded in World War II, Korea, and Vietnam because we had a firm place to go, known things to do, and (though, I blush to say, within fuzzy strategic goals in Korea and Vietnam) a purpose for which to train. The Seapower Strategy is not a war strategy but a peacemaking strategy, with different needs expressed. We will adapt to its new conditions by training the forces we have to new tasks. This will happen when our training institutions are imbued with the Seapower Strategy and know how it affects operations. We must also *educate our officers* in these new directions. The Naval Academy, Naval Postgraduate School, and the war colleges have different horizons and educate with

differing emphases on engineering, the humanities, the physical and social sciences, and the military arts. But no new strategy is instituted until it is being taught and new military technologies are being spawned. Admiral Gary Roughead, the new Chief of Naval Operations, will know whether the strategy is going to take off and fly as much by talking to our students as by talking to his flag officers.

DESIGNING FUTURE CAPABILITIES: LEARNING BY DOING

In the past five or six years we have seen a considerable effort to transform the armed services from the top down. A more productive way is sometimes from the bottom up. When our officers and petty officers have to fight insurgency in the littorals and rivers of Indonesia and the Philippines, when our carrier pilots are taught to compete with the finest Chinese aircraft, when our submariners have trained to defeat North Korean submarines in their shallow home waters, and when our forces ashore learn how to win the hearts of good people being intimidated by terrorists, then simultaneously they will tell us ways to improve sensors, networks, ships, aircraft, and the logistics of war.

We have seen this bottom-up approach in action. Unmanned aerial vehicles are now ubiquitous, because their value was obvious in the Balkans, Afghanistan, and Iraq and their cost-effectiveness unchallengeable. The tactics to face swarms of small combatants are being developed with accompanying search and attack systems. We have reawakened to the threats from mines and quiet enemy submarines that have for too long been virtually ignored.

Here are two examples of the bottom-up approach from the Naval Postgraduate School. First, the Cebrowski Institute has been working on “hastily formed networks,” which is to say, systems that are not the rigid, permanent systems imposed from the top down, like the Navy/Marine Corps Intranet (the “NMCI”), but adaptable networks that can quickly be stood up to fill a vacuum of communications in unforeseen places. NPS students and faculty were on scene for both the Indonesia tsunami and Hurricane Katrina. They learned by doing how to collaborate with a variety of participants to reestablish communications from veritably a zero base. With this and other research as a springboard, the systems engineering analysis students’ next Capstone Project will be to develop ways and means to conduct maritime interdiction operations in a logistically barren region.

As a second example of learning by doing, the dean of research fosters red-tape-free development of new sensor and network technologies, often provided at no cost by eager contractors. These are usually tried out in the field (seldom by computer simulations) at nearby Camp Roberts and Fort Hunter Liggett. Typically the gadgets are built into a system by attaching them to the school’s fleet of UAVs. Because the program is funded by, among others, the

Special Operations Command, the vetted products are quickly deployed and tried out in action. If they work in war they are procured in numbers and sent to Iraq and Afghanistan.

Should not the partnerships promoted by the Seapower Strategy help develop new capabilities suited to the strategy? Here are three broad-based examples of learning on the job.

First, bilateral operations with Asian navies like those of South Korea, Japan, Singapore, Australia, and India should include collaborative learning on both sides. New open-ocean tactics, techniques, and technologies for us and them should result. By such collaboration the sea services (and also the U.S. Army) picked up on Australia's swift, seaworthy, highly adaptable, low-cost commercial High Speed Vehicles. We have tried out the HSVs in a variety of exercises and real operations. Their wave-piercing catamaran hulls have helped to break a forty-year logjam in mostly unrewarded American experiments with alternative hull designs like SWATH, air-cushion vehicles, and hydrofoils.

Second, more exploitation of the tactics and technologies of small navies like those of Israel, Croatia, Sweden, Norway, Denmark, and Germany can accelerate our competence in littoral operations, because each of these states has, over many years, developed the fighting ships and skills to operate in the hazardous and sometimes lethal waters off their coasts. Despite past study of the successes and failures of foreign inshore navies, it is hard to point to specific instances of American adaptation. Perhaps we ought to be more humble and admit that they are the experts who can teach us—for example, that we need not gild every lily with higher-tech, larger, more expensive ships and aircraft that we cannot afford to lose.

Third, the sea services can learn the art of effective foreign aid to underdeveloped countries, say, in the Caribbean and Africa, from *American* experts with decades of experience: special operations personnel, Army psychological operations specialists, and foreign affairs officers. Some of the states we should assist have no navies but ought to, in their interest and ours, to join to the international thousand-ship navy. One result of assistance should be simple, affordable, yet reliable equipment, because we will wish to train their navies for self-sufficiency, after which we should gift them the equipment.

In summary, a new strategy having been established, the American sea services can learn about, as well as teach, the tactics and technologies that help us transition to it. There are experts in littoral operations whom we should not hesitate to understudy. There are countries still emerging economically that we can help with artfully simple systems that we might well consider employing ourselves. The partnerships championed by the Seapower Strategy can be a major source of wisdom.

QUANTITATIVE ANALYSIS

Distinct from cost and budgeting is an effectiveness evaluation of the capabilities purchased. Sea-based forces have a quantitative story to tell that undergirds the new Seapower Strategy as forcefully as do kill probabilities and detection ranges.

Above I stressed that sea control prevents an enemy from attacking from the sea and gives a maritime state the power to choose the scene of action on a land power's coast. Naval operational maneuver is a great advantage of maritime powers, past and present. Strategists know this, and historians cite examples more recent than those in Mahan's classics. General Erwin Rommel probably failed to take Alexandria in 1941 because he needed an advance sea base, and a year later General Bernard Montgomery blamed his long land line of communication for his snail's-pace pursuit of Rommel across Egypt and Libya to Tunisia. The Mediterranean had been transformed into a sea too dangerous for merchant shipping.

