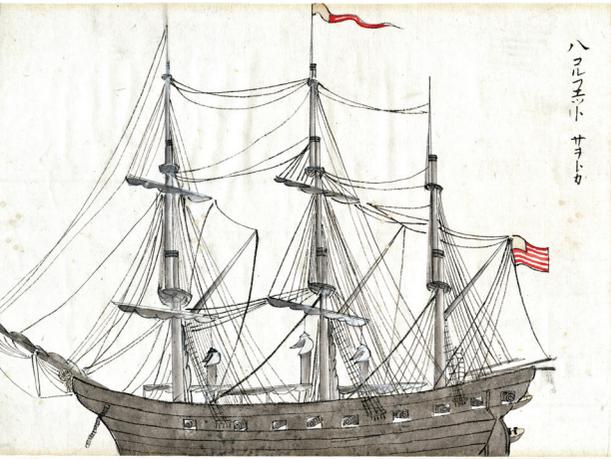


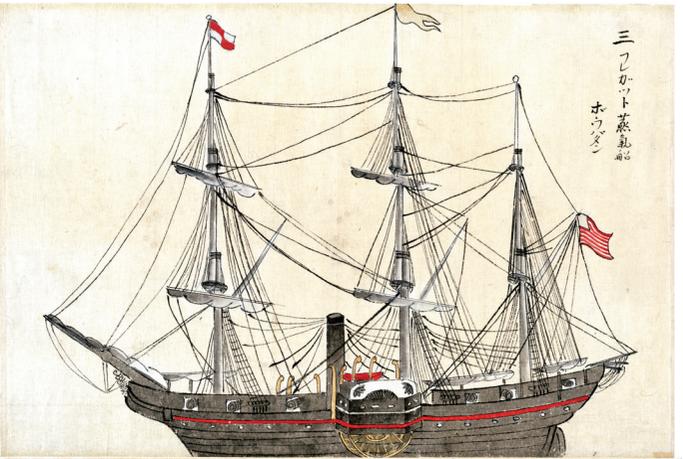
NAVAL WAR COLLEGE REVIEW

Autumn 2010

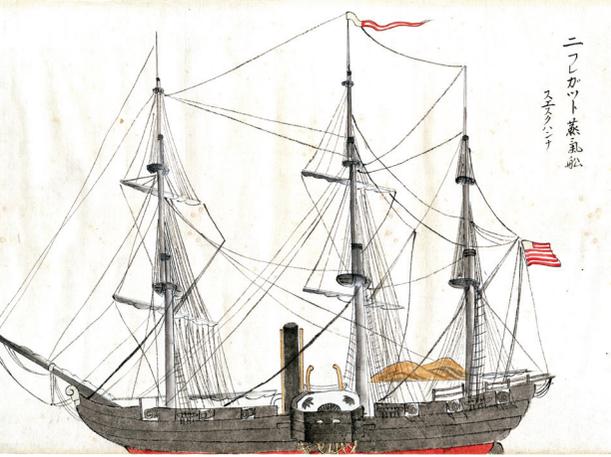
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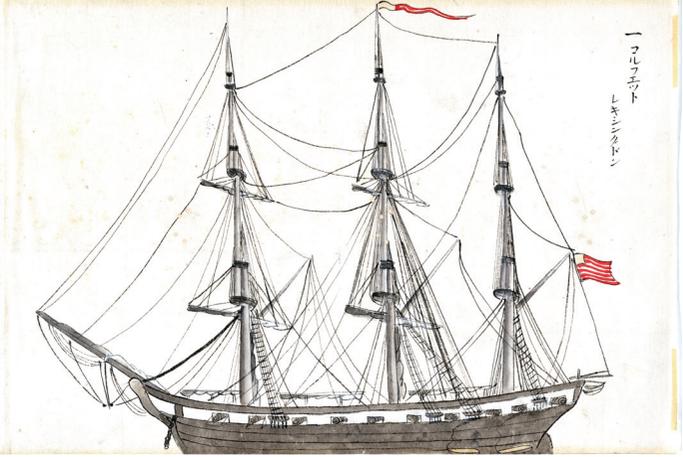
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Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 2010		2. REPORT TYPE		3. DATES COVERED 00-00-2010 to 00-00-2010	
4. TITLE AND SUBTITLE Naval War College Review, Autumn 2010, Volume 63, Number 4				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval War College,,686 Cushing Rd.,Newport,,RI, 02841				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT It is becoming increasingly clear that the prolonged financial crisis in which the United States currently finds itself will not be without significant consequences for the size and shape of American military forces in the coming decades. While the present administration has so far been careful to avoid linkage of the defense budget with the domestic economic situation, it is difficult to believe that this state of affairs is politically sustainable for the indefinite future.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 175	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Cover

Details from the “Black Ship scrolls,” created in Japan soon after the visits of Commodore Matthew Calbraith Perry’s squadron in 1853 and 1854. Digitized copies of the original scrolls, on long-term loan from the Preservation Society of Newport County, Rhode Island, are on display at the Naval War College Museum. They appear in an attractive new exhibit space on the first floor produced by moving the Naval War College Foundation’s Museum Store to an expanded site in the Museum’s first-floor west wing. Shown are USS Saratoga (upper left), USS Powhatan (upper right), USS Susquehanna (lower left), and USS Lexington (lower right). See our “From the Editors” department in this issue for related, exciting developments at Founders Hall. Courtesy Naval War College Museum.

NAVAL WAR COLLEGE REVIEW

Autumn 2010

Volume 63, Number 4



NAVAL WAR COLLEGE PRESS
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Newport, RI 02841-1207

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Naval War College Review
Code 32, Naval War College
686 Cushing Rd., Newport, RI 02841-1207
Fax: 401.841.1071
DSN exchange, all lines: 841
Website: www.usnwc.edu/press
<http://twitter.com/NavalWarCollege>

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The *Naval War College Review* was established in 1948 as a forum for discussion of public policy matters of interest to the maritime services. The thoughts and opinions expressed in this publication are those of the authors and are not necessarily those of the U.S. government, the U.S. Navy Department, or the Naval War College.

The journal is published quarterly. Distribution is limited generally to commands and activities of the U.S. Navy, Marine Corps, and Coast Guard; regular and reserve officers of U.S. services; foreign officers and civilians having a present or previous affiliation with the Naval War College; selected U.S. government officials and agencies; and selected U.S. and international libraries, research centers, publications, and educational institutions.

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Periodicals postage paid at Newport, R.I. POSTMASTERS, send address changes to: *Naval War College Review*, Code 32S, Naval War College, 686 Cushing Rd., Newport, R.I. 02841-1207.

ISSN 0028-1484



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FROM THE EDITORS

It is becoming increasingly clear that the prolonged financial crisis in which the United States currently finds itself will not be without significant consequences for the size and shape of American military forces in the coming decades. While the present administration has so far been careful to avoid linkage of the defense budget with the domestic economic situation, it is difficult to believe that this state of affairs is politically sustainable for the indefinite future. In recent months, the secretary of defense himself has signaled unmistakably that the Pentagon needs to rethink in fundamental ways how it spends public funds and to identify areas of significant savings. Very recently, Secretary Gates for the first time turned his gaze specifically on the U.S. Navy. In a speech in May to the Navy League Sea-Air-Space Expo, reprinted in its entirety at the beginning of this issue, the secretary called attention to the erosion of the U.S. monopoly of precision-strike long-range missiles and the consequent developing threat to our major naval combatants; also, he specifically questioned whether the current carrier force and large-deck amphibious ships will retain their utility for the Navy in relation to their escalating costs. The secretary's words should be carefully pondered by anyone concerned about the future direction of the sea services. In this connection, we also offer our readers a current snapshot of the Navy's long-range budget situation and its implications for Navy shipbuilding by analyst Ronald O'Rourke of the Congressional Budget Office. O'Rourke's paper, "Programs vs. Resources: Some Options for the Navy," was originally presented at a workshop sponsored by the Ruger Chair of National Security Economics at the Naval War College and held in Newport in May of this year.

Any effort to rethink the force structure of the Navy over the coming decades needs to revisit the issue of sea control, especially, though not only, in the context of China's growing antiaccess challenge to the U.S. Pacific Fleet. In "Talking about Sea Control," Robert C. Rubel provides a historically grounded overview of the sea-control mission of naval forces, which he argues has been substantially forgotten by the U.S. Navy since that service's achievement of undisputed maritime dominance following the end of the Cold War. Rubel suggests that the loss of such dominance in the western Pacific today requires a fundamental rethinking of the operational roles of aircraft carriers and other large "high-value

units” and a rededication to the sea-control mission of submarines and smaller surface combatants. Robert Rubel is dean of the Center for Naval Warfare Studies at the Naval War College.

In this issue we continue our focus on allied navies. In “The Canadian Navy and Canada’s Interests in This Maritime Century,” Vice Admiral Dean McFadden, Chief of the Maritime Staff and Commander of the Canadian Navy, sets out a broad vision of the importance of the maritime domain for Canada, arguing that Canada has a continuing and growing interest in the application of naval power in cooperation with the United States and other powers in defense of the global maritime system. A complementary perspective on Canada’s recent contributions to maritime security in the policing of Somali piracy in the Indian Ocean is provided by Christopher Spearin in “A Private Security Solution to Somali Piracy? The U.S. Call for Private Security Engagement and the Implications for Canada.” Spearin, a professor at the Royal Military College of Canada in Toronto, focuses on the controversial issue of the use of private security companies in countering piracy and suggests that Canada may want to consider taking a leading role in resolving the various international legal and regulatory challenges involved in such a move.

The seemingly intractable problem of dealing with the piracy threat off the Horn of Africa is the theme of “Taming the Outlaw Sea,” by Admiral James G. Stavridis and Lieutenant Commander Richard E. LeBron, USN. The authors advocate a comprehensive approach to countering piracy, one that focuses on a broad range of issues including deterring and disrupting piratical activity at sea, capturing pirates and bringing them to justice, developing regional and international agreements to prosecute suspected pirates effectively and punish them humanely and legally when found guilty, enabling Somalia’s Transitional Federal Government to extend and enforce the rule of law, and encouraging the economic development of Somalia over the long term. Countering piracy off the Horn of Africa is an effort that must reflect international will, must focus on building the capacity of Somalia’s Transitional Federal Government and that of neighboring countries, and must be centrally and skillfully led to achieve a holistic effect. Admiral Stavridis is Commander, U.S. European Command, and Supreme Allied Commander, Europe.

The Navy continues to digest the implications of the advent of large numbers of Chinese precision-strike conventional ballistic missiles for the American military posture in the western Pacific. Marshall Hoyler, in “Chinese ‘Antiaccess’ Ballistic Missiles and U.S. Active Defense,” builds on recent work by Naval War College analysts and other observers to present a detailed picture—to the extent this can be done from open sources—of the dimensions of the current Chinese conventional missile threat to U.S. land- and sea-based assets in the western

Pacific and to the ability of American active defenses (principally, the Aegis Ballistic Missile Defense System) to counter them. He concludes that active defenses by themselves will not be sufficient to cope with the likely threat and recommends serious exploration of alternative defensive approaches. Hoyler was until recently a professor in the War Gaming Department of the Naval War College.

Finally, two articles explore the naval past for lessons for today. In “The Most Daring Act of the Age: Principles of Naval Irregular Warfare,” Lieutenant Commander Benjamin Armstrong, USN, discusses the successful American raid leading to the destruction of the captured frigate *Philadelphia* in Tripoli harbor in 1804 as an exemplary illustration of principles of irregular naval warfare that remain valid today. In “Four Lessons That the U.S. Navy Must Learn from the *Dreadnought* Revolution,” Angus K. Ross offers a novel interpretation of the complicated and obscure history of the evolution of British naval strategic thinking in the critical decade leading up to the First World War. Among his lessons learned is the importance of professional military education as a counterweight to the imperatives of bureaucracy and technology. Formerly an officer in the Royal Navy, Angus Ross is a professor in the Joint Military Operations Department of the Naval War College.

NEWPORT PAPER DISTRIBUTION

The budgetary pressures that will begin to affect the Naval War College in the coming fiscal year will make it impossible hereafter to mail free copies of Newport Papers to individual subscribers. Beginning with the next title in the series (number 36, *Defeating the U-boat: Inventing Antisubmarine Warfare*, by Jan S. Breemer, to appear this fall), print copies will be mailed or available free only to a limited number of naval staffs selected by the editor, a small list of historical associations selected by the College’s Ernest J. King Chair of Maritime History, and the College’s leadership. For all other readers, print copies of Newport Paper 36—and future titles, on a case basis—will be available by purchase from the Government Printing Office’s online bookstore, linked from our website. Electronic copies (pdf) of all titles in the series will continue to be posted online on our site. Print copies of earlier titles (Newport Papers 1–35) remain available on request while stocks last.

NEW FROM THE NAVAL WAR COLLEGE PRESS

The eighteenth in our Historical Monograph series—*To Train the Fleet for War: The U.S. Navy Fleet Problems, 1923–1940*, by Albert A. Nofi—will soon be delivered by the printer and available for sale by the Government Printing Office’s online bookstore, at bookstore.gpo.gov/. In this book, which is based especially

on the Naval War College archives, Dr. Nofi, an American military historian, examines in detail each of the U.S. Navy's twenty-one "fleet problems" conducted between World Wars I and II, elucidating the patterns that emerged, finding a range of enduring lessons, and suggesting their applicability for future naval warfare.

THE PRESS MOVES, AND THE MUSEUM RENOVATES

This issue marks our farewell earlier this summer to Founders Hall and the Naval War College Museum, after having occupied since 2003 what had been exhibition space for temporary shows on the second floor. The Museum restored the former West Gallery to its original use just in time for the Wilma Parker Naval Art Show, which opened on 4 August 2010, to run through November. That marked the culmination of a series of dramatic remodelings and renovations at the Museum over the past year. The familiar exhibits on the history of the U.S. Navy in Narragansett Bay and the Torpedo Station remain, in new locations, as do selections from the Museum's impressive ship-model collection. They are joined now by a new "Navy in Art" gallery (on the first floor, next to the relocated Museum Store); by an extensively redecorated second-floor exhibit, lecture, and function space in the Center Gallery; and by new electronic and Web-based media throughout. In addition, exterior repairs to the porches on the east and west ends are about to begin as this issue goes to press. Our editorial offices are now in Pringle Hall (rooms 141 and 143). Our Web and e-mail addresses and telephone and fax numbers remain unchanged.

REMARKS OF SECRETARY OF DEFENSE ROBERT M. GATES

Delivered to the Navy League Sea-Air-Space Expo, Gaylord Convention Center, National Harbor, Maryland, on 3 May 2010

The topic of this year's exposition is "Responding Globally: Engaged at Sea and Ashore." Considering our military's unprecedented level of global engagement—especially the sea services—I cannot think of a better subject.

The pattern of engagement is reflected in a range of activities around the world that would no doubt leave Alfred Thayer Mahan spinning in his grave: building partnership capacity through the Africa Partnership Station in the Gulf of Guinea; training with friends and allies to secure vital shipping lanes in Southeast Asia; digging wells and building schools in Djibouti; leading multinational efforts to counter the scourge of piracy around the Horn of Africa; dispatching hospital ships to treat the poor and destitute; helping with crises like the oil spill along the Gulf Coast; and responding to natural disasters, most recently in Haiti—efforts that demonstrate our service members' incredible compassion and decency.

Then there are the wars. With roughly twenty-five ships—and more than twenty thousand sailors—in the CENTCOM [U.S. Central Command] area of operations, there is no doubt that this is a navy at war. Every time I visit Iraq or Afghanistan, I am struck by the number of sailors on the ground—one of the great unappreciated stories of the last few years. Tens of thousands of sailors have been to theater—including officers commanding provincial reconstruction teams, finance clerks, riverine crews, engineers, the SEALs and the corpsmen, and our "devil docs." These men and women are vital to the mission and helping to ease the strain on our ground forces—and doing so without fail and without complaint.

And then, of course, there is the role of the Marine Corps, whose impact has been a game-changer: first in Anbar Province, key to the turnaround in Iraq, and now in southern Afghanistan, the center of gravity in that war. In March, I had a chance to meet with Marines at the tip of the spear in a town called Now Zad—a

place that had been, for nearly four years, a ghost town under the jackboot of the Taliban. Then came a battalion of Marines, who, after months of hard work and sacrifice, have slowly brought the town back to life—creating a model for operations elsewhere.

For years now, the Corps has been acting as essentially a second land army. As General [James T.] Conway [Commandant, U.S. Marine Corps] has noted, there are young, battle-hardened Marines with multiple combat tours who have spent little time inside of a ship, much less practicing hitting a beach. Their critical work well inland will be necessary for the foreseeable future.

Many of the tasks and roles I've just mentioned would have been unthinkable as recently as a decade ago and are with our sea services to stay. But we must always be mindful of why America built and maintained a Navy, Marine Corps, and Coast Guard in the first place. Indeed, it was an Army general, Ulysses S. Grant, who said that “money expended in a fine navy, not only adds to our security and tends to prevent war in the future, but is very material aid to our commerce with foreign nations in the meantime.” In fact, this country learned early on, after years of being bullied and blackmailed on the high seas, that it must be able to protect trade routes, project power, deter potential adversaries, and, if necessary, strike them on the oceans, in their ports, or on their shores. We cannot allow these core capabilities and skill sets to atrophy through distraction or neglect.

This is even more important considering that, with America's ground forces dedicated to the campaigns in the Middle East and Central Asia, the weight of America's deterrent and strategic military strength has shifted to our air and naval forces. So in the next few minutes I'd like to offer some perspective on the challenges facing America's sea services as they strive to field and fund the capabilities our nation will need for the decades ahead—focusing on three central questions:

- What kind of qualities should the maritime services encourage in a new generation of leaders?
- What new capabilities will our Navy–Marine Corps team need, and which ones will potentially be made obsolete?
- How can we be sure that our procurement plans are cost-effective, efficient, and realistic?

As a starting point, given the complex security challenges America faces around the globe, the future of our maritime services will ultimately depend less on the quality of their hardware than on the quality of their leaders. I addressed

this question to the midshipmen at the Naval Academy a month ago by citing some of the towering figures from our sea services. Leaders like:

- Lieutenant General Victor Krulak, the visionary behind the Higgins boat who later contributed greatly to our understanding of counterinsurgency in Vietnam;
- Admiral Chester Nimitz, who as a young officer helped develop the circular formation for carrier escorts, used to great effect in World War II and for decades afterward;
- Admiral Hyman Rickover, whose genius and persistence overcame the conventional wisdom that nuclear reactors were too bulky and dangerous to put on submarines; and
- Finally, Roy Boehm, who after World War II designed and led a special new commando unit that became the Navy SEALs. Boehm's legacy is at work every night, tracking down our country's most lethal enemies in Afghanistan and elsewhere around the world.

The reason I wanted to talk to midshipmen about these leaders—and why I am citing them today—is not that they were always right. Nor that they should be emulated in every way—to put it mildly. What is compelling about each of these leaders is that they had the vision and insight to see that the world and technology were changing, they understood the implications of these shifts, and then they pressed ahead in the face of often fierce institutional resistance.

The qualities these legends embody have been important and decisive throughout the history of warfare. But I would contend that they are more necessary than ever in the first decades of this century, given the pace of technological changes, and the agile and adaptive nature of our most likely and lethal adversaries—from modern militaries using asymmetric tactics to terrorist groups with advanced weapons. Our officers will lead an American military that must have the maximum flexibility to deal with the widest possible range of scenarios and adversaries.

Second, in order to be successful, the sea services must have the right makeup and capabilities. Surveying our current force, it is useful to start with some perspective—especially since the Navy, of all the services, has been the most consistently concerned about its size, as measured by the total number of ships in the fleet.

It is important to remember that, as much as the U.S. battle fleet has shrunk since the end of the Cold War, the rest of the world's navies have shrunk even more. So, in relative terms, the U.S. Navy is as strong as it has ever been.

In assessing risks and requirements even in light of an expanding array of global missions and responsibilities—everything from shows of presence to humanitarian relief—some context is useful:

- The U.S. operates eleven large carriers, all nuclear powered. In terms of size and striking power, no other country has even one comparable ship.
- The U.S. Navy has ten large-deck amphibious ships that can operate as sea bases for helicopters and vertical-takeoff jets. No other navy has more than three, and all of those navies belong to allies or friends. Our Navy can carry twice as many aircraft at sea as the rest of the world combined.
- The U.S. has fifty-seven nuclear-powered attack and cruise missile submarines—again, more than the rest of the world combined.
- Seventy-nine Aegis-equipped combatants carry roughly eight thousand vertical-launch missile cells. In terms of total missile firepower, the U.S. arguably outmatches the next twenty largest navies.
- All told, the displacement of the U.S. battle fleet—a proxy for overall fleet capabilities—exceeds, by one recent estimate, at least the next thirteen navies combined, of which eleven are our allies or partners.
- And, at 202,000 strong, the U.S. Marine Corps is the largest military force of its kind—exceeding the size of most world armies.

Still, even as the United States stands unsurpassed on, above, and below the high seas, we have to prepare for the future. As in previous eras, new centers of power—with new wealth, military strength, and ambitions on the world stage—are altering the strategic landscape. If history shows anything, it's that we cannot predict or guarantee the course of a nation decades from now—the time it takes to develop and build the next generation of ships, a process that has been likened to building a medieval cathedral: brick by brick, window by window, over decades.

Our Navy has to be designed for new challenges, new technologies, and new missions—because another one of history's hard lessons is that, when it comes to military capabilities, those who fail to adapt often fail to survive. In World War II, both the American and British navies were surprised by the speed with which naval airpower made battleships obsolete. Because of two decades of testing and operations, however, both were well prepared to shift to carrier operations. We have to consider whether a similar revolution at sea is under way today.

Potential adversaries are well aware of our overwhelming conventional advantage—which is why, despite significant naval modernization programs under way in some countries, no one intends to bankrupt themselves by

challenging the U.S. to a shipbuilding competition akin to the dreadnought race prior to World War I.

Instead, potential adversaries are investing in weapons designed to neutralize U.S. advantages—to deny our military freedom of action while potentially threatening America’s primary means of projecting power: our bases, sea and air assets, and the networks that support them.

We know other nations are working on asymmetric ways to thwart the reach and striking power of the U.S. battle fleet. At the low end, Hezbollah, a nonstate actor, used antiship missiles against Israel’s navy in 2006. And Iran is combining ballistic and cruise missiles, antiship missiles, mines, and swarming speedboats in order to challenge our naval power in that region.

At the higher end of the access-denial spectrum, the virtual monopoly the U.S. has enjoyed with precision-guided weapons is eroding—especially with long-range, accurate antiship cruise and ballistic missiles that can potentially strike from over the horizon. This is a particular concern with aircraft carriers and other large, multibillion-dollar, blue-water surface combatants, where, for example, a *Ford*-class carrier plus its full complement of the latest aircraft would represent potentially \$15 to \$20 billion worth of hardware at risk. The U.S. will also face increasingly sophisticated underwater combat systems—including numbers of stealthy subs—all of which could end the operational sanctuary our Navy has enjoyed in the western Pacific for the better part of six decades.

One part of the way ahead is through more innovative strategies and joint approaches. The agreement by the Navy and Air Force to work together on an Air-Sea Battle concept is an encouraging development, which has the potential to do for America’s military deterrent power at the beginning of the twenty-first century what AirLand Battle did near the end of the twentieth.

But we must also rethink what and how we buy—to shift investments toward systems that provide the ability to see and strike deep along the full spectrum of conflict. This means, among other things:

- Extending the range at which U.S. naval forces can fight, refuel, and strike, with more resources devoted to long-range unmanned aircraft and intelligence, surveillance, and reconnaissance capabilities.
- New sea-based missile defenses.
- A submarine force with expanded roles that is prepared to conduct more missions deep inside an enemy’s battle network. We will also have to increase submarine strike capability and look at smaller and unmanned underwater platforms.

These changes are occurring even as the Navy is called on to do more missions that fall on the low end of the conflict spectrum—a requirement that will not go away, as the new naval operational concept reflects. Whether the mission is counterinsurgency, piracy, or security assistance, among others, new missions have required new ways of thinking about the portfolio of weapons we buy. In particular, the Navy will need numbers, speed, and the ability to operate in shallow water, especially as the nature of war in the twenty-first century pushes us toward smaller, more diffuse weapons and units that increasingly rely on a series of networks to wage war. As we learned last year, you don't necessarily need a billion-dollar guided-missile destroyer to chase down and deal with a bunch of teenage pirates wielding AK-47s and RPGs [rocket-propelled grenades].

The Navy has responded with investments in more special warfare capabilities, small patrol coastal vessels, a riverine squadron, and joint high-speed vessels. Last year's budget accelerated the buy of the Littoral Combat Ship [LCS], which, despite its development problems, is a versatile ship that can be produced in quantity and go places that are either too shallow or too dangerous for the Navy's big, blue-water surface combatants. The new approach to LCS procurement and competition should provide an affordable, scalable, and sustainable path to producing the quantity of ships we need.

There has been some talk that the rebalancing effort of the last couple of years—where resources and institutional support have shifted toward what is needed in the current conflicts and other irregular scenarios—has skewed priorities too far away from high-tech conventional capabilities. In reality, in this fiscal year the Department requested nearly \$190 billion for total procurement, research, and development—an almost 90 percent increase over the last decade. At most, 10 percent of that \$190 billion is dedicated exclusively to equipment optimized for counterinsurgency, security assistance, humanitarian operations, or other so-called low-end capabilities. In these last two budget cycles, I have directed a needed and noticeable shift—but hardly a dramatic one, especially in light of the significant naval overmatch that I described earlier.

