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The Illusion of Power: Aircraft Carriers and U.S. Military Strategy

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Executive Summary

"Where are the carriers?" The nation's leaders seem to ask that question whenever a crisis perceived to involve vital U.S. interests develops. According to the conventional wisdom, the aircraft carrier--because of its mobility, its versatility, and the capabilities that it affords the United States, particularly that of projecting air power without relying on overseas bases--is the best military instrument for carrying out national security strategy. Indeed, since 1945--from post-World War II scenarios involving retaliatory nuclear air strikes against the Soviet Union to the capture of the Palestine Liberation Front hijackers of the Achille Lauro--the carrier has been a principal component of U.S. military operations.(1)

There is no denying that the aircraft carrier is an impressive technological achievement; the challenges of safely launching and landing modern aircraft at sea, particularly at night and under adverse weather conditions, are enormous. There is also no denying that the aircraft carrier has a legitimate role in the execution of national security strategy. But the precise nature of that role has been the subject of intense controversy in recent years, especially in the context of the Reagan-era military program and the effort to build a 15-carrier, 600-ship navy.

Carriers, like other military systems, have always been targets of public and congressional criticism because of their enormous cost, but such criticism was sharpened by two factors. The first was the abrasiveness of former secretary of the navy John F. Lehman, Jr., who contemptuously dismissed critics of the navy build-up and carriers as "systems analysts," "armchair strategists," and "detentists."(2) The second was the 1986 release of the navy's Maritime Strategy (also known as the Forward Maritime Strategy), to which carriers are instrumental. A major goal of that strategy, which involves taking a war to an enemy's naval forces, is to ensure that the enemy would quickly be prevented from interfering with America's use of certain areas of the sea to provide U.S. and allied forces with essential kinds of support. The ensuing torrent of debate on both the Maritime Strategy and the function of carriers continues to this day.(3)

The construction, deployment, and use of carriers have political as well as financial costs. Thus, it is important to determine whether there are less costly ways of carrying out the missions assigned to carriers. It is equally important to determine which of those missions are vital to the security of the United States.

The Enthusiasm for Carriers

Part of the mystique of aircraft carriers stems from their history. Carriers were involved in some of the epic battles of World War II. At the Battle of Midway on June 4, 1942, dive-bombers from the U.S. carriers Yorktown, Enterprise,

and Hornet sank the Japanese carriers Kaga, Akagi, and Soryo. U.S. carriers also performed well in the first all-carrier battle in history, the Battle of the Coral Sea in 1942, and in other battles. Carrier-based planes supported the U.S. landings on Guadalcanal, Saipan, Iwo Jima, and Okinawa and immobilized the German battleship Tirpitz.(4)

The Battle of the Pacific demonstrated that carrier battle groups could exert an overwhelming concentration of force against specific targets before an enemy had a chance to counterattack. The battle also demonstrated that carrier-based air patrols could supplement strategic bombing by flying over enemy airfields; they were not restricted to defending the airspace over carriers.

Since World War II naval ships in general and aircraft carriers in particular have been U.S. leaders' preferred military means of carrying out political objectives. According to Barry M. Blechman and Stephen S. Kaplan, naval forces participated in 177 of the 215 incidents in which the United States used its armed forces for political purposes between January 1, 1946, and December 31, 1975.(5) They concluded that during those 30 years the navy "clearly had been the foremost instrument for the United States' political use of the armed forces: at all times, in all places, and regardless of the specifics of the situation."(6) Furthermore, the navy had "most often utilized sea-based air power. Aircraft carriers took part in 106 incidents in all, about 60 percent of those involving naval forces and slightly less than one-half of all the incidents."(7)

Another naval analyst found that carrier battle groups had participated in 35 (69 percent) of the 51 international incidents to which the navy responded between January 1976 and July 1985. Of those 35 incidents, 22 (63 percent) occurred during the Reagan administration, compared with 13 (37 percent) during the period 1976-80.(8) Allowing for its greater duration, the Reagan administration used carriers less than the Carter administration even though more money was allocated for carriers during the Reagan years.

Carriers have often been viewed as a status symbol or a measure of national will and credibility. More than a decade ago Lehman noted that

> the very fact that carrier presence has been established in the past in various areas of the world carries with it important political implications should there be a downward adjustment in such a presence. Whether enlightened academics approve [of] it or not, it is a fact that the world judges U.S. priorities in part by where and how [the United States] deploys its forces in peacetime.(9)

Those who advocate the use of carriers typically employ the following argument: The navy's ability to carry out U.S. military strategies is highly dependent on its ability to supply tactical air power at sea and deliver weapons where and when the president commands. A carrier battle group's tactical aircraft can be deployed quickly and can be used to execute a wide variety of missions, including sea control, sea denial, antisubmarine warfare, and close air support and interdiction; their armament can be tailored to meet the requirements of a specific mission or threat. That versatility provides a carrier-based air wing with an unmatched ability to meet national security objectives across the whole spectrum of U.S. global involvement.(10)

Is the Enthusiasm for Carriers Misplaced?

Notwithstanding that argument, the scenarios in which the use of carriers is considered critical--such as attacks against the Soviet Union--may be unrealistic. Further, carrier-based aircraft may not always be the most cost-effective way to deliver weapons.

The Maritime Strategy, articulated by Adm. James Watkins, chief of naval operations, in 1986, emphasizes what can be called a crisis response--containing a crisis before it erupts into open warfare. Such a response requires that authority be predelegated to naval commanders so that they can carry a fight to the enemy. William W. Kaufmann of the Brookings Institution noted,

> Senior officers should know from experience that in an era shadowed by the threat of nuclear exchanges, even secretaries of defense are more likely to want to test gingerly the cold waters of contemporary warfare than to plunge intrepidly into their depths. Yet the Maritime Strategy calls for precisely that kind of a plunge.(11)

Nor are the costs of using carriers to project air power always assessed realistically. Each carrier is protected by an escort fleet, which consists of several cruisers and destroyers and often an attack submarine. Fleet oilers follow along, as do ships that replenish the jet fuel and ordnance of the air wing. Defense analyst Edward N. Luttwak estimated that more than $6 billion worth of ships as well as salaries, benefits, and pensions for 8,000 people are needed to keep a carrier-based air wing of 90 planes at sea.(12) Although the cost of maintaining a land-based tactical air wing of 100 planes and manning its base also exceeds $6 billion, in most cases additional planes can be stationed on a land base if necessary.

