Admiral Turner attended Amherst College and then the U.S. Naval Academy, from which he graduated in 1946; thereafter he earned a master's degree in philosophy, politics, and economics from Oxford University as a Rhodes Scholar and studied at the Harvard Business School. Before promotion to flag rank in 1970, he served in destroyers (including off Korea and Vietnam) and in shore assignments including duty as executive assistant and naval aide to two Secretaries of the Navy. As a rear admiral he commanded a Sixth Fleet carrier task group; from 1972 to 1974, as a vice admiral, he was President of the Naval War College, where he instituted fundamental and enduring curriculum changes. Thereafter he commanded the Second Fleet/NATO Striking Fleet Atlantic and, upon promotion to full admiral, was Commander in Chief, NATO Forces in Southern Europe. In 1977 President Carter appointed Admiral Turner as the Director of Central Intelligence, a post he held until 1981. Since then he has taught at the U.S. Military Academy, Yale University, and the University of Maryland. Admiral Turner served as the Raymond A. Spruance Distinguished Fellow at the Naval War College in the fall academic term of 2000. His books include: Secrecy and Democracy: The CIA in Transition (1985), Terrorism and Democracy (1991), Caging the Nuclear Genie: An American Challenge for Global Security (1997, winner of the 1998 Foreign Policy Association Medal), and Caging the Genies: A Workable Solution for Nuclear, Chemical, and Biological Weapons (1999). His most recent article in this journal was "The Dilemma of Nuclear Weapons in the Twenty-first Century," in the Spring 2001 issue.

IS THE U.S. NAVY BEING MARGINALIZED?

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Il who have gone down to the sea appreciate the various roles that seapower plays in our nation's defense. Going back to Alfred Thayer Mahan's day, that role was sea control—the ability to use the oceans to one's advantage and to deny the use of them to opponents. Shortly after Mahan, the first rudimentary projection of power ashore by amphibious assault was added. During World War II, the projection of power ashore with aircraft and guns became another major mission of navies; this has since expanded to include guided missiles. With the advent of the nuclear age, navies also came to assure strategic nuclear retaliation as the cornerstone of nuclear deterrence. Today a new mission may be emerging, that of defending the homeland or other land areas against attacks by missiles through space.

Declining Missions

Setting aside homeland defense for the moment, the other four missions are today of lessening importance to our country's security.

Strategic Deterrence. At the peak we had forty-one strategic ballistic missile submarines (SSBNs). We are now approaching eighteen and probably going to ten. In part that is true because of the demise of the Soviet Union. It is also in part because we are beginning to recognize that the prime virtue of the SSBN, its invulnerability, has never been as important as many of us who have written on this subject have contended. This change of mind results from a realization that the threat of even only a few retaliatory nuclear detonations is sufficient to deter anyone. That is because any would-be nuclear aggressor must assume the worst, which is that we would retaliate by attacking his cities. Would the Russians or even the Chinese, let alone ourselves, be willing to lose ten, or five, or even two

major cities in the name of initiating and "winning" a nuclear war? Thus, even if we had only the more vulnerable intercontinental ballistic missiles (ICBMs) and no SSBNs at all in our nuclear arsenal, we would still have an adequate strategic deterrent. That would be the case even were some other nuclear power to acquire many more nuclear weapons than we. No such power could assume that any preemptive first strike it undertook would be 100 percent successful—that is, that there would be no nuclear retaliation. There would always be errors of targeting, missiles that failed entirely, missiles that were inaccurate, and human errors in execution. It all adds up to what Clausewitz described as "friction" in war. So a U.S. strategic nuclear deterrent with only ICBMs should suffice. Thus, the Navy's role in this area is going to be looked at more critically, and this mission of the Navy will be seen as less critical to the country than it once was.

Sea Control. Sea control is the most fundamental mission of the Navy, because the country cannot thrive in peacetime without it and cannot fight overseas in wartime in any sustained way without it—and no other military service can perform it. Today, though, there is no challenge to our control of the seas. The once formidable sea-denial capabilities of the Soviet Navy have dried up. Starting from the low point they are at today, it is unlikely they could be rebuilt in less than two decades. The Chinese may have aspirations to challenge our use of the seas in their region of the world, but they also are several decades from being able to mount such a challenge. Smaller navies with diesel submarines, fast patrol craft, land-based aircraft, and land-based missiles may be able to make our use of littoral waters more costly than we would like, but not to deny it to us. In this atmosphere the Navy is going to have a difficult time obtaining funding for sea control in the foreseeable future. It is also going to be difficult to motivate personnel to train against a nonthreat.