These issues invariably bring up debates over so-called gaps between stated requirements and current platforms—be they ships, aircraft, or anything else. More often than not, the solution offered is either more of what we already have or modernized versions of preexisting capabilities. This approach ignores the fact that we face diverse adversaries with finite resources that consequently force them to come at the U.S. in unconventional and innovative ways. The more relevant gap we risk creating is one between the capabilities we are pursuing and those that are actually needed in the real world of tomorrow.

Considering that, the Department must continually adjust its future plans as the strategic environment evolves. Two major examples come to mind.

First, what kind of new platform is needed to get large numbers of troops from ship to shore under fire—in other words, the capability provided by the Expeditionary Fighting Vehicle. No doubt, it was a real strategic asset during the first Gulf War to have a flotilla of Marines waiting off Kuwait City—forcing Saddam’s army to keep one eye on the Saudi border, and one eye on the coast. But we have to take a hard look at where it would be necessary or sensible to launch another major amphibious landing again—especially as advances in antiship systems keep pushing the potential launch point further from shore. On a more basic level, in the twenty-first century, what kind of amphibious capability do we really need to deal with the most likely scenarios, and then how much?

Second—aircraft carriers. Our current plan is to have eleven carrier strike groups through 2040. To be sure, the need to project power across the oceans will never go away. But, consider the massive overmatch the U.S. already enjoys. Consider, too, the growing antiship capabilities of adversaries. Do we really need eleven carrier strike groups for another thirty years when no other country has more than one? Any future plans must address these realities.

And that brings me to the third issue: the budget. I have in the past warned about our nation’s tendency to disarm in the wake of major wars. That remains a concern. But, as has always been the case, defense budget expectations over time, not to mention any country’s strategic strength, are intrinsically linked to the overall financial and fiscal health of the nation.

And in that respect, we have to accept some hard fiscal realities. American taxpayers and the Congress are rightfully worried about the deficit. At the same time, the Department of Defense’s track record as a steward of taxpayer dollars leaves much to be desired.

Now, I know that part of the problem lies outside the Defense Department—and it has been this way for a long time. One of my favorite stories is about Henry Knox, the first secretary of war. He was charged with building the first American fleet. To get the necessary support from the Congress, Knox eventually ended up with six frigates being built in six different shipyards in six different states.

In this year’s budget submission, the Department has asked to end funding for an extra engine for the Joint Strike Fighter as well as to cease production of the C-17 cargo aircraft—two decisions supported by the services and reams of analysis. As we speak, a fight is on to keep the Congress from putting the extra engine and more C-17s back in the budget—at an unnecessary potential cost to the taxpayers of billions of dollars over the next few years. The issues surrounding political will and the Defense budget are ones I will discuss in more detail at the Eisenhower Library on Saturday [8 May 2010].

None of that, however, absolves the Pentagon and the services from responsibility with regard to procurement. These issues are especially acute when it comes to big-ticket items whose costs skyrocket far beyond initial estimates. Current submarines and amphibious ships are three times as expensive as their equivalents during the 1980s—this in the context of an overall shipbuilding and conversion budget that is 20 percent less. Just a few years ago, the Congressional Budget Office projected that meeting the Navy’s shipbuilding plan would cost more than \$20 billion per year—double the shipbuilding budget of recent years, and a projection that was underfunded by some 30 percent. It is reasonable to wonder whether the nation is getting a commensurate increase in capability in exchange for these spiraling costs.

The Navy’s DDG-1000 is a case in point. By the time the Navy leadership curtailed the program, the price of each ship had more than doubled and the projected fleet had dwindled from thirty-two to seven. The programmed buy is now three.

Or consider plans for a new ballistic-missile submarine, the SSBN(X). Right now, the Department proposes spending \$6 billion in research and development over the next few years—for a projected buy of twelve subs at \$7 billion apiece. Current requirements call for a submarine with the size and payload of a boom-er—and the stealth of an attack sub. In a congressional hearing earlier this year, I pointed out that in the later part of this decade the new ballistic-missile submarine alone would begin to eat up the lion’s share of the Navy’s shipbuilding resources.

To be sure, the most recent thirty-year shipbuilding plan is a step in the right direction. Secretary [of the Navy Ray] Mabus and Admiral [Gary] Roughead [Chief of Naval Operations] have worked hard to create reasonable budgets and reset the service “in stride” to reduce operational disruptions. At the same time, the Navy’s innovative energy security and independence initiative not only helps the environment, but also will save money in the long term.

Even so, it is important to remember that, as the wars recede, money will be required to reset the Army and Marine Corps, which have borne the brunt of the conflicts. And there will continue to be long-term—and inviolable—costs associated with taking care of our troops and their families. In other words, I do not foresee any significant top-line increases in the shipbuilding budget beyond current assumptions. At the end of the day, we have to ask whether the nation can really afford a Navy that relies on \$3 to \$6 billion destroyers, \$7 billion submarines, and \$11 billion carriers.

Though I have addressed a number of topics today, I should add that I don’t pretend to have all the answers. But, mark my words, the Navy and Marine Corps must be willing to reexamine and question basic assumptions in light of

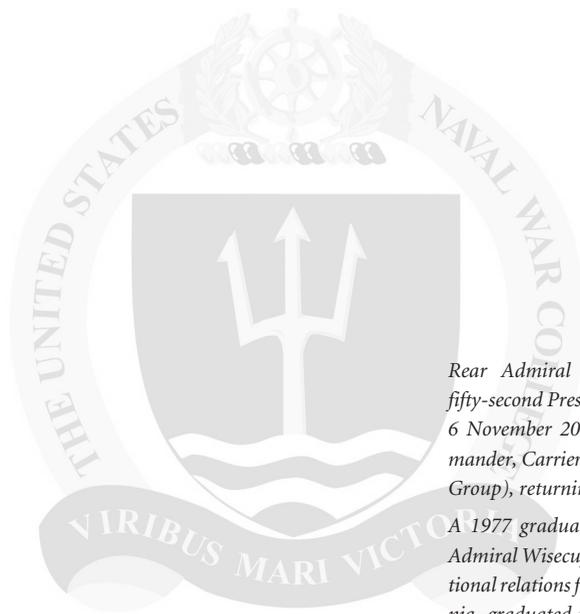
evolving technologies, new threats, and budget realities. We simply cannot afford to perpetuate a status quo that heaps more and more expensive technologies onto fewer and fewer platforms—thereby risking a situation where some of our greatest capital expenditures go toward weapons and ships that could potentially become wasting assets.

A concluding thought. The number and kind of ships we have—and how we use them—will be ever changing, as they have for the last two hundred-plus years. What must be unchanging, what must be enduring, is the quality of the sailors and Marines on board these ships and serving ashore. They must have moral as well as physical courage; they must have integrity; they must think creatively and boldly. They must have the vision and insight to see that the world and technology are constantly changing and that the Navy and Marine Corps must therefore change with the times—ever flexible and ever adaptable. They must be willing to speak hard truths, including to superiors—as did their legendary predecessors.

Over the past three and a half years, in the fury of two wars, I have seen the future of the Navy and Marine Corps on board ships, on the ground in Iraq and Afghanistan, at Navy bases and Marine camps, and at the [U.S. Naval] Academy. These young men and women fill me with confidence that the future of our sea services is incredibly bright and that our nation will be secure in their hands. Thank you.

DR. ROBERT M. GATES

Dr. Gates was sworn in on 18 December 2006 as the twenty-second Secretary of Defense. A text of the speech given at the Eisenhower Library on 8 May 2010, mentioned in these remarks, is available at www.defense.gov/speeches/speech.aspx?speechid=1467.



Rear Admiral James "Phil" Wisecup became the fifty-second President of the U.S. Naval War College on 6 November 2008. He most recently served as Commander, Carrier Strike Group 7 (Ronald Reagan Strike Group), returning from deployment in October 2008.

A 1977 graduate of the U.S. Naval Academy, Rear Admiral Wisecup earned his master's degree in international relations from the University of Southern California, graduated from the Naval War College in 1998, and also earned a degree from the University of Strasbourg, France, as an Olmsted Scholar, in 1982.

At sea, he served as executive officer of USS Valley Forge (CG 50) during Operation DESERT STORM. As Commanding Officer, USS Callaghan (DDG 994), he was awarded the Vice Admiral James Stockdale Award for Inspirational Leadership. He served as Commander, Destroyer Squadron 21 during Operation ENDURING FREEDOM after 9/11.

Ashore, he was assigned to NATO Headquarters in Brussels, Belgium; served as Force Planner and Ship Scheduler for Commander, U.S. Naval Surface Forces, Pacific; and served as action officer for Navy Headquarters Plans/Policy Staff. He served as a fellow on the Chief of Naval Operations Strategic Studies Group; as Director, White House Situation Room; and as Commander, U.S. Naval Forces Korea.

Rear Admiral Wisecup's awards include the Defense Superior Service Medal, Legion of Merit, Bronze Star, and various unit, service, and campaign awards.

PRESIDENT'S FORUM



Gaming in Newport and What Lies Ahead

ONE OF THE THINGS I FIND as I travel around and talk about the Naval War College is that many people aren't aware of the fact that Newport is the home of war gaming in the United States. In fact, our war-gaming facility is named after William McCarty Little, who in 1903 as a young naval officer—a lieutenant—was instrumental in establishing gaming as a fundamental part of the curriculum and research. In 1995 McCarty Little Hall was designed from the ground up to support this. If you've never seen it, I highly recommend, especially to naval professionals, that you visit it at some point.

I had said in a previous edition of the "President's Forum" that I would talk some about gaming. Even as a student at the Naval War College in 1998 I had little idea of the variety and relevance of some of the gaming going on. Our Dean of Naval Warfare Studies, Robert Rubel, wrote an article that appeared in these pages in the spring of 2006 entitled "The Epistemology of War Gaming." He goes into some of the history of gaming and also some of the misconceptions surrounding it. Most important, he tells us that gaming is not prescriptive but descriptive.¹ What this means is that games will not foretell the future. In fact, no individual game may produce the "Aha!" moment, but the cumulative effect of persistent gaming over time *if you are looking at the right things* can produce insights over time. This also means that as naval leaders we must also be knowledgeable about the nature of gaming, so that we can be "good consumers" of its results. Sometimes these games can turn out like Rorschach tests, where all draw their own conclusions, or there may be inconclusive results; sometimes, however, there are very interesting results—or you might see things you have looked at for years in a very different way, for the first time. McCarty Little's most famous quote resonates with me even today: he said in 1887, "Now the great secret

of its power lies in the existence of the enemy, a live, vigorous enemy in the next room waiting feverishly to take advantage of any of our mistakes, ever ready to puncture any visionary scheme, to haul us down to earth.”²

In Newport, our history makes pretty fascinating reading, and it is chronicled in some interesting and readable books:

- Edward S. Miller’s *War Plan Orange: The U.S. Strategy to Defeat Japan, 1897–1945* (reissued in 2007)
- John T. Kuehn’s *Agents of Innovation: The General Board and the Design of the Fleet That Defeated the Japanese Navy* (2008)
- Michael Vlahos’s *The Blue Sword: The Naval War College and the American Mission, 1919–1941* (1980)
- John B. Hattendorf, B. Mitchell Simpson III, and John R. Wadleigh’s *Sailors and Scholars: The Centennial History of the U.S. Naval War College* (1984)
- Hal M. Friedman’s *Digesting History: The U.S. Naval War College, the Lessons of World War Two, and Future Naval Warfare, 1945–1947* (2010)
- Albert A. Nofi’s forthcoming *To Train the Fleet for War: The U.S. Navy Fleet Problems, 1923–1940*.

These works describe in detail how the Navy used the Naval War College and also its gaming to educate a generation of officers over twenty years about how a campaign in the Pacific (and elsewhere, for that matter) might be waged. Admiral Chester Nimitz, speaking in the early 1960s about his time at the College (he was a 1923 graduate) said two things that I find very interesting. First, he said, by the time the war arrived all the officers who attended the Naval War College had done the necessary logistical planning during their courses; he didn’t even have to look at a chart to find some of the islands in the Pacific, as he had learned the geography during his time in Newport. Second, he talked about new technology, in this case, aviation: “We all knew that aviation would play a central role in the next war; we just didn’t know *how*.”³ The “how” was eventually provided by the fleet—and people like John Towers, and former Naval War College faculty member Joseph Reeves—during the annual fleet problems, over a period of years.

The conclusion I draw from reading these books and talking with our historians here is this: a persistent effort over a long period of time in gaming and study imparted to almost the entire flag community a common understanding of the major issues of campaign plans against potential adversaries. On 7 December 1941 all flag officers in the U.S. Navy but one were Naval War College graduates. In fact, by the time this issue goes to press we will have dedicated a “wall of honor” in Spruance Hall that will include many of their names.

At the same time, there was always a belief even at the highest levels of the Navy that “failure to attend the Naval War College never hurt anyone’s career.”⁴ Admiral Rickover famously said that “all the tactics and strategy taught by the Naval War College were of little use if a ship could not operate properly.”⁵ It’s not my intention to debate this issue here—I think the facts speak for themselves. That said, much has changed here in Newport during my thirty-two years of naval service. Most recently, the size of the student body has grown from three hundred during the 1970s to almost six hundred. International officers now make up 20 percent of the student body. There are officers from all services and several government agencies (the State Department, the Intelligence Community, and others). There is now a significant research faculty, which includes the War Gaming Department. For U.S. officers, we issue a master’s degree in national security and strategic studies accredited by the New England Association of Schools and Colleges. Over two-thirds of our faculty is civilian.

Throughout, the attention to gaming has remained a constant. The Global War Game series spanned over two decades of the Cold War, ending in the run-up to the attacks on 9/11. Its success not only for the Navy but for the nation is chronicled in two Newport Papers.⁶ When I arrived as President, now almost two years ago, I was surprised at the variety of gaming in progress, though also at how much it had been scaled back in comparison to those halcyon days of “Global,” when a thousand players participated from high levels and most departments of government. Even so, there is interesting work going on here, and it is continuous. I tell my parents in Ohio that we are looking at all those things they would want us looking at, and some that might surprise them—topics such as maritime domain awareness, cyber warfare, regional issues, piracy, the Arctic, international law and the United Nations Convention on the Law of the Sea, bilateral games. The list is endless. As this goes to press, we’re conducting a game looking at irregular challenges and some of the stressors that could lead to potential conflicts. This is consistent with Rear Admiral Stephen B. Luce’s charge over a hundred years ago for the Naval War College to be “a place of original research on all questions relating to war and to statesmanship related to war, or the prevention of war.”⁷ It is also a fundamental part of today’s “Cooperative Strategy for 21st Century Seapower,” which raises “prevention of war” to a level equal to the “conduct of war” and elevates humanitarian assistance and disaster relief to core elements of maritime power.⁸

There is a tremendous tradition of gaming here in Newport. At its zenith, the Naval War College and the lessons from decades of gaming helped the Navy and the nation figure out a way ahead at critical junctures, and many graduates and some of its faculty were players on the world stage.⁹ The gaming tradition is alive

and well today, but we face an increasingly complex world of wicked problems coupled with budget squeezes. Our challenge, then, becomes using our best professional judgment over the long haul to help the Chief of Naval Operations and the Navy answer the question, “What will be asked of us in the future?” You can bet that gaming will play a part in finding the answer.



JAMES P. WISECUP

Rear Admiral, U.S. Navy
President, Naval War College

NOTES

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2. As quoted in *U.S. Naval War College: War Gaming: McCarty Little*, www.usnwc.edu/Research---Gaming/.
3. Lecture, Naval War College, 12 October 1961, Naval War College Library Historical Collection.
4. J. O. Richardson, *On the Treadmill to Pearl Harbor: The Memoirs of Admiral James O. Richardson as Told to George C. Dyer* (Ann Arbor: Univ. of Michigan Library, 1973).
5. George H. Baker, “The Rickover Story: A Compilation of Selected Works” (course paper, Naval War College, National Security Decision Making Department, August 2008).
6. See Bud Hay and Bob Gile, *Global War Game: The First Five Years*, Newport Paper 4 (Newport, R.I.: Naval War College Press, 1993), and Robert H. Gile, *Global War Game: Second Series, 1984–1988*, Newport Paper 20 (Newport, R.I.: Naval War College Press, 2004).
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8. J. T. Conway, G. Roughead, and T. W. Allen, “A Cooperative Strategy for 21st Century Seapower,” October 2007, available at www.navy.mil/; repr. *Naval War College Review* 61, no. 1 (Winter 2008), p. 15, available at www.usnwc.edu/press/.
9. Joel Ira Holwitt, *Execute Against Japan: The U.S. Decision to Conduct Unrestricted Submarine Warfare* (College Station: Texas A&M Univ. Press, 2009).

Ronald O'Rourke has been since 1984 a specialist in naval affairs at the Congressional Research Service of the Library of Congress. He is a Phi Beta Kappa graduate of the Johns Hopkins University, from which he received his BA in international studies, and a valedictorian graduate of that university's Paul Nitze School of Advanced International Studies, where he received an MA in the same field. He has written numerous reports for Congress on various issues relating to the Navy. He regularly briefs members of Congress and congressional staffers and has testified before congressional committees on several occasions. Mr. O'Rourke, whose work last appeared in this journal in the Winter 2001 issue, is the author of several articles on naval issues and is a past winner of the U.S. Naval Institute's Arleigh Burke essay contest.

PROGRAMS VS. RESOURCES

Some Options for the Navy

Ronald O'Rourke

The Navy, like other U.S. military services, faces a challenge in funding various program goals within a budget that is expected to experience little or no real growth. This challenge will be compounded if the change in the nation's projected budget and debt situation that has developed since the 2008 financial crisis leads to a real decline in the Department of Defense (DoD) budget.

The total number of ships in the Navy is to be bolstered over the next decade by the entry into service of substantial numbers of relatively inexpensive Littoral Combat Ships (LCSs) and Joint High Speed Vessels (JHSV). In addition, the unit capability of Navy ships, aircraft, and other systems will increase in coming years as a result of the introduction of new platforms and technologies. If, however, the Navy's budget does not increase in real terms, the Navy faces a longer-term prospect of a decline in ship and aircraft numbers that would offset at least some of the gains realized in unit capability. The resulting fleet could have a rich collection of capabilities for performing various missions but lack the capacity (i.e., numbers) for performing those missions simultaneously in all desired geographic areas.

If Navy budget pressures are compounded by a real decline in the DoD budget, policy makers could face difficult choices to fund programs for some kinds of Navy capabilities but not others. If so, the resulting fleet could have gaps in capability as well as capacity. These developments could occur at a time when the United States faces various international security challenges, including a potentially significant challenge from a modernized Chinese military capable of acting as a maritime antiaccess force and otherwise influencing events in the western Pacific.

Although the Navy forms only a part of the U.S. military, which in turn forms only a part of the nation's overall tool kit for defending its interests and pursuing its policy goals, a Navy with insufficient ability to maintain desired levels of forward-deployed presence and engagement, to respond to contingencies and contain crises, or to conduct combat operations of certain kinds could contribute to a situation in which American policy makers might need to prioritize key U.S. interests and goals and reconsider the national strategy for defending those interests and pursuing those goals.

THE NAVY'S PROGRAMS-VS.-RESOURCES SITUATION

Shipbuilding accounts for only 35 percent or so of Department of the Navy (DON) procurement funding and only 10 percent or so of DON's entire baseline budget.¹ Even so, examining funding pressures in the Navy's shipbuilding account can be a useful means of gaining an understanding of the service's overall programs-vs.-resources situation, for two reasons. First, the Navy balances funding demands for shipbuilding against those for other programs, so funding pressures in the shipbuilding account are likely to be mirrored by similar pressures in other accounts. Second, ships are central to the Navy: it is difficult to have a navy without them; many of the Navy's manned aircraft, unmanned vehicles, and weapons are based on them; and much of the Navy's other spending funds their basing, crewing, operation, maintenance, and modernization.

The Navy's five-year (fiscal year [FY] 2011–FY 2015) shipbuilding plan includes a total of fifty ships, or an average of ten per year. Such a rate represents an increase over the single-digit numbers of ships that have been procured for the last eighteen years (FY 1993–FY 2010) and is a little above the steady-state replacement rate for a fleet with 313 ships (the Navy's force-level goal), which is about 8.9 ships per year, assuming a weighted average ship life of thirty-five years.

The Navy's ability to assemble a five-year plan for fifty ships within available resources does not, however, necessarily mean that the service has solved its long-term challenge of shipbuilding affordability. The Navy was able to fund this fifty-ship plan in part because twenty-five of those ships—half the total—are relatively inexpensive LCSs and JHSVs. Since LCSs and JHSVs are to account eventually for about 25 percent of the Navy's planned 313-ship fleet, they are temporarily overrepresented in the Navy's shipbuilding plan.² Beyond FY 2015, as the LCS and JHSV programs run their courses and are procured in smaller annual quantities, and particularly as the Navy enters the period for procuring twelve replacement ballistic-missile submarines, or SSBN(X)s, the amount of funding needed for an average of ten ships per year will increase

substantially. The Navy preliminarily estimates the unit procurement cost of the SSBN(X) at six to seven billion dollars in constant fiscal-year 2011 dollars—a figure equivalent to roughly half the Navy’s annual budget for new ship construction. The thirty-year shipbuilding plan acknowledges the pressure the SSBN(X) program will place on the shipbuilding budget and shows reduced rates of shipbuilding during the fifteen years (FY 2019–FY 2033) when the twelve boats are to be procured.

The Navy’s thirty-year (FY 2011–FY 2040) shipbuilding plan does not include enough ships to support fully all elements of the Navy’s planned 313-ship fleet over the long run. The Navy projects that if all 276 ships in the plan are bought, the total number of ships in fleet will increase from 284 in FY 2011 to

If limits on resources lead not only to reduced ship and aircraft numbers but also to smaller investments in capabilities, the Navy’s margin of superiority in certain high-end combat scenarios could be reduced.

320 in FY 2024, in part due to the entry into service of substantial numbers of LCSs and JHSVs; then fall below 313 in 2027, reaching a minimum of 288 in 2032 and 2033; and then increase to 301 by the end of the thirty-year period.

The Navy projects that the fleet would have significant shortfalls during the latter years of the plan in two types of combat ships—attack submarines and cruisers/destroyers:

- The attack submarine shortfall, which in previous thirty-year plans was “bathtub-shaped” (i.e., the total number of attack submarines was projected to fall below the force-level goal of forty-eight boats in the 2020s and then get back up to forty-eight by the early 2030s), is now projected to be more open-ended. That is, under the new thirty-year plan the attack submarine force is not projected to get back up to forty-eight boats by the end of the thirty-year period.
- The previous (FY 2009–FY 2038) thirty-year shipbuilding plan did not show a shortfall in cruisers and destroyers. The new (FY 2011–FY 2040) plan shows the cruiser-destroyer fleet falling below the eighty-eight-ship force-level goal for these ships to a low of sixty-seven in 2034 before increasing to the middle seventies by the end of the thirty-year period. The eighty-eight-ship goal, like other elements of the 313-ship plan, dates to 2006. Some observers believe it should be increased to some higher number to reflect increased demands for cruisers and destroyers resulting from the administration’s plan, announced in September 2009, for using ballistic missile defense (BMD)–capable Aegis cruisers and destroyers for European BMD.

It is not clear whether the Navy will be able to procure all 276 ships shown in the thirty-year plan, for three reasons.

- Several Navy shipbuilding programs have experienced significant cost growth in recent years. If some of the ships in the plan turn out to be more expensive than estimated, the projected funding profile in the plan will likely be insufficient to build all the ships intended. Programs that might be considered risks for cost growth include the *Gerald R. Ford* (CVN 78) class of aircraft carriers (first ship procured in FY 2008); the Flight III *Arleigh Burke* (DDG 51)—class Aegis destroyer (first ship to be procured FY 2016); the LSD(X) amphibious ship (first ship to be procured FY 2017); and the SSBN(X) (first ship to be procured FY 2019). The Congressional Budget Office (CBO) estimates for all these ships are higher than the Navy estimates.³
- The shipbuilding funding profile shown in the plan presumes the availability of an additional two billion dollars or so per year in constant dollars in the middle years of the plan—when the Navy plans to procure the twelve SSBN(X)s. There is little in the Navy’s report on the plan, however, to explain how this “hump” in shipbuilding funding will be realized, particularly in the context of a budget that experiences little or no real growth. If this hump in funding were not realized, the Navy might not be able to fund numerous ships now shown in the plan. A draft version of the thirty-year plan that was reported by the defense trade press in December 2009 showed a scenario in which the shipbuilding budget was not increased to pay for the twelve planned SSBN(X)s. In that scenario the total number of ships built over the thirty-year plan dropped to 222 and the total number of ships in the Navy to declined to 237 by the end of the thirty-year period.⁴
- As a result of the financial crisis of 2008 and subsequent developments, the nation is facing significant projected budget deficits and significant projected growth in the debt-to-GDP (gross domestic product) ratio. CBO’s March 2010 estimate of the administration’s FY 2011 budget submission shows annual deficits averaging 5.2 percent of GDP from FY 2011 through 2020 and debt as a percentage of GDP increasing from 63.2 percent in FY 2010 to 90 percent in 2020.⁵ Given that the DoD budget accounts for roughly half of discretionary federal spending, if policy makers decide to take steps to reduce substantially projected deficits and growth in the debt-to-GDP ratio, the DoD budget could be reduced in real terms. This could cause a reduction in the Navy’s budget, which could lead to shipbuilding budgets that are smaller than what would remain in the thirty-year plan without the above-discussed two-billion-dollar-per-year hump.

If the Navy is not able to afford all 276 ships in the thirty-year shipbuilding plan, the total number of ships in the fleet would, other things held equal, be less than that shown in the thirty-year plan. A fleet below three hundred ships, perhaps closer to 250 ships, is a possibility. The Navy might also experience shortfalls in some aircraft types, such as strike fighters (where a shortfall is already projected).

