

FIGHTING AT AND FROM THE SEA

A Second Opinion

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In our concentration on the excellent sensors, weapons, computers, and communications systems now or soon to be in our hands, strategic and operational naval theory has faded from our minds—in some cases, it may never even have entered. Hence, the great effects imposed on the Navy and, indeed, on the world at large by Captain Alfred Thayer Mahan seemingly have passed forever. Since Mahan, who died nearly ninety years ago, few have ventured into this still ill-explored field of endeavor, and the names of those who have done so do not easily come to the minds of others.

However, naval theory beyond the management of arms, sensors, and communications is alive, if not perfectly well.¹ Those writing today in this field invite thought on several matters, but here I will comment on only one—the methods for the use of naval forces in war.

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One well informed and thoughtful scholar lists six such methods.² These, in the order discussed below, are coastal defense, maritime power projection, commerce raiding, the fleet-in-being, fleet battle, and blockade. Over the centuries navies have used, or tried, all of them, and others, too. In the last half-century they have added two new methods. Perhaps a third is in the offing.

The defense of coasts, and especially of harbors, against superior forces coming from the sea has most often and most powerfully been undertaken from ashore by armies and air forces. The usual result of a

strong harbor defense is that the potential invader either chooses a less desirable place through which to begin his campaign ashore, or he does not try at all. Cases in point are Manila in World War I and, also in World War II, some of the French Atlantic ports, all of them well defended. The Japanese, impressed by the harbor defenses at Manila, began their drive upon that city in December 1941 at Lingayen Gulf, 120 miles to the north. At the time of the Allied amphibious attack at Normandy in 1944, British and American respect for the German defenses of the French Atlantic ports led them to land near none of them. Through the use of small craft, including submarines, and minefields, local naval forces can contribute, in an adjunctive manner, to the defense of a coast or port, but they have seldom had the principal role and seem unlikely to do so often in the foreseeable future.

Maritime power projection consists of bombardments by aircraft, missiles, and guns, small-unit raids ashore, and invasions, all coming from across the sea. Whatever the form, this is what coastal defenses are supposed to thwart. These offensive actions from the sea are an option for strong navies when the enemy's navy is weak and even more so when his coastal defenses, too, are thin. When the defending enemy is strong the attacking fleet, and the landing force as well, must be very strong.

Nowadays, it might be argued, a large amphibious force would surely be detected well ahead of time, the defenders alerted, and the amphibious assault crushed. Still, in most such assaults of the last century, even though the defender usually did not know exactly when the attack was coming, he hardly ever was unprepared to oppose it vigorously. Yet, almost without exception, the amphibious assault carried the day. Thus, one should not refrain from using the amphibious weapon simply because it may no longer be hidden. In effect, it seldom ever was.

In 2001–2002, Osama bin Laden and his Taliban hosts probably imagined that in the absence of an Afghan coastline to be assaulted, they were safe from American reprisals mounted from the sea for bin Laden's murderous attacks on the United States of 11 September. No doubt to the consternation of bin Laden and the others, American diplomacy opened the Pakistani gates between Afghanistan and the Indian Ocean, as well as other gates well inland, and the American reprisals on the Taliban and their admiring guest came anyway. First the reprisals came from aircraft flying off carriers in the Arabian Sea and, not long after, from Air Force aircraft too. Some of the latter flew from Diego Garcia in the Indian Ocean, others from countries bordering on Afghanistan, and some directly from the United States. All American aircraft en route to Afghanistan needed the help of not only diplomacy but also, because of the long distances they had to fly in order to reach their objectives, that of tanker aircraft. The carrier planes were, for instance, "heavily dependent on shore-based tanking, much

of which was provided by the RAF.”³ Altogether the aircraft, assisted by several dozen Tomahawk land-attack cruise missiles fired from ships at sea, achieved a great deal. In cooperation with a few hundred Special Forces troops and a number of Afghan tribal armies, within a short time they chased the Taliban and its guests out of the lowlands and the cities into the mountains, where the survivors still lurk. The outcome of the struggle in Afghanistan is unclear and may remain so for some time. But the aviators flying from afloat and ashore were essential to the improvements so far achieved.