Moreover, protection beyond that provided by surface ships is required. Of the 90 planes in an air wing, the following serve to protect the carrier: 24 F-14s, 4 radar- equipped E-2Cs, 10 antisubmarine S-3s, and 6 antisubmarine SH-34 helicopters (which serve to protect the convoy as well). F-14s and E-2Cs can also support offensive missions, by tracking and destroying enemy fighters, but they are not readily available for the land attacks that are envisioned in power projection scenarios. F-18s are multipurpose aircraft; because they are used in both fighter and attack roles, they can't be counted on to be available for the latter. Only 34 planes-- 10 of the medium-weight A-6s and 24 of the lighter A-7s, or approximately 31 percent of a carrier's aircraft complement-- can be used in offensive missions.(13)

In short, the burden of defending carriers has outstripped the offensive air power provided by carriers, especially in the past few decades. During World War II carriers were almost entirely oriented toward offensive air power. Their decks were crowded with dive-bombers, torpedo-bombers, and fighters (which also dropped bombs). Even 30 years ago the aircraft complement that could be launched from the deck of a single carrier was more powerful than the complete air forces of most countries. But 50-odd aircraft (including F-14s and E-2Cs) may very well be no match for the fighter strength of countries in the regions most likely to be combat zones for U.S. carriers-- the Middle East, the Far East, South Asia, and, of course, the Warsaw Pact sphere. For example, Syria has 14 squadrons of fighters (302 fighters in all); Iraq, 16 squadrons (255 fighters); and India, 13 squadrons (275 fighters). The Soviet Union has 2,300 fighters in its air defense forces alone.(14)

The Carrier as a Paper Tiger

Ironically, using carriers to assert power can undermine the credibility that the United States seeks to foster by doing so. As Luttwak noted in 1985,

The diminishing value of carrier air power has been masked in recent years by political malpractice. Presidents unwilling to actually use force, but equally unwilling to admit impotence, have developed the habit of sending aircraft-carrier task forces to regions in crisis where American interests are in danger. The carriers go off, and the mighty armada is duly filmed in distant waters for the benefit of the nightly television news. The President, it seems, has acted. But the crisis continues to unfold just as before, and the natives do as they want with our interests in need of protection, quite unafraid of those 34 attack aircraft.

Nothing of value is therefore achieved; but the aircraft carriers and all their escorts are kept on station day after day, for weeks or months. Actually, there is one significant result from this parody of gunboat diplomacy; next time, upon the occasion of the next crisis, the sending of the aircraft carriers will intimidate even less. Of course, the maneuver could work--but only if the rule of gunboat diplomacy were strictly followed: if the natives refuse to behave themselves, the gunboats must open fire, if only to preserve their value for the next occasion. But that is not a rule likely to be obeyed when the whole point of sending out the carriers in the first place is not to act, but rather to avoid having to act. Nevertheless, in February of the year following each such maneuver, when the Secretary of the Navy presents his statement to Congress, he will stress how much the carriers were "used" during the previous year and note their great utility for "crisis management."(15)

Some analysts maintain that the events of recent years invalidate Luttwak's argument and that the carrier strikes in Lebanon, Libya, and Grenada demonstrate the utility of carriers. However, those incidents and similar ones can be seen as validating Luttwak's argument. The use of carriers against hostile factions in Lebanon failed to secure Washington's objective of a pro-American regime able to control the entire country. Likewise, in 1980 the United States was unable to rescue American hostages in Iran despite the involvement of the USS Coral Sea and the USS Nimitz.

The Carrier as a White Elephant

In an era of fiscal austerity, carrier cutbacks are always viewed as a potential source of savings. Cutbacks are made by failing to replace carriers that have been retired; canceling a carrier once it is in production is almost inconceivable, given the economic and political considerations involved. By the time production begins, hundreds of millions of dollars have already been invested in long-lead procurement costs. That commitment, along with the pressure generated by legislators anxious to preserve jobs for their constituents, is a virtually irresistible force.

In March 1989 the Congressional Budget Office concluded that if the defense budget experienced either no growth or a real decline of 2 percent a year for the next five years and the military remained determined to carry out its modernization program, substantial reductions in the number of major combat units in each service's active forces would be called for. Under the CBO's scenario, four carrier battle groups would be taken out of service by 1994.(16)

Calculations of the cost of a carrier battle group can vary widely because a number of methodologies can be used.(17) Moreover, it is impossible to specify the composition of such a group with certainty because it may very well differ in wartime and peacetime, and the navy's plans are subject to change. After all, as Lehman observed, a carrier battle group can be almost anything that includes a carrier. Thus, the navy and the Department of Defense--along with the Congressional Research Service, which has extrapolated from their data--have focused on projecting the cost of a national, or representative, single-carrier battle group. (See Table 1.)

The Weaknesses of a Carrier-based Strategy

Aircraft Shortfalls

A crucial limitation of carriers involves their primary reason for existence: to transport large numbers of aircraft. If the navy ever achieved its goal of 15 carriers, there would be a real possibility that it would have too few aircraft for those carriers. A 1987 CBO study found that the navy had not bought enough aircraft to meet its stated requirements and that the purchases planned would not eliminate the short- fall in aircraft--the difference between the navy's stated requirements and its inventories. The CBO estimated that the shortfall would increase from 110 aircraft in 1987 to 176 aircraft in 1994.

Indeed, the shortfall could become much larger by 1994. If the navy could not extend the service lives of its aircraft, the 1994 shortfall might be 600 planes--enough to fill six carriers.(18) Even though the navy can exercise certain options in an emergency, such as using Marine Corps F/A-18, AV-8B, and A-4 squadrons, its aircraft shortfall is likely to continue.

Furthermore, the navy plans to begin procuring two new planes in the 1990s: the A-12, formerly known as the advanced tactical aircraft, and a variant of the U.S. Air Force's advanced tactical fighter. The new planes are intended to replace the A-6 attack aircraft and the F-14 fighter/interceptor, and increases in the real costs of attack and fighter aircraft from one generation to the next have ranged upward from 150 percent. However, the navy's projections of the new planes' cost increases range from 0 to 60 percent. Significant shortfalls--and pressure for increased funding-- would occur if the costs increased according to historical patterns. Under some conditions the navy might be able to afford only half as many planes as it has said it requires.

Insufficient Logistical Support

Existing defense commitments of the United States oblige the navy to conduct operations far from friendly ports. Because carrier battle groups can be replenished at sea, they do not require access to land-based supply depots--a major advantage, their supporters claim, especially in wartime.

Table 1

Costs of a National Aircraft Carrier Battle Group for the 1990's (In Millions of Constant Fiscal Year 1988 Dollars, Rounded to the nearest Million)

(Table Omitted)

Because surface ships have limited storage space for fuel, ammunition, food, and other supplies, however, the navy's ability to sustain wartime operations is critically dependent on regular resupply at sea. Without enough replenishment vessels, it is nearly impossible for the navy to carry out essential wartime missions--protecting sea-lanes of communication, striking sea- and land-based targets, and transporting marines to the sites of amphibious assaults. Thus, replenishment ships have some of the same vulnerabilities as overseas land bases. In short, it can be extremely costly and difficult to have supplies delivered overseas regardless of the method of delivery.