POTENTIAL IMPLICATIONS OF A SMALLER FLEET

Although tomorrow's ships will in many cases have more individual capability than today's, a fleet of fewer than three hundred ships, and perhaps closer to 250, could be hard-pressed to meet regional combatant commander requests for forward-deployed Navy ships. If limits on resources lead not only to reduced ship and aircraft numbers but also to smaller investments in capabilities, the Navy's margin of superiority in certain high-end combat scenarios could be reduced, which could increase operational risks in conflict situations.

The implications of a Navy that is substantially below its force-level goals and perhaps lacking certain desired mission capabilities could be particularly significant in the Pacific. U.S. Navy capabilities in that region could affect the likelihood or possible outcome of a potential U.S.-Chinese military conflict in the Pacific over Taiwan or some other issue. Some observers consider such a conflict to be very unlikely, in part because of significant U.S.-Chinese economic linkages and the tremendous damage that such a conflict could cause on both sides. In the absence of such a conflict, the U.S.-Chinese military balance in the Pacific could influence day-to-day choices made by other Pacific countries, including choices on whether to align their policies more closely with China or the United States. In this sense, decisions on U.S. Navy programs for countering improved Chinese maritime military forces could influence the political evolution of the Pacific, which in turn could affect the ability of the United States to pursue goals relating to various policy issues, both in the Pacific and elsewhere.

OPTIONS FOR ADDRESSING THIS SITUATION

Options for dealing with the prospect described above include but are not limited to the following. The options are not mutually exclusive, are in some cases overlapping, and are presented in no particular order. Each option poses either feasibility challenges or potential downsides.

- Increase DoD's budget in real terms.
- Increase the Navy's share of DoD's budget.
- Find more Navy cost-saving efficiencies.

- Exploit joint Navy–Air Force combat effectiveness, particularly in the Pacific, through the Air-Sea Battle concept.
- Reduce the cost of Navy shipbuilding programs.
- Shift to a more highly distributed fleet architecture.
- Extend the service lives of in-service ships and aircraft.
- Increase the use of forward homeporting, multiple crewing, and long-duration deployments with crew rotation.
- Increase the use of unmanned vehicles to augment or substitute for manned ships and aircraft.
- Reduce levels of forward deployments in some regions while maintaining them in others.
- Transfer Navy responsibilities to other U.S. military forces or federal agencies.
- Transfer “low end” Navy missions to allied and partner navies and coast guards, concentrating available Navy resources on programs for “high end” combat capabilities for countering improved Chinese maritime military forces.
- Encourage allies and partners to do more in terms of fielding naval and other forces for countering Chinese forces.

Each of these is discussed very briefly below.

Increase DoD’s Budget in Real Terms. The change in projected budget deficits and the projected debt-to-GDP ratio that has developed since the 2008 financial crisis make this option difficult to implement. To the contrary, as mentioned earlier, given DoD’s share of discretionary federal spending, if policy makers take steps to reduce substantially projected budget deficits and the projected increase in the debt-to-GDP ratio, DoD’s budget might be reduced rather than increased in real terms.

Increase the Navy’s Share of DoD’s Budget. Supporters of naval forces could seek to open a debate about the value of sea-based forces relative to land-based forces in defending the nation’s interests in coming years, with the aim of shifting a greater share of DoD’s budget to the former. Supporters of such a shift could argue that American access to overseas land bases in coming years could be limited or uncertain; that those bases are fixed in location and thus highly vulnerable to attack by theater-range ballistic missiles and other forces; and that U.S. forces based on foreign soil could face host-nation limits on how they are

used. Supporters could argue that a large percentage of the world's population and economic activity is located in littoral areas; that sea-based forces can project power into and otherwise influence events in littoral areas while operating in international waters without permission from other countries; that sea-based forces can use the sea as a medium of maneuver to avoid detection, targeting, or attack; and that sea-based forces can easily move closer to shore or back over the horizon, as needed, to achieve desired political effects. They could also argue that China's military modernization effort will make the Pacific a key U.S. military operating area in coming years and that the geography of the Pacific makes it a primarily maritime and aerospace theater.

A fleet below three hundred ships, perhaps closer to 250 ships, is a possibility.

As compelling as these arguments might appear to supporters of naval forces, attempts to shift a greater share of DoD's budget to

naval forces could face strong headwinds. Current U.S. military operations in Iraq and Afghanistan tend to focus attention on the value and needs of the ground forces rather than of the Navy. The Navy's emphasis in recent years on its contributions in Iraq and Afghanistan might actually reinforce this dynamic. While operations in Iraq appear to be winding down, those in Afghanistan may continue for several more years, extending the focus on ground forces for some time. Even when operations in Afghanistan wind down, advocates of land-based forces could argue that weak or instable governments in other countries of interest to the United States make it possible, if not likely, that the United States will engage in similar operations in the future. Navy leaders in recent years have been stressing the fleet's value in engagement, partner capacity building, and humanitarian assistance and disaster response (HADR) operations. Emphasizing these operations helps demonstrate the Navy's day-to-day relevance but does little to make a case for shifting to it a greater share of DoD's budget, because such operations do not appear to require investment in expensive, high-end combat capabilities. A stronger case for such investments might be made by placing more stress on the need to counter improved Chinese military forces in coming years, but the executive branch appears averse to putting China nearer the center of the public discussion of American defense plans and programs.

Last, it can be noted that even gaining a larger share of DoD's budget might not result in a substantial increase in funding for Navy programs if the DoD's budget is at the same time reduced.

Find More Navy Cost-Saving Efficiencies. The Navy in recent years has implemented a number of cost-saving efficiency measures. Among other things, it has closed and realigned bases, reformed its approach to maintenance, implemented

energy-saving initiatives ashore and on ships, and reduced its end strength. The Navy continues to look for additional cost-saving efficiencies and will likely find some, but it is not clear that such initiatives by themselves will be sufficient to resolve the service's programs-vs.-resources situation fully. Future reductions in end strength may be difficult to achieve, given the reductions the Navy has already made, and savings from past end-strength reductions have been offset by increases in per capita personnel costs.

Exploit Joint Navy–Air Force Combat Effectiveness through Air-Sea Battle. DoD's final report on the 2010 Quadrennial Defense Review states, in its section on deterring and defeating aggression in antiaccess environments, that

the Air Force and Navy together are developing a new joint air-sea battle concept for defeating adversaries across the range of military operations, including adversaries equipped with sophisticated antiaccess and area denial capabilities. The concept will address how air and naval forces will integrate capabilities across all operational domains—air, sea, land, space, and cyberspace—to counter growing challenges to U.S. freedom of action. As it matures, the concept will also help guide the development of future capabilities needed for effective power projection operations.⁶

In theory, joint efficiencies created through closer integration of Navy and Air Force operations under the Air-Sea Battle concept could reduce requirements for certain Navy and Air Forces assets. It is not clear, however, how much effect Air-Sea Battle will have in this regard. It can also be noted that development of the concept could conceivably *increase* requirements for certain Navy and Air Force assets by uncovering gaps in joint capabilities.

Reduce Cost of Navy Shipbuilding Programs. The Navy in recent years has reduced the cost of its shipbuilding programs by, among other things, incorporating significant numbers of LCSs and JHSVs in the 313-ship plan, canceling the planned CG(X) cruiser in favor of the Flight-III DDG 51 destroyer, and reducing numbers and capabilities of new maritime-prepositioning ships. The Navy is also seeking to reduce shipbuilding costs through changes in acquisition strategy and ship design.⁷ Some observers might advocate further reducing costs by changing the Navy's planned shipbuilding mix to include a larger number of less expensive (but less capable) ships.⁸

Shift to a More Highly Distributed Fleet Architecture. Some observers in recent years have advocated shifting to a more highly distributed fleet architecture featuring a reduced reliance on carriers and other large ships and an increased reliance on smaller ships, arguing that such an architecture could generate comparable aggregate fleet capability at lower cost and be more effective at confounding Chinese maritime antiaccess capabilities.⁹ Skeptics, including

supporters of the currently planned fleet architecture, question both of these arguments.

Extend Service Lives of In-Service Ships and Aircraft. One option for mitigating the force-structure effects of reduced ship and aircraft procurement rates would be to extend the lives of in-service ships and aircraft. Potential candidates would include cruisers, destroyers, and attack submarines. The thirty-year plan contemplates operating the twenty-two *Ticonderoga* (CG 47)–class Aegis cruisers and twenty-eight Flight I/II *Arleigh Burke*–class Aegis destroyers to age thirty-five and the growing number of Flight-IIA DDG 51s to age forty. A potential goal for a service-life-extension program for these ships would be to increase all their operating lives to forty-five years. The thirty-year plan contemplates operating the final twenty-three submarines of the *Los Angeles* (SSN 688) class (i.e., the Improved *Los Angeles*–class boats) and the three *Seawolf* (SSN 21)–class boats to age thirty-three. A potential service-life-extension goal for these ships would be to increase that figure by ten or more years, which would require nuclear refuelings.

The feasibility and costs of such service-life extensions would need to be examined. Feasibility could be a particular issue for the attack submarines, given limits on pressure-hull life. The limited growth margins of the existing cruisers and destroyers could also pose challenges. Ships identified for service-life extension would likely need enhanced maintenance in coming years to ensure that they are in good enough condition at the end of their normal service lives to have them extended, which would increase maintenance costs.

Increase Use of Forward Homeporting, Multiple Crewing, and “Sea Swap.” Another option for mitigating the effects of reduced ship force structure would be to make greater use of forward homeporting, multiple crewing, and long-duration deployments with crew rotation (an initiative known as “Sea Swap”). More forward homeporting could involve shifting additional attack submarines to Hawaii and Guam; forward-homeporting BMD-capable Aegis ships in Europe (to reduce the number of such ships needed for sustaining BMD operations in that region); moving additional surface ships to such existing homeporting locations as Hawaii, Guam, Japan, and Bahrain; and perhaps establishing new forward-homeporting locations in such places as Singapore, Australia, or India. Surface ships would be candidates for both multiple crewing and Sea Swap, attack submarines for multiple crewing.

Additional forward homeporting, multiple crewing, and Sea Swap could help a fleet with fewer ships maintain desired levels of day-to-day forward deployments but might do little to mitigate shortfalls in required numbers of ships for

wartime operations. Forward homeporting in foreign countries carries a possibility of host-nation limits on how the ships are used and a risk of sudden eviction following shifts in host-nation policy, particularly those that might result from changes in government. Multiple crewing and Sea Swap would likely increase ship operation and support costs and more quickly consume ship service lives, which could eventually make it more difficult to maintain force levels.

Increase Use of Unmanned Vehicles. The Navy is currently developing and deploying a variety of air, surface, and underwater unmanned vehicles (UVs). In theory, UVs might reduce required numbers of ships and manned aircraft by substituting for those platforms in certain missions or by extending their capabilities. UVs, however, are more suitable for some missions than others; have their own development, procurement, operation, and support costs (including for remote human operators); and pose their own development risks, particularly in the case of UVs intended for autonomous operations.

Reduce Levels of Forward Deployments in Some Regions. Another option would be to reduce levels of naval forward deployments in some regions while maintaining desired levels in others. One approach would be to maintain naval deployments in the Pacific, so as to counter improved Chinese maritime military forces, while reducing forward deployments elsewhere. The administration's new plan for European BMD operations would make it more difficult at the margin to implement that particular possibility, since it will require increasing the number of Aegis ships deployed to European waters. More generally, reducing naval forward deployments to some regions could reduce the deterrence of potential aggressors and the reassurance of allies, Navy engagement and partner capacity-building operations, and ability to respond quickly to contingencies in those regions. It could also encourage perceptions, both in those regions and elsewhere, of the United States as a declining power, which could make it more difficult to achieve U.S. policy goals of various kinds.¹⁰

Transfer Navy Responsibilities to Other U.S. Forces and Agencies. In theory, there are several possibilities for transferring Navy responsibilities to other U.S. military services or federal agencies.¹¹ Implementing these options might reduce Navy funding requirements but might not necessarily improve the service's programs-vs.-resources challenge if the funding for meeting these responsibilities were shifted out of the Navy's budget along with the responsibilities themselves. Skeptics might argue that these responsibilities currently reside with the Navy because they are most cost-effectively performed by the Navy and that transferring them consequently could increase government costs or result in these tasks being carried out less fully.

Another option that has been mentioned would be to reduce or eliminate the amphibious-assault mission, on the grounds that it is unlikely to be needed in the future. Opponents would argue that it is difficult to predict the kinds of operations the United States might need to conduct in the future, that amphibious ships are valuable for engagement and partner capacity building, and that these ships and associated ship-to-shore transfer capabilities are especially useful for humanitarian assistance and disaster relief operations, which are not only of humanitarian value but also generate significant political benefits for the United States.

Transfer Low-End Navy Missions to Allies and Partners. Another option would be to transfer such missions as engagement, partner capacity building, and maritime security (including antipiracy operations)—to allies and partners, on the grounds that allied and partner navies and coast guards are capable of performing them. Under this option, the Navy would concentrate its resources more heavily on “high end” combat capabilities, such as those required for countering improved Chinese maritime forces. Whether allied or partner navies would be willing to take on new or expanded responsibilities for low-end operations is uncertain. Also, transferring them to other navies and coast guards might free up only a relatively modest amount of Navy funding and would reduce the political and interoperability benefits the United States currently receives from performing low-end missions.

Encourage Allies and Partners to Do More to Counter Improved Chinese Forces. One more option would be to encourage allies and partners to do more in terms of fielding naval and other forces for countering improved Chinese maritime military forces. Countries that might be candidates include Japan, South Korea, Australia, and India. Even without American encouragement, Chinese military modernization might persuade one or more of these countries to modernize or expand their military forces; Australia and India might be viewed as already taking steps in this direction. It is not clear whether American encouragement would result in countries’ taking more steps along these lines than they otherwise might, particularly since these other countries must contend with their own constraints on what they can spend on their military forces. This option could pose risks for the United States, because the interests and policy goals of allies and partners do not always coincide with U.S. interests and goals, and because a change in the government of an ally or partner could lead to a change in its security policy.

NOTES

This article (in slightly different form) was originally prepared for and delivered to a workshop, “Economics and Security: Resourcing National Priorities,” sponsored by the Naval War College’s William B. Ruger Chair of National Security Economics and held at the College on 19–21 May 2010. It appears in essentially the present version, in the proceedings of that conference available at www.usnwc.edu/rugerpapers. The views expressed here are those of the author and do not necessarily reflect the views of the Congressional Research Service, the Library of Congress, or Congress.

1. DON’s FY 2011 baseline budget request of \$160.6 billion includes \$46.6 billion for procurement, of which \$16.1 billion is for shipbuilding. Rear Admiral Joseph P. Mulloy, Deputy Assistant Secretary of the Navy for Budget, “Department of the Navy FY 2011 President’s Budget,” briefing, 1 February 2010, p. 5.
2. The Navy plans to achieve and maintain a force level of fifty-five LCSs and about twenty-three JHSV’s.
3. Congressional Budget Office, *An Analysis of the Navy’s Fiscal Year 2011 Shipbuilding Plan* (Washington, D.C.: May 2010), p. 14, table 3.
4. *Inside the Navy*, 7 December 2009, tables. See also Christopher J. Castelli, “Navy Confronts \$80 Billion Cost of New Ballistic Missile Submarines (Updated),” *Inside the Pentagon*, 3 December 2009.
5. Congressional Budget Office, *An Analysis of the President’s Budgetary Proposal for Fiscal Year 2011* (Washington, D.C.: April 2010), table 1-1 (“Comparison of Projected Revenues, Outlays, and Deficits in CBO’s March 2010 Baseline and CBO’s Estimate of the President’s Budget”), available at www.cbo.gov.
6. U.S. Defense Dept., *Quadrennial Defense Review Report* (Washington, D.C.: February 2010), pp. 32–33.
7. These measures include the following, among other things: exerting more discipline in establishing performance requirements for new ships; resisting subsequent growth in those requirements; working toward more stability in shipbuilding plans; making use of competition where possible in the awarding of contracts for building ships; using fixed-price-type shipbuilding contracts; making greater use of common hulls, systems, and components and seeking greater cross-yard and cross-firm efficiencies in shipbuilding, so as to regain lost economies of scale in shipbuilding; increasing the use of modularity in ship design and construction; increasing the use of open-architecture combat systems; incorporating improved design-for-productibility features and making better use of production engineering in developing new ship designs; developing technologies for reducing the size, weight, and cost of shipboard systems; incorporating technologies for reducing crew size; and developing improved construction processes and methods, such as those developed by the National Shipbuilding Research Program (NSRP). Some observers might advocate additional measures, such as consolidating Navy shipbuilding into a smaller number of shipyards (which would be strongly resisted by supporters of the yards that would lose their Navy shipbuilding business and perhaps face possible downsizing or even closure) or building U.S. Navy ships in foreign shipyards or acquiring foreign-built ships for Navy use (which would require a change in federal law and be strongly resisted by supporters of American shipyards).
8. Possibilities that some observers might advocate could include building conventionally powered aircraft carriers instead of nuclear-powered carriers (which would reduce their mobility and combat sustainability and perhaps achieve only a small savings in total life-cycle costs), building smaller aircraft carriers (which would embark smaller and less capable air wings), and supplementing the Navy’s nuclear-powered attack submarines with conventionally powered boats (whose mobility limitations might make them unsuitable for performing typical U.S. Navy submarine missions).
9. For an example of a study outlining a more highly distributed naval force architecture, see Stuart E. Johnson and Arthur K. Cebrowski, *Alternative Fleet Architecture Design*, Defense & Technology Paper 19 (Washington, D.C.: Center for Technology and

National Security, National Defense Univ., August 2005). See also Wayne P. Hughes, Jr., *The New Navy Fighting Machine: A Study of the Connections between Contemporary Policy, Strategy, Sea Power, Naval Operations, and the Composition of the United States Fleet* (Monterey, Calif.: Naval Postgraduate School, August 2009).

10. For further discussion of options for reducing levels of forward deployments in some regions, see Daniel Whiteneck et al., *The Navy at a Tipping Point: Maritime Dominance at Stake?* (Alexandria, Va.: CNA, March 2010).
11. These might include, among other things, the following: shifting a greater share of the strategic nuclear deterrence mission to Air Force intercontinental ballistic missiles and bombers; transferring Navy tactical aircraft

missions, including strike and airborne electronic warfare, from carrier-based aircraft to the Air Force; transferring intelligence and surveillance responsibilities from attack submarines or other Navy platforms to non-Navy intelligence and surveillance assets; transferring special operations forces (SOF) missions from the Navy SEALs to Army and Air Force SOF; transferring engagement and partner capacity-building responsibilities to the Air Force and Army; transferring Navy homeland-security responsibilities, and potential Navy responsibilities for Arctic surface and air operations, to the Coast Guard; and transferring Navy responsibilities for HADR operations to the Air Force, Army, Coast Guard, and civilian U.S. agencies, such as the Federal Emergency Management Agency or the State Department.



TALKING ABOUT SEA CONTROL

Robert C. Rubel

The year 1990 was a significant one in naval history. It marked the transition from a world in which the oceans were contested to one in which one navy had uncontested command of the sea. The evidence for this shift is that during the run-up to the first Gulf War with Iraq, the U.S. Navy positioned half of its total aircraft carrier striking power in narrow seas, splitting it between the Red Sea and the Persian Gulf. If there was any conceivable threat, such a move would have constituted strategic Russian roulette. The incipient demise of the Soviet Union and the evaporation of its fleet, along with Iran's decision to stand aside, made the only threat to U.S. ships the stub oil platforms in the Persian Gulf and some mines in the gulf's northern reaches.

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In the two decades since, the U.S. Navy has enjoyed total command of the sea, so much so that it has stopped talking about sea control, even to the extent of forgetting *how* to. With the emergence in China of a robust area-denial force of great range and a navy capable of reaching beyond home waters, the time has again come to talk about sea control. This article will try to support the dialogue by discussing naval operational concepts that navies have used in the past and relating them to today's environment.

NAVAL OPERATIONAL CONCEPTS

The first thing to understand about naval warfare is that it almost never occurs between two evenly matched navies or fleets. There is always some

imbalance, and it is the degree and nature of the imbalance that spawn the naval operational concepts admirals employ to squeeze the most strategic value out of their fleets. Thus the following discussion will be organized against a presumption of imbalance, starting with the concepts used by a fleet with great superiority and ending with those used by the weaker side. Also, it should be noted at the outset that it is hard to separate naval operations from merchant shipping; naval operational concepts frequently involve acting against another's sea commerce. This point will be blended in rather seamlessly in the concepts discussed below. A third factor underlying this examination is sanctuary. Because naval warfare is characterized by the dominance of the tactical offense (he who shoots effectively first generally wins—a principle articulated by Wayne Hughes), sanctuary is needed to prevent the enemy from getting off a first shot or engaging in the first place. In an age of aircraft, missiles, and nuclear bombs, sanctuary is harder than ever to achieve.¹

Blockade. A fleet that has great superiority may choose simply to bottle up an opponent's fleet and his commerce by stationing forces off his ports. The goal may be economic strangulation, or it may be simply to keep his fleet from getting to sea. This worked well in ages before aviation, when ships could operate out of shore artillery range (i.e., the enemy's sanctuary). Aircraft greatly complicate the problem, missiles and submarines even more. At some point a distant blockade becomes ineffective in a military sense and turns into commerce raiding, in an economic framework. Moreover, in an age where merchant ships have flags of convenience, multinational crews, international ownership, and cargoes that may change hands several times during a voyage, economic blockade becomes problematic.

From the Sea. A fleet that enjoys command of the sea (that is, establishes conditions in which the other navy cannot come out and challenge), or at least local sea control, but does not have the possibility of land-based aviation support can nonetheless bring with it everything it needs to project power ashore. In current terms, this is sea basing. The Leyte Gulf operation in World War II is an example. Given today's long-range aircraft, it is doubtful that there will be any more pure "from the sea" operations, although the initial operations in Operation ENDURING FREEDOM approximated such an undertaking, with the important exceptions that land-based tankers and reconnaissance aircraft were available. The British operations in the Falklands in 1982 also came close. Smaller-scale sea-basing operations might be mounted purely from the sea, and the modern expeditionary strike group is well designed for such a concept.

Air-Sea Battle. The stronger fleet, whether or not it encounters opposition, may be supported by land-based aircraft to a significant extent. General Douglas

MacArthur's Southwest Pacific campaign in World War II constituted a good example; his operational jumps reached only as far as the operational radius arcs of his land-based fighters. Today it is hard to imagine any major naval operation that would not represent some form of this concept.² Of course, we can blend space and cyberspace into this concept too—and surely will. The defensive converse of this concept would be the operation of an area-denial force, like that which the Chinese are building, in the littoral. The idea would be, using a combination of ballistic missiles and shore-based aircraft in conjunction with submarines and surface ships, to present the U.S. or other navy with a multidimensional threat that would be too hard to deal with. In both the offensive and defensive versions, the coordination of land-based and sea-based forces is critical, but that is something that has not often been satisfactorily achieved.

Decisive Naval Battle. In a contest for control of the oceans between two capable navies, a decisive battle has been the goal of the stronger. This is what Nelson sought in 1805 as he chased the combined Franco-Spanish squadron, and it is what Yamamoto sought in 1942 at Midway. Generally speaking, the weaker force will attempt to avoid such an engagement, but every once in a while circumstances conspire to precipitate one. Trafalgar was produced by Napoleon's ordering Admiral Villeneuve to sortie, and Midway was produced by Chester Nimitz's recognition that an ambush was possible. There might have been one off the Falklands in 1982, had there been sufficient wind for the Argentine carrier to launch its strike aircraft and had the aircraft then inflicted damage on the British carriers. In today's world there is little or no chance of such an engagement, except possibly among two smaller navies.

Fleet-in-Being. A navy that is strong but reluctant to roll the dice on a decisive battle might elect to avoid engagement but still present a threat to the stronger navy that would keep it from doing what it wanted (like projecting power ashore). In 1690 Lord Torrington, commanding the Anglo-Dutch fleet, adopted such a concept by keeping his fleet upwind of the French. Although suffering a defeat at the battle of Beachy Head, he kept his fleet intact, such that it constituted a threat to any invasion operation (which would compromise the mobility of the French force) but could not be brought to battle. Thus it achieved its strategic goal of preventing an invasion. The key to making a fleet-in-being strategy work is sanctuary. Today sanctuary is hard to find. However, diesel submarines might constitute a fleet-in-being if they went to sea and "got lost." If they could avoid detection they might constitute a sufficient threat, at least for a while, to keep the stronger navy (presumably American) from projecting power as it wished. A lone Argentine Type 209 submarine almost did this in the Falklands; the British task force used up almost all its antisubmarine weapons on false

contacts. Other sources of sanctuary might be political alignments or dense umbrellas of missiles and aircraft.

Commerce Raiding. A navy that is not strong enough even to constitute a fleet-in-being might try commerce raiding (also known by the French term *guerre de course*). The Germans resorted to it in both world wars. This concept requires sustained and systematic operations and therefore sanctuary for the bases of the raiders (since the early twentieth century, usually submarines). In an age of jet bombers and missiles, achieving such sanctuary is hard to imagine today, except perhaps for the U.S. Navy. Moreover, the same factors that complicate blockade make commerce raiding almost infeasible in the current environment. In any case, if the U.S. Navy attempted to interdict Chinese commerce, nuclear escalation could become an issue.