In whatever form it comes, maritime power projection works best when at least the immediate objectives are at, or near, the coast, or at most within the normal combat radius of the fleet’s aircraft, including those of the landing force. It need not involve any combat afloat, though if such combat is among the possibilities, a navy had best be prepared to engage in it successfully. In 1917–18 this country advanced an army of two million soldiers across three thousand miles

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of the contested Atlantic to friendly French ports. To protect the forward-moving battalions, regiments, brigades, and divisions in their transports from German U-boats, the Navy provided each

convoy with a substantial escort of destroyers. Once the troops were disembarked, authorities ashore took over and moved them to where they would be needed, eventually to the fighting front three or four hundred miles inland. Though not an invasion, that enormous achievement, right up to disembarkation, certainly was “maritime power projection.”

On a much smaller scale but mounted much more swiftly and over a much greater distance—eight thousand miles—the Royal Navy also projected power ashore in 1982, in response to the Argentine invasion of the Falkland Islands. The British navy landed the rescuing troops not in a friendly port but across a hostile, though undefended, beach fifty miles from the objective, which was the garrisoned village of Port Stanley. The Argentines chose to oppose the British amphibious assault—that is, they engaged in coastal defense—not with the troops they had on the islands, nor with missile-armed surface combatants, but with naval and air force aircraft flying from bases four hundred miles distant. It was only by a slight margin that the Argentine aviators failed. But they did, and in a few days the British landing force had recaptured the archipelago.

Whether the objective is near to, or far from, the beach, maritime power projection has so far had the most influence when the power projected from the ships consisted chiefly of troops in sufficient numbers to meet the need, and when the fleet supported them, during the landing and thereafter, with fire and

logistics. A new form of fire support for forces ashore or about to go ashore is that of defending them, and the ships in which they are embarked, against attack by ballistic missiles. This may prove to be a heavy burden, to be borne by only a small number of ships. In our recent small wars, the primary forces projected, whether from ashore or afloat, have consisted of bomber and attack aircraft, with troops and surface-to-surface missiles in a supporting role.⁴ Be that as it may, a successfully landed army soon enough will provide its own fire, including that against ballistic missiles, but while the fighting lasts, its need for logistical support will be unending.

A few small, short-distance airborne assaults were carried out during World War II, notably by the Germans at Crete in 1941. But as a rule, the projection of an army across the water has been successful only when either there was little danger to shipping at sea or the side that wished to project force ashore had gained at least momentary command of those parts of the sea that were of interest to it. It had to continue to maintain such command for as long as it wished to sustain its forces on the other shore. After their air-landed assault forces had defeated the British defenders on Crete, the Germans achieved adequate local sea command, chiefly through the use of shore-based aviation.

Sometimes the weaker side at sea will engage in *commerce raiding*—that is, attacks on enemy shipping where no core issues are at stake, where distances are great, and where, while enemy merchant ships may be scarce, enemy warships are scarcer yet. The objective is, as inexpensively as possible, to annoy and inconvenience the enemy as much as possible without attracting too much of the enemy's strength to the defense of its distant merchantmen. This mode is exemplified by the nineteenth-century Confederate raider *Alabama* and by Germany's newly armed former merchant ships roaming the lonely southern ocean in the last century's world wars. This might still work, but probably not for long.

It was the weaker side too, and it alone, that would engage in the practice of a *fleet-in-being*. This required little more than a substantial naval presence with which to inhibit useful activities on the part of the more powerful opponent. The mere presence of the large German High Seas Fleet in the southeastern corner of the North Sea through the entire First World War is an example. It prevented the British from shifting important elements of the more powerful Grand Fleet (based at Scapa Flow, in that sea's northwestern corner) to other waters where they would have been most welcome. As the example suggests, the effect of a fleet-in-being was likely to be marginal. After 1918 this passive and largely ineffective form of warfare had just about died. Current means of intelligence and communications have buried the corpse.⁵

Fleet battle is aimed, through the defeat and even destruction of the enemy's main force at sea, at gaining command of that sea. Why does one seek such

command? What can one do with it? One seeks such command so that friendly shipping, filled with cargoes or people necessary for the survival of a nation and the success of its forces in battle, can sail to where it is needed when it is needed, and so that hostile shipping cannot do those things.