During wartime, merchant ships would transport supplies from the United States to the American naval bases closest to the fighting forces. The forward bases at Subic Bay in the Philippines would handle supplies en route to forces in the Pacific or Indian Ocean. But future access to Subic Bay--and other sites of U.S. bases--cannot be assumed.

Since 1987 the constitution of the Philippines has contained the declaration that "freedom from nuclear weapons in its territory" is "consistent with the national interest."(19) A bill introduced in the Philippine senate in May 1988 would have banned not only nuclear weapons but ships and aircraft that carried such weapons. The issue was tabled by an October 1988 memorandum of agreement between the Philippines and the United States, but it may reemerge. Despite strong U.S. support for the Corazon Aquino government, nationalistic and anti-American sentiment runs high. The Philippine government is obliged to honor the current base-rights agreement until September 1991, when it expires, but has not promised to conclude a new agreement. Thus, there is no guarantee that the United States could use bases in the Philippines for any purpose after that time.

More important, the navy does not have as many combat logistics force vessels as it believes are needed to carry out resupply operations. It currently has 56 CLF ships, but its stated requirement is 65. Furthermore, the navy's estimate of the number of ships required, and hence its estimates of future shortfalls, may be low. The navy assumes that CLF ships would be provided for the battle groups around aircraft carriers, but it fails to acknowledge that CLF ships would be provided neither for the battle groups around its four battleships, which would probably be operated independently of aircraft carriers, nor for the amphibious ships that would transport marines. As many as 93 CLF ships might be needed to resupply vessels of all three kinds.(20)

Inadequate Survivability

Whether carriers are used in direct combat with the Soviet Union or in power projection missions in Third World countries, their utility is partly dependent on their invulnerability. The current strategy for defending a carrier battle group against an enemy attack is a layered, or in-depth, defense; escorts and defending aircraft would be arrayed in rings around the carriers.

Enemy aircraft and cruise missiles would first be engaged in an "outer air battle" by U.S. fighter planes. Any surviving attack forces would be engaged by U.S. cruisers and destroyers equipped with Aegis antiair-warfare defense systems. Last- ditch protection would come from point-defense weapon systems such as the Sea Sparrow missile and the Phalanx, a radar- directed Gatling gun.

Similarly, attacking submarines would have to penetrate an outer screen of U.S. antisubmarine-warfare destroyers and carrier-based aircraft. An inner screen of destroyers equipped with active sonars and helicopters would intercept any surviving enemy submarines that tried to close with the carriers. Thus, a battle group would be protected through the attrition of attacking forces.

The success of that strategy, however, could be undermined by the limitations of carrier-based planes and the weapons they launch. The F-14, for example, has a well-deserved reputation as a formidable aircraft, but the probability that on a one-for-one basis it could defeat any fighter plane in any other nation's arsenal is of scant reassurance in light of the prospect of combat against the Soviets, whose fighter planes would outnumber U.S. carrier-based aircraft by between 6

and 7 to 1. Furthermore, the F-14 has dual missions--waging air-to-air combat against other fighters and defending a ship against bombers and the antiship cruise missiles they carry. If an F-14 was equipped entirely or mostly with long-range Phoenix missiles for its mission of shooting down bombers and antiship cruise missiles, it would lose all or most of its capacity for short- and medium-range missiles and hence all or most of its attack capability.

Scott Shuger, a former U.S. naval officer, outlined a depressing scenario:

> Suppose we are in the Pacific, where Soviet missiles pose an enormous threat to our carriers. And suppose that we have three carriers deployed there. Further suppose that all 60 of the F-14s are "mission-capable" and each is fully loaded with six Phoenix missiles. On the best estimates available, the Soviets have at least 350-400 antiship cruise missiles launchable from the bombers of their Pacific fleet alone. That means it's not unlikely that a few air- launched cruise missiles will score nuclear hits on carriers in such an all-out scenario even if every navy F-14 pilot has a perfect day.

> There are some features of the situation that make it hard to accept even this optimis- tic an outcome. First, I have never witnessed or heard of an F-14 squadron with all its planes "up" at once. Second, one of those carriers deployed in the Pacific Fleet is likely to be the Midway, which, due to its smaller flight-deck and hangar, doesn't have any F-14s. Third, it's more than a little reasonable to expect that in any such scenario the Soviets will also be shooting at our carriers with sub- launched and surface-launched antiship missiles, not just those from bombers. And fourth, and perhaps most relevant to any discussion of the budget, the Phoenix missile is so expensive-- costing $1 million apiece--that carrier air wings don't carry enough of them to outfit each of their F-14s with six.(21)

Weapons Systems of Questionable Utility

The Phoenix. Shuger may have understated the problem. Whether the Phoenix missile system would perform as advertised is questionable. The Phoenix has long been plagued by design and mechanical defects.(22) On several occasions the navy has refused to accept Phoenix missiles from their manufacturer, Hughes Aircraft Company, because of their marginal workmanship. At one point the navy was forced to banish nearly $500 million worth of Phoenix missiles to storage bunkers because of a defective safety and arming device.(23)

Even if Phoenix missiles were consistently free of defects, they would still have several serious disadvantages. Radar-guided missiles such as the Phoenix emit powerful electronic waves that enemy weapons can home in on, a feature that makes targets out of the ships, planes, and artillery units that fire those missiles.

Furthermore, the chief rationale for the use of the Phoenix is that for every radar-guided missile fired, there is a resulting hit, or, in military parlance, that the probability of kill is 100 percent. However, that is not the case. The Phoenix is one of the missiles that have an active form of guidance; a radar pumps out energy to produce an echo that reveals the location of a target. Other missiles, including the Sparrow, have a semiactive form of guidance. Still others, including the Sidewinder, operate by passive guidance, homing in on energy radiated by a target. The Sidewinder is the kind of weapon that "listens," while the Phoenix and the Sparrow are "talkers." The combat record seems to show that listeners not only are less expensive but perform better.(24)

Thomas Amlie, a former technical director of the navy's research laboratory in China Lake, California, noted that the present tactic for U.S. fighter aircraft is to search for enemy aircraft with airborne interception radars and shoot radar-guided missiles at them. However, Amlie argued, that tactic poses two problems:

1. AI radars that operate continually could attract highly lethal ARMs [antiradiation missiles]. The radars aboard all modern U.S. fighter aircraft (F-14, -15, -16, and -18) are sufficiently close in frequency so that one model of an air-to-air or surface-to-air ARM could be used against all. If an adversary deployed such ARMs, our pilots would either have to turn off their radars or suffer losses.