Such descriptions are more meaningful when the underlying data calibrate America's maritime advantage. An amphibious force under way will move about five hundred nautical miles in a day. Modern containerships move faster still, but to compare sea with land movement I will take as a datum that independent shipping in World War II moved 250 nautical miles a day or more.¹¹ On land an army maneuvering at operational speed against weak opposition will advance about twenty-five statute miles a day. The famous German blitzkriegs in Poland and France moved no faster than that in 1939 and 1940. In Operation IRAQI FREEDOM the American army took three weeks to reach Baghdad—whether against weak or substantial resistance scarcely matters—which is, again, twenty-five miles a day. The Roman road system was designed to allow a legion to move thirty miles a day. In 1066 King Harold of England had to defeat a Norse attack at York and then immediately rush south to face William the Conqueror on the English Channel. Harold's army marched twenty-five, perhaps even thirty, miles a day to confront the French invasion at Hastings.

Concisely, in *speed of operational movement* ships have an order-of-magnitude advantage over an army. The advantage in mobility has been a great constant of ships for a very long time. In numbers of logistical *personnel required* to move a given force to the scene of action and sustain it, the advantage of ships over land transport is one or two orders of magnitude. It is reasonable to conjecture that in *weight of combat potential carried* to the scene of action per unit of energy consumed, the ships' advantage over ground transport may be as much as two and three orders of magnitude!

The introduction of aircraft and aerial logistics complicates this simplified description, but aircraft have never changed the threefold advantage of

seapower in offensive action, of selecting the point of attack, moving to it more quickly than an army can respond, and sustaining the operation with a modicum of personnel and energy.¹²

We have seen, on one hand, that the Seapower Strategy is powerful and timely as a unifying plan for collaborative action. It reaffirms values almost forgotten during the decade of the presumptive peace that never came to pass in the 1990s, and in the current decade, when conflicts in Afghanistan and Iraq draw excessive attention to ground operations. The new strategy speaks of global reach, the power to influence, and the attractiveness of worldwide partnerships.

We have seen, on the other hand, that the new Seapower Strategy is a necessary foundation but not sufficient, because it can express no more than aspirations. First, presidents and their administrations decide on employments among the possibilities afforded by global reach and maritime domination. The demands imposed by American commanders in chief will change, and the lives of their administrations will be short relative to the lives of the ships, aircraft, sensors, and command structures of the three sea services. Second, the strategy must take affordability into account, partly because that is the will of the people and partly because economic health and competitiveness are as important in the long run as military power. Third, the existing Coast Guard, Marine Corps, and Navy must suffice for the short term, so we must reorient their operational capabilities by education and training that respond to the strategy. Fourth and finally, experience gained in forthcoming multifaceted operations will lead to changes in force structure from the bottom up—if the leadership in and over the sea services are attuned to what will probably be a considerable set of changes.

NOTES

The author thanks for their constructive suggestions Captain Jeffrey Kline, USN (Ret.), Operations Research Department of the Naval Postgraduate School in Monterey, California (who also teaches an elective sequence in executive analysis at the Naval War College), and Professor George Baer, former chair of the Strategy and Policy Department at the Naval War College (who now teaches NPS students as a member of the Naval War College faculty at Monterey).

1. Among the many lists of principles, the most common near-synonym is *unity* (of effort). Henry Eccles, whose study of logistics in

World War II is a classic, referred to *cooperation* as the vital ingredient of successful supply.

2. Professor George Baer pointed out this truism by Clausewitz to me.
3. Classic army strategy aims to destroy the enemy fighting forces and their will to resist. But these are means, not ends. At sea too, Mahanians say, the object of the battle fleet is to sink the enemy fleet, but Corbett and others have shown that that is not enough. A guerrilla war at sea by submarines, mines, and swarms of surface craft was and still is a severe threat to capital ships.

4. See W. P. Hughes, Jr., "A Bimodal Strategy for the National Maritime Strategy," *Naval War College Review* 60, no. 2 (Spring 2007), pp. 29–47.
5. Elsewhere I have suggested that half of the U.S. Navy's cost is probably accounted for by global reach. For example, an aircraft carrier is a remarkable instrument of international power because it can be dispatched wherever it is needed, but without aircraft it is just a mobile airfield. The life-cycle cost of the airfield is about the same as the cost of the air wing it supports.
6. Those who know that the Maginot Line was never breached will best understand the analogy. First, France poured so much money into it—costs overruns being no new phenomenon—that not enough defense budget was left over for the mobile forces that were essential to the concept. Second, the German panzers found a way to end-run the Maginot Line, and so will terrorists also find soft spots in a "perfect" defense.
7. J. S. Corbett, *Some Principles of Maritime Strategy* (Annapolis, Md.: Naval Institute Press, 1988 [1911]). See chapter 2, "Theory of the Means—The Constitution of Fleets."
8. See J. T. Sumida, *In Defence of Naval Supremacy: Finance, Technology and British Naval Policy* (New York: Routledge, 1993), and R. K. Massie, *Dreadnought: Britain, Germany, and the Coming of the Great War* (New York: Random House, 1991).
9. That is, the variable-time fuse, identification friend or foe, and the combat information center.
10. The felicitous term "thousand-ship navy" has been watered down in the strategy to the more formal appellation "Global Maritime Partnerships."
11. Convoyed shipping in the Atlantic moved more slowly, conservatively 150 nautical miles a day. In the age of sail, one hundred nautical miles a day in a trade wind was a reasonable expectation.
12. One must not claim that seapower permits a landing anywhere, viz., at the enemy center of gravity. The Normandy landings were deferred two years because any landing would be against the German "center of gravity."