Delay, Disruption, Denial, and Demoralization. If a navy is not strong enough for anything else, it can attempt “delay, disruption, denial, and demoralization” (D4) operations. That is, it can send out units to try to do enough damage to the stronger force (which is presumably attempting to project power or blockade) to cause that force to abandon the operation or at least delay it, giving the weaker power some strategic breathing space. The effects of the “hits” may be physical, such that the operation cannot continue, or they may be demoralizing, either to the force itself or the attacking nation’s public or leadership. The Argentine strategy after its fleet retreated to port was of this nature, and it almost worked when the containership *Atlantic Conveyor* was sunk by an Exocet. The Japanese SHO plan in World War II was also a D4 strategy. One of the elements that make a D4 strategy dangerous and potentially effective is the resolute acceptance by its implementer of the prospect that what it sends out will not come back. A D4 strategy is normally not sustainable unless—and this is a big *unless*—the weaker side has some kind of sanctuary that enables it to hide its forces until they are used and thereby meter them out over time. Mines and coastal submarines are potentially effective D4 tools. Such operations that are maintained for a substantial length of time essentially constitute “irregular warfare” at sea.

Maritime Security. Though not universally recognized today as a true area of naval warfare, maritime security has nonetheless been raised to a naval strategic imperative by the possibility that terrorists might sneak nuclear or other weapons into the United States or a friendly nation by sea. Given the economic and political disruptions caused by the 9/11 attacks, a seaborne insertion of weapons of mass destruction could be regarded as having the strategic importance of a conventional invasion. Maritime security thus occupies the same level of importance for the U.S. Navy as did fleet-based defense of the hemisphere in Alfred Thayer Mahan’s time. Maritime security in today’s world requires an almost

seamless blanket of awareness and cooperation over all the world's oceans. Thus it is inherently an international naval mission; the U.S. Navy's job is to help catalyze this cooperation. In fact, as an operational concept, maritime security today is different from the others in that it is absolutely dependent on the integrated operations of both strong and weak navies.

Bastions and Maneuver. If the principle of dominance of the offense at the tactical level holds true, which it has for the majority of naval history, logic says that trying to establish strongpoints or bastions at sea is a losing proposition. Two exceptions—where the defensive at sea has worked—have, by their rarity, the effect of proving the rule. The first is the clash between USS *Monitor* and CSS *Virginia* in March 1862, during the American Civil War. These ships being the first ironclads, naval guns and shells that could pierce armor did not yet exist, and thus the cannonballs of each bounced off the other. Less than a century later, the battle of the Philippine Sea in June 1944 was a triumph of integrated air defense due to the slowness of Japanese bombers and to the American use of radar to direct fighters, as well as of VT (proximity, or “variable time”) fuses on anti-aircraft shells. Today, although U.S. cruisers and destroyers carry the incomparable Aegis weapons system, modern antiship missiles have capabilities and characteristics that make them very hard to detect and shoot down. Submarines and mines are still very difficult to find. Naval leaders must still consider very carefully the fact that if “the other guy” knows where to find you, he can likely find a way either to evade or saturate any defensive scheme. If nothing else, he may just get lucky. Therefore, when there is a sea-control threat, maneuver is a requirement until that threat is neutralized.

That point raises the issue of the modern “sea base,” essentially a stationary strongpoint at sea. In some U.S. Navy publications, the definition of the term is stretched to include almost any grouping of ships at sea, regardless of how they are arranged or maneuvered. Such definitions have more relevance to inter-service budget competition than actual utility in naval operational art. A sea base is intrinsically a group of ships supporting an operation ashore. Accordingly, its scope of operational maneuver is highly restricted, as is the degree of tactical maneuver that can be tolerated if support to the shore is to remain effective. But history has taught navies not to get themselves into situations in which they must risk a disaster ashore in order to avert one at sea, or vice versa. This was Admiral Frank Jack Fletcher's dilemma right after the Guadalcanal landings in 1942: he felt constrained to remove his “sea base” of aircraft carriers before it could be attacked by the Japanese, since his carriers were the only operational ones in the Pacific. Thus, in theory, a navy should not attempt to project power ashore until it has achieved sea control. But the theory almost never holds. A

smart opponent will wait until the attacker is lodged ashore and cannot maneuver without invoking the dilemma above. This was the Japanese plan at Guadalcanal (from which resulted the first battle of Savo Island, disastrous for the Americans), Saipan (and the battle of the Philippine Sea), and Leyte (the SHO plan). The same dynamic was illustrated with the Argentine D4 operations during the British landings at the Falklands. Attempting to create and defend bastions at sea entails risk.

AIRCRAFT CARRIER DOCTRINAL ROLES

If there were no sea-control threat, there would be no need to discuss the doctrinal roles of carriers. As a new and uncertain modern world emerges, it is time to review how aircraft carriers have been used during their history. They are high-value units, and accordingly their use has always been governed by the degree of risk it is appropriate to incur; the doctrinal roles for carriers are centered on this aspect of their operations.

Eyes of the Fleet. The original use envisioned (at least by battleship admirals) for carriers was behind the battle line, out of harm's way, sending aircraft to scout and spot for the battle line. Interestingly, this may be a future role for our carriers. They stay far out at sea, beyond the range of missile-based access-denial systems, and send in ultra-long-range unmanned aerial vehicles for intelligence, surveillance, reconnaissance, and communication relay in support of a grid of submarines, destroyers, and other craft "inside the arena."

Cavalry. In early 1942, aircraft carriers supported the Doolittle raid on Tokyo, as well as a number of hit-and-run raids meant to disrupt Japanese operations. In these, the carriers relied on the protective cover of a large ocean. The missions were such that the carriers, if detected, could immediately run for safety; standing and fighting would have been suicidal. So long as a carrier can remain unlocated, it can speed around and deliver quick pulses of aerial bombardment.

Capital Ship. When in World War II a decisive naval battle became possible, as at Midway, carriers would stand and fight. Nimitz's definition of calculated risk nicely captures the logic of committing capital ships to a desperate fight: "You will be governed by the principle of calculated risk, which you shall interpret to mean the avoidance of exposure of your force to attack by superior enemy forces without good prospect of inflicting . . . greater damage on the enemy." Any capital ship is a "consumable" in such a fight, but not cannon fodder. Thus, when there was a prospect of inflicting greater damage to the other fleet, carriers could be risked, and of course some were lost. By the way, a capital ship is that ship type that is most capable in a fight for sea control and around which the tactics of the

fleet are centered. “Capital ship” is thus a doctrinal term related to sea control, not a general phrase describing any big, expensive naval ship.

Nuclear Strike Platform. After World War II, in the “Revolt of the Admirals” era, the Navy pressed its carriers into service as nuclear strike platforms. This was due not only to interservice fights with the Air Force but also to genuine concern that the slow B-36 bombers might not get through. The carriers had to survive to get to their launch positions; after that, all bets were off. Carriers retained their nuclear missions until the 1980s, when the evolving global situation made the massive Single Integrated Operational Plan obsolete.

Air Base at Sea. When carriers provide continuous support to operations ashore, they are functioning as air bases at sea—that is, as a kind of sea base. As such, they are constrained in their maneuvering and thus cannot tolerate any risk from sea-control threats. This is the mode in which aircraft carriers have been operating for virtually the whole post–Cold War era. Trying to use them in this mode in a sea-control situation almost guarantees they will take hits. During the Falklands War, the British had to use their carriers as sea bases, but because there was a sea-control threat from the Argentines, the carriers had to be kept out of harm’s way. This meant that their short-legged Harrier jets could not provide adequate air defense for the San Carlos beachhead, and a number of destroyers and frigates were lost as a result. When carriers try to function as air bases inside the range arcs of sea-control threats, they must try to erect bastions around themselves. As previously discussed, this is a debatable proposition.

WATER COLORS

Reference is heard in naval circles to three metaphorical “colors” of water: blue, green, and brown. They denote generally the proximity of land: “blue” water, the oceanic, reaches farthest from land; “green” water is the oceanic littoral; and “brown” water comprises rivers, bays, and estuaries. In the Cold War, these colors had more specific meanings. Blue water meant those areas of the ocean in which only other naval forces could confront one’s own. Green water denoted those areas of the ocean in which naval forces could be confronted and affected by land-based aircraft. Brown water was that zone of the ocean that could be covered by ground-based artillery. This distinction had some vague planning value, but the advent of long-range jet bombers carrying antiship cruise missiles made virtually all of the oceans “green.” In the era of total U.S. Navy dominance after the Cold War, the “colors” of water all but disappeared, other than in characterizations of a navy as “blue water,” which meant oceangoing, capable of more than purely littoral operations. With the emergence of very capable

sea-denial forces and oceangoing navies that might turn out to be adversaries, there is utility to readopting this shorthand, but with new definitions. The new basis of definitions would be the kind of naval forces that can operate at an acceptable degree of risk in water of each color.

Blue water would denote those areas of the ocean in which naval forces structured around high-value units (usually aircraft carriers or large amphibious ships, but perhaps in the future such things as arsenal ships as well) can operate. High-value units (HVUs) concentrate a substantial proportion of the force's offensive combat power in a single ship, the loss of which would likely unhinge a whole operation or at least significantly reduce the odds of its success. These ships are normally surrounded by a screen of cruisers and destroyers, as well as perhaps submarines operating in more distant support; the idea is to create a defensive bastion around the HVU that can fend off attacks by submarines, aircraft, other surface ships, and missiles. An HVU-centered naval formation relies on not only defensive firepower and electronic countermeasures but also maneuver to defeat attacks. Such maneuver seeks to deny detection and targeting as well as to force enemy units, especially submarines, to engage in such disadvantageous actions as speeding up in order to attack. If an HVU and its escort are far enough out at sea, the odds will be in their favor: they have plenty of room for maneuver, and an opponent can muster fewer forces against them. Blue water comprises those areas of the ocean where both of these conditions obtain. The weaker the opponent, the closer to shore blue water exists.

If an opposing nation possesses powerful antiaccess forces, especially if they consist of capable submarines, aircraft, surface vessels, and missiles, there comes a point at which the ability of the screen protecting an HVU risks being saturated. Depending on the sophistication of the antiaccess force—in terms of advanced missiles that are hard to shoot down, numerous tactical aircraft, robust sea surveillance and targeting, etc.—the distance at which saturation could occur varies. A small boat-based force can reach out only a few miles; one possessing antiship ballistic missiles can reach out hundreds. As an HVU-centered force moves inside the range arcs of various antiaccess systems, the defense problem becomes more difficult. Instead of just submarines and long-range bombers, the screen now has to deal with surface vessels (like fast missile boats), land-based tactical aircraft, and shore-launched missiles. Threats become not only more diverse but also more numerous. As the force moves in, the likelihood of “leakers” (missiles, aircraft, submarines, etc., that survive screen defenses to get a shot at the high-value unit itself) increases. Depending on the strategic and operational situation, there is a point at which the risk to the HVU becomes incommensurate with the nature and value of its mission. It is at that point that blue water would turn green.

Green water, in the new scheme, would embrace those areas of the ocean into which it is not rational to send HVUs. In green water, a different approach to naval warfare would have to be taken; offensive power must be dispersed into a number of vessels that have sufficient stealth and other characteristics that make them capable of operating in these areas, where antiaccess systems are capable of “ganging up” on high-value units. At first glance, this may seem to mean only submarines could enter green water, but certain kinds of surface combatants might be usable as well. What seems clear is that the offensive weapons of necessity in these waters would be missiles, torpedoes, and mines (be they launched from manned or unmanned vessels). The “names of the game” in green water would be hiding, deception, countertargeting, and ambush—and also, conversely, reconnaissance, targeting, and communicating. Given the lethality of modern antiship missiles, torpedoes, and mines, naval forces entering green waters would be at significant risk, whether attacking or defending. As space, missile, and other technologies improve, the proportion of green water in the world will expand.

Brown water, in the new order of things, would not simply be “worse green water” but zones in which oceangoing units could not operate effectively at all. Generally speaking, this would mean waters that are too shallow, narrow, or infested with mines. In brown water, only smaller craft could operate effectively, whether or not there was any actual opposition. While brown water clearly denotes rivers and some bays, it would not necessarily be limited to them. Depending on opposition and other conditions, certain seaward littoral areas, as well as straits and other choke points, might be regarded as brown water.

These new definitions, if they became widely accepted, would represent a useful shorthand for planning and discussing sea control. The very fact of acknowledging that green water, as just defined, even exists would lead necessarily to force-structure decisions that would in turn produce a naval force that is at least a bit less centered on high-value units than at present. Moreover, determining where potential naval missions exist in brown water might yield a force that was not simply “riverine” in nature. Using these water colors, with the proposed definitions, could enhance dialogue on sea control and point to a force more usefully adapted to the emerging strategic and operational environment.

THE DISCIPLINE OF SEA CONTROL

When a navy’s sea control is challenged, life is more difficult. That navy cannot assume free access to the littorals, and it may face the prospect of being attacked far out at sea, depending on the particulars of a dispute. Since the best protection for a naval force is to be unlocated in the vast ocean, the force must not only develop measures for achieving this condition in wartime but must set things up

accordingly in advance, in peacetime. Thus a navy that contemplates opposition must attain an operational discipline that includes not only tactics and weapons but also command-and-control doctrine and nodes, as well as integration with diplomatic circles. The U.S. Navy allowed this discipline to erode in the Vietnam era, when it focused all its energies on power projection. Consequently, when a true sea-control challenge arose, in the form of the Soviet Fifth Eskadra during the Yom Kippur War in 1973, the U.S. Navy had neither the weapons nor the tactics to deal with the situation.³ Only after the crisis (mercifully) blew over did the Navy take up rediscovering sea control. Since 1990, however, the Navy has again focused on power projection and, again, has lost the discipline of sea control. Perhaps this article will stimulate a new rebirth of this discipline before the Navy is confronted with a new challenge for which it is unprepared.

NOTES

1. Wayne Hughes, *Fleet Tactics: Theory and Practice* (Annapolis, Md.: Naval Institute Press, 1986), p. 25.
2. For a theoretical, doctrinal, and historical examination of the nature, planning, and conduct of major naval operations generally, see Milan Vego, *Major Naval Operations*, Newport Paper 32 (Newport, R.I.: Naval War College Press, September 2008), available at www.usnwc.edu/press/.
3. For this episode see Lyle J. Goldstein and Yuri M. Zhukov, "A Tale of Two Fleets: A Russian Perspective on the 1973 Naval Standoff in the Mediterranean," *Naval War College Review* 57, no. 2 (Spring 2004), pp. 27–63, available at www.usnwc.edu/press/.

THE CANADIAN NAVY AND CANADA'S NATIONAL INTERESTS IN THIS MARITIME CENTURY

Vice Admiral Dean McFadden, Canadian Navy

In my centennial message at the beginning of [the Spring 2010] issue of the *Canadian Naval Review*, I reflected briefly on our history as a navy. In this article, I will offer my reflections on the future. While no one can predict exactly what will happen in the decades ahead, I am confident in stating two things about the

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21st century. First, the oceans will be of increasing importance to Canada's security and prosperity. Second, virtually every defence and security challenge I can envisage will require that Canada integrate all of the elements of the Canadian Forces—in fact, the entire arsenal of skills and competencies that this country has at its disposal—if it is to succeed.

The aim of this article is not to focus on *how* the Canadian Forces must organize to meet challenges, but rather *what* these challenges are likely to be, and *why* they should matter to Canadians. I will argue, as you might expect, that Canada's maritime air and naval forces will make a substantial contribution to addressing these challenges, as they did in the past 100 years and as they do today, as was so recently evident in Haiti, Vancouver and off the Horn of Africa. But first, let me explain why the 21st century will be a maritime century.

Today's global maritime order is based on a delicate geopolitical and juridical balance between two central but essentially competing ideas that have existed in a state of tension for some 500 years. These ideas are:

- *mare liberum*, the concept that the seas *cannot* be made sovereign and hence are free for all to use; and
- *mare clausum*, the idea that the seas *can* be made sovereign to the limits of effective state control.

The delicate balance was achieved not through bloodshed, but rather through an unprecedented degree of international consultation in the closing decades of the 20th century to reconcile the vital interests of the great maritime powers with the interests of coastal states. That balance was precisely what the United Nations Convention on the Law of the Sea (UNCLOS) achieved, making this landmark international treaty arguably the crowning legal achievement in history.

Few states have benefitted as much from the Law of the Sea treaty as Canada. It has endowed us with an immense ocean estate, one that extends beyond our shores to encompass the riches of more than 3.5% of the planet's entire surface. This represents a priceless inheritance for generations to come, with inalienable sovereign authority over nearly one-half of this massive oceanic reach, but as well special duties of care and custody for the resources and ecosystems of the remainder. Anything that challenges or threatens to challenge the geopolitical balance embodied in UNCLOS therefore touches deeply on Canada's national interest.

Given the enormous stakes involved, however, it is by no means assured that the unique and remarkable consensus of maritime interests that occurred in the latter half of the 20th century will withstand the tremendous changes this century is likely to witness. Ocean politics will make for a global maritime commons of great strategic complexity and growing strategic competition.

Nowhere is this more apparent than in the Indo-Pacific, where ocean politics already occupy centre-stage. China—the region's most rapidly growing maritime power—acknowledged a fundamental strategic reality when it recently stated that its principal vulnerabilities and threats came from the sea. This is a remarkable shift for a state which has focused for millennia on protecting its frontiers from threats originating inland. But it's a shift that was also inevitable as China assumed a more prominent place in a global system that depends on maritime commerce and the fundamental openness of the "great commons," as Alfred T. Mahan once described them. It's the echo of a powerful geopolitical idea, expressed in the following words written in the early 16th century and now

pertinent to all states, that “[w]hoever is Lord of Malacca has his hand on the throat of Venice.”¹

What is very clear today is that the world’s oceans no longer serve to shield Canada from far-distant events. Rather, they connect us through a vast and intricate web of relationships—political, economic, financial and social—that has made us neighbours with all the world’s peoples. Our prosperity and security are thoroughly enmeshed in a global system that transcends all boundaries. It is a system that depends to varying degrees on regulated air, space and cyber commons for its functioning, but it would not function at all without a regulated ocean commons. Defending that system is not a matter of choice for Canada: it is essential to our way of life.

In fact, I would maintain that the most essential public good of this globalized era is a regulated ocean commons. By this I mean a world in which the seas are open for all to use freely and lawfully, regulated against the increasingly troubling range of illegal and criminal activities that are occurring on them, and defended against those who would threaten the pillars upon which the current global system is built.

Thus, the organizing principle for the application of Canadian seapower in this maritime century is to defend the global system both at sea and from the sea. The strategic requirement this calls for is a globally deployable sea control navy, with an operating concept of a maritime force not only held at readiness, but also forward deployed.

The responsibility to regulate the ocean commons in our own home waters must be taken by Canada alone, even if we were to develop closer arrangements with our American neighbours to defend the three ocean approaches to North America. But this task is not exclusively the preserve of the navy. It requires a comprehensive, whole of government approach in which Canada is considered a world leader.

Defending the global system may begin at home but it must also be defended abroad, and this clearly is the work of navies. Only navies can ensure the safety of waters that are likely to become increasingly contested by a range of actors. These actors may be purely criminal and opportunistic, as we’re seeing today off Somalia or the Gulf of Guinea, or they may be armed maritime groups whose political purpose and access to increasingly sophisticated weapons can be used to hold even an advanced navy at risk.

But even the largest of navies can’t be everywhere. This is why the leaders of many like-minded navies speak of the need for a maritime strategy that seeks to enlist all coastal states and maritime powers to regulate the ocean commons cooperatively, to the extent permitted by their capacities. We need to build a

FIGURE 1



The frigate HMCS *Toronto* (FFH 333) on sovereignty patrol in Frobisher Bay, off Baffin Island, 2009
Canadian Forces

meaningful capacity within the Canadian Forces, including the navy, to help build the capacity of others.

Not only must we defend the global system at sea, we must also defend the conditions that permit the global system to flourish, by being able to operate as part of a joint force “from the sea.” There’s a reason we’re seeing defence diplomacy becoming more focused on populations through the elevation of humanitarian assistance and disaster relief to core military missions. It’s not just the right thing to do, it’s in Canada’s national interest because of the crucial roles these populations play in our collective future.

This is not to say that traditional maritime diplomacy will no longer be important. In fact, it is probably more important now in this globalized era than “gunboat diplomacy” ever was. At the strategic level, forward-deployed maritime forces help to prevent and contain conflict, while also creating the conditions that can shape the success of joint forces should they ever be needed. They provide Canada with insight and influence, promote trust and confidence among our friends and give pause to our potential adversaries.

At the operational level, forward-deployed maritime forces provide options to government. They provide the capacity to respond quickly to unfolding events and a range of choices that can be carefully calibrated to the situation, including creating the time for diplomacy to work, and declaring intent without irreversible entanglement. Nothing says commitment like “boots on the ground,” whether sailors, aviators or soldiers. However, when the decision is taken to act, maritime forces provide governments the priceless advantage of choosing when and where to commit a force. The use of the sea for operational manoeuvre, as this advantage is called, can greatly amplify the employment of even a relatively small ground force, as was the case in East Timor.

Defending the global system “from the sea” doesn’t require the kind of high-end capabilities that are associated with modern amphibious warfare, which tend in the public imagination to evoke images of Normandy, Iwo Jima or Inchon. These kinds of capabilities are beyond Canada’s aspirations. What is within our national ambitions, as declared by the current government, is the capacity, in relatively permissive environments, to deliver a force ashore and to sustain it there indefinitely without reliance on shore-based infrastructure. As Haiti so recently demonstrated, there is a whole range of operations where such a capacity would permit Canada to project its power and influence to defend the global system from the sea.

The world’s littoral regions—that strip of the planet where land meets sea, extending landward or seaward as far as force and influence can be projected from either environment—will not always be as permissive as we saw in Haiti. Nonetheless, we will be drawn to these regions by our vital national interests. Over three-quarters of the world’s population lives within 200 nautical miles of a coast and over half of them within dense urban landscapes. Four out of five of the world’s capital cities are to be found in the littoral region, and virtually all of the world’s productive capacity. Moreover, these regions are where the effects of massive change along every human axis—social, demographic, cultural, technological and climatological—are increasingly being concentrated. Accordingly, there is little doubt that this is where Canada’s future joint force will operate, almost invariably as part of a large multinational operation led by our closest allies.

As a battle space, the world’s littoral regions are becoming cluttered and congested, requiring the precise delivery of a whole range of effects, from the need to win the “battle of competing narratives” at one end of a spectrum to the need to take and hold ground at the other. As we’re seeing in Afghanistan, we will usually be more constrained by international law and the values of Canadian society than the potential adversaries that Canada and its allies are likely to face. These

FIGURE 2



HMCS *Windsor* (SS 877), a *Victoria*-class submarine, with the frigate HMCS *Montréal* (FFH 336) along the Atlantic seaboard in November 2005
Canadian Forces

are adversaries who have learned to integrate the warfare traditions of Clausewitz and Mao Zedong and to organize all means of violence—criminal, irregular and conventional—to achieve their political ends. This will make for future joint operations of great ambiguity and complexity.

There are important implications in this for Canada's maritime forces, including the fundamental capacity to fight and prevail in combat at sea against a potentially far broader and more comprehensive range of threats than ever before. Our maritime forces must continue to be organized, trained and equipped to control events in contested waters. The price of admission to these high-end capabilities, including the capacity to lead multinational maritime operations, is unlikely to go down.

It is far from certain that the West will continue to enjoy its current technological and materiel advantages, and Canada is unlikely ever to enjoy the advantage of numbers. This means that we must become far more agile and adaptable as an integrated fighting force. Haiti demonstrated what we could achieve as an integrated joint team in the face of great tragedy, and this operation achieved more than a dozen exercises and months of doctrinal discussions could have achieved. But much more remains to be done.

The operation in Haiti illustrated one of our clear strengths—our people. They are the key to our future success, and so they must remain a key area of investment. This is not merely a matter of bringing the number of sailors up to the navy’s authorized strength, or of ensuring that the Canadian Forces adopt policies that make sense for a Canadian population that is evolving dramatically. This is about making sure that our people have the skills and competencies that hybrid warfare will demand, and deny to potential adversaries the advantages we now concede them in terms of their superior knowledge of local terrain—physical, social and cultural.

The government gives the Canadian Forces responsibility for defending Canada, defending North America and contributing to international peace and security. The navy has vital roles to play in all of these enduring pillars of defence policy. Defending the global system is fundamental to all three, as is the capacity to defend from the sea the conditions that permit the global system to prosper. This is our unique contribution towards Canada’s prosperity, security and national interests, and has been since the navy’s creation in 1910. This is what makes Canada’s globally deployable, sea control navy of enduring relevance in this maritime century.

NOTES

This article originally appeared, under the title “The Navy and Canada’s National Interests in this Maritime Century,” in *Canadian Naval Review* 6, no. 1 (Spring 2010). It is reprinted with permission. That article was based on opening remarks made by Vice Admiral McFadden during a panel discussion to examine “National Interests and Power

Projection: Required Capabilities,” at the 73rd Annual General Meeting of the Conference of Defence Associations, held in Ottawa, 3 March 2010.

1. Tomé Pires, *Suma Oriental of Tome Pires: An Account of the East, from the Red Sea to China, Written in Malacca and India, 1512–1515*.

A PRIVATE SECURITY SOLUTION TO SOMALI PIRACY?

The U.S. Call for Private Security Engagement and the Implications for Canada

Christopher Spearin

Canada's naval response to Somali piracy has been a mixed affair. On the positive side, in recent years the Canadian Navy has successfully dedicated a significant level of resources to countering Somali piracy: the destroyer HMCS *Iroquois*, the frigates HMCS *Calgary*, *Ville de Québec*, *Winnipeg*, and *Fredericton*, and the oiler HMCS *Protecteur*. Collectively, these vessels operated effectively alongside the ships of several other navies, especially those of the U.S. Navy, that together form the various international flotillas confronting Somali pirates. The Canadian Navy's level of involvement has been no mean task, because of the great distances involved, its limited number of surface combatants, and its other responsibilities.