2. Radar-guided air-to-air missiles are expensive (up to $2 million each) and not particularly reliable, having demonstrated a probability of kill per shot of approximately 10 percent in the Vietnam War.(25)

The Phoenix has other disadvantages as well. The navy's F-14 fighter was designed to keep a powerful radar and six long-range missiles aloft. The combined weight of a radar and six Phoenix missiles is over 7,000 pounds. As jet fighters increase in weight, their cost skyrockets and, consequently, their annual production plummets. Moreover, the maneuver- ability they need for dogfighting decreases.

Thus, the use of the Phoenix leaves an F-14 pilot with the worst of both possible worlds. It reduces his ability to shoot down enemy bombers and cruise missiles as well as his ability to engage in air-to-air combat.

The Aegis. After the F-14s in the outer screen, Aegis- equipped cruisers and destroyers are the main line of defense against an enemy air attack. But the Aegis system, a combination of radars, computers, launchers, and missiles, has some of the same disadvantages as the Phoenix. When its powerful radars are transmitting signals, it is vulnerable to radar-homing weapons (and countermeasures such as jamming). A family of Soviet missiles is designed to exploit that beacon effect; the AS-6 Kingfish missile, for example, can attack from either low or high altitude, and the seeker in its nose can be set to home in on transmitting American radars. Carrier supporters argue that to minimize the vulnerability of the Aegis, its radars should be kept off. However, that would defeat the purpose of the system.

Furthermore, there are indications that the Aegis, like the Phoenix, might not perform as advertised. In 1988 the General Accounting Office reported that the navy had tested the Aegis under unrealistically favorable conditions and had stamped the test secret when the results proved to be poor,(26) and the Aegis has been known to make serious operational mistakes.

The 1988 incident in which the USS Vincennes shot down an Iranian passenger jet is the best-known but not the only case of an Aegis malfunction. In 1983 a U.S. destroyer, the Tatnall, was off the coast of Lebanon when it spotted a small Cessna-type airplane flying toward it. A nearby U.S. cruiser equipped with an Aegis system, the Ticonderoga, repeatedly failed to spot the plane.(27) Earlier that year the Ticonderoga had undergone an operational test in which it missed 11 out of 15 targets because of computer and crew errors.(28) In 1986 another Aegis-equipped U.S. cruiser, the Yorktown, apparently mistook a low cloud over the Gulf of Sidra for a missile attack boat and tried to destroy it with two antiship missiles.(29)

The Phalanx. The Phalanx, a radar-aimed Gatling gun, is supposed to be one of last-ditch defenses against air attack. But it may not be able to stop sea-skimming missiles like the Exocet that hit the USS Stark in the Persian Gulf in 1987. Critics of carrier battle groups have warned that the Phalanx too has not been tested realistically and that even if it located attacking missiles, its shells might not be heavy enough to destroy them.(30) A 1988 GAO report found that tests of the Phalanx had not accounted for the countermeasures and multiple threats from other weapons likely to occur in combat.(31)

Moreover, a carrier doesn't have to be sunk to be put out of action; that can be accomplished by blowing holes in the runways or destroying the catapults that launch the aircraft. The navy claims that doing the latter is much harder than it seems. It often cites a 1969 incident in which several 500-pound bombs sitting on the flight deck of the USS Enterprise went off, noting that the carrier could have resumed flight operations in a few hours. But bombs stacked on a deck are much less destructive than a single armor-piercing warhead or antiship missile hitting a deck at the speed of sound or faster. The damage done by such a hit could easily require shipyard repair, which would take a carrier out of operation for weeks or even months.

Vulnerability to Submarine Attacks

In addition to the air threat, carrier battle groups face increased danger from enemy submarines. Soviet advances in submarine quieting could lead to a radically different naval environment. If quieter Soviet submarines are introduced, U.S. attack submarines are likely to become far less effective in what has been one of their major missions. Conversely, because they will be so much harder to defend against, Soviet attack submarines are likely to become far more effective in operations against U.S. surface ships (merchant as well as naval).

Moreover, as a recent congressional report notes,

Not only are the Soviets finally beginning to build quiet submarines such as the Akula class, but

significant innovation is taking place in some Italian, German, and Swedish designs for non-nuclear submarines. . . . Being the product of foreign technology, such submarines could well become available to third-world nations in the next decade. This is a matter of special concern in that our carrier battle groups often operate near--and from time to time in the recent past, even against--such nations. That raises the possibility of small but radical powers being able to threaten the capital ships of the U.S. Navy.(32)

The Fallacies of the Maritime Strategy

Although the Maritime Strategy is still evolving, one of its original purposes was to ensure that the U.S. Navy would play a greater role in the event of a European war. A basic tenet of the strategy is that carrier strike forces, submarines, and Marine Corps expeditionary forces would attack Soviet naval forces as close to Soviet bases as possible and destroy the attack and ballistic submarines at the outset of a war. Thus, the Maritime Strategy assumes that the defense of Europe is a critical obligation of the United States--an increasingly debatable assumption. Moreover, as defense analyst William Lind observes,

> Unlimited commitment to the Continent is the opposite of a maritime strategy; it is the essence of a continental strategy. A maritime power that risks its continued national survival in a continental showdown has adopted a continental strategy and voluntarily surrendered the benefit of its overseas position. In effect, it relegates itself to being another European land power. In the light of this classical definition of maritime strategy, it is clear that what the U.S. Navy has been calling its maritime strategy is, indeed, no such thing. It is merely the naval component of the continental strategy that the United States has followed since the end of World War II.(33)

Although the Maritime Strategy encompasses various missions, it is a carrier-based strategy, and yet the mission that most directly involves carriers is their use in a land campaign against the Warsaw Pact. Given that a relatively small percentage of an air wing could be used for an attack, it is difficult to see what advantage sea-based aircraft would have over land-based aircraft in such a mission. Indeed, Kaufmann argued that the Maritime Strategy

> seems to smack more of nostalgia than of reality. Perhaps unwittingly, its authors appear to have borrowed from the naval campaigns in the Pacific during World War II and Winston Churchill's pleas for attacks on the "soft underbelly" of Europe without ever asking whether the Soviet Union would lend itself to the same treatment as Japan and Germany, or questioning whether resources are likely to be at all commensurate with these objectives.(34)

The Maritime Strategy can be viewed as an implicit acknowledgment that aircraft carriers are not essential to the navy's traditional post-World War II missions, peacetime patrol and crisis management. The navy had been able to cite ample evidence that of all the instruments at their disposal, presidents prefer aircraft carriers. But it had not been able to demonstrate that carriers have a significant impact on the outcome of peacetime crises. Thus, it was natural for the navy to invoke a different mission--an attack on Warsaw Pact forces--to justify the use of carriers, especially the new large-deck carriers.