Once the enemy's main force at sea is defeated or destroyed, one's own combatant ships can then be dispersed in ways that will help ensure the destruction of the enemy's weaker warships and the capture, blockade, or destruction of his military and commercial shipping. Moreover, concentrated anew, they can protect and support forces engaged in the projection of power ashore.

What do we mean by "shipping"? Commercial shipping, normally privately owned but in wartime usually under government control, consists of ships carrying fuel (gas, coal, oil, refined products), dry bulk cargoes (grains and ores), food and manufactured goods (now almost always in containers), autos and trucks, and heavy and bulky structures (sometimes including damaged ships). Commercial shipping also includes ships and boats engaged in fishing, in support of those extracting oil and gas from the sea, and in the swift or clandestine transport of such illegal cargoes as drugs and unsought immigrants. Though they are not ships, oil and gas rigs in the ocean, and transoceanic cables too, are as worthy of naval attack and defense as any ship might be.

Military shipping, often commissioned naval vessels, includes all those ships that do not take part in the struggle for command of the sea—such as those intended for amphibious warfare and for the logistical support of forces engaged in combat afloat, aloft, or ashore. Ballistic missile submarines come under this heading too.

Though there have been many actions between small and medium-sized naval forces—such as at Manila Bay (1898), Dogger Bank (1915), and the bloody night actions in Ironbottom Sound (1942)—there have never been many fleet battles. In the First World War there was only Jutland (1916). On that occasion the German admirals had neither sought nor expected their encounter with the

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Grand Fleet; thereafter they made sure it would not be repeated. The battle's most important effect was that the German navy shifted the bulk of its effort to direct attack on hostile shipping by means of

submarines. In the Second World War there were no fleet battles at all in either the Atlantic or the Mediterranean, and very few in the Pacific. It seems likely that no one now, or soon to be, in any navy will ever experience such an action.

Blockades attempt in another way to achieve what successful fleet battles theoretically do. The military blockade is an attempt by the stronger fleet to keep the weaker fleet locked in port where it can do its own side no good, its enemy no

harm. Even in the old days blockades were more common than big battles, because while the stronger fleet longed for a fleet action, the weaker one dreaded such a thing. Since the coming of the aircraft and now of the long-range missile as well, ships in port are not likely to be any safer than those at sea. The difference is that ships at sea can do things, and they often are hard for an enemy to find, while those in port can do nothing and are easy for an enemy to find.

Just before the First World War, with the submarine an established part of every fleet, the aircraft not far behind, and the effectiveness of minefields upon incautious ships beyond doubt, the British decided that next time they would establish a “distant” blockade (hundreds of miles from the ports of interest) rather than a “close” one.

When war broke out in 1914, traffic across the once commercially lively North Sea ended, as a result of the British blockade; that sea became, in the words of a German admiral, Edward Wegener, a “dead sea.”⁶ So it remained as long as the war lasted. Mainly in its commercial form, the distant blockade was a great success. Almost no ships, civil or naval, tried to sail from outside into German ports or from German ports to destinations outside. Only U-boats tried that. They made such voyages routinely, but they alone.

In the role of counterblockaders the U-boats proved highly successful. In the English Channel, the Western Approaches to Britain, and the Mediterranean too, they could not capture British and other Allied shipping, but they could sink it. Soon an old truth reasserted itself—that Britain and its allies, much more than a wholly continental alliance, were dependent for their very lives on the flow of merchant shipping in and out. The defeat of Allied shipping by the U-boats would have meant the defeat of the entire Allied war effort. In the nick of time, the British, both naval officers and merchant mariners, reluctantly recognized that the way to overcome the deadly threat was to form merchantmen into convoys guarded by small warships suitable to the task. This they did; as a result, the threat to shipping was cut to a bearable size. The Allies recovered their strength, and before the end of 1918 they had defeated Germany on the western front.