On the negative side, the effective handling of Somali pirates has been an ephemeral and problematic task. Despite the international naval presence, the incidence of Somali piracy has increased. In 2008 pirates attacked 122 vessels, and in 2009 the number rose to 198. In the spring of 2010, just as HMCS *Fredericton* was cruising back to Halifax, Nova Scotia, after completing a 4.5-month patrol, Somali pirates renewed their attacks following the monsoon season.¹ *Fredericton's* captain, Commander Steve Waddell, recognized the elusiveness of overall success: "Pirates continue to attack shipping in the region. . . . [T]hey've

been doing it while we are here, and they continue to do it now even as we get ready to go home."²

In light of the counterpiracy mission's prominence for Canada and the limited effect navies have had so far, a call by the United States for international

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commercial shippers to rely upon private security companies (PSCs) demands attention. For instance, Vice Admiral Bill Gortney, “double-hatted” as commander of the Fifth Fleet and Naval Forces Central Command, has advised that “companies don’t think twice about using security guards to protect their valuable facilities ashore. Protecting valuable ships and their crews at sea is no different.”³ General David Petraeus, then commander of U.S. Central Command, similarly espoused the engagement of PSCs by international shippers operating near Somalia.⁴ Though Canada’s Chief of Defence Staff, General Walter Natynczyk, has not explicitly endorsed the U.S. call, he has argued that pirates who “see some challenge” will back off: “There’s a responsibility on the shipping companies in terms of where they are routing ships and the kind of protection they take, and it’s an issue they have to resolve because what we have found is that the pirates are not a bunch of courageous people.”⁵

What, therefore, are the call’s implications in terms of future Canadian activism and the overall effectiveness of countering Somali piracy? To answer this question, this article offers four main points. First, through initially examining the rationales supporting Canada’s counterpiracy activities, it identifies the conundrum that PSC/shipper engagement presents to Canada. The call’s American roots suggest boundaries on what Canada should likely expect in terms of future U.S. Navy efforts and, correspondingly, the efficacy of a counterpiracy approach stressing mostly state assets (i.e., naval ships). Second, the article compares the differences between a state naval (i.e., Canadian) counterpiracy response to that of PSCs. It finds that though PSCs can avoid many of the problems that state responses currently confront, their engagement presents some qualitative challenges. Third, the article identifies the *Montreux Document on Pertinent International Legal Obligations and Good Practices for States Related to Operations of Private Military and Security Companies during Armed Conflict* (to which we will refer as the Montreux Document) as an appropriate device that Canada might advance to ameliorate the maritime PSC option. Finally, the article argues that while, quantitatively, more interactions between PSCs and shippers might result through the Montreux Document’s promotion, many commercial shippers do not wish to respond to the American recommendation; it upsets long-held expectations about who does what at sea. Increasing the PSC presence to such an extent that a strong public/private partnership at sea exists will be a longer-term undertaking.

CANADIAN RATIONALES FOR COUNTERING SOMALI PIRACY

Five rationales frame the Canadian Navy’s efforts in countering Somali piracy. One concerns the negative effects that piracy poses to maritime trade in both holistic and, in turn, direct ways for Canada. At the holistic level, the Canadian

Navy's 2001 guiding document *Leadmark* and the government's 2008 *Canada First Defence Strategy* set the direction for the nation's policy. They link Canada's economic prosperity as a trading nation with globalization, which in turn depends on advancing stability and limiting lawlessness abroad.⁶ The Canadian Navy's assessment of important future strategic issues similarly stresses maintaining this prosperity:

The greater interdependence of economies resulting from globalisation means that great harm can be inflicted upon the economy and people of Canada by even low-level warfare or asymmetric threats virtually anywhere in the world. . . . It is therefore in the best interests of Canada to assist in ensuring the free flow of goods and the creation and maintenance of an environment free of disruptions and threats not only to us but also to our trading partners.⁷

Likewise in a direct manner—for instance, Somali pirates seized control of the MV *Yasa Neslihan* on 29 October 2008. This Turkish-flagged bulk carrier held seventy-seven thousand metric tons of Canadian iron ore and was en route to China. Canadian naval personnel have also acknowledged the importance of the Gulf of Aden to commercial vessels bound to Canada.⁸

The second rationale pertains to the physical security of Canadians. The Canadian government asserts that a variety of security concerns, regardless of geographical proximity, can pose a threat. To justify the government's 2009 dispatch of HMCS *Winnipeg* to the Gulf of Aden to counter Somali piracy, Defence Minister Peter MacKay contended that "the security challenges facing Canada are real and globalization means that developments abroad can have a profound impact on the safety and interests of Canadians here." The minister's language echoed the government's stance laid out in the *Canada First Defence Strategy*.⁹

Third, in a political sense, Canadian involvement in counterpiracy efforts demonstrates a commitment to responsible and meaningful *participation* in international security endeavors. Political calculations intrude here, given the current government's desire to portray its *Canada First Defence Strategy* as reversing the decline of international activism precipitated by preceding governments. For Prime Minister Stephen Harper, the strategy "[ensures] that Canada can return to the international stage as a credible and influential country, ready to do its part."¹⁰ In this context, Canada demonstrates leadership by "being there," which in turn helps to avert strategic marginalization felt by nonparticipants. Canada also demonstrates leadership through its seeking out and acceptance of prominent roles within international military activities.¹¹

The fourth rationale is that historically the Canadian Navy has generally participated in international naval activities headed by the U.S. Navy (USN). Put differently, though the Canadian Navy certainly does not disregard independent

operations or participation in coalitional activities lacking American leadership, it does link much of its operational fortunes to the U.S. Navy. As *Leadmark's* drafters note, "There will continue to arise any number of situations in which naval forces of medium powers such as Canada can make a difference by working in combination with the USN."¹²

Therefore, the Canadian Navy's long-standing interoperability with the U.S. Navy allows for the contemplation of a range of operations that feature the latter's involvement.¹³ Equally, interoperability is recognition of the Canadian Navy's own qualitative and quantitative limitations. Interoperability permits the Canadian Navy to do more regarding both operations and the potential accrual of political credit, but it also ties the service closely to what its U.S. counterpart does.¹⁴

The final rationale concerns the Canadian Navy's self-preservation: there is public appeal in confronting pirates. Though Somali pirates differ substantially from the buccaneers of old or the swashbuckling figures of popular culture, counterpiracy activities have an allure that the population easily appreciates. This is no small issue, because historically the Canadian Navy has had difficulties in promoting its relevance in terms of maintaining the nation's security and prosperity.¹⁵ If anything, this promotion has become more difficult in recent years, for four reasons: the end of the Cold War brought a reduction in strategic clarity; nontraditional threats, such as terrorism, are largely land-based phenomena; considerable media attention has focused on the Canadian Army's operations in Afghanistan; and it is difficult to espouse to domestic political audiences measures of effectiveness that reveal the linkage between forward naval presence and globalization's economic benefits.¹⁶ Thus, it is striking that Commander Craig Baines, commanding officer of HMCS *Winnipeg* during its counterpiracy mission, asserted that Canada's efforts garnered "a level of national and international media interest 'that is unprecedented in recent naval operations.'" Equally surprising is that the media labeled Commander Baines a "national celeb" as a result of his efforts and those of his crew in the waters off Somalia.¹⁷

IMPLICATIONS OF THE U.S. CALL

Notwithstanding the importance Canada places on countering Somali piracy, the American origins of the call for PSC/shipper engagement suggest a vacillating U.S. Navy approach. On the one hand, Secretary of State Hillary Clinton has justified an initial naval, rather than land-based, approach toward Somali piracy, arguing that "[you] have to try to put out the fire before rebuilding the house."¹⁸ More generally, American policies issued in 2005, 2007, and 2008 explicitly connect freedom of the seas with countering piracy.¹⁹ In a congruent manner, the

2007 “Cooperative Strategy for 21st Century Seapower” identifies piracy as an irregular and transnational threat. A U.S. Navy response to these threats, it declares, “protects our homeland, enhances global stability, and secures freedom of navigation for the benefit of all nations.”²⁰ Similarly, the current chairman of the Joint Chiefs of Staff, Admiral Michael Mullen, asserted in the past that piracy can “no longer be viewed as someone else’s problem. It is a global threat to security because of its deepening ties to international criminal networks, smuggling of hazardous cargoes, and disruption of vital commerce.”²¹

Yet on the other hand, the call for PSC/shipper engagement does imply limitations on the degree to which piracy is to be a U.S. Navy problem. Certainly, that service has not said that it is ending its counterpiracy work, nor has it suggested that other states stop their own efforts. But one can argue that additional U.S. Navy vessels, however necessary, will not be immediately forthcoming in countering Somali piracy.²²

In this context, among the various transnational threats the U.S. Navy now confronts, countering Somali piracy is apparently of a lower order of concern than, for example, terrorism. As Jonathan Stevenson, of the faculty of the U.S. Naval War College, contends, “Most naval commanders do not consider the containment of the piracy problem a central military task, seeing it as a distraction from core counterterrorism, counterproliferation, deterrence and war-fighting missions.”²³ Though U.S. Navy officials are consistently wary of possible linkages between Somali pirates and Islamic extremists, there is no evidence to suggest the two are connected.²⁴ Until such a connection is clear, antipiracy efforts will seemingly be a lesser priority for the U.S. Navy.

For Canada and its navy, the U.S. call for PSC/shipper engagement leads one to question the nature of Canadian involvement in countering Somali piracy. The Canadian Navy can still in the future show Canada’s international credentials by “being there” in the Gulf of Aden, so garnering publicity at home. However, the ultimate success of a solely state-centric approach is minimized if additional state naval resources, especially from the U.S. Navy, are not in theater. Put differently, while the Canadian Navy can still assist the U.S. Navy in confronting contemporary security threats that are of concern to Canada, Somali piracy specifically is apparently on a lower level of importance for the U.S. Navy.

In the face of these issues, might Canada work to develop a better public/private relationship beyond General Natynczyk’s demand that shippers be capable at deterrence? Generally, such an approach, given Canada’s rationales for engaging in counterpiracy efforts, might help to safeguard its interests *at sea* and support its interests *by sea*.²⁵ Canadian activism would help compensate for the quantitative limitations of a solely state-centric response at sea. It would also be in keeping with the U.S. Navy’s desires to develop positive partnerships with sea

users. These desires are evident in the 2005 “thousand-ship navy”/Global Maritime Partnership and the policy directives presented in the 2007 “Cooperative Strategy,” noted above. Indeed, the language employed in these cooperative frameworks is not exclusive to states.²⁶

Therefore, to assess in what ways Canada might best advance the private presence as per the American call, the article now turns to the differences, vis-à-vis state naval resources, of a PSC response and the possible drawbacks of the PSC approach that require minimization.

Public/Private Differences

While warships of state navies off the Horn of Africa may convoy specific ships of interest, they also patrol areas of water and intercept pirates. These are difficult tasks for state navies, given the Somali coastline’s size—the longest in mainland Africa—and Somali pirates’ increasing brazenness and prowess. Somali pirates, using mother ships to support smaller skiffs, have attacked vessels farther than a thousand nautical miles from Somalia’s shores. The mother ships provide for reach and the dispatched skiffs are stealthy and fast. Indeed, attacks often end in less than fifteen minutes. Somali pirates have even mounted attacks within the Internationally Recommended Transit Corridor—in which shippers and navies alike are to concentrate their resources—to the degree that the Gulf of Aden has been nicknamed “pirate alley.”²⁷

In light of these factors, state navies also emphasize reach and speed in countering Somali pirates. Canadian naval officers, such as Commander Baines, have underlined the reach and swiftness of air assets: “It cannot be overstated how critical Winnipeg’s embarked Sea King was to mission success. . . . The helicopter was integral to every major piracy event that Winnipeg was involved in.”²⁸ Commander Waddell, of *Fredericton*, similarly stressed how state navies can stretch their abilities: “It’s really huge geography. You don’t work side by side with other ships. . . . You spread your resources out as best you can. You extend the range of what you’re looking for by using radar, helicopters and patrol aircraft.”²⁹

In contrast, PSCs largely avoid the coverage issues and the consequent capital requirements by concentrating on the close protection of their clients’ vessels.³⁰ As explained by one private security company, Hollowpoint Protective Services, “vessels travelling in hostile waters require one on one protection. The seas are much too vast for governments both foreign and domestic to protect every ship that travels.”³¹

In exercising this close protection, PSCs are not under international law permitted to “go after” and conduct offensive activities against Somali pirates. Article 107 of the United Nations Convention on the Law of the Sea (UNCLOS) highlights state prerogative in this regard: “A seizure on account of piracy may

be carried out only by warships or military aircraft, or other ships or aircraft clearly marked and identifiable as being on government service and authorized to that effect.” What is more, only defensive measures are allowable, given UNCLOS article 101’s definition of piracy as “any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft.” Indeed, taking action beyond the mere defense of a client could itself constitute piracy.

In two particular ways, these legal limitations at sea fit well with how the PSC industry has evolved generally. One pertains to the manpower rather than capital-centric orientation of PSCs already evident in their operations on land.³² At sea, whereas some PSCs do send their own vessels to sail alongside clients’ ships, most instead offer only onboard security personnel, hired on a contractual basis.³³ Through this hiring method and by “equipping the man” rather than “manning the equipment,” PSCs can avoid much of the administrative, management, investment, and infrastructure-related costs that state militaries confront. This approach also, however, removes any opportunity for a PSC to pursue and intercept pirates; a ship’s master retains control of the vessel even if PSC personnel are on board.

The second way has to do with the carving out of a market niche for defensive activities. States and PSCs alike are generally keen to conflate the offensive application of violence with combat duties—that is, something that only states perform.³⁴ In the view of both, private commercial actors who perform offensive tasks are “mercenaries.” Indeed, American officials draw the distinction between mercenaries and PSCs:

Accusations that U.S. government-contracted security guards, of whatever nationality, are mercenaries is inaccurate and demeaning to men and women who put their lives on the line to protect people and facilities every day. . . . The security guards working for U.S. government contractors in Iraq and elsewhere protect clearly defined United States government areas, and their work is defensive in nature.³⁵

In this vein, directives of the Coalition Provisional Authority in Iraq and the Joint Contracting Command–Iraq/Afghanistan restrict combat duties and law enforcement to state forces exclusively.³⁶ One can note comparable offensive/defensive distinctions made by British and Canadian officials. The “value added” of PSC engagement comes through allowing militaries to concentrate on combat-related tasks.³⁷

Similarly, more and more firms utilize the term “private security company” rather than “private military company,” so as to keep the “military” as the preserve of states. This is also true for industry associations, such as the British Association of Private Security Companies, whose membership pledges “to avoid

any armed exchange in their operations, except in self-defence.”³⁸ Individual companies also routinely espouse their defensive credentials.³⁹

Another major difference between the public and the private is that PSCs avoid the operational and legal challenges associated with bringing Somali pirates to justice. Canadian Navy crews have let suspected pirates go rather than face prosecution, a policy derided as “catch-and-release.”⁴⁰ Several reasons inform this approach. Some relate to the navy’s human capital, as suggested by Commodore Bob Davidson, who led Combined Task Force 150 in 2008: “We are military people, not law-enforcement people. . . . We are not trained in evidence gathering and the connection between crime and punishment.”⁴¹ Some problems relate to developing legal proxies in the region. For instance, only in 2010 did Canada initiate funding for special judicial venues in the Seychelles and Kenya to prosecute captured pirate suspects.⁴² Other issues concern reluctance to bring pirates to account in Canada: first, clear evidence of an attack, rather than simply probable intent to attack, must be obtainable; second, no Canadians are likely to be directly affected by a particular pirate attack; and third, prosecutions in Canada might be ineffective and even lead to subsequent refugee claims.⁴³

It is true that UN Security Council Resolution (UNSCR) 1816 “calls upon all . . . States with relevant jurisdiction under international law and national legislation, to cooperate . . . in the investigation and prosecution of persons responsible for acts of piracy and armed robbery off the coast of Somalia.” The Security Council has emphasized the resolution’s importance by renewing it twice through UNSCR 1846 of 2 December 2008 and UNSCR 1897 of 30 November 2009. Nevertheless, Canada’s Department of Foreign Affairs and International Trade argues that Canada is not obliged to respond: “The wording of paragraph 11 of UNSCR 1816 on ‘investigation and prosecution’ is not cast so as to create a legally binding decision pursuant to Article 25 of the Charter of the United Nations.”⁴⁴ Whatever the legal merits—some Canadian Navy personnel have grumbled about the lack of “follow through”—this is a perplexing matter that PSCs have not faced.⁴⁵

Possible Drawbacks

Though the private presence enjoys some unique and useful attributes that states and shippers alike might capitalize upon, PSC professionalism and capabilities are unclear, given current industry dynamics. There is a fear that counterpiracy work will become the next big PSC “gold rush,” with all the potential for disorder the term evokes. Regarding the last “rush,” by some estimates 60 percent of private security companies did not exist before 11 September 2001; they found their places in Iraq, Afghanistan, and elsewhere.⁴⁶ Similarly, start-ups can increase the pressure

for expansion into maritime operations, due to the small outlay required to get into the business, given the aforementioned emphasis on contracted manpower. Other, more established PSCs will also likely enter the maritime marketplace in search of further opportunities and service diversification. As pointed out, for instance, by Jim Cowling of the PSC Shipguard, “Iraq is being wound down, and guys are looking around and latching onto piracy.”⁴⁷

In many ways, the PSC expansion is occurring in a vacuum. Shippers, while often knowledgeable of nonlethal security measures and tactics for countering pirates, do not always have experience in managing violence; they must rely on PSC expertise. PSCs themselves, however, have varying levels of experience in maritime security. The ease of entering the marketplace has some qualitative implications, as emphasized by Neptune Maritime Security’s David Rider: “Ironically, hiring armed guards for a boat is easy. What’s difficult is hiring seasoned, experienced professionals at a competitive price who will ensure the security of not only the boat, its crew and cargo, but also the parent company’s corporate reputation as well.”⁴⁸ Disagreement among PSCs is also evident as to whether unique characteristics and understandings are required regarding maritime conditions, operations, and equipment, compared to security work on land.⁴⁹ Equally, some flag states have laws about the permissibility of arms onboard but do not have regulations governing PSCs specifically.⁵⁰

The potential for unmanaged growth and lack of control are troubling, because even with the hoped-for target-hardening and deterrent effect of PSC employment, it is likely that private violence will be increasingly applied. Indeed, it has already happened: on 23 March 2010, in what has been termed as “the shot ‘heard round the seas,’” PSC personnel for the first time killed a pirate during a thwarted attack on the MV *Almezaan*.⁵¹

CANADA AND REGULATION’S POTENTIAL ROLE

There is one international regulatory mechanism that might promote responsible and effective PSC/shipper engagement: the Montreux Document. Together, the Swiss government and the International Committee of the Red Cross (ICRC) initiated the negotiations leading to the document. On 17 September 2008 Canada became one of the document’s first seventeen signatories. The other states were Afghanistan, Angola, Australia, Austria, China, France, Germany, Iraq, Poland, Sierra Leone, South Africa, Sweden, Switzerland, Ukraine, the United Kingdom, and the United States. Since September 2008, an additional seventeen states have announced their support for the document: Albania, Bosnia and Herzegovina, Chile, Cyprus, Ecuador, Georgia, Greece, Italy, Jordan, Liechtenstein, Macedonia, Netherlands, Portugal, Qatar, Spain, Uganda, and Uruguay.

In the main, these states recognize the document's two major contributions. First, it identifies "hard" international humanitarian law and human-rights law for states to follow. States are not immune from their international obligations simply because PSCs are involved. Second, the document presents seventy-three nonbinding "soft" standards—a tool kit of good practices—designed to guide states in fulfilling their legal obligations.

The Montreux Document's applicability to PSC maritime operations is threefold. First, though the document emphasizes operations during armed conflict, its drafters nevertheless espouse its broader applicability in peacetime endeavors. In particular, they devised its good practices to be germane to the wider development of responsible PSC employment independent of context. Indeed, in their explanatory comments, the drafters explicitly identify the Montreux Document's practicality and usefulness regarding PSCs countering piracy.⁵²

Second, the document's language is not overly limiting or exclusive. For instance, the instrument focuses generally on firms providing services that "include, in particular, armed guarding and protection of persons and objects, such as convoys, buildings and other places; maintenance and operation of weapons systems; prisoner detention; and advice to or training of local forces and security personnel."⁵³ PSC counterpiracy activities can easily fall into these categories. What is more, the document's points on state jurisdiction are apt. It defines "home states" as those in which a firm has "its principal place of management."⁵⁴ Many states that are document signatories are also the home states of private security companies offering counterpiracy services.⁵⁵ Similarly, "territorial states" are those states in which PSCs operate. The provisions can apply to flag states because of the sovereign responsibilities they are to exercise. As well, the drafters champion the document's applicability beyond relations between states and PSCs: "The good practices may be of value for other entities such as international organizations, NGOs [nongovernmental organizations] and companies."⁵⁶ Though only states can be signatories, the document's guidance for "contracting states" might be valuable for shippers that are PSC clients.

Third, acting on the good practices listed in the Montreux Document would be beneficial in handling the qualitative concerns raised earlier. The good practices are ways in which state and nonstate actors can become savvy about the PSC industry in terms of background checks, past activities, and performance requirements. The document's suggestions pertinent to quality control, personnel training, weapons systems operations, rules bearing on the use of force, and standardization for the sake of upholding international humanitarian and human-rights law are equally relevant to ensuring appropriate and effective PSC activity. Similarly, the Montreux Document identifies the elements of

international humanitarian and human-rights law that home states could incorporate into more general controls. These controls might be “corporate operating licensing” for limited time spans, “specific operating licensing” for the export of particular services, and “export authorization” that takes into account the proposed service, the client, and the operating context.⁵⁷ Additionally, the Montreux Document seeks to protect PSC employees themselves—that is, it stresses employment standards and operational safety. States can identify and underscore the particular requirements for the operations at sea of private security companies, to the benefit of clients and PSC personnel alike.

Canada could work to promote the document’s applicability among states (home and territorial/flag) and commercial shippers. To be sure, Canada was instrumental in pushing forward the three-year-long negotiations leading to the document’s creation. The Department of National Defence is devising policies on the selection, employment, and management of PSCs with the document squarely in mind—making Canada one of the first countries to take this step. What is more, Canadian advocacy would complement the efforts of the Swiss government to disseminate the document’s good practices in forums like the United Nations, NATO, the Organization of American States, and the Organization for Security and Cooperation in Europe. Such advocacy certainly would be in line with the ICRC’s expectations that signatories actively promote the document. In total, Canada could advance the document’s scope even beyond its important humanitarian and human rights functions to cover PSC activities at sea.

THE QUANTITATIVE CHALLENGE

One must recognize the challenge Canada and others who advocate the document are likely to face: qualitative improvements in PSC/shipper relationships may only lead to a limited increase in the quantitative level of these relationships. From one standpoint, some shippers and industry associations are wary about how having PSCs on board might lead to further violence, the deaths of seafarers, and even environmental disaster. As suggested by Giles Noakes, the head of maritime security at the Baltic International Maritime Council (BIMCO), “While I understand the temptation, placing armed guards on board creates a severe risk of escalation.”⁵⁸ Measures undertaken by states to ensure the capabilities and professionalism of PSCs might make the relationship called for by the United States more appealing.

Yet from another standpoint, the very call for PSC/shipper engagement upsets long-held understandings about who should be doing what at sea. While many shippers will take precautionary measures, they will draw the line at violence employed under their auspices. For them, only navies are to possess this

potential and, in turn, bring about a degree of order on the high seas. Peter Hinchliffe, the International Chamber of Shipping's marine director, sums up this opposition:

I think what navies are forgetting, and perhaps governments are forgetting as well, is that we are not talking about the protection of an individual ship in a piece of water. What we are talking about is the fundamental obligation of nations to provide safe passage for world trade. So, therefore, it is totally unsatisfactory for naval authorities to try to devolve that responsibility to innocent merchant ships.⁵⁹

In this regard, a number of other maritime-related organizations oppose the usage of armed PSC personnel: BIMCO, the International Association of Independent Tanker Owners, the International Chamber of Shipping, the Oil Companies International Marine Forum, the Society of International Gas Tanker and Terminal Operators, the International Association of Dry Cargo Ship Owners, the International Group of Protection and Indemnity Clubs, the Cruise Lines International Association, the International Union of Marine Insurers, the Joint War Committee and Joint Hull Committee, and the International Transport Workers Federation.⁶⁰ Equally, the UN's International Maritime Organization and the International Maritime Bureau of the International Chamber of Commerce are nonsupportive.

It would appear, therefore, that normative matters might easily impede the ostensible functionality of security privatization. The upset resulting from security privatization in whatever form is not surprising, according to Alyson Bailes: “[The] rules, norms, disciplines, rewards and punishments have not been tailored to fit this type of actor *for a significant and habit-forming period of historical time*. It is not the intrinsic ‘newness’ of the private sector and . . . transnational actors that explains the difficulty; rather, it is the fact that they are *different from the recently dominant players*.”⁶¹ All the same, unless a large number of shippers embrace the U.S. call, the development of a critical mass of private security activity will be constrained. Without this mass, the PSC presence will be limited in how effectively it can counteract both the limitations of state naval activities and the increasing assertiveness of Somali pirates. Hence, it is evident that increasing the PSC presence to the point of creating a strong public/private partnership against Somali piracy will be a longer-term undertaking.

Commander Waddell summed up the state of Canada's naval efforts in the waters off Somalia as HMCS *Fredericton* prepared to return home: “My view is that the work is not complete here. . . . There will be a requirement, in my opinion, to see further deployments here to sustain the effort.”⁶² The extent of Canada's concern and of its past engagement leads one to contend that the Canadian

government will likely in the future decide to send naval resources to the Gulf of Aden to further this “work.” This decision, however, must recognize that there is now less certainty about the growth of U.S. Navy commitment. At the same time, relations among states, private security companies, and shippers are in flux. The Montreux Document is an appropriate vehicle through which Canada and like-minded states can act in order to bring about qualitative improvements in the PSC presence at sea. But building on the American call for PSC/shipper engagement will be a challenging task. Despite the current state limitations, many shippers prefer grey hulls on the distant horizon to PSC personnel on board.