Official Rationales and Bureaucratic Interests

The Maritime Strategy can also be viewed as the latest salvo from a service trying to justify its role and its force structure. World War II demonstrated that the navy could use ship-based aircraft to project power ashore. Within 20 years after the end of the war the navy had adopted power projection by means of an air offense as its primary mission and had assigned that mission to what it considered its premier ship, the aircraft carrier, and its air wing. Protecting the sea-lanes of communication, which calls for a less sophisticated navy than controlling the areas of the sea needed for power projection, had been deemphasized.

Those decisions were not based entirely on the lessons of combat. The submariners had as good a case as the aviators or any other navy group if the matter of dominance in the post-war navy was going to be decided solely on the basis of comparative war records. Admiral Raymond A. Spruance, one of the most renowned carrier task force commanders in the Pacific (although not himself an aviator), is reported by one reputable navy historian to have made the flat statement: "The submarine beat Japan."(35)

In fact, contrary to the assertions of navy apologists, the size, composition, roles, and missions of the navy have never been determined in a political vacuum or by means of an orderly process in which strategy follows from national objectives, naval strategy from overall military strategy, and naval forces from naval strategy. Indeed, as one historian emphasizes, such decisions have always occurred in a real world in which the relationships are much more complicated and in which naval policy is both a product of and a reaction to the competition, interaction, and ambiguities of broader conceptual, technological, fiscal, political, and organizational factors.(36)

Many people still recall the ferocious debate that erupted in 1949 when Secretary of Defense Louis Johnson canceled the construction of the navy's first supercarrier in favor of the air force's B-36 bomber. The use of supercarriers was viewed by the navy as a guarantee of institutional survival and by the air force as a threat to its monopoly of atomic delivery. Because Johnson was committed to economy and President Harry S Truman had insisted that the U.S. defense budget be kept small, the determining factor was the high cost of the carriers.

Unlike preceding administrations, the Reagan administration endorsed a strategy that stressed simultaneous, rather than sequential, naval operations, particularly in wartime scenarios involving U.S. forces deployed around the perimeter of the Soviet Union. That approach, which the navy had demanded, served as a rationale for additional carrier battle groups. But in 1987 Tom Stefanick noted that "the chief of naval operations . . . remains guarded on the prospect of truly simultaneous operations on the Soviet periphery and believes the U.S. Navy 'may have to sequence [its] operations among theaters.'"(37) Thus, a key assumption of the Maritime Strategy may be incorrect.

A particularly troubling aspect of the Maritime Strategy is the goal of advancing as far as possible in the event of a European war by sending aircraft carriers into the Norwegian Sea.(38) The problem is that the most valuable and capable U.S. ships would be pitted against the densest concentration of Soviet naval forces. The Soviets could send submarines, surface ships, and aircraft on repeated sorties against the U.S. forward-deployed ships, which would be far from naval bases and thus highly dependent on replenishment at sea for fuel and ammunition. The Soviet forces would not have that disadvantage.

Moreover, even the most valuable and capable weapon systems can be ill used, and carriers have proved to be no exception. The navy's bombing raid in Lebanon on December 3, 1983, is a case in point. Washington, eager to send Syria a political message, micromanaged the raid, ordering aircraft from the USS Kennedy to attack early in the morning instead of late in the morning as scheduled. The mission was therefore executed after an abrupt briefing and hasty preparations. Some have suggested that the death of Lt. Mark Lange and the capture of Lt. Bobby Goodman were direct results of a flawed strike plan.(39) The incident should serve as a sobering reminder that advanced weaponry is of little use if the military command structure is broken.

Reconsidering a Carrier-based Strategy: The Navy's Options

As noted above, the use of aircraft carriers--especially large-deck carriers such as those in the Nimitz class--may not always be cost-effective. Carriers are extremely expensive, incapable of projecting more than a fairly small amount of offensive power, and vulnerable to hits that could, at the very least, impede flight operations. Even if the United States retained its current global commitments, certain options would be more attractive than continuing to rely on carrier battle groups.

One such option is to adopt wartime strategies that make more use of attack submarines. Today the submarine is the true capital ship, just as the battleship was at the beginning of the century. If America's submarine force was wiped out by the Soviets in the course of a war and much of theirs remained intact, the U.S. surface ships, including carriers, would be confined to port. That is what happened to Argentina's navy after a British submarine sank the Argentine cruiser General Belgrano during the Falklands war, since Argentina could not counter the British submarine threat. Having asserted that one of the characteristics of capital ships is that "their main opponent is each other," Sen. Gary Hart observed,

> Submariners say the opponents they fear are other submarines, antisubmarine aircraft, and surface ships, in that order. . . . What will actually happen in combat is still an open question, since submerged submarines have never been pitted against each other in actual combat. But if the submariners' expectations are correct

--and we have built our whole submarine fleet (except for ballistic missile submarines) in the belief that they are--the submarine's status as the capital ship will be confirmed.(40)

In the increasingly unlikely event of a prolonged war between NATO and Warsaw Pact forces, the United States would have to send in more troops and equipment by means of convoys of ships and prevent the enemy from sinking those ships. Thus, sea control would become critically important. Submarines could be used more effectively than carriers to execute that mission.

Another option is to use sea-launched cruise missiles to give frigates, destroyers, and cruisers the long-range striking power now associated only with aircraft carriers. Improvements in the guidance and targeting systems of cruise missiles over the years have only increased their utility.

Yet another option is the increased use of V/STOL (vertical/short takeoff and landing) technology. In 1978 Norman Polmar, a respected naval analyst, observed that "recalling the effectiveness of aircraft at sea" had led him to believe that the V/STOL aircraft's support ship "could become second in importance to the larger supercarrier in naval operations." According to Polmar, future V/STOL fighter, attack, antisubmarine-warfare, antielectronic-warfare, and reconnaissance aircraft could give the support ship "more versatility and capability than any cruiser or destroyer in the fleet today or on the drawing boards."(41)

Reconsidering America's Global Security Objectives

In addition to exploring the foregoing options and others, U.S. policymakers should reconsider the global geopolitical objectives that the Maritime Strategy is intended to advance. If those objectives change, the need for aircraft carriers will change accordingly. The rationale for building a 15- carrier navy was that the offensive operations against the Soviet Union envisioned by the Maritime Strategy would require a fleet of that size. But both that assumption and the tenets of the Maritime Strategy are increasingly being called into question.(42)

Joshua Epstein, a defense analyst at the Brookings Institution, sought to determine how well 15 carrier battle groups with one carrier apiece would fare in offensive operations against the Soviet Union's northern or Pacific fleet. He concluded that even under best-case assumptions, "a fleet of more than 20 carrier battle groups would be required to execute such operations while also fulfilling assignments in the Mediterranean, the Indian Ocean, and the Atlantic."(43)

Epstein subsequently concluded that 21 carriers would be needed to carry out the Maritime Strategy if the navy could keep 100 percent of its fleet on station in wartime. But "if, perhaps more realistically, one assumes that only 75 percent of the fleet can be kept on station in war, the peacetime inventory needed to keep 21 carriers fighting is 28: 13 more than the 15-carrier fleet and over $340 billion more in 10-year costs."(44)

Even a 28-carrier fleet would not ensure the success of wartime operations involving carriers. The navy's scenarios for those operations are unrealistic. For example, they fail to allow for degradation of carriers' defensive capabilities as hits accumulate, imperfect weather conditions, conflicts between the power projection and air defense missions, and potential changes in the composition of Soviet bomber and submarine forces.