In the second war, that of 1939–45, as soon as possible the struggle at sea between submarines and convoys took the form of submarine “wolf packs” deployed operationally against convoys by headquarters ashore on the strength of communications intelligence. The convoys, this time protected not only by small warships but also by large, land-based aircraft, came to depend as well on advice, commands, and communications intelligence from their own headquarters ashore. In keeping with the Allied objective at sea—the safe and timely arrival of the convoys—the most important use of such intelligence was to route the convoys away from where it was expected that U-boats would be. The next most important use of it was to direct Allied aircraft and warships not needed

for escort of convoys to where U-boats would most likely be found. It took the Allies three and a half years to win this struggle. Once they had the upper hand they never loosened their grip, for victory in the Atlantic was the prerequisite for victory on and over the continent of Europe.

What we have seen here—sustained heavy assault on, and defense of, shipping far at sea—is something not often found in lists of naval functions. However, since the world wars we have not seen, nor are we likely soon to see again, anything like it. Rather, the assault on, and defense of, shipping has abandoned the open oceans and moved into coastal waters and the narrow seas. Aircraft and surface combatants large and small have engaged in such warfare during the last half-century in the Sea of Japan, Yellow Sea, Taiwan Strait, South China Sea, Persian Gulf, Red Sea, eastern Mediterranean, and Falkland Sound. Some of their actions have had much greater influence, or impact, on the course of the war than the small size of the craft often engaged would lead one to expect.

By the middle of the twentieth century we had seen the end, so it appears, of commerce raiding, the fleet battle, and the fleet-in-being. What remained for navies was, by whatever means were both possible technically and acceptable politically, to ensure that friendly shipping could reach its destination in a safe and timely fashion and that hostile shipping could not. Should friendly shipping be able to do as desired, then and only then would it also be possible, if necessary, to engage in maritime projection of power—that is, to assault the enemy ashore, in whatever ways seemed most suitable.

Since then, two methods of using naval forces have been added and two strategic conditions have changed. The first new method to be added was the deterrence of nuclear attack—the forestalling of any such attack upon one country by means of the threat of an equal or greater nuclear blow upon the country that had launched the attack. The necessity for this arose shortly after the Soviet Union demonstrated its ability to manufacture and use nuclear weapons. In the United States, at first nuclear deterrence was entirely the responsibility of the Air Force, but over time it shifted toward the sea, and now, through its ballistic-missile submarines, the Navy has a large, perhaps the largest, part to play. For the same reason as the United States, the Soviets, British, and French also supplied themselves with such submarines. With Russia having reasserted its own existence in place of the sinister Soviet Union and the good relations now enjoyed among all four powers possessing such submarines, the deterrence task has lost the salience it once had. Moreover, it has no part in our current struggle against a stateless enemy, Osama bin Laden and his criminal gang of religious zealots. But against a small power potentially possessing some “weapons of mass destruction,” the deterrent effect of our ready nuclear forces should be as dependable at least as it was in the days of an

immensely powerful, aggressive, and overtly hostile Soviet Union. As the years go by it will be important to replace old ships, weapons, and all else necessary to the success of the force dedicated to the role of nuclear deterrence.

The other new method of employing naval forces is that of making sure friendly air traffic can pass over the sea and hostile military air traffic cannot. Let us quickly review an example. In the fall of 1973 the United States responded to an Israeli demand for help during the war that had broken out between that country and Egypt (to the southwest) and Syria (to the northeast). U.S. combat aircraft were flown from this country to Israel; to ensure their safe and timely arrival, the Sixth Fleet strung itself out almost from one end of the Mediterranean to the other. Its immediate tasks were navigational assistance to transiting aircraft, protection against air interdiction originating in North Africa, and help in the event of a mishap. Two carriers of the three available in that theater provided tanker support to aircraft that needed it, while the third made room for some of those same aircraft on its flight deck. Shortly, it appeared that the other great power actively engaged in the area, the Soviet Union, might be preparing to airlift some of its own troops to Egypt. In response, the Sixth Fleet concentrated south of Crete, where, should the situation arise, it could both protect Israeli-bound shipping and aircraft, and destroy Soviet shipping and aircraft bound for Egypt. Meanwhile Soviet warships, which had been stationed where they could protect supply ships and air transports bound for Syria, moved south so they could provide similar protection to air transports bound for Egypt. They might have performed that task either by means of surface-to-air missiles with which to engage U.S. fighter planes headed toward the transport aircraft, or by means of surface-to-surface missiles with which to engage the carriers from which the aircraft would fly. By that time, however, a truce respected by both sides had taken hold ashore. The Soviets did not try to fly their troops to Egypt. Slowly the ships dispersed, and the crisis wound down.⁷