NOTES

- The views expressed in the article are those of the author; they do not necessarily reflect those of the Canadian Department of National Defence or the Government of Canada.
1. “Somali Pirate Attacks Increasing,” *Stars and Stripes*, 2 April 2010, available at www.military.com/; ICC Commercial Crime Services, “IMB Reports Unprecedented Rise in Maritime Hijackings,” 16 January 2009, available at www.icc-ccs.org/.
 2. Cited in Allison Cross, “Canadian Warship Combating Piracy, Terrorism Ends Mission,” *Vancouver Sun*, 8 April 2010, www.vancouversun.com/.
 3. Cited in Combined Maritime Forces Public Affairs, “Super Tanker Attacked in Arabian Sea,” Story NNS081117-07, *United States Navy*, 17 November 2008, www.navy.mil/.
 4. Tony Capaccio, “Petraeus Urges Ships to Use Armed Guards,” *Boston Globe*, 25 April 2009, www.boston.com/.
 5. Cited in “Shipping Firms Must Step Up Piracy Prevention: Natynczyk,” Canadian Press, 24 November 2008, available at www.ctv.ca/.
 6. Department of National Defence [hereafter DND], *Leadmark: The Navy’s Strategy for 2020* (Ottawa: Directorate of Maritime Strategy, 2001), p. 47; DND, *Canada First Defence Strategy* (Ottawa: 2008), p. 8. Similar arguments are presented in Geoffrey Till, *Seapower: A Guide for the Twenty-first Century*, 2nd ed. (London: Routledge, 2009), p. 224.
 7. DND, “Strategic Issues: The Future: Canada’s Economic Prosperity,” *Canadian Navy*, www.navy.forces.gc.ca/.
 8. Allison Cross, “Goods Bound for Canada Travel through ‘Pirate Alley,’” *Canwest News Service*, 20 March 2010, available at www.canada.com/.
 9. Peter MacKay, cited in “Government of Canada Tasks HMCS *Winnipeg* to NATO Fleet,” CEFCOM NR 09.006, 27 March 2009, available at www.forces.gc.ca/. See also DND, *Canada First Defence Strategy*, p. 6, and DND, *Securing Canada’s Ocean Frontiers: Charting the Course from Leadmark* (Ottawa: Directorate of Maritime Strategy, May 2005), p. 22.
 10. DND, *Canada First Defence Strategy*, p. 1.
 11. *Ibid.*, p. 9.
 12. DND, *Leadmark*, p. 111.
 13. *Ibid.*, p. 96; Andrew C. Richter, “‘Alongside the Best?’ The Future of the Canadian Forces,” *Naval War College Review* 56, no. 1 (Winter 2003), p. 88.
 14. DND, *Leadmark*, p. 14; Richter, “‘Alongside the Best?’” p. 112.
 15. Till, *Seapower*, p. 98.
 16. James Wirtz, “Will Globalization Sink the Navy?” in *Globalization and Maritime Power*, ed. Sam J. Tangredi (Washington, D.C.: National Defense Univ. Press, 2002), p. 1, available at www.ndu.edu/. See also Martin N. Murphy, *Contemporary Piracy and Maritime Terrorism: The Threat to International Security*, Adelphi Paper 388 (London:

- International Institute of Strategic Studies, July 2007).
17. Cited in Allan Woods, "Navy's Piracy Mission Troubled," *Toronto Star*, 9 January 2010, p. A10. See also Allan Woods, "Canada Makes Waves Battling Somali Pirates," *Toronto Star*, 18 April 2009, www.thestar.com/, and Steven Haines, "The New Piracy: The Legal Context," *Survival* 52, no. 1 (February–March 2010), p. 52.
 18. Cited in David Gollust, "Clinton Announces US Anti-piracy Measures," *Voice of America*, 15 April 2009, www.voanews.com/.
 19. U.S. Defense Dept./U.S. Homeland Security Dept., *The National Strategy for Maritime Security* (Washington, D.C.: September 2005); "United States Maritime Security (Piracy) Policy," Memorandum from the President, 14 June 2007; and National Security Council, *Countering Piracy off the Horn of Africa: Partnership & Action Plan* (Washington, D.C.: December 2008), available at www.marad.dot.gov/.
 20. J. T. Conway, G. Roughead, and T. W. Allen, "A Cooperative Strategy for 21st Century Seapower," October 2007, repr. *Naval War College Review* 61, no. 1 (Winter 2008), p. 15, available at www.usnwc.edu/press/.
 21. Admiral Mullen made this statement when he served as Chief of Naval Operations. Admiral Mike Mullen, "Vision for a 21st Century Navy," U.S. Naval Institute *Proceedings*, 17 January 2006, available at www.military.com/.
 22. While states have responded to earlier U.S. Navy calls to provide assets to counter Somali piracy, it is unlikely these states will have sufficient resources to contribute much more. A 2009 Congressional Research Service report assessed that "the number of naval ships that would be needed to completely halt piracy in the Gulf of Aden and the waters of Somalia's Eastern Coast is probably much larger than the 12 to 20 that have been operating there in recent months. As many as 60, for example, might be required to suppress piracy in the Gulf of Aden." *Piracy off the Horn of Africa*, CRS Report for Congress (Washington, D.C.: Congressional Research Service [hereafter CRS], 24 April 2009), p. 9, available at www.fas.org/. These numbers do not take into account the additional vessels required to replace those on station in order to maintain constant coverage. The inability of many other states to respond substantially stems in part from the fact that over time they have become reliant on the U.S. Navy's forward presence. In this sense, some perceive the U.S. Navy as the "global navy," providing common security functions. A recent calculation also underscores the U.S. Navy's prominence: in 2009, the U.S. Navy's total tonnage equaled that of the next seventeen navies. The "global navy" argument is evident in Tangredi, ed., *Globalization and Maritime Power*. The statistic on total tonnage is from Jeremy Black, *Naval Power: A History of Warfare and the Sea from 1500 Onwards* (New York: Palgrave Macmillan, 2009), p. 204.
 23. Jonathan Stevenson, "Jihad and Piracy in Somalia," *Survival* 52, no. 1 (February–March 2010), p. 31.
 24. For instance, in his March 2009 testimony to the U.S. House Armed Services Committee, Vice Admiral Gortney asserted that "we look very, very carefully for a linkage between piracy and terrorism or any kind of ideology and we do not see it. It would be a significant game changer should that linkage occur. But we have not seen it." *Piracy off the Horn of Africa*, p. 12.
 25. The author employs here the language used by J. R. Hill, *Maritime Strategy for Medium Powers* (Annapolis, Md.: Naval Institute Press, 1986), p. 219.
 26. See, for instance, this passage from "A Cooperative Strategy for 21st Century Seapower": "Increasingly, governments, non-governmental organizations, international organizations, and the private sector will form partnerships of common interest to counter emerging threats" (p. 10).
 27. Cross, "Goods Bound for Canada Travel through 'Pirate Alley.'"
 28. Cited in Woods, "Navy's Piracy Mission Troubled," p. A10.
 29. Cited in Allison Cross, "Trawling for Pirates," *Montreal Gazette*, 7 March 2010, p. A7.
 30. For instance, in recent years, Shipcraft A/S, International Ship Management Pte. Ltd., Biyat International, and Marsek have employed PSCs. It is difficult to determine the exact number of shippers that utilize PSCs,

- because many do not wish to disclose their security arrangements. PSCs, for their part, frequently maintain client confidentiality.
31. Cited in “Ships Need Armed Guards,’ Says Security Firm Chief,” *Maritime Global Net*, 20 October 2008, available at www.mgn.com/.
 32. For general overviews of the PSC industry, see P. W. Singer, *Corporate Warriors: The Rise of the Privatized Military Industry*, 2nd ed. (Ithaca, N.Y.: Cornell Univ. Press, 2008), and Deborah Avant, *The Market for Force: The Consequences of Privatizing Security* (Cambridge, U.K.: Cambridge Univ. Press, 2005).
 33. For instance, some PSCs, such as Xe, Espada Logistics and Security Group, Securewest International, and Hollowpoint Protective Services, advertise their own ships. In Southeast Asia, Glenn Defense Marine Asia also advertises its own vessels.
 34. Sarah Percy, *Mercenaries: The History of a Norm in International Relations* (New York: Oxford Univ. Press, 2007), p. 10; Mary Lamey, “Garda Has 1,800 Workers in War Zones,” *Montreal Gazette*, 15 May 2007, p. B1; “Kidnapping Clouds Garda’s Year,” *Prince George Citizen*, 13 June 2007, p. 22; Luke Baker, “British Firms Battle for Iraq Security Deals,” Reuters, 1 October 2007, available at www.reuters.com/.
 35. Cited in Alexander G. Higgins, “US Rejects UN Mercenary Report,” *USA Today*, 17 October 2007, www.usatoday.com/.
 36. Coalition Provisional Authority, “Memorandum Number 17: Registration Requirements for Private Security Companies (PSC),” CPA/MEM/26, 17 June 2004, pp. 7, 10–11, available at www.trade.gov/; Walter Pincus, “Contractor Hirings in Afghanistan to Emphasize Locals,” *Washington Post*, 7 December 2009, www.washingtonpost.com/.
 37. Andrew Mayeda, “MPs Seek Cost of Private Contractors,” *Ottawa Citizen*, 26 November 2007, p. A5; Gloria Galloway, “\$8-Million, No Oversight,” *Globe and Mail*, 18 November 2009, p. A1; Brian Brady, “Britain Could Hire ‘Mercenaries’ to Guard Bases in Combat Zones,” *Independent*, 6 July 2008, www.independent.co.uk/.
 38. Andy Bearpark, “Why Private Security Companies Are Essential in Post-conflict Iraq,” *Business Intelligence Middle East*, 2 March 2008, www.bi-me.com/.
 39. See, for instance, Steve Fainaru, “Iraq Contractors Face Mounting Losses,” *Washington Post*, 16 June 2007, available at www.msnbc.msn.com/, and Patrick Jerome Cullen, “Private Security in International Politics: Deconstructing the State’s Monopoly of Security Governance” (unpublished doctoral dissertation, London School of Economics, 2009), p. 152.
 40. Dan Lett, “Prosecution Not Necessary to End Scourge,” *Winnipeg Free Press*, 23 May 2009, www.winnipegfreepress.com/.
 41. Cited in Matthew Fisher, “Canadian Warships Hunt Modern-Day Pirates,” *Ottawa Citizen*, 15 July 2008, p. A3. Davidson became a rear admiral in late 2008. The other significant flotillas with mandates to counter Somali piracy are Combined Task Force 151, the North Atlantic Treaty Organization’s (NATO) standing maritime groups, and the European Union Naval Force Somalia.
 42. The United Nations Office on Drugs and Crime, the European Union, Australia, France, Germany, and the United States also provide funding for these venues.
 43. Cross, “Canadian Warship Combating Piracy”; Bruce Champion-Smith, “Canadians Foil Pirates in Dramatic Night Chase,” *Toronto Star*, 18 April 2009, www.thestar.com/; Dan Lett, “Practicalities of Pirate Prosecution Raises Questions,” *Winnipeg Free Press*, 22 May 2009, www.winnipegfreepress.com/; “HMCS Winnipeg Constant Thorn in the Side of the Somali Pirates,” *Winnipeg Free Press*, 24 May 2009, www.winnipegfreepress.com/; and “Canadian Sailors Uncover Biggest Weapons Haul,” *Ottawa Citizen*, 25 May 2009, www.ottawacitizen.com/.
 44. Cited in Paul Koring, “Ottawa’s Piracy Policy Flouts Law, Experts Say,” *Globe and Mail*, 1 May 2009, p. A14. Article 25 of the UN Charter states that “the Members of the United Nations agree to accept and carry out the decisions of the Security Council in accordance with the present Charter.”
 45. Dan Lett, “Our Sailors Finding True Justice Elusive,” *Winnipeg Free Press*, 28 May 2009, www.winnipegfreepress.com/. On the one hand, some states contend that they have

- both the right and a duty to prosecute pirates. Consider, for instance, the language of UNCLOS article 100: “All States shall cooperate to the fullest possible extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any State.” On the other hand, some states espouse that they do not have a duty; they wish to avoid the international liability if they do not exercise it in any particular case. In this sense, weakness in the development of domestic law regarding pirates “represents a tacit refusal to acknowledge a duty to prosecute pirates.” Janice E. Thomson, *Mercenaries, Pirates, and Sovereigns: State-Building and Extraterritorial Violence in Early Modern Europe* (Princeton, N.J.: Princeton Univ. Press, 1996), pp. 108, 187 notes 8 and 9.
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TAMING THE OUTLAW SEA

*Admiral James G. Stavridis, U.S. Navy, and
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The goods of the world move predominantly by sea. Across that broad global commons, trade generally flows freely and well. Yet there are places today where the term “outlaw sea” applies.¹ Piracy, sadly, flourishes in several key choke point regions of the world’s sea-lanes of communications. We must tame this outlaw sea.

To many, the word “piracy” conjures images of seventeenth- and eighteenth-century swashbuckling rebels brandishing cutlasses and flintlocks under the ominous skull-and-crossbones flag, à la Walt Disney World’s “Pirates of the Caribbean” attraction. But to those who have been victims of their blades and bullets, the word invokes a darker “profession”—and one that continues today.

Pirates and corsairs of the “Golden Age of Piracy”—feared mariners with names like Barbarossa, “Calico Jack” Rackham, “Black Bart” Roberts, and Anne Bonny—have captured imaginations since early-eighteenth-century periodicals chronicled their crimes. But piracy is more than theft, rape, and murder on the high seas. It is a systemic destabilizer of international norms of commerce, economics, and trade. Piracy is also intertwined with conditions ashore. In particular, piracy in the waters off the Horn of Africa today results from deep social, political, economic, and environmental problems in Somalia. It is the fruit of anarchy, extreme poverty, and the severe failure of the rule of law. At the pragmatic level, however, piracy is an illicit entrepreneurial pursuit whose main objective is to maximize profit.

In other words, Somali pirates are armed opportunists who stem from a permissive and enabling environment formed by a weak state and who engage in a

business enterprise subject to risk-and-reward calculations that can be influenced by the international community. The international community, including various governmental and nongovernmental organizations, as well as private enterprises, has an opportunity now to work together and exert the necessary influence both at sea and ashore to shift the calculus of piracy from profitable enterprise to futile folly.

The United Nations, the European Union (EU), the African Union, the Arab League, and NATO are collaborating to influence the risk-and-reward analysis of Somali pirates. A wide range of countries—including Australia, China, Djibouti, Egypt, Ethiopia, Japan, Kenya, Malaysia, New Zealand, Pakistan, Russia, Singapore, Somalia, South Korea, and Ukraine—are cooperating to broadly address the issue as well.

Though piracy manifests itself most perceptibly at sea, it is a complex and persistent land-based problem with political, social, and economic dimensions requiring a long-term, comprehensive solution. To bring about a lasting cure to the cancer of piracy, particularly off the Horn of Africa, two endeavors must be undertaken in parallel. First, the risk of failure in hijacking a vessel at sea must be increased to the point where piracy is no longer seen as an attractive and lucrative endeavor. In other words, pirates' own calculations must yield deterrent conclusions. Second, governance, stability, and security within Somalia must be so improved that less risky yet reasonably profitable alternatives to piracy can be fostered both at sea and ashore. The second task is a much more challenging proposition than the first, given Somalia's fragmented and unstable state.

CAPTURING THE LESSONS OF THE PAST

Lawlessness upon the sea is nothing new. Piracy is an ancient profession. Its history dates back to antiquity, preceding even the ancient Egyptians. Nautical bandits have plied the waves for nearly as long as people have used the seas for trade. The Lukka raiders, for example, launched raids from the coast of Asia Minor as early as the fourteenth century BC; Thucydides mentions pirates in his *History of the Peloponnesian War*; and Herodotus writes of how pirates kidnapped the poet Arion of Methymna in an attempt to steal his riches.²

As is the case today in the Horn of Africa, piracy in the ancient Mediterranean world flourished when there was an absence of central control.³ In periods when the empire du jour—Egyptian, Greek, or Roman—was unable to maintain a strong naval presence in the large inland sea, pirate communities spread along its shores. Before the middle of the first century BC, piracy was a significant problem in the Mediterranean.⁴ As Rome's maritime trade of wheat and other commodities flourished, piracy expanded. At their height pirates exerted dominion and control over the Mediterranean to an extent that left little room for

free navigation or commerce.⁵ The economic impact was felt throughout the Roman Republic as prices of goods—particularly of wheat, vital for feeding the Roman people—grew out of control. Even young Julius Caesar was taken for ransom by Cilician pirates, around 75 BC.⁶

It was only when Rome's power expanded to claim the whole of the Mediterranean basin—and the littorals whence pirates sailed—that piracy was eradicated from the ancient world.⁷ Gnaeus Pompeius Magnus, known to history as Pompey, was sent by the Roman people to wrest the seas from the pirates. In combating piracy, Pompey focused on the act and its source, not exclusively on the actor. Over a period of several months in 67 BC, with hundreds of ships and 120,000 soldiers, he swept the Mediterranean Sea and corralled the pirates in their strongholds ashore.

Most surrendered.⁸ They did so because the risk of death or capture at sea in future piratical attempts exceeded the potential rewards to be gained. But they surrendered also because Pompey, understanding that piracy was bred in rootlessness and social disorder, offered attractive alternatives ashore. He admitted some into the small towns of the Cilicians in Anatolia, and others he planted in the city of the Solians, also in Anatolia; to the majority he granted land in the ancient Greek province of Achaea to call their own and cultivate.⁹ With this land he afforded the former pirates an opportunity to pursue an enterprise with more acceptable risks and rewards and so helped turn the pirates into contributing Roman subjects.

Pompey, then, wiped out Mediterranean piracy by countering pirates at sea *and* by presenting former and would-be pirates with stakes in profitable and less risky enterprises ashore. Though Somali pirates are unlikely to be presented with land to call their own, Pompey's actions provide a valuable demonstration of the balanced application of hard and soft power both at sea and ashore, one that is no less relevant and wise in combating piracy today than it was more than two millenniums ago.

CONTROL OF THE SEA IS VITAL

Though Pompey's strategic vision and his expedition against piracy were successful, not even the mighty Roman Empire ever extinguished piracy permanently. As civilizations and empires ebbed and flowed and control of what Alfred Thayer Mahan later called a "wide common" was exerted and relinquished, so too did the threat and impact of piracy fluctuate.¹⁰ In the early Middle Ages, the Vikings raided and plundered their way across Europe, and later corsairs from the North African "Barbary Coast" terrorized the Mediterranean Sea. Piracy also waxed and waned in the Far East and in the Caribbean, as trade grew and the tides of profit rose and fell. As merchants ventured to sea and maritime trade

expanded, pirates followed, ransacking vulnerable ships and cargo; they continue to do so to this day.

Today, however, pirates chase their prey not in galleys, sloops, or schooners but in fast, open skiffs. They brandish not cutlasses and flintlocks but AK-47s and rocket-propelled grenades and are aided by satellite phones, high-tech navigation gear, and competent and continually evolving networks ashore. The last few years have witnessed a rising trend in piratical attacks around the world. In 2009, the International Maritime Bureau (IMB) reported 406 attacks, compared to 293 in 2008, 263 in 2007, and 239 in 2006. In 2009, a total of 217 incidents carried out by suspected Somali pirates were reported to the IMB, making the area off the Horn of Africa the number-one hot spot for piracy in the world.¹¹ The attacks are becoming more violent, brazen, and sophisticated. The number of incidents where guns were used nearly doubled in 2009 from 2008 levels and has tripled since 2005.¹² Somali pirates have extended their reach, threatening not only the Gulf of Aden and the east coast of Somalia but also the southern region of the Red Sea, the strait of Bab el Mandeb, and the east coast of Oman.¹³

The attacks listed in the IMB report were wide-ranging; they included eighty attacks off the east and south coasts of Somalia, 116 in the Gulf of Aden, fifteen in the southern Red Sea, four off Oman, and one each in the Arabian Sea and Indian Ocean. In 2009, off the east coast of Africa alone, a total of 114 vessels were fired upon, forty-seven vessels were hijacked, 867 crew members taken hostage, four killed, and one missing.¹⁴ By comparison, throughout the rest of the world six vessels were fired upon, two were hijacked, 185 crew members were taken hostage, four were killed, and seven were missing.¹⁵ Since IMB figures are based on self-reporting and many attacks may go unreported, the actual figures may very well be much higher, particularly in areas where the level of international focus on piracy is lower than it currently is off the Horn of Africa.

The year 2010 started with a bang for the twenty-four seamen of the chemical tanker *Premoni*. The ship was attacked and hijacked, and its crew taken hostage by Somali pirates in the Gulf of Aden on 1 January. As of the second week of January a total of six vessels had been successfully attacked by pirates and bandits: *Premoni*; a liquified propane gas tanker in Côte d'Ivoire's Abidjan harbor; a vehicle carrier off the Horn of Africa; and a vehicle carrier, a chemical tanker, and a bulk carrier in Southeast Asia. As of mid-April, a total of forty-eight vessels had been attacked, or attacks had been attempted against them, off Africa's eastern shores. Globally, that number grows to a total of eighty-one vessels.

The annual cost of piracy is not accurately recorded, but it is not trivial, even setting human costs aside. Piracy is estimated to cost anywhere between a billion and sixteen billion dollars a year.¹⁶ Some countries are investing to thwart piracy by increasing their military presences in high-risk areas. Some shipping

companies are taking such measures as rerouting ships to bypass the Gulf of Aden, hiring private security guards, and installing nonlethal deterrence equipment. Examples of the latter are the Long Range Acoustic Device, which was employed against pirates attempting to hijack the luxury cruise ship *Seabourne Spirit* in late 2005, and Secure-Ship, an innovative electrified fence that surrounds the whole ship and uses a high-voltage pulse to deter boarding attempts.¹⁷ But these actions all come at a price. For example, routing a tanker from Saudi Arabia to the United States via the Cape of Good Hope adds approximately 2,700 miles to the voyage and approximately \$3.5 million in annual fuel costs.¹⁸ According to the U.S. Maritime Administration, the cost of avoiding risk becomes more complex in the liner trades. If pirates were to become able to attack cruise liners successfully and regularly, the long bypass required to avoid them would result in the need for additional vessels to maintain scheduled service and capacity commitments. For example, routing from Europe to the Far East via the Cape of Good Hope rather than through the Suez Canal would incur an estimated additional \$89 million annually—\$74.4 million in fuel and \$14.6 million in charter expenses—without considering the added costs associated with disruption of global supply chains.¹⁹ Also, insurance costs have soared over the last few years. The cost of war-risk insurance premiums for vessels passing through the Gulf of Aden, about five hundred dollars in 2007, was twenty thousand dollars in 2008.²⁰ A shipowner with a vessel worth \$100 million can now reportedly expect to pay about \$150,000 to cover its payload—a cost that is ultimately passed on to the consumer.²¹

Not all is bad news, however. The rate of successful hijackings in the vicinity of the Horn of Africa dropped in the second half of 2009, to an average of one in nine vessels targeted by pirates, compared to one in 6.4 in 2008.²² The decrease can be attributed to expanded control of the sea around the Horn of Africa established through increased international cooperation and naval patrols; expanded coordination of naval patrols through the use of the Mercury secure, Internet-based communication system; shared intelligence at the operational level; and willingness of potential target ships to respond to military guidance, comply with recommendations, and deploy effective protective measures. If continued, these measures, particularly self-protection by potential targets, will likely drive the rate of successful hijackings down further.

THE CHALLENGE ASHORE

In Somalia, where nearly ten million mostly nomadic pastoralist people live with neither a permanent national government nor a formal economy and where pervasive and violent crime is an extension of the general state of insecurity, piracy is perceived pragmatically, as an opportunity for profit.

In a recent National Public Radio report, for example, a Somali pirate nicknamed “Boya” declared, “I’ll be a pirate until I die. . . . We understand what we’re doing is wrong. But hunger is more important than any other thing.” Another pirate acknowledged that “sometimes doing a bad thing is the only way to improve the situation for yourself and the people you love.” That same pirate also described how he had “worked his way up” from indigent lobster fisherman to pirate and then, having made enough money to get his siblings out of southern Somalia and into neighboring Kenya, had quit. He would, he asserted, never go back to being a pirate.²³

Though just two examples, the above vignettes offer a glimpse of the factors influencing individuals to shoulder Kalashnikovs, board open skiffs, and head to sea in search of easy prey. It also brings into focus a fundamental fact of piracy: that at its core, piracy is a land-based challenge.

Even so, piracy is most often looked at as a waterborne problem. In fact, article 101 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) defines piracy as, in part, “any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft; against (ii) a ship, aircraft, persons or property in a place outside the jurisdiction of any state.”²⁴ This definition, though adequate for the framing of law-enforcement and antipiracy activities on the high seas, does not account for the dual challenge that characterizes piracy. UNCLOS article 101 is focused on the symptom, the crime at sea, and not the cause, the deplorable conditions ashore. To address the challenge of Somali piracy, the UN Security Council has approved resolutions 1816, 1838, 1846, and 1851—all containing authority to use “all necessary means” to counter piracy. Broadly speaking these resolutions encourage states to develop a cooperative framework to oppose piracy in the region and grant specific authority to “cooperating states” to enter Somalia’s territorial sea to repress piracy in a manner consistent with international law. Resolution 1851 authorizes “cooperating states” to go farther and engage in antipiracy action on Somali soil—a complex endeavor even under the best of circumstances and one that ought to focus on building the capacity of Somalia’s Transitional Federal Government to fulfill its responsibility to the Somali people and root out piracy and armed robbery at sea.²⁵ That said, none of those resolutions authorize any state to address the deplorable conditions ashore that are arguably why individuals find piracy potentially attractive. Perhaps it is time for the international community to focus on the root causes.