At any rate, a fleet of 28--or even 21--carriers is clearly not in the offing. Even during the early years of the Reagan administration, which were halcyon years for the navy, the number of carriers to be acquired was based on what the United States could afford, not what the navy claimed to need. Given the current political and fiscal realities, and the likelihood that there will be reductions in the number of carriers, it seems only prudent for U.S. policymakers to reject the Maritime Strategy, especially the portion of it that calls for engaging the Soviets in their homeland in the event of a war.

Two additional Nimitz carriers, which would have a total of fewer than 100 offensive aircraft, would be unlikely to make a difference if the United States sought to carry a war directly to the Soviet Union. They would also be unlikely to affect the outcome of Third World contingencies such as the peacetime presence missions that presidents are so fond of. A single carrier can project only a small amount of power, as noted above, but even with a 14- or 15-carrier fleet, assembling a multicarrier battle group in peacetime would strain U.S. resources. And the military environment in

which carriers would have to operate is becoming increasingly hostile. A former carrier commander observed,

> There are a number of areas of the world where large aircraft carriers do not steam. It is not that they cannot go there but simply that it is too risky to expose them in such areas. . . . The station ship carriers are becoming more the "presence pawns" of international politics than the "fighting ladies" we would like them to be.(45)

The navy has shown great creativity in explaining why it needs additional carrier battle groups. Its stated reasons range from the need to maintain its traditional peacetime presence by keeping two carriers in the Mediterranean and three in the western Pacific to the need to allow a president to escalate a war horizontally through an attack on the Soviet Union. However, no law or directive requires that a naval presence be maintained in certain seas and oceans or that five carriers be kept on overseas station. And, as noted above, the addition of a few more carrier battle groups would be unlikely to affect the outcome of an attack on the Soviet Union.

U.S. policymakers should abandon the goal of a 600-ship navy as well as the goal of a 15-carrier fleet, and for various reasons, they are likely to do so. Both goals are holdovers from the Reagan administration, as is the strategy that supposedly dictates them. The navy should be directed to settle for a smaller number of active and reserve ships and strive to achieve a mix of capabilities in which less emphasis is placed on power projection and more on sea control.

Although after World War II the navy downgraded sea control and adopted power projection as its primary mission, protecting the sea-lanes to theaters of war would be critical if U.S. forces had to be resupplied and reinforced overseas. That would be the case in contingencies involving the regions considered most likely to become theaters of war: Europe, Korea, and the Persian Gulf. However, it is doubtful that the Soviets would engage in adventurism in the Persian Gulf, in light of their experiences in Afghanistan and the resilience shown by both sets of combatants in the recent war between Iraq and Iran. It is also doubtful that Korea would become a theater of war (and that the United States should continue to station troops in South Korea in peacetime), given Seoul's increasingly robust defense capabilities.(46)

Furthermore, the United States would not have to go it alone. The other NATO nations have a total of more than 600 seagoing ships, and America's Asian allies could field 200 warships.(47) According to William Kaufmann, European forces could escort 17 large convoys between the United States and the Continent each month, and their 128 submarines could play a significant role in establishing barriers against Soviet attack submarines. In addition, the navies of France, Italy, Spain, and Turkey, in conjunction with the NATO nations' land-based tactical air forces, could substitute for the Sixth Fleet in the Mediterranean.(48) And if U.S. allies, particularly Japan and South Korea, were to increase their defense contributions as a result of the current burden-sharing debates, the United States would have even more opportunities to reduce its naval forces. A substantial fleet of Japanese attack submarines patrolling Pacific chokepoints would be enough to give the Soviets or any other potential Asian aggressors pause.

Finally, sea-lanes all over the world could be protected through area defenses--that is, through the exploitation of geographic features that favor the United States and its allies. For example, the United States could establish barriers between Greenland and Iceland and between Britain and Iceland by mining the intervening waters and having submarines and aircraft patrol them. It could also station land-based aircraft so as to enable them to detect and intercept bombers preparing to attack U.S. and allied naval forces. If those measures were taken and efficient antisubmarine-warfare systems were designed, many of the sea-lanes could be protected without the use of carriers.

A U.S. defense strategy in which land-based aircraft and other non-carrier-based resources were fully utilized would allow the navy to secure the sea-lanes and fulfill its other missions with a fleet of 9 or even fewer carriers. Of course, that estimate is based on the assumption that the United States would continue to honor its current defense commitments, at least rhetorically. But arrangements that were formulated at the dawn of the containment era should be examined in the light of perestroika and a rapidly changing geostrategic environment.

The Maritime Strategy--particularly its power projection component--should also be examined in the light of new military and diplomatic realities. If negotiators succeed in achieving lower levels of NATO and Warsaw Pact conventional forces and lessening the possibility of a successful Soviet attack on Western Europe, the justification for maintaining a large fleet of carriers may well be eliminated. The current distribution and missions of carriers should be

scrutinized as well as we enter a post-cold-war environment.

Carriers in a Post-Cold-War Era

Policymakers cannot and should not base the composition of military forces solely on the capabilities of a potential opponent. They should also take its intentions into account, which, admittedly, is not always easy to do. Yet the crumbling of the Berlin Wall, the collapse of communist regimes throughout Eastern Europe, and the restructuring of the Soviet military (as well as other ramifications of glasnost and perestroika) have made it increasingly evident that the cold war is ending rapidly. In a post-cold-war geostrategic en- vironment, there would be no reason for the navy to have 15 deployable carriers.

Even Department of Defense officials have begun to concede as much. Secretary of Defense Richard Cheney has already reduced the number of deployable carriers from 15 to 14 (not including 1 in overhaul). Of the proposals being circulated by other officials, the most dramatic calls for lowering the number of carriers from 14 to 10.(49) And in a recent study from the Brookings Institution, Kaufmann argued that if the current START (strategic arms reduction talks) and CFE (conventional forces in Europe) negotiations are concluded successfully, as expected, it should be possible to cut the number of carriers to 6 (of which 4 could be put on station in an emergency) by 1999.(50) Maintaining such a level in a post-cold-war era seems entirely reasonable.