At the top of the preceding paragraph is an inequality: a fleet must ensure the passage of “friendly *air traffic*” and prevent the passage of “hostile *military air traffic*.” The reason for protecting all friendly air traffic is plain. But attack on hostile civil aircraft, at least at the beginning of a war, could result in the destruction of an airplane filled with hundreds of civilian passengers trying merely to go about their private lives. In 1988 a U.S. warship did shoot down an Iranian civil airliner (having mistaken it for an attacking combat plane), and nearly three hundred people perished unnecessarily. Nothing much came of this, for the United States expressed its regrets immediately and did what little it could to make amends. A more ominous analog was the sinking by a U-boat in 1915 of the British passenger liner *Lusitania*, an attack that cost over a thousand lives, including those of many Americans. Most people in this country had been indifferent to the outcome of

the European war, but the sinking turned many of them into opponents of Germany and helped bring about the American decision two years later to enter the war against that country. So, although passage of hostile military aircraft over the sea, or even inland within reach of the fleet's weapons, should be prevented, passage of an enemy's civil aircraft is a different matter.

The potential third new method of employing naval forces in war or near-war is that of forward defense of countries friendly to us from attack by ballistic missiles. If this task, which is likely to be separate from that of defending our own forces, were undertaken by the U.S. Navy, it would require the services of perhaps a large portion of the nation's not very numerous modern surface combatants, at some measurable cost to the accomplishment of other assigned, or assumed, missions.

In order to destroy a hostile ballistic missile before it has gained too much speed or advanced too far into space for a forward-deployed ship to counter, our ship might have to be very close to the launching site. However, its being there would mark it as a clear and present danger to one of the potential enemy's most highly prized possessions. Thus, before launching a missile (not necessarily only one missile), the enemy might reasonably seek to disable, sink, or capture our forward-located ballistic missile-defense ship. Because the hair-trigger nature of

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our ship's duty will demand the full attention of all on board, to assure that it can carry out its assigned task, we might find it advisable to deploy additional forces for its protection. This is

one of those old naval issues that, when ignored, bring great difficulty. Consider the catastrophes that enveloped those lonely far-forward ships, the USS *Liberty* in 1967 and the USS *Pueblo* in 1968.⁸

Perhaps the threat to a hostile ruler of being annihilated himself, along with all he values, posed by our, and other countries' nuclear deterrent forces, so successful for so long, will still prove to be the least provocative, most effective defense we will have against hostile missiles.⁹

The ability and willingness to counter-attack is inherent in deterrence. So it will be necessary for the government to make clear to everyone that no matter what its nature or means of delivery, any "weapon of mass destruction" fired at this country, at our forces, or at one of our allies who does not itself possess nuclear deterrent forces, will yield in return more than one nuclear explosion in the land of the perpetrator.

The first of the two strategic conditions that changed in the second half of the last century is that most of the countries that had maintained large navies and

used them vigorously in the wars of the first half of that century have lost interest in engaging in wars against their neighbors and thus also lost the resources needed to do so, let alone to engage in warfare against countries at a significant distance. Thus, except for the United States, they now see no further need to have large navies. Moreover, though powerful militarily ashore, neither China nor India seems ready to match its strength there with similar strength afloat. For its part, with 337 ships in commission at the end of 2001, the U.S. Navy, currently the biggest in the world by far, has about the same number of ships in commission as it did during the years of pacifism and economic depression between the two world wars. This number is far smaller than at any time since those days.¹⁰ It is a number not soon likely to grow.

The second changed strategic condition is that few major countries—China is the great exception—nowadays man or maintain substantial merchant fleets under their own flags. Indeed, in Europe and North America, once the world's main sources and users of seagoing ships of all kinds, not many people even know how to build a merchant ship. What has not changed is that almost all those countries are as dependent as ever on the safe and timely flow of merchant ships into their ports, each ship filled with necessary or at least desirable imports. In general, they are equally dependent on the safe and timely flow of such ships *out* of their ports, many of them filled with important exports. Few people today know that oceangoing merchant ships are not only much larger than their predecessors but also more numerous than they have been for a long time.¹¹ The coming into common use of the highly efficient cargo container, which can swiftly be moved from ship to truck or train, has led to the economical commercial practice of “just in time” resupply of goods or products from source to store. No one wishes disruption of this efficient flow—that is, no one except those at war with important exporters or importers.