Piracy off the Horn of Africa has its sources in economic deprivation and political instability. It is a multifaceted problem that calls for a comprehensive

solution involving actions and activities ashore as much as focused naval power at sea. In the words of Secretary of Defense Robert M. Gates, “There is no purely military solution to it, and as long as you’ve got this incredible number of poor people and the risks are relatively small, there’s really no way to control it unless you get something on land that begins to change the equation for these kids.”²⁶ If the international community believes piracy off the Horn of Africa is a serious matter that must be resolved, it must seriously consider broad solutions that go beyond the obvious and expedient application of naval power at sea. In countering piracy, as in most security efforts, the solution will be found in a balanced and comprehensive approach. If piracy in those strategic waterways is ever to be eradicated, it will take the coming together of governments, nongovernmental organizations, international organizations, and the private sector in the partnerships necessary to deliver security, stability, sustained economic development, and prosperity in Somalia. Hard military and law-enforcement activities are necessary but not enough. Pompey understood the need for this balance in the Mediterranean more than two thousand years ago; it is a fact that must not be overlooked in the Horn of Africa today.

AN OPPORTUNITY FOR COOPERATION

Recognizing that no one nation has all the resources required to guarantee safety and security throughout the maritime domain, the international community must commit enough maritime assets—platforms, capabilities, and ideas—to make acts of piracy both risky and difficult to conceal, thereby treating the symptom of piracy at sea. International operations such as NATO’s Operation OCEAN SHIELD, the EU’s Operation ATALANTA, and Combined Task Force 151—all supporting international efforts to combat piracy off the Horn of Africa—are excellent examples of such a collaborative effort among international partners. Certainly more ships would be helpful and welcomed, but even more valuable would be increased inputs from overhead satellites and greater deployment of maritime patrol aircraft and long-range surveillance assets.

There are many ways to collaborate and cooperate in conducting maritime security operations. There are expansive capabilities outside the military. For instance, Stephen M. Carmel, senior vice president of maritime services at Maersk Line, Limited, recently wrote about employing commercial shipping in preserving maritime security.²⁷ Carmel describes how Maersk Line—the world’s largest container shipping company, with over a thousand ships of various types—can offer what he called “overwhelming, persistent global presence” and a “good vantage point from which to see what is going on in the global commons.”

Commercial shipping vessels—the very targets of pirates—can be found throughout the area of interest. Maersk has operations in nearly three hundred

ports around the world and makes thirty-three thousand port calls a year—one every fifteen minutes, every day of the year.²⁸ No single navy can make such a claim, and no single nation can see what Maersk's ships see every day—and that's just one company. The implications of these statistics are enormous. If each one of the thousands of commercial vessels at sea were to contribute to a partnership for maritime surveillance and reporting, domain awareness would potentially improve by orders of magnitude, as would the ships' own security.²⁹

Each potential partner can bring something that can elevate the comparative advantage at sea of antipiracy forces. The UN, the EU, and NATO must seek, create, and leverage opportunities for maritime collaboration. But the maritime piece is just part of the puzzle. Maritime surveillance capabilities and capacity for maritime law enforcement and military engagement at sea must be integrated with the efforts of nonmilitary government agencies, nongovernmental organizations, and public and private ventures ashore. Ultimately, piracy must be resolved on land, by enabling Somalia's Transitional Federal Government to deliver security and create jobs and thereby reduce the risk of engaging in legitimate enterprises ashore.

Of course, and as we have noted, this is much easier said than done. In Somalia the internal challenges are daunting. Somalia's internationally recognized Transitional Federal Government has been unable to establish itself as the legitimate regime, and most of the country is outside its control.³⁰ Somalia's weak government serves as a catalyst for piracy and exacerbates the challenges of countering pirates at sea.

The lack of capacity and domestic legislation in Somalia and an absence of clarity as to how to dispose of pirates after they are captured have hindered international action against the pirates off the coast of Somalia and in some cases led to pirates' being released without facing justice.³¹

To counter piracy at sea effectively, there must be a viable and legitimate central authority ashore capable of enforcing the rule of law. As the commander of U.S. naval forces in Europe and Africa and of NATO's Allied Joint Task Force Command in Naples, Admiral Mark P. Fitzgerald, recently commented, "Somali-based piracy . . . will not go away until a government in Mogadishu is stable enough to confront the problem within its borders."³² The nations of Djibouti, Ethiopia, Maldives, Madagascar, Seychelles, Yemen, Tanzania, Kenya, and Somalia have all pledged their support to seizing, investigating, and prosecuting pirates off Somalia's coast, but the solution to piracy in the Horn of Africa ultimately lies within Somalia itself.³³ It is of little help in long-term piracy eradication if naval forces must operate in a catch-and-release mode because it is difficult or impossible to prosecute pirates.

STRONGER TOGETHER

In this interconnected world, international security and prosperity depend heavily upon the sea. Skillful cooperation and collaboration at sea and ashore are vital components to ensuring the free and lawful use of the world's waterways. Piracy in the Horn of Africa presents the international community with a complex and multidimensional challenge but also with a golden opportunity to come together and work collaboratively to solve it.

Beyond naval assets, the international community has an opportunity to take a comprehensive approach to countering piracy, one that focuses on a broad range of issues including deterring and disrupting piratical activity at sea; capturing pirates and bringing them to justice; developing regional and international agreements to prosecute suspected pirates effectively and humanely and legally punish them when found guilty; enabling Somalia's Transitional Federal Government to extend and enforce the rule of law; and encouraging the economic development of Somalia over the long term. Countering piracy off the Horn of Africa is an effort that must reflect international will, must focus on building the capacity of Somalia's Transitional Federal Government and the governments of neighboring countries, and be coordinated centrally and skillfully (by an internationally sanctioned body) so as to achieve a holistic effect. The European Union, given its recent successes with Operation ATALANTA and its growing commitment to combating piracy off the Horn of Africa, seems a logical international body to lead this effort.

Broadly speaking, the international community must undertake projects to build the capacity of Somalia's Transitional Federal Government to extend the reach of the rule of law. Additionally, investment in developing the capacities of the other countries in the region to detain, prosecute, and punish pirates is key.

NATO in particular can play a role in this regard in developing partner capacity to combat piracy, and it is expected to do so within the framework of the Contact Group on Piracy Off the Coast of Somalia, in a low-cost and noncontentious way. Simultaneously, international humanitarian work ashore must be encouraged and protected—an increasingly complex endeavor. The combination of conflict, drought, floods, and disease that has ravaged the country for decades has created a humanitarian catastrophe for some 3.64 million Somalis—more than half the population—who are in need of livelihood or humanitarian support. This environment of extreme penury and human displacement, where one in five children under five years old is acutely malnourished, adds to internal instability and serves as a catalyst for illicit activities, such as piracy, that in turn can further destabilize the region. The creation of alternative livelihoods through public/private partnering ashore, as well as

afloat, is vital. From the enablement of subsistence farming through irrigation to the development of environmentally sustainable coastal fish farms, to environmental remediation to support both agriculture and aquaculture, to the generation of microloans to facilitate the creation of small business—the range of possibilities is enormous and limited only by the imagination and will of the international community.

Beyond the low-water mark, control of the sea and maintenance of maritime domain awareness are essential to the eradication of piracy and armed robbery at sea. Programs now ongoing and initiatives currently being staffed within NATO's Allied Command Operations are squarely aimed at exploiting potential synergies in parallel with, and in support of, the EU and coalition maritime forces, as well as several national initiatives. Efforts include the close cooperation and exchange of information related to antipiracy efforts between various players within NATO and between NATO, the EU, the UN, the African Union, and the Arab League. Continued cooperation is paramount and must be expanded. We must achieve fusion in existing command-and-control structures, to include the use of space-based surveillance assets, NATO AWACS (airborne surveillance and control) aircraft, and unmanned aerial vehicles. Other ideas include the "tagging" of vessels identified as legitimate commercial and private craft, employment of convoys and escorts, a tactical shift to blockading pirates' points of embarkation, and, in cooperation with commercial entities, the use of more effective nonlethal, nonmilitary piracy countermeasures aboard merchant and passenger vessels. All of these options would serve, in combination, as complementary efforts to make acts of piracy more risky and therefore less likely to succeed.

Understanding that piracy is neither an at-sea problem alone nor a challenge with a single and isolated solution will go a long way toward taming the "outlaw sea." In addressing the root cause of piracy, the European Union, empowered by international consent and in partnership with the broader international community, must wisely consider, as the Greek historian Plutarch suggests, that "man by nature is not a wild or unsocial creature, but is transformed by the unnatural vice; whereas he may be softened by new customs and a change of place and life." Upon that consideration it should do as Pompey did and give pirates a taste of an "honest life by dwelling in towns and tilling the ground" or by casting their nets and harvesting the fruits of the sea.³⁴ The solutions to piracy will not likely be delivered by warships at sea alone; rather, they will emerge from a careful balance of security and development both afloat and ashore.

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CHINA'S "ANTIACCESS" BALLISTIC MISSILES AND U.S. ACTIVE DEFENSE

Marshall Hoyer

Relations between Taiwan and China have improved recently. At the same time, U.S.-Japanese relations have worsened, partly as the result of disagreements over Futenma Marine Air Station on Okinawa. As a result, the prospects of fighting between the United States and China over Taiwan and of U.S. reliance on Okinawa bases to supplement carrier airpower in the course of such a fight appear far-fetched, disastrous for the states concerned.

Of course, military professionals and the defense analytic community need to think through unlikely and unwelcome scenarios.¹ To that end, various analysts have contributed to a lively discussion of Chinese "antiaccess" systems designed to keep the United States at bay in the event of conflict.² These systems include C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) assets like over-the-horizon (OTH) radar and increasing numbers of satellites, a more modern air force, more submarines with better weapons, and both cruise and ballistic missiles to hold at risk our ships at sea and our air bases ashore.³ This article examines ballistic missile threats to carriers and air bases and the adequacy of U.S. active defenses.

China seeks the capacity to find U.S. aircraft carriers roughly a thousand miles from the mainland and to attack them with homing ASBMs (antiship ballistic missiles).⁴ China must overcome serious technological challenges to field the systems needed to do these things. The United States faces the prospect that

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China might overcome these challenges, perhaps as soon as five years from now. To attack fixed targets like American air bases in Japan, China has already developed a family of road-mobile, solid-fuel, short-range ballistic missiles.⁵ One of these missiles, the CSS-6, has the range to attack Kadena Air Base on Okinawa, a U.S. Air Force facility that is in many ways the best air base ashore for U.S. operations against China.⁶

The current U.S. response to these developments relies heavily on active defense—that is, deployment of antiballistic missiles (ABMs). To defend ships at sea, the United States is investing in Aegis/Standard Missile ABMs, and to defend air bases ashore, in Patriot PAC-3 ABMs. The Navy originally developed Aegis ballistic-missile defense (BMD) to protect assets ashore, such as seaports of debarkation. Given China’s ASBM efforts, however, many officers see the counterASBM mission as an important role for Aegis BMD. Indeed, the commander of the U.S. Pacific Fleet, Admiral Patrick Walsh, recently characterized missile defense as “essential to our ability to operate freely.”⁷

MY ARGUMENT IN A NUTSHELL

The U.S. ABM investments just described deserve critical scrutiny: asymmetries in the competition of Chinese ballistic missiles versus U.S. antiballistic missiles make it unlikely that active defense alone will succeed. To see why, we need to review China’s ASBM system threat to ships at sea and China’s short-range ballistic missile (SRBM) threat to U.S. air bases.

Active Defense against the ASBM System. What is the asymmetry in the ASBM versus ABM competition? On one hand, China can easily determine how many ABMs the United States is building and compute the limited number that each ABM-configured Aegis ship will likely have aboard. Should it succeed in developing ASBMs that work and systems that can detect, locate, and track U.S. aircraft carriers, China can overcome active defenses by launching more ASBMs than the United States can possibly intercept.⁸ It can do so with relative ease even if Aegis/ABM systems have high single-shot kill probabilities, because Beijing’s entire ASBM inventory is available.

The United States, on the other hand, can devote only a subset of its ABMs to protecting carriers from the ASBM threat. Even if the Navy makes heroic efforts to increase the fraction that is forward deployed in the western Pacific, China will retain its “home field” numeric advantage. The United States cannot “buy its way out” of this problem by acquiring larger numbers of Standard Missile 3s (SM-3s). First, China can add additional ASBMs to its inventories at substantially lower costs than those the United States would incur by adding offsetting numbers of ABMs.⁹ Second, if China proves able to meet the difficult technical

obstacles required to mount ASBM attacks, it should be readily able to surmount the easier technical challenges involved in fielding dirt cheap decoys that can lead astray already-scarce ABMs.

Suppose that Chinese C4ISR is able to detect, locate, and identify carriers within ASBM range and a Chinese salvo proves able to overwhelm Aegis BMD defenses. Does it follow that the penetrating ASBMs will succeed in hitting U.S. carriers? Not necessarily. Much depends on the area of uncertainty (AOU) that China faces, given its C4ISR capabilities, and on the “seeker footprint” of the guidance radars on each ASBM warhead reentry vehicle. If the AOU is large and seeker footprints are small relative to that AOU, China’s inventory may be too small to fire the number of ASBMs needed to get a hit. For this reason, the Navy needs to do all that it cost-effectively can to increase the size of the AOU and thereby force China to commit large numbers of ASBMs to cover it.

Active Defense of Air Bases against Ballistic Missiles. Depending on how a Taiwan contingency unfolds, U.S. land-based aircraft might perform important roles. However, their potential contribution diminishes the farther those bases are from the Taiwan Strait. If available for use, Kadena Air Base on Okinawa would easily prove the most valuable.

China has 350 to 400 CSS-6 ballistic missiles capable of reaching Kadena. A fraction of those missiles might put it out of action, in either of two ways: they might deliver unitary warheads that crater runways, or they might deliver cluster munitions that destroy unsheltered aircraft on the ground. This prospect is especially worrisome for “big wing” aircraft like AWACS (the Airborne Warning and Control System), tankers, and the P-3 Orion maritime patrol aircraft, since they are too large to place in shelters.¹⁰ China’s best choice would appear to be a combination attack—cratered runways to fix aircraft in place for destruction by follow-on cluster munitions.

The U.S. Army has based a Patriot battalion armed with the PAC-3 ABMs at Kadena. Whether the PAC-3 can prevent Chinese missiles from putting Kadena out of action depends on factors impossible to predict with certainty. These factors include China’s decision at the time about what fraction of its missile inventory to devote to Kadena attacks and also U.S. choices about what fraction of the global PAC-3 inventory to send to Kadena. That said, China enjoys, again, a “home field” advantage in that its entire CSS-6 inventory is available, whereas the United States needs PAC-3s in distant theaters, like the Persian Gulf.¹¹

What’s Next? I provide below the evidence behind each of the assertions in the argument just summarized. First, I focus on the ASBM problem. I recap the hurdles—mainly technical but also organizational—that China would have to overcome to field an ASBM system. Next, I review Department of Defense

(DoD) projections of Chinese ASBM and American antiballistic-missile inventories. I discuss what ASBM-versus-ABM exchanges might look like, given those inventories.

Next, I discuss the CSS-6 threat to Kadena.¹² Given the potential contributions of land-based aircraft, I compare Kadena to other western Pacific U.S. air bases. I discuss the numbers of CSS-6s needed to put Kadena out of action and compare CSS-6 inventories to those of PAC-3 ABMs.

Against this background, I discuss U.S. choices. I argue against planning to “thin the (ASBM) herd” by attacks on Chinese soil. Instead, I argue that the United States should devote more effort to developing and rigorously testing passive defenses and to fielding those that look likely to perform well in defeating China’s ASBM system and its ballistic missiles that threaten air bases ashore. If passive defense of ships or land bases appears inadequate to offset the limitations of active defense despite such efforts, I argue, the United States should consider a wider range of alternatives to defend its interests in the western Pacific.

BALLISTIC MISSILES VS. AIRCRAFT CARRIERS: CHINA’S ASBM PROGRAM AND U.S. ACTIVE DEFENSE

China has to overcome a series of tough technical challenges to enable ASBM strikes on carriers at sea. Recent analyses have outlined these challenges in detail.¹³

The first tasks for an ASBM system are to detect a carrier, identify it, and locate it with enough precision to launch missiles. In principle, China might perform these tasks from such platforms as fishing boats or merchant ships, submarines, surface ships, or manned and unmanned maritime reconnaissance aircraft. China might also rely on its developing OTH radar. However, though some combination of these systems might work in the future, few observers judge them adequate today. (Of course, one or more of these systems might suffice even now. For example, a carrier might pass close to a Chinese submarine, as USS *Kitty Hawk* did in October 2006.)

Analysts Eric Hagt and Matthew Durnin have reviewed the potential contribution of various kinds of satellites and identified strengths and limitations of each. They say that satellite-borne ELINT (electronic intelligence) and SIGINT (signals intelligence) systems could provide “long-distance early warning.”¹⁴ However, their apparently exhaustive list makes no mention of ELINT satellites. I conclude that China now has few such satellites, if any. As long as that is true, China will be able perform ELINT/SIGINT missions for only part of each day (a large number would be required to keep potential carrier operating areas under continuous surveillance). That limitation matters because the United States can

tell when SIGINT satellites come within range of carriers. During those periods, the United States can use emission control (EMCON) to defeat SIGINT.¹⁵ The shorter those periods, the better for the United States, because EMCON can sharply reduce a carrier's operational effectiveness.

Of course, China needs other capabilities to enable its satellite constellation to provide targeting-quality data to ASBM launchers. Hagt and Durnin observe that "China . . . lacks C4ISR infrastructure—such as information processing, bandwidth capacity, and network support—needed for wide-area surveillance."¹⁶ In addition, they note "organizational and bureaucratic barriers impeding the ability of disparate space assets to perform highly time-sensitive missions," such as precise location of a moving carrier far at sea.¹⁷ Similarly, Thomas Ehrhard and Robert Work state that "even when PRC [People's Republic of China] engineers fit all of the technical pieces together, it will take even more time for the PLAN, PLANAF, and PLAAF [respectively, the People's Liberation Army Navy, Naval Air Force, and Air Force] to develop the tactics, techniques, and procedures necessary to convert their disparate systems and combat methods into a truly effective joint operational network."¹⁸

Despite these obstacles, Hagt and Durnin apparently regard a space-based system as China's best hope for detecting, locating, and tracking carriers in the foreseeable future. Indeed, they assert that if everything goes as well for China as they think possible to imagine, "a system competent to provide near-real-time regional coverage could be five years away."¹⁹

A second set of technological challenges confronts China even if it can get targeting-quality data to the mobile transporter-erector launchers (TELs) of its ASBM and launch weapons promptly. Those challenges involve building an ASBM whose reentry vehicle (RV) seeker can identify and track the carrier and guide the RV to hit it. For example, "reentry into the atmosphere . . . would produce a plasma shield, making homing by radar and infrared difficult."²⁰ Other technical obstacles include development of "materials needed to protect sophisticated guidance systems during reentry; the ability to function in an environment of higher speed and more severe temperature dynamics than in earlier applications; and the ability to distinguish a target at unusual angles of attack at the distances required for reentry."²¹

How Many Missiles?

Chinese analysts identify a third major set of technological hurdles—those involved in penetrating U.S. active defenses.²² Those analysts are unduly pessimistic concerning this problem. To see why, we need to consider the numbers in each side's inventories.

How Many ASBMs Will China Field? China's ASBM will use the DF-21D airframe, which will enter production this year.²³ Over the past four years China has produced DF-21s of earlier models at the rate of nine to fifteen per year.²⁴ In light of increased funding for SM-3s that DoD announced earlier this year, it is plausible that China will produce DF-21Ds at the higher of these rates. If so, and if it earmarks ten DF-21Ds for testing, China will have eighty ASBMs by the end of 2015.²⁵

How Many ABMs Will the United States Have? The Navy has configured eighteen Aegis ships (fifteen *Arleigh Burke*-class destroyers and three *Ticonderoga*-class cruisers) for anti-ballistic missile missions worldwide and will add six more.²⁶ It will equip such ships with two ABM models of its Standard Missile: the SM-2 Block IV and the SM-3.²⁷ The SM-3 is designed to intercept ballistic missiles beyond the atmosphere. The SM-2 Block IV is an interim missile, based on the SM-2 airframe, originally intended for "air-breathing" targets. It will intercept reentry vehicles in their terminal phase.

The Navy had forty SM-2 Block IVs at the end of 2008.²⁸ It originally announced an inventory target of a hundred of these missiles. More recently, senior officials have mentioned targets of seventy or eighty missiles.²⁹ The Navy had thirty-eight SM-3s at the end of 2008. As a result of an ABM-investment increase announced by Secretary of Defense Robert Gates in April 2009, the Navy intends to have an inventory of 220 SM-3s by the end of 2015.³⁰

How Many ABMs Will Be Available to Counter the ASBM Threat? The Navy faces demands for ballistic-missile defense in several places. The Congressional Budget Office estimates that the Navy will need seventy-two SM-3s to defend Europe against Iranian missiles.³¹ U.S. Central Command has said that it needs Aegis BMD capability to defend friends in the Middle East. Given North Korea's ballistic-missile program and hostile rhetoric, the Navy will likely need to devote some Aegis BMD capability to countering that threat. Since Iran and North Korea field relatively unsophisticated ballistic missiles, let us assume that the Navy decides to devote its SM-2 Block IV missiles to these missions; further, to establish a bounding case favorable to active defense against ASBMs, let us assume that the Navy allocates none of the inherently scarce SM-3s to Middle East or UNorth Korea missions. (Japan's posture makes it especially plausible that the United States would earmark only SM-2 Block IV ABMs against North Korea—Japan has acquired Aegis/BMD ships and plans to buy SM-3 Block II missiles.)

Given the demands just described, what allocation of Aegis BMD ships appears plausible? The Congressional Budget Office assumes that DoD would need nine ships, including three deployed forward, for the defense of Europe

against Iran.³² For purposes of this analysis, I assume the Navy would need to maintain at least one Aegis BMD ship forward deployed in or near the Persian Gulf for Middle Eastern defense and at least three additional Aegis BMD ships to support this rotation (i.e., to keep one ship on station continuously). Similarly, I assume one Aegis BMD ship forward deployed in the Sea of Japan, but (owing to relative proximity to U.S. ports) only two additional ships to support the rotation.

Table 1 summarizes the 2015 regional allocation of Aegis ships and ABMs, given the assumptions just described. It shows that the Navy would devote thirteen Aegis BMD ships to countering Iran and three to North Korea. This would leave eight for a Chinese contingency. Similarly, the Navy would devote seventy-two SM-3s to European defense and all seventy or eighty SMK-2 Block IVs to the Middle East or North Korea roles. Of the 220 SM-3s produced by 2015, therefore, the Navy could earmark 148 for China. If the Navy allocated those missiles to six of the eight China-rotation ships, each would have twenty-four or twenty-five aboard. (Of course, the total number available for China contingencies might be lower if larger numbers were devoted to the counter-Iran European-defense mission.)

What Might ASBM-vs.-ABM Exchanges Look Like?

To answer this question, we need to consider the targeting problem that each side faces and to make explicit some simplifying assumptions. First, I assume that the U.S. Navy would enjoy perfect warning and perfect positioning. In other words, I assume that Aegis ships would know of ASBM launches virtually instantaneously and that they would then direct radar energy exactly where it should be directed. In possible future combat, of course, they might not enjoy these advantages.

TABLE 1
ASSUMED 2015 ALLOCATION OF ABMS AND AEGIS BMD SHIPS

Combatant Command	Threat	ABMs		Aegis BMD Ships	
		SM-3	SM-2 Block IV	Total Number in Rotation	Subset Deployed Forward
EUCOM	Iran	72	0	9	3
CENTCOM	Iran	0	70–80	4	1
PACOM	DPRK	0		3	1
PACOM	PRC	148	0	8	2–3
Inventory Totals		220	70–80	24	7–8

Note: EUCOM = U.S. European Command; CENTCOM = U.S. Central Command; PACOM = U.S. Pacific Command; DPRK = North Korea.

Second, I assume that absent enemy countermeasures, each side's missiles would perform well. I assume that the ASBM would have a high probability of hit against a correctly identified and located carrier and that in turn the SM-3 would have a high probability of hit against a correctly identified and located ASBM reentry vehicle. Compared to actual historical experience involving large numbers of guided missiles, these estimates appear optimistic.³³

The U.S. Navy's Targeting Problem. The Navy would almost certainly fire two ABMs against each of the incoming ASBMs.³⁴ Doing so would of course increase the probability of a successful intercept. However, with only twenty-four or twenty-five ABMs aboard, each Aegis ship escorting a carrier would at that rate be able to engage at most thirteen ASBMs. Even if each ABM individually performed as well as the Navy could reasonably expect, the fourteenth would get past active defenses.

So what should we expect if an ASBM-vs.-ABM clash were to occur in 2015, which some judge the earliest that Chinese satellites would provide data sufficient for an attack?³⁵ As noted earlier, China might plausibly have eighty ASBMs available by that time. If so, the United States would have to have 160 ABMs on hand—more than the 148 ABMs in its entire “China inventory”—to fire two against each incoming antiship missile.