Nor should the prospects for earlier reductions be overlooked. Political considerations may prevent Congress from canceling the 2 new carriers that it has already funded, but it should immediately retire the 5 oldest carriers-- including the Midway and the Coral Sea, which are already scheduled for retirement. That would leave the navy with a total of 12 (including 1 in overhaul) carriers and 1 trainer, a level at which it operated during many of the years since World War II. Retiring 5 carriers would also release certain ships in carrier groups for sea control duty and reduce the need for such expensive and unproven weapon systems as the Aegis.

Money that would have been spent on additional carriers could simply be saved, or it could be used to procure more attack submarines and escort ships and develop the technology needed to ensure a sufficient antisubmarine-warfare capability. Certainly other essential naval roles have been neglected in recent years--minesweeping, as recent events in the Persian Gulf demonstrate, is one of them--and more resources could be devoted to them as well.

It is important to remember that the main role assigned to carriers is to project tactical air power. Now that the United States and the Soviet Union are discussing the possibility of orienting their armed forces toward defense, policymakers should strive to determine whether the United States still needs a means of projecting tactical air power and, if so, whether it should be land- or carrier-based. In answering the first question, they should consider whether the incidence of overseas conflicts that would truly impinge on vital American interests is likely to be high enough to warrant a forward deployment capability. In answering the second question, they should assess the costs and benefits of each option in the light of new political and military realities.

Carriers and their battle groups are awesome instruments of war, but they are not juggernauts, as their supporters claim; the amount of offensive power they can wield would be unlikely to affect the outcome of an attack on the Soviet Union. Furthermore, their financial cost is staggering, and their cost to the navy in both resources consumed and other ships not built is considerable. (In the current climate of fiscal austerity, those costs are likely to be ever more keenly felt.) Finally, the strategy they are intended to help implement is seriously flawed.

Carriers have rendered enormous services to the nation and still have a role to perform. But in view of the above considerations, that role does not consist of lingering off the coast of a country deemed hostile for the purpose of signaling that the United States has menacing intentions. Procuring additional large-deck carriers with that purpose in mind would be unwise.

Footnotes

(1) Other U.S. operations in which aircraft carriers figured prominently are the 1975 recovery of the USS Mayaguez in Cambodia, the 1980 attempt to rescue American hostages in Iran, the 1981 downing of Libyan jets, the 1983 Grenada intervention, and the 1986 air strikes against Libya. For descriptions of those operations, see Daniel P. Bolger,

Americans at War: 1975-1986--An Era of Violent Peace (Novato, Calif.: Presidio, 1988). And on January 4, 1989, two Libyan MiG-23 fighters approaching the U.S. carrier Kennedy in the Mediterranean Sea were shot down by two U.S. F-14 fighters. For other accounts of the use of aircraft carriers, see Norman Polmar, Aircraft Carriers (New York: Doubleday, 1969); Clark G. Reynolds, The Fast Carriers (New York: McGraw-Hill, 1968); Edwin P. Hoyt, The Carrier War (New York: Lancer, 1972); George Sullivan, The Supercarriers (New York: Dodd, Mead, 1980); and George C. Wilson, Supercarrier: An Inside Account of Life aboard the World's Most Powerful Ship, the USS John F. Kennedy (New York: Macmillan, 1986).

(2) John F. Lehman, Jr., Command of the Seas: Building the 600-Ship Navy (New York: Charles Scribner's Sons, 1988), pp. 116, 127, 149.

(3) See The Maritime Strategy, supp. to Proceedings (U.S. Naval Institute, Annapolis, Md.), January 1986.

(4) For descriptions of those campaigns, see "World War II: 1940-1945," chap. 16 in Clark G. Reynolds, Command of the Sea: The History and Strategy of Maritime Empires (New York: William Morrow, 1974).

(5) Barry M. Blechman and Stephen S. Kaplan, Force without War: U.S. Armed Forces as a Political Instrument (Washington: Brookings Institution, 1978), p. 38.

(6) Ibid., p. 39.

(7) Ibid., p. 41.

(8) Scott C. Truver, "Where Are the Carriers?" Proceedings, October 1986, p. 63.

(9) John F. Lehman, Jr., Aircraft Carriers: The Real Choices (Beverly Hills, Calif.: Sage, 1978), p. 20.

(10) For a more detailed presentation of this argument, see Truver.

(11) William W. Kaufmann, A Thoroughly Efficient Navy (Washington: Brookings Institution, 1987), p. 16. It is rather ironic that Admiral Watkins supported the Maritime Strategy in 1986. In 1983 he had publicly challenged Secretary Lehman, his superior, by saying that "aircraft carriers should not go charging into waters near the Soviet Union in wartime." Peter Hayes, Lyuba Zarsky, and Walden Bello, American Lake: Nuclear Peril in the Pacific (New York: Viking Penguin, 1986), p. 138.

(12) Edward N. Luttwak, The Pentagon and the Art of War (New York: Simon & Schuster, 1985), pp. 220-21.

(13) The navy has proposed to adopt a standard air wing composed of 20 F-14D Tomcat fighter planes, 20 F/A-18 Hornet fighter/attack planes, 20 A-6 Intruder attack planes, 5 EA-6B Prowler electronic-warfare planes, 5 E-2C Hawkeye airborne early-warning planes, and 6 SH-3 Sea King antisubmarine-warfare helicopters. Caleb Baker, "Navy Plan Proposes Standard Mix of Aircraft on Carriers," Defense News, March 6, 1989, p. 4.

(14) International Institute for Strategic Studies, The Military Balance: 1988-1989 (London: IISS, 1988). Other elements of an air defense force include bombers, antiaircraft artillery, surface-to-air missiles, and radars.

(15) Luttwak, p. 222.

(16) Congressional Budget Office, Effects of a Constrained Budget on U.S. Military Forces (Washington: GPO, March 1989), p. 7.

(17) In 1984 Earl C. Ravenal, a former Pentagon analyst, made the following estimates: A Nimitz-class nuclear carrier would cost $3.8 billion; its complement of aircraft would cost $3 billion. Six escort ships (including an Aegis-equipped cruiser) and a group of attack submarines would cost $4 billion. The cost of replenishment ships and support systems would be $2 billion. The battle group's share of the cost of building and acquiring shore facilities would be $2 billion. And the 30-year life cycle operation and support cost would be $29.6 billion. Those costs add up to $44.4 billion, but

for each carrier deployed forward overseas, two others would have to be kept in the rear--one in reserve and one in overhaul. Thus, the 30-year total cost of keeping a one-carrier battle group forward would be $133 billion. Earl C. Ravenal, Defining Defense: The 1985 Military Budget (Washington: Cato Institute, 1984), pp. 12-13.