During their long war of 1980–88, Iran and Iraq came to attack each other's oil exports. Iraq did so by means of missiles launched from aircraft at what mainly were neutral tankers attempting to fill themselves at Iranian terminals. Iran did so primarily by laying mines in the channel between Kuwait (which was Iraq's seaport proxy) and the exit from the Persian Gulf.

The Iraqi pilots hit many ships with their missiles. But despite the almost complete absence of naval or air protection, the flow of neutral tankers willing to risk attack never ended—the Iraqi attack on shipping failed. In contrast, the United States, which favored Iraq as the lesser of evils and feared what the Iranian mines and other naval instruments might do to Iraq's ability to continue the war, arranged to have a number of foreign-flag tankers placed under American colors. This justified the employment of U.S. warships to protect the tankers from any form of Iranian attack. A series of skirmishes followed that led, among other

results, to the destruction of several Iranian warships and oil drilling platforms at sea, as well as serious mine damage to an American frigate. The most important effect of these activities, albeit one little noticed, was that all merchant ships under the protection of the U.S. fleet arrived where they were needed when they were needed. After a year Iran called a halt to the war, not only that against the United States but also that against Iraq.¹²

It is to the advantage of most countries that neither tankers nor container ships be sunk at sea and that tankers, at least, not be sunk in port either. If a tanker were to be sunk at sea, someone's fishing grounds could be ruined, or a coast fouled, for years—if in port, the result would be even worse. Should a container ship be fatally damaged at sea, not only would the ship's entire cargo be lost but hundreds, or even

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thousands, of buoyant or semi-buoyant containers could break loose from the sinking ship and form a giant floating minefield, albeit a nonexplosive one, endan-

gering all ships and craft nearby, perhaps for months. A new task for navies, or for the U.S. Coast Guard if the problem is in American waters, will be to round up all those floating containers in such a contingency, either placing them aboard some self-submerging ship—such as a dock landing ship (LSD) or a heavy-lift ship—or sinking them so they will be no more a source of danger to others. This task will be tedious, dangerous, and important. Hence, it is a good thing that the U.S. and other navies have revived the old practice from sailing ship days of organizing boarding parties in order to examine, and perhaps seize, merchant ships of interest—as well as, for intelligence purposes, the people on board. Thus, in this old way twenty-first-century navies can conduct blockades (or embargoes, quarantines, or other terms suitable to non-war confrontations) in a highly effective fashion.¹³

However, that does not mean belligerents opposed to the safe passage of the enemy's ships, or enemy-supporting neutral ships, across the seas and oceans will not resort to whatever means they have to sink them. If the ships in question are ours or supporting us, the U.S. fleet must protect them. If they are the enemy's or supporting the enemy, that same fleet must blockade, capture, or sink them.

For an important reason, it will not be enough for navies just to be able to board, examine, and perhaps seize merchant ships of interest. They must retain the ability to sink them, for without that, the people in those ships might choose to brush off the attentions of would-be boarding parties. When one considers in particular the current need to keep dangerous ships out of our ports and those of our neighbors, the importance of retaining the capability to sink them looms large.

For that reason the U.S. fleets should consider establishing on each coast, or other areas of concern, "flying squadrons" of suitable forces able to concentrate

on ships of interest as far at sea as intelligence will permit. If such a ship resists seizure, it should be sunk, and sunk as quickly as possible. No resource of ours is better suited to that task than a submarine, for no other ships, and few aircraft, have weapons so effective for that purpose as a submarine's full-sized torpedo—or two, or three, as needed. Other resources will be needed to rescue survivors from the sea and, should any such survivors still be filled with murderous hate, to control them until they are delivered to the authorities ashore.

How does this play out in a world dominated by information?

Commanders in the time of George Washington and Horatio Nelson had to fight their battles, campaigns, and wars in an era of information poverty. Commanders now must fight in an era of information wealth, or even of information excess.