Power Projection Ashore by Amphibious Assault. The last opposed amphibious assault was made in 1950 at Inchon. We planned one at Wonsan in 1951 and another at Kuwait in 1991; both came a cropper due to mines. Today it is difficult to imagine where the United States might want to conduct a major opposed amphibious assault in the next twenty years or so. China seems a possibility, but one has to wonder if the United States would ever risk placing a major force ashore in a country as vast as China and one with over a billion people, some three million of whom are under arms. After fifty-two years of nonuse, the mission of major amphibious assault is not going to draw a great deal of support or money. What can be justified is the capability to put troops ashore in remote areas reasonably quickly, either by helicopter assault or assault across a beach, in modest numbers and against modest opposition.

Power Projection Ashore by Bombardment. This is a mission of expanding capabilities. Guns already reach far inland and almost certainly can be made to go very much farther; precision-guided missiles can be launched from submarines, ships, aircraft, and unmanned aerial vehicles. All except guns played a role in Operation ENDURING FREEDOM in Afghanistan. All will almost certainly have roles to play in any future conflict. The Navy would do well today, though, to take note that the U.S. Air Force dropped a majority of the munitions in Afghanistan, though it had to go halfway around the world to do it because there were no good bases. In short, land-based airpower has demonstrated a very long reach and quite short response times under very taxing circumstances. In contrast, naval airpower may find its response time lengthened. Today the Navy has a fleet of about three hundred ships but is procuring only enough new ones each year to sustain a fleet of about 180 to two hundred. If the Navy does drop down that far, there will be insufficient ships to ensure that it can be quickly within range of unexpected trouble spots around the world. If the Navy cannot get there first, it will not be the instrument of first choice in such situations. Today, though, there are areas where only the Navy can bring shorter-range, tactical airpower to bear quickly, but the melding of long-range bombers with tactical missiles is creating competition even here. Recent reports indicate there are plans to upgrade the fleets of B-1, B-2, and B-52 bombers to reach targets almost anywhere in the world. This is certainly not to say that naval air, missile, and gun power will not be in demand for a long time to come. It is to say that the Navy's traditional advantages with these weapons are diminishing.

As noted earlier, the Navy may emerge into a mission of defense of land areas through the interception of intercontinental ballistic missile attacks. It is far too early to tell whether this mission will in fact mature or whether it will become such a major one as to justify additional forces. With the fleet declining in size, however, it would be difficult for the Navy to take on this additional mission.

An Altered Relevance

Why, though, with the exception of the possibility of missile defense, are the Navy's missions less relevant to national needs today than during the Cold War? In part this is because advances in technology are making other systems more competitive. In part it is because changes in the global environment have radically altered the need for military forces of all types. The relevance of the Army's heavy armored forces, for instance, has been questioned. In the 1991 Gulf War we manhandled one of the largest tank forces in the world with hardly a scratch on our own tanks. The Air Force, for its part, finds itself in a position with respect to air superiority analogous to the Navy's in regard to sea control—there just is not much opposition today that can tangle with it in aerial combat. In short, all the

military services are facing a need for "transformation," to use the current jargon. If the Navy is to play the best role it can for our country it needs to examine what transformation means for it, mission area by mission area.

Strategic Deterrence. We will not, and should not, forsake the submarine-based deterrent entirely. It is psychologically important for the country to feel assured that its strategic nuclear forces will never be so vulnerable as to endanger the country. It is also prudent to err in the direction of safety when the consequences of making a mistake could be so high. Also, should deterrence fail, we would want to have a reasonable retaliatory capability available. Still, we also must recognize that the SSBN has several disadvantages. One is that the cost per deliverable warhead is high, and it will be especially so if we eventually succeed in reducing nuclear arsenals to the low hundreds of warheads. We would not place all those warheads in one SSBN, but it would be very expensive to maintain SSBNs with only a handful of warheads on each. Also, if we do work our way down to a low number of total warheads, numbers of warheads and their condition of readiness may well be controlled by an arms control treaty—we would be anxious to know for certain what other people have, and they would want to know what we have. It is difficult to count numbers and observe readiness in a submarine hiding deep in the sea. In any case, however, we do not require more than one or two SSBNs at sea with two hundred to four hundred warheads to intimidate any potential nuclear aggressor. In time we could reduce the cost of this element of deterrence by replacing some of the ICBMs in our SSBNs with conventional cruise missiles and giving the submarines a dual mission. Alternatively, if each attack submarine carried one or two cruise missiles with nuclear warheads, we would have plenty of assured deterrent out at sea at all times without having to dedicate SSBN platforms solely to that role.