(18) Congressional Budget Office, Naval Combat Aircraft: Issues and Options (Washington: GPO, November 1987), p. x. A further consideration is whether the navy will have enough munitions and equipment for its aircraft. In 1984 a congressional subcommittee found that the readiness of the navy's tactical air forces had been overestimated in reports to Congress. The subcommittee noted that recent peacetime carrier operations had been sustained through intense management of available assets, but shortages that are tolerable in peacetime could become critical in a mobilization for hostilities. See U.S. Congress, House Government Operations Committee, Legislation and National Security Subcommittee, Readiness of the Navy's Tactical Air Forces Is Overstated, 98th Cong., 2d sess., March 29, 1984.

(19) Richard F. Grimmett, "Current Issues with the 'Base- Rights' Countries and Their Implications," Congressional Research Service Report for Congress no. 88-726 F, December 5, 1988, p. 12.

(20) Congressional Budget Office, Issues and Options for the Navy's Combat Logistics Force (Washington: GPO, April 1988), pp. x, xi. Ninety-three CLF vessels would be needed if the navy's ships were widely dispersed and most of them were engaged in intensive combat operations, but those conditions are unlikely to occur. Nevertheless, the navy's estimate that 65 CLF ships would be required is probably conservative. Even if ships in the military sealift command's inventory that had not been assigned to underway replenishment missions were available, the number of CLF ships needed would be likely to exceed 65.

(21) Scott Shuger, "The Navy We Need--And the One We Got," Washington Monthly, March 1989, p. 13.

(22) Ann Rumsey, "Phoenix among 4 Missiles Hit by GAO," Defense Week, April 25, 1988, p. 8. See also U.S. General Accounting Office, "Quality Assurance: Concerns about Four Navy Missile Systems," GAO Report no. NSIAD-88-104.

(23) Ralph Vartabedian, "Four Navy Missile Systems Hit by Defects, GAO Says," Los Angeles Times, September 23, 1987, p. 1.

(24) For example, in August 1981 two F-14s scrambled off the deck of the U.S. carrier Nimitz and used heat-seeking Sidewinder missiles to shoot down a Soviet SU-22 flown by Libyans. But in August 1987 a U.S. F-14 flying over the Persian Gulf fired two radar-guided Sparrow missiles at an oncoming U.S. F-4. Both shots missed the plane. David Evans, "High-Tech Weapons Miss Mark on Performance," Chicago Tribune, February 6, 1989, p. 1

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(25) Thomas Amlie, "Radar: Shield or Target?" in More Bucks, Less Bang: How the Pentagon Buys Ineffective Weapons, ed. Dina Rasor (Washington: Fund for Constitutional Government, 1983), p. 203.

(26) John J. Fialka, "GAO Criticizes Testing of Aegis System, Saying the Navy Withheld Poor Results," Wall Street Journal, September 30, 1988, p. 6.

(27) Philip J. Hilts, "Aegis System Has Been Controversial from the Start," Washington Post, July 7, 1988, p. 21.

(28) John J. Fialka, "Two Tests of Navy's New Aegis Cruiser Give Widely Disparate Marks to Ship's Abilities," Wall Street Journal, November 4, 1983, p. 37.

(29) Jim Stewart, "Aegis System Malfunctioned in Battle," Atlanta Constitution, July 7, 1988, p. 1.

(30) Otto Kreisher, "Value of Phalanx Gun System Doubted," San Diego Union, June 11, 1987, p. 1.

(31) Molly Moore, "GAO Questions Frigate's Missile Defenses," Washington Post, February 2, 1989, p. 20.

(32) U.S. Congress, House Armed Services Committee, Advisory Panel on Submarine and Antisubmarine Warfare, Report to the Research and Development Subcommittee and the Seapower and Strategic and Critical Materials Subcommittee, unclassified ed., 101st Cong., 1st sess., March 21, 1989, pp. 3-4.

(33) William Lind, "The Maritime Strategy: 1988," Proceedings, February 1988, p. 56.

(34) Kaufmann, p. 18.

(35) Vincent Davis, Post War Defense Policy and the U.S. Navy, 1943-1946 (Chapel Hill: University of North Carolina Press, 1966), p. 130, cited in Carl H. Builder, The Masks of War: American Military Styles in Strategy and Analysis (Baltimore: Johns Hopkins University Press, 1989), p. 77.

(36) Fletcher Pratt, The Compact History of the United States Navy (New York: Hawthorn Books, 1957), p. 319, cited in Builder, p. 80.

(37) Tom Stefanick, Strategic Antisubmarine Warfare and Naval Strategy (Lexington, Mass.: Lexington Books, 1987), p. 86.

(38) See Robert Kennedy-Minot, U.S. Regional Force Application: The Maritime Strategy and Its Effect on Nordic Stability (Stanford, Calif.: Hoover Institution, 1988).

(39) See Wilson, chaps. 10 and 11.

(40) Gary Hart with William Lind, America Can Win: The Case for Military Reform (Bethesda, Md.: Adler & Adler, 1986), p. 90.

(41) Norman Polmar, "The Case for Sea-based Aviation," in Problems of Sea Power As We approach the Twenty-First Century, ed. James L. George (Washington: American Enterprise Institute, 1978), p. 223.

(42) For detailed assessments of the Maritime Strategy, both pro and con, see Naval Strategy and National Security, ed. Steven E. Miller and Stephen Van Evera (Princeton: Princeton University Press, 1988).

(43) Joshua M. Epstein, The 1987 Defense Budget (Washington: Brookings Institution, 1986), p. 42.

(44) Joshua M. Epstein, The 1988 Defense Budget (Washington: Brookings Institution, 1987), p. 49.

(45) Capt. Gerald O'Rourke, "CVNs Forever! Forever?" Proceedings, July 1982, p. 23.

(46) See Stephen D. Goose, "U.S. Forces in Korea: Assessing a Reduction," in Collective Defense or Strategic Independence? Alternative Strategies for the Future, ed. Ted Galen Carpenter (Lexington, Mass.: Lexington Books, 1989), pp. 85-102.

(47) Kaufmann, p. 71.

(48) Kaufmann, pp. 71-72. In an era of increasing European unity, that prospect merits serious consideration.

(49) Eric Rosenberg, "Carriers in Budgetary Cross Hairs," Defense Week, November 20, 1989, p. 1.

(50) William W. Kaufmann, Glasnost, Perestroika, and U.S. Defense Spending (Washington: Brookings Institution, 1990), p. 51.