We celebrate today the enormous volume, variety, and accuracy of information we gather and the speed with which we move it over great distances. We seek, send, receive, store, and delete information. Sometimes between receiving information and deleting it we examine and act upon it well. Information now not only comes from, but also goes to, great numbers of devices that we have conceived, created, and deployed. One example is the direct coupling of sensors and navigators to weapons.¹⁴ Hitherto, forces were accustomed to firing, launching, or dropping many weapons in the hope of gaining at most a few hits. With the current coupling, the likelihood of a hit is so high that only one weapon, or a few, need be directed at any target. The influence of this change on the requirements for ships, aircraft, launchers, weapons, fuel, parts, and crews has been enormous. Now only a few (or a little) of each of these can achieve as much as once required many (and much). This both eases a navy's problem of protecting logistical ships and aircraft and magnifies the effect of the loss of even one. In time the enemy, whoever it may be, will be operating under the same influences.

All the foregoing—people, ships, weapons, and the rest—must be harnessed by the commander in order to carry out his (or her, not yet its) intent. Nowadays that commander is more likely than ever before to be at a great distance from the scene of action; yet he possesses the ability to make tactical decisions in a timely fashion. This ability is something far beyond the reach of Admiral Chester Nimitz in Hawaii during World War II, or even in the thick of battle, as Vice Admiral Nelson was at Trafalgar in 1805. Current and future very senior officers and civilian officials having such power likely will see it as a good thing. Among the others, at least some will see it otherwise.

Whether information comes from near or far, or reaches the recipient through his eyes or ears, the great efforts we make now (and made in the past, too) to gain and transmit it are all intended to influence, affect, and direct in a

timely way their recipients' thoughts and actions. The same purposes lie behind efforts to deny the enemy timely access to accurate information and, in the same fashion, to provide him instead with believable misinformation.¹⁵

Hence, both sender and receiver must be able to trust that the signal received is identical to the signal sent. They must also be able to understand accurately what has come in and, if a message is just wrong, or fraudulent, to sense that. (Recent experiences in Eastern Europe and Central Asia suggest we have room for improvement here.) Finally, those to whom information is sent must be able to decide swiftly what to do about it—sometimes to do nothing is best—and send out to their subordinates orders that are coherent, practical, and suitable to the occasion.

It is in this context that naval forces now and in the foreseeable future must carry out their missions. How will they do that?

Mainly, it appears, they will make sure that friendly ships, and aircraft flying over the sea, can go where they are needed when they are needed, and that enemy ships and military aircraft flying over the sea cannot do those things. Furthermore, if necessary or desirable, they will land forces ashore, supporting them then, and thereafter, with fire and logistics. (If sufficient ground forces are already in place, the provision by the fleet of fire and logistics will be enough.) For those who like labels, this can be called “objective-centered warfare.”

Little of the foregoing is new. Less is dramatic. Often those engaged in a navy's work must demonstrate high skill and courage. As they do so, they must understand that the world will most likely have focused its attention elsewhere and will never notice how well they perform. But those are everlasting characteristics of war at sea, and from the sea.

NOTES

1. The point is made with particular clarity by Roger Barnett—Captain, U.S. Navy (Ret.), and professor emeritus of the Naval War College—in his “Naval Power for a New American Century,” *Naval War College Review* 55, no. 1 (Winter 2002), pp. 43–62. Because it invites new thought from others, its publication was particularly welcome.
2. *Ibid.*, p. 46.
3. David C. Isby, “Carrier Battle Group and Its Alternatives,” *Air Forces Monthly*, September 2002.
4. David R. Mets, *The Long Search for a Surgical Strike: Precision Munitions and the Revolution in Military Affairs* (Maxwell Air Force Base, Ala.: Air University Press, 2001), pp. 34–50. In the preface to his small book Dr. Mets says (p. xii) that even if airpower “cannot carry the day alone, we would be derelict to our duty as citizens not to consider the possibility of increasing use of airpower as the supported force and ground and sea power as the supporting forces.”
5. Wayne P. Hughes [Capt., USN, Ret.], of the Naval Postgraduate School, Monterey, California, conversation and notes in Newport, Rhode Island, 3 October 2002.
6. Edward Wegener [Rear Adm., Federal German Navy, Ret.], “Theory of Naval Strategy in the Nuclear Age,” in *Naval Review 1972*, ed. Frank Uhlig, Jr. (Annapolis, Md.: Naval