Sea Control. As noted above, as far as the Navy's sea control, the Army's armored warfare, and the Air Force's air superiority are concerned, the traditional forms of threat have all but disappeared and will not reemerge for the foreseeable future. Still, it would be foolhardy to expect these conditions to continue indefinitely. Since at least the battle of Salamis in 481 B.C., nations have attempted to deprive other nations of the use of the seas. The issue for the Navy, then, is how to sustain sufficient sea control capability to be able to deal with the possibility of a revived threat of some sort to the use of the seas. One approach is simply to resolve to retain some modest level of training and equipment against the traditional threats, despite the cost. That is easier said than done. For instance, in "Sea Power 21," the Chief of Naval Operations recently revised the wording of the Navy's missions, apparently to focus them more directly on impacting wars on and over land. This new doctrine includes three new missions, "Sea Shield,"

"Sea Strike," and "Sea Basing." Sea control may be subsumed within these three new categories, but it is difficult to tell.

Perhaps the best way to deal with the sea control dilemma is a strong emphasis on discerning what the next threats may be and how to counter them. For instance, one near certainty is that traditional antisubmarine and antiair warfare will not suffice to keep our ships afloat. One new threat to be countered is that of terrorists attempting to drive our ships away from overseas deployments by harassing them whenever in port, as with the USS Cole. The development of a mobile defensive perimeter needs priority attention. Another potential threat is a cruise missile, or even ICBM, launched from land and targeted at our larger ships at sea by satellites. We will need far greater capabilities in antimissile defenses than we have today; bringing them into being should be a high priority for research and development. Also, as part of better defensive capabilities, we will likely want to move more of our cruise missile punch under the surface of the seas—that is, into submarines. Analysis of the trade-offs in costs, capabilities, and vulnerabilities of surface ships and submarines for launching cruise missiles in a future threat environment is a vital need. Still another concern must be with our training and educational establishments, which must remind our officers that the core mission of any navy will always be sea control, even if the challenge is not great at a particular time.

Power Projection Ashore by Amphibious Assault. As the Navy shrinks, the amphibious force, with its rather limited mission, is bound to decrease in size, probably substantially. The first units to go should be those having the primary role of supporting major, division-scale assaults. For instance, large command ships are not needed for smaller assaults, and the large staffs that go with them could be trimmed down. The last amphibious units to go should be those capable of a second mission of projecting power ashore by bombardment. As we come to rely increasingly on aircraft capable of vertical and short takeoffs and landings, such as the Marine Corps's V-22, and unmanned aerial vehicles to deliver ordnance ashore, amphibious ships with small flight decks could operate as small aircraft carriers. The Chief of Naval Operations recently indicated that the Navy and Marine Corps are moving in this direction, creating "expeditionary strike groups" from what have been amphibious ready groups. These groups will be capable of littoral power projection by either assault or bombardment. Ideally, this move is a precursor to making the Navy the fixed-wing tactical air force of the Marines, with substantial savings over the present practice of maintaining two separate air establishments. Still another point to remember in the transformation of projection forces is that mentioned earlier with respect to amphibious assaults aborted because of mines. In those instances, mines were employed successfully by powers that—like our potential opponents today—had negligible naval forces. Effective ways to detect and sweep mines have eluded us for decades. It is time for a full-scale research effort to get on top of this problem.

Power Projection Ashore by Bombardment. Sea Power 21 calls on the Navy to be ready to strike at a moment's notice anywhere. That is a tall order for a shrinking fleet. There are four approaches to stretching the Navy's resources for attacking land targets: obtaining more funding, building less expensive ships and aircraft but more of them, getting as much dual use as possible out of ships and aircraft having other primary missions, and getting more punch out of existing forces designed for the mission.