- Institute Press, 1972), p. 195. (This annual also served as the May 1972 issue of the Naval Institute *Proceedings*.) On the same page Admiral Wegener states that “sea traffic is the object of naval war.”
7. This is a shortened version of my account of those events on pages 360–61 and 362 of *How Navies Fight* (Naval Institute Press, 1994). Sources for that account are Robert G. Weinland, *Superpower Naval Diplomacy in the October 1973 Arab-Israeli War* (Arlington, Va.: Center for Naval Analyses, 1978); and Stephen S. Roberts, “The October 1973 Arab-Israeli War,” in *Soviet Naval Diplomacy*, ed. Bradford Dismukes and James M. McConnell (New York: Pergamon, 1979).
 8. On the swiftly emerging issue of the defense of both our forces and nearby allies from theater-range and area-range ballistic missiles see Charles C. Swicker [Cdr., USN], *Theater Ballistic Missile Defense from the Sea: Issues for the Maritime Component Commander* (Newport, R.I., Naval War College Press, 1998). Commander Swicker’s is a remarkably clear and concise discussion of a subject that lends itself to long-winded murkiness.
 9. For an interesting account of an earlier naval effort to help defend the nation against a land-to-land attack from over the ocean, see Joseph F. Bouchard [Capt., USN], “Guarding the Cold War Ramparts: The U.S. Navy’s Role in Continental Air Defense,” *Naval War College Review* 52, no. 3 (Summer 1999), pp. 111–31.
 10. Naval Historical Center, *U.S. Navy Active Ship Force Levels, 1917–* (Washington, D.C.: Ships Histories Branch, 23 January 2002).
 11. According to a table of shipping statistics compiled by the Maritime Administration in 1992 and sent me two years later by Mike Blouin, then of that organization, in 1940 (before the sinkings and building programs of war had had much time in which to distort peacetime figures) there were in the world 12,798 seagoing merchant ships of 80,600,000 deadweight tons. Half a century later, in 1990, the number of ships had nearly doubled, to 22,983, and their deadweight tonnage, or carrying capacity, had multiplied more than seven times, to 609,479,000. Since 1990 these numbers have risen.
 12. For an excellent contemporary account of how this task is handled in one area, the upper reaches of the Persian Gulf, see James Goldrick [Commodore, Royal Australian Navy], “In Command in the Gulf,” U.S. Naval Institute *Proceedings*, December 2002, pp. 38–41.
 13. In *Tanker Wars: The Assault on Merchant Shipping during the Iran-Iraq Crisis, 1980–1988* (London: I. B. Taurus, 1996), Martin S. Navias and E. R. Hooton provide a thorough account of that subject. Other sources are: Anthony S. Cordesman and Abraham R. Wagner, *The Lessons of Modern War*, vol. 2, *The Iran-Iraq War* (Boulder, Colo.: Westview, 1990), pp. 135, 271–73, 338; Michael A. Palmer, *Guardians of the Gulf: A History of America’s Expanding Role in the Persian Gulf, 1833–1992* (New York: Free Press, 1992), pp. 119–49; and Uhlig, *How Navies Fight*, pp. 378–83.
 14. This combination of sensors, navigating devices, and weapons has taken unto itself much of the work formerly carried out by the tactician, who usually has concerned himself, at least up to now, first with finding the enemy and then with placing his own command where it can deliver its fire upon that enemy with greatest effect, keeping in mind the desirability of minimizing the enemy’s ability to return fire effectively.
 15. Commander G. Guy Thomas, U.S. Navy (Ret.), pointed out recently that “one seeks command of the electro-magnetic spectrum for reasons analogous to the reasons a navy seeks command of the sea: so that friendly information necessary for the survival of a nation and the success of its forces in battle can get where it is needed when it is needed, and that hostile information cannot do these things” (conversation, 3 September 2002). Commander Thomas is the liaison officer between the Johns Hopkins University Applied Physics Laboratory in Baltimore and the Navy Warfare Development Command in Newport, R.I.