As for the first option, increased funding, it is difficult to forecast whether the Navy's budget will increase substantially. Many of us would have thought it improbable that military funding would stay as high as it has after the end of the Cold War. Still, it would be not only problematic but even dangerous to bet on sizable increases in the next decade.

The second option, less expensive but more numerous ships and aircraft, fits well with the trends in both offensive and defensive military technologies. The day of large aircraft carriers with large numbers of high-performance aircraft is simply drawing to a close. Ninety percent of the munitions dropped on Afghanistan were precision guided, up from 10 percent in the Gulf War just a decade earlier. Remote sensors will see targets better than pilots can, and remotely controlled precisions weapons will hit targets more accurately. In time more and more of the precision weapons will be launched at long ranges from their targets, or from unmanned aerial vehicles, in order to minimize the exposure of pilots. With more accurate weapons, the ordnance-carrying capacity of the large carrier will no longer be as important. On the defensive side of the technology coin, we must recognize that technologies that make our forces more lethal will be available in time to others. When opponents acquire remote sensing and precision, long-range targeting capabilities, as they are bound to do, the huge detection signature of the hundred thousand tons of steel in one of today's aircraft carriers will be a tremendous liability. It is argued that such liability is offset by the defensive capabilities of larger ships. Those defensive systems (like directedenergy weapons) are themselves shrinking in size, however.

The third option of more dual use of ships and aircraft also fits with the trends in technology. Small, less-vulnerable ships can carry much greater offensive punch than was possible just a few years ago. We need to distribute fire-power: in expeditionary strike groups; in surface combatants and attack submarines loaded heavily with land-attack missiles; in surface combatants with

long-range, accurate guns; and in ballistic-missile submarines converted to conventional missile shooters. We should also revisit the concept of an Arsenal Ship as an inexpensive way to put firepower to sea.

Just as the means of projecting naval power ashore by bombardment are changing dramatically, the need for projecting naval power ashore is also changing dramatically. The requirement today is, and will be into the future, for quick response with limited force more than for response with massive firepower. The days of all-out "alpha strikes," as in Vietnam, are behind us. Instead, as seen in Iraq, we are turning to precision-guided attacks with modest amounts of munitions and modest numbers of aircraft. What we are likely to confront tomorrow is the terrorist cell that is a target today but will be gone tomorrow; the rogue state that is about to obtain weapons of mass destruction or already has and is about to use them; the hostages who need to be rescued before they are taken deep underground; the coup against, or invasion of, a friendly regime that must be reversed before it becomes a fait accompli; or the need to respond to the use of weapons of mass destruction by anyone against anyone.

The fourth option, doing more with what the Navy has, brings up the networkcentric concept of making information more universally available, thus optimizing the usefulness of the forces that can be brought to bear. The Navy has been netting ships together for combat effectiveness for decades. The issue today is to take maximum advantage of the ever-growing capabilities of information technology.

The demand for transformation of the Navy is urgent, because of the pace of both technological and geopolitical change. Military professionals are often accused of resisting change, and there is considerable evidence to support that charge. Today it is vital to prove that adage wrong. Battleships dominated naval warfare for about sixty years, and carriers for about the same. Our existing carriers will have plenty to do for the remainder of their operating lives, but a Navy built around these ships will not carry us into the emerging era of warfare any better than did the USS Arizona into World War II. To procure more large carriers today and expect them to be useful into midcentury is to be blind to reality.

Finally, today, much more than ever before, it is incumbent upon military professionals to promote transformation. The nature of the military-industrial complex, plus the breadth of congressional constituent interest in military procurement, bases, etc., will by themselves make forsaking the tried and true extremely difficult. Only if military professionals stand up and place the weight of their expertise and prestige behind radical change will there be a change.

NOTES

- 1. See the author's "The Dilemma of Nuclear Weapons in the Twenty-first Century," Naval War College Review 54, no. 2 (Spring 2001), pp. 13-23.
- **2.** First publicly introduced by Adm. Vernon Clark, USN, "Sea Power 21: Operational Concepts for a New Era," remarks delivered at the Current Strategy Forum, Naval War College, Newport, R.I., 12 June 2002.