Suppose that China produced fewer than ninety DF-21Ds by 2015 or used so many in testing that it had too few to overwhelm U.S. defenses as just described. In that case, it could seek to increase the odds in its favor in other ways. First, it might fire earlier-model DF-21 missiles alongside its DF-21D ASBMs. (It could have almost thirty such earlier-model missiles available for use in this way.)³⁶ Second, China might deploy other kinds of decoys. For example, Chinese engineers could design ASBMs to deploy aluminum-coated Mylar balloons during the exo-atmospheric phase. The actual warhead would be inside one of the balloons; the other balloons would have lithium batteries to simulate the heat escaping from the balloon with the warhead, making it virtually impossible to distinguish the warhead from the decoys.³⁷ Third, it might develop penetration aids aside from decoys. For example, Chinese engineers could defeat a hit-to-kill intercept by enclosing the ASBM warhead in a cooled shroud, making it difficult for the infrared sensors of the ABM “kill vehicle” to detect. Finally, it might choose some combination of the above approaches or adopt them all. Again: the fact that many kinds of penetration aids are quite cheap relative to ABMs is one reason why the United States cannot “buy its way out” of this problem.

Unfortunately, the public record provides little reason to be confident that the SM-3s now being produced can defeat the kinds of countermeasures just

described. Indeed, that record strongly suggests that tests of Aegis/SM-3's ability to distinguish decoys and defeat other countermeasures have not yet been conducted. (Two pieces of evidence deserve note. First, of over sixteen tests and nineteen cumulative SM-3 firings, the Missile Defense Agency [MDA] or the Navy publicized every test's objectives save one. Tests against decoys or countermeasures were never mentioned. Second, BMD critics frequently cite countermeasures and decoys in explaining their skepticism. This means SM-3 developers have strong incentives to announce such tests. That they have not strongly suggests that the United States has not yet conducted any, let alone tested SM-3s with the frequency needed to build confidence, given the variety of possible countermeasures.)

China's Targeting Problem. Imagine that China overcomes each of the technological and organizational hurdles identified earlier and that its ASBM system passes a series of tough operational tests. Next, assume that China's sensors detect, identify, and locate a carrier and that it decides to shoot. In such a situation, China would need to consider two aspects of system performance in deciding how many ASBMs to launch. Since the carrier will have moved by the time ASBMs are fired, China would have to estimate the size of the area of uncertainty it faces. Next, China would have to decide how many midcourse seekers would be needed at least to cover that AOU. Finally, China would need to estimate the probability that those seekers would correctly identify the carrier despite the possible presence of other high-radar-cross-section ships.

The first sidebar's analysis implies that China's AOU would be a circle with a radius of at least thirty-one kilometers. The second sidebar shows that much depends on the RV seeker's "footprint"—the area on the surface that the seeker can search to find its target. If China were in fact able to field a seeker with a one-hundred-kilometer-radius footprint, only one RV penetrating U.S. active defenses would be adequate to cover the entire AOU. On the other hand, a twenty-kilometer-radius footprint would mean that China would need at least six penetrating RVs to do so. If the AOU proved substantially larger, which might happen if Chinese leaders deliberated at length before deciding to shoot, far more RVs (and accordingly ASBMs) would be needed.

An Assessment

The facts reported above suggest that the United States cannot counter the ASBM threat by buying more SM-3s. Were it to try to do so, China could offset these efforts by investing in decoys and other countermeasures; it might even be able to increase ASBM production. However, the United States might counter the ASBM threat by developing hardware and operational concepts that increase

ESTIMATING THE AREA OF UNCERTAINTY

As noted earlier, Hagt and Durnin say that China's satellite systems might be able to collect data sufficient to detect, locate, and identify an aircraft carrier (CV) within ASBM range by 2015. (They note, however, China will have too few satellites to track the CV continuously.) They point out that data from reporting satellites would have to be transmitted to a ground station for processing. They note that the U.S. data link system has greater bandwidth than China's; even so, they say, it would take the United States five minutes to transmit such data. Given these observations, I assume this transmission would take more than five minutes but use that figure as a lower bound. Once transmission was complete, the ground station would need time to process the data and estimate the CV's location. In addition, ASBM-carrying TELs would need ten to fifteen minutes to prepare to fire. If we assume that those TELs would be told to begin those preparations soon after the ground station received needed data, we might conclude (optimistically for China) that fifteen minutes would be sufficient for both ground-station data analysis/sensor fusion and TEL launch preparation. If the TEL fired on completing those steps, the ASBM would require another twelve to fifteen minutes to fly to the target. At a minimum, therefore, from thirty-two to thirty-five minutes would elapse between the time that satellites gathered necessary data and when the ASBM hit. At thirty-five knots, the carrier could travel roughly thirty-one kilometers in that time.

Note that the timeline just computed implicitly assumes that China's political leaders have given orders to its military to fire as soon as it has precise carrier-location data. This assumption may well prove wrong if the United States and China were not yet shooting at each other. In that case, China's political leaders might want to be notified when a CV was identified and located within range, so that they could decide whether to attack, on the basis of their up-to-the-minute assessment of the political situation. If so, a delay while the politicians decide what to do is quite likely. The longer that delay, the greater the chances that the AOU would grow so large that Chinese satellites would have to locate the CV again.

HOW MANY ASBMS ARE NEEDED TO COVER THE AOU?

The Office of Naval Intelligence (ONI) expects China's ASBM's warhead reentry vehicle to use an on-board high-altitude radar seeker to look for the carrier and to correct its trajectory accordingly. As the RV gets closer to earth, ONI apparently expects, active radar would take a "second look" and guide the ASBM's RV until it can rely on a "passive" seeker to guide it the rest of the way to the target.*

Given the process just described, Chinese weaponeers need to know the ASBM RV radar seeker's "footprint"—the size of the area on the earth's surface that it can search. Even if the United States had no active defenses, China would need to plan to shoot enough ASBMs so that, taken together, their seeker footprints would cover the AOU.

Hagt and Durnin report that Chinese analysts have referred to a "kill radius" (the distance the target could deviate from initial position and still be struck) for a carrier targeted by an incoming ASBM. They cite three different Chinese kill-radius estimates: twenty, forty, and a hundred kilometers. It is unclear whether the Chinese analysts who made the twenty- and forty-kilometer estimates did so based on seeker capabilities or arrived at these figures some other way. Of course, "kill radius" as just defined only applies if the ASBM's seeker can cover the entire circle. Therefore, table 2 uses these figures as the radii of "seeker footprints," to illustrate the minimum number of RVs required to cover the first sidebar's thirty-one-kilometer minimum-radius AOU and, for comparison, a sixty-kilometer AOU. (I used hexagonal approximations to make these estimates and rounded upward.)

* This description is based on the ONI illustration in Stokes, *China's Evolving Conventional Strategic Strike Capability*, p. 21.

TABLE 2
NUMBER OF RVS REQUIRED GIVEN AOUS OF VARIOUS SIZES

AOU Radius (km)	RV Seeker “Footprint” Radius Estimates		
	20 km	40 km	100 km
31	6	1	1
60	13	6	1

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the size of the AOU that China sees and that drive up the chances that Chinese seekers will direct RVs to the wrong targets or fail in other ways.

CHINESE BALLISTIC MISSILES VS. U.S. AIR BASES ASHORE: CSS-6 VS. KADENA

Land-based aircraft could make important contributions in the event of conflict over Taiwan. Big-wing planes like tankers and AWACS would act as “force multipliers” for fighter/attack aircraft operating from both land bases and carriers.

Why Focus on Kadena? A recent RAND analysis asserted that the U.S. Air Force can conduct air operations most efficiently from bases no more than five hundred miles away from the target.³⁸ Kadena, at 460 miles, is the only U.S. air base within five hundred miles of the Taiwan Strait. Table 3 provides relevant data concerning the next-closest U.S. bases.

The “distance to the strait” column understates Kadena’s advantage compared to Osan and Kunsan. Both Korean bases are more vulnerable to Chinese attack, since they are roughly four hundred kilometers from the closest Chinese territory; Kadena is more than six hundred kilometers distant. In addition, if big-wing aircraft were to operate from Korean bases, they would likely not fly directly to operating areas east of Taiwan. Such a flight path would place these planes dangerously close to China and make them vulnerable to attack by Chinese fighters. Of course, a more circuitous route would reduce the time they could spend on station in support of carrier- or land-based fighter/attack aircraft. In addition, such a route would reduce even further the amount of fuel that tankers could deliver.

How Many CSS-6s Would Put Kadena Out of Action? Suppose that China sought to crater Kadena’s runways. Given highly accurate missiles, it might do so with as few as twelve unitary warheads.³⁹ Six warheads could divide each 3,700-meter runway into three segments, none of which would be long enough to permit fighters—to say nothing of AWACS or tanker aircraft—to land.

TABLE 3
U.S. AIR BASES ASHORE CLOSEST TO TAIWAN

Air Base	Number of Runways	Runway Length(s)	Fixed-Wing Aircraft	Distance to Taiwan Strait (km/mi)
Kadena	2	3,700 m	F-15, E-3 AWACS, P-3, RC-135V/W Rivet Joint, RC-135U Combat Sent and WC-135 Constant Phoenix, F-22*	740/460
Osan	1	2,743 m	F-16, OA-10	1,360/845
Kunsan	1	2,743 m	F-16	1,263/785
Iwakuni	1	2,440 m	F/A-18, F-35†	1,424/885

Notes:

* F-22s from Elmendorf Air Force Base, Alaska, routinely deploy as units to Kadena.

† The Marines reportedly plan to operate F-35s from Iwakuni.

Calculations based on RAND Corporation analyses show that forty CSS-6 warheads configured as cluster munitions could completely cover all the areas where big-wing aircraft would stand between landing and takeoff.⁴⁰ (Some fighter-sized aircraft could survive such an attack, because Kadena has fifteen hardened shelters.) Of course, the effectiveness of a cluster-munition attack depends on how many large aircraft are on the ground at the time. Satellites could presumably report when many are present, and China could launch CSS-6s soon after.

China's best approach would appear to be a combination attack. First, it could fire missiles to crater runways and prevent aircraft from taking off. Next, it could fire missiles with cluster munitions to destroy unsheltered aircraft. (Of course, China would do well to develop and employ still other weapons to help its ballistic-missile attack succeed. For example, it might employ antiradiation missiles [ARMs] to attack Patriot radars.)

If the United States were willing to bear the costs associated with preparing for a war that most observers judge unlikely, it could make preparations that would reduce Kadena's vulnerability to attacks like those just described. Rapid-repair kits might enable ground personnel to restore runways to operable condition. Additional shelters would permit F-15s and F-22s to ride out attacks. Whether the U.S. Air Force would be willing to budget for such passive defenses is an entirely separate question, of course. (Fliers prefer buying airplanes to buying concrete. They sometimes act like they need to buy planes just in case but will somehow know to buy concrete just in time.)⁴¹ In any case, shelters for big-wing aircraft seem prohibitively costly.

What Is the ABM-vs.-CSS-6 Balance at Kadena? Kadena's Patriot battalion reportedly has four missile batteries armed with the PAC-3 ABM. Patriot batteries nominally have eight launchers apiece; each PAC-3 launcher has sixteen missiles. Even if the Kadena PAC-3 battalion has no reloads for its launchers, these figures imply an inventory of 512 (i.e., $4 \times 8 \times 16$) missiles. DoD reports that it will have bought 791 PAC-3 missiles by the end of fiscal 2010;⁴² accordingly, a Kadena inventory of 512 missiles would constitute roughly two-thirds of all U.S. PAC-3 missiles worldwide.

The Army has fourteen Patriot battalions. Not all are armed with the PAC-3 missile. Even so, it does not seem plausible, especially in light of the Iranian missile threat, that a single battalion on Okinawa would have two-thirds of all PAC-3 missiles. So let us assume that only 264 PAC-3s (roughly a third of the total) are based there.

Suppose we also assume that Kadena's Patriots enjoy perfect warning and engage incoming Chinese CSS-6s with two PAC-3s apiece. If so, these ABMs could engage 132 Chinese missiles. If each PAC-3 enjoyed a 0.7 probability of kill (P_k), Kadena's ABMs would destroy all but twelve of these 132 incoming missiles. The 133rd missile and all that followed would be unopposed.

Given these assumptions, China could crater Kadena's runways and destroy all unsheltered aircraft by firing 172 CSS-6s. DoD reports that China has 350 to 400 CSS-6 missiles and is building from twenty to forty more each year.⁴³ Thus, inventory numbers alone suggest that China has a "home game" advantage in the competition of CSS-6 vs. PAC-3 analogous to the advantage it enjoys in the contest of ASBM vs. SM-3. (Of course, China would need far fewer CSS-6s if it destroyed Patriot radars with ARMs.)⁴⁴

Of course, much depends on circumstances impossible to predict. If a Taiwan crisis were to arise after missile attacks on friends of the United States in the Middle East, for example, Kadena might have fewer PAC-3s than assumed above.

What Role Might THAAD and MEADS Play in Defense of Air Bases Ashore?

Terminal High Altitude Area Defense (THAAD) is a hit-to-kill Army missile system designed to shoot down short-, medium-, and intermediate-range ballistic missiles in their terminal phases. THAAD has been in development since 1992 but only recently entered production. According to the Missile Defense Agency, "The THAAD missile is uniquely designed to intercept targets both inside and outside the Earth's atmosphere, making the use of countermeasures in their terminal phase difficult against THAAD."⁴⁵ If that prediction proves accurate, each THAAD missile deployed to protect Kadena will enhance active defense effectiveness there.

The MDA will deliver twenty-five THAAD missiles to operational units in fiscal year (FY) 2010. In the near future, MDA expects production of forty-eight THAAD missiles per year.⁴⁶ If most or all were devoted to defending Kadena, they would make active defenses more effective than otherwise. However, since THAAD will be available in relatively small numbers for several more years, these missiles might better be devoted to the defense of Andersen Air Force Base, on Guam.⁴⁷

The Medium Extended Air Defense System (MEADS) is a joint U.S., German, and Italian project originally intended to replace the Patriot air-defense system. It was to “provide a robust, 360-degree defense against the full spectrum of ballistic missiles, anti-radiation missiles, cruise missiles, unmanned aerial vehicles, tactical air to surface missiles, as well as rotary and fixed wing threats.”⁴⁸ If such a system were to be developed successfully and were then deployed in sizable numbers, it too might contribute to Kadena’s defense. However, the Army has reportedly concluded that MEADS is too costly and unlikely to perform as needed.⁴⁹

IMPLICATIONS FOR U.S. CHOICES

The “battle of the inventories” argument just made rests on DoD reports of Chinese missile production to date and projections about future ABM production, on competing demands for ABMs, on RAND analyses of Kadena vulnerability, and on the judgment of many analysts that China will prove able to field an effective ASBM system. The upshot is that active defenses likely cannot adequately counter the threat posed by China’s “antiaccess” ballistic missiles.

If U.S. ABMs cannot defeat enemy countermeasures, of course, active defenses will prove even more inadequate. The variety of countermeasures China might field and the apparent failure to test ABMs rigorously against them makes the case for “business as usual” ABM acquisition even weaker. Given the limits of active defense, the United States needs to assess other ways of protecting carriers and air bases ashore. It must make such an assessment in light of the large costs and (as we have seen) limited benefits of buying all the ABMs called for in current plans. Indeed, the United States should decide which other initiatives for carrier and air-base defense deserve increased funding and effort, even at the cost of decreased funding and effort for active defense.

Such initiatives fall into two broad categories. On one hand are measures such as attacks on Chinese missile launchers. On the other hand are passive defense measures. Detailed discussion of these options is beyond the scope of this article. Instead, I provide examples of possible approaches and comment on costs and benefits. I argue against approaches involving attacks on Chinese soil and for the reinvigoration of passive defense.

Aggressive Measures to Supplement Active Defense

Given the “home field” advantage that China enjoys in the ballistic missile–vs.–ABM competition, the United States could choose to try to “thin the herd” of missiles that China could effectively fire. Such alternatives deserve analytic scrutiny.

Attacks on Missile Launchers. This approach to reducing the ASBM and CSS-6 threat has some obvious downsides. One involves technical feasibility. China’s ASBMs and CSS-6s are fired from mobile transporter-erector launchers. This means that the United States has to find TELs before it can strike them. That is hard to do. In both Persian Gulf wars, the United States was not able to find Scud launchers despite overwhelming air superiority. American aircraft over China would be outnumbered in the air and face numerous surface-to-air missiles, so hunting for TELs would be even harder. The United States might well be unable to diminish substantially China’s ASBM inventory advantage by attacking launchers.

Another possible downside involves political constraints. To have the best chance of offsetting China’s inventory advantage, the United States would need to attack Chinese launchers before they began firing. However, it is hard to imagine American political leaders granting permission for preemptive attacks against an adversary with nuclear-tipped intercontinental ballistic missiles. When faced with such an adversary during the Cold War, the United States took great care to avoid fighting the Soviet Union directly. It did not conduct attacks on Soviet territory and relied on proxies even when combat occurred elsewhere, like Afghanistan. It is hard to see American political leaders behaving differently as a means of compensating for inadequacies in ABM capabilities. After all, one reason for investing in missile defense is to give political leaders options apart from direct attacks on nuclear-armed adversaries.

Attacks on Chinese Command and Control (C2). Suppose that the United States could deny China the ability to send launch orders promptly once a carrier was identified and located or at least could delay such messages. Doing so would increase the size of the area of uncertainty and thus the number of missiles the attacker would have to fire to be successful. Thus, successful disruption of Chinese C2 might help to offset “Red’s” inventory advantage.

Whether C2 attacks would face the same political constraints as launcher attacks depends on the technology employed. If the United States were able to disrupt command and control without kinetic attacks on Chinese soil (e.g., via cyberspace attack), American political leaders might go along. Otherwise, attacks against C2 might encounter the same political resistance as attacks on TELs.

Attacks on Chinese ISR Assets. As noted earlier, one way to decrease the effectiveness of China's ASBM inventory is to increase the size of the AOUs that China's missileers face. Imaginable ways to do so include attacks on Chinese satellites or on OTH radar ashore. As with other "thin the herd" approaches, the feasibility of such attacks depends on both technical and political factors. Advocates of such attacks to compensate for active-defense shortcomings face a substantial burden of proof.

Passive Means of Supplementing Active Defenses

Fortunately, the United States might well compensate for the limits of its active defenses in ways that do not involve the risks just described. Doing so would involve vigorous development and testing of passive defenses and energetic deployment of those that show promise.

The Case for Reinvigorating Passive Defense at Sea. Of course, the fact that active defense is inadequate does not prove that passive defense will work. However, it does mean that if the Navy is serious about possible conflict with China, it should reallocate resources from active to passive defense. The Navy should use increased passive-defense spending to support a rigorous program of hardware development, operational testing, and change in peacetime operating procedures. Such initiatives will permit the United States to assess more accurately the extent to which enhanced passive defense can check the ASBM threat.

Efforts to reinvigorate passive defense at sea would likely include severe radar and communications emissions control, use of decoys and deception emitters, development and deployment of obscurants, and adoption of operational patterns that China would find hard to predict.⁵⁰ The United States should not only develop the hardware needed to permit such operations but publicize the fact. Indeed, the nation should consider *pretending* to embrace certain passive defenses, even if they have drawbacks that would make commanders reluctant to use them in wartime.

Reinvigorated passive defense should, of course, increase the area of uncertainty that Chinese systems confront and thus drive up the odds that the ASBM system would prove unable to perform its missions. Even if convincingly pretended rather than genuine, such efforts might also erode Chinese confidence and induce costly investments to restore that confidence. Finally, such initiatives might persuade the Chinese not to launch ASBM attacks in situations where they might otherwise have done so.

Reinvigorated passive defenses will come at a cost. One retired naval intelligence officer puts the point this way:

It is very demanding to maximize a CVN's [nuclear-powered aircraft carrier's] operational effectiveness while minimizing its signature. Given the advanced sensors that

China says that it is fielding, the U.S. Navy will have to take countertargeting very seriously—much more seriously than it currently does or did during the Cold War. Rigorous countertargeting will have to be standard operating procedure, not a periodic and half-hearted event that is readily suspended for safety of operations. In particular, sufficiently effective countertargeting operations entail increased casualty and equipment risks in peacetime operations from operating in what is essentially a wartime mode. If the U.S. Navy is going to operate ships within the range arc of these advanced missiles and their targeting sensors, it must fully train for it, invest heavily in passive defense/countertargeting systems, and be ready to accept increased risk and potentially higher peacetime loss rate (both people and equipment).⁵¹

Of course, the United States could continue to spend money as planned and to shortchange passive defense. Unfortunately, the result might well be to make U.S. carriers far more vulnerable than they would be if we allocated our efforts differently.

The Case for Enhanced Passive Defense of Air Bases Ashore. Military-spending advocates often argue that only real capability deters a serious opponent. If that is true, the United States needs to assess the prospects that increased efforts at passive defense would enable air bases like Kadena to survive determined and repeated Chinese attacks.⁵² Of course, passive defense of (inherently fixed) land bases is in critical respects more difficult than passive defense of (inherently mobile) ships. So it is entirely possible that passive defense investments would pay off at sea and fail ashore.

That said, what kinds of passive defense investments should the United States consider, if it is serious about using the U.S. Air Force in a conflict with China? (Indeed, if it does not take that prospect seriously, why does it need the F-22?) Several deserve mention.

- RAND reports “weakly protected fuel storage” at Kadena; the United States should evaluate the costs and payoffs of various fixes.⁵³
- The United States should consider building additional hardened shelters for fighters. If it fails to do so, relatively modest ballistic-missile investments would enable China to destroy large numbers of extremely costly F-22s.
- If U.S. intelligence concludes that Chinese CSS-6s are sufficiently accurate to sever runways with modest numbers of warheads, the United States should evaluate the costs and benefits of having enough rapid-runway-repair kits on hand to restore runways after repeated cratering attacks. Of course, all kits should be able to pass realistic tests—for example, will the concrete “set up” in a timely way during the rainy season?

The vulnerability of big-wing aircraft means the United States should consider unorthodox alternatives. For example, it should evaluate whether to build hardened shelters for the E-2D Advanced Hawkeye, a twin-engine turbo-prop aircraft, and buy E-2Ds for land-based use. Although they are normally based on carriers and are in some respects inferior to the land-based E-3 AWACS, folding-wing E-2Ds can do something that an E-3 cannot do if caught on the ground by a ballistic-missile attack—occupy a shelter and survive a cluster-munition bombardment.

But does a cost-effective substitute for big-wing tankers exist? This issue deserves analytic scrutiny, in light of the Chinese ballistic-missile threat to U.S. air bases in Korea and Japan. Attacks on these bases (or denial of permission to use them) could mean that U.S. tankers would have to operate from Guam, 1,565 kilometers from the Taiwan Strait. Even massive investments in larger tanker fleets to operate from Guam might not solve the problem. China could respond to such developments by developing the means (e.g., ballistic missiles, or cruise missiles from submarines) to attack “big wings” on Guam.

If Chinese ballistic-missile threats to U.S. carriers and air bases evolve along the lines described above, the United States needs to compensate for the shortcomings of active defense. Certain kinds of attacks might “thin the herd” of threatening missiles; others involve prohibitive risks.

Passive defense efforts appear more promising, especially in helping carriers survive. Even so, the vulnerability of big-wing aircraft may prove an insoluble problem. If so, destruction of tanker aircraft would reduce the effectiveness of both carrier fighter-bombers and land-based ones.

In the worst case, a rigorous program of hardware development, changes in peacetime operations, and operational testing might lead the United States to conclude that reinvigorated passive defense cannot adequately offset the inadequacy of active defense. Such an outcome would not mean that the future is hopeless. It would mean that the United States should consider a broader menu of alternatives. For example, the nation might respond by stepping up efforts to develop very-long-range, stealthy, carrier-based unmanned combat aircraft, as suggested by Thomas Ehrhard and Robert Work.⁵⁴ Or it might help Taiwan develop a “porcupine defense,” as suggested by William Murray.⁵⁵ That approach might well enable Taiwan to hold out for several months or longer, even if sudden Chinese missile strikes put its air force and navy out of action. The United States might pursue both these alternatives and develop others equally promising.

Strategy involves weighing costs and benefits. Given the increased costs and risks implied by China’s emerging missile forces, the United States needs to

consider more broadly how best to protect its interests in the western Pacific. More of the same—active defense—is unlikely to work.

NOTES

The author wishes to thank Professors Tom Fedyszyn and Bill Murray and three anonymous reviewers for helpful comments and criticisms.

1. “With the emergence in China of a robust area-denial force of great range . . . the time has again come to talk about sea control.” Robert C. Rubel, “Talking about Sea Control,” in this issue.
2. See, for example, Andrew S. Erickson and David D. Yang, “Using the Land to Control the Sea? Chinese Analysts Consider the Antiship Ballistic Missile,” and Eric Hagt and Matthew Durnin, “China’s Antiship Ballistic Missile: Developments and Missing Links,” both *Naval War College Review* 62, no. 4 (Autumn 2009).
3. For a good overview of the systems that constitute China’s “maritime battle network,” see Thomas Ehrhard and Robert Work, *Range, Persistence, Stealth, and Networking: The Case for a Carrier-Based Unmanned Combat Air System* (Washington, D.C.: Center for Strategic and Budgetary Assessments, 2008), pp. 197–201.
4. For a refreshingly original argument that China’s ASBM program mainly threatens “carrier-like vessels” operated by other western Pacific navies, see Craig Hooper and Christopher Albon, “Get Off the Fainting Couch,” U.S. Naval Institute *Proceedings* (April 2010). Hooper and Albon also are unusual in emphasizing the fact that China has not yet conducted at-sea tests of the system. Most other analysts seem sure that China will soon have an ASBM that works.
5. “Chinese doctrinal writings clearly indicate that the American presence in Japan would likely be the subject of attack if the United States were to intervene in a cross-strait conflict.” Toshi Yoshihara, “Chinese Missile Strategy and the U.S. Naval Presence in Japan,” *Naval War College Review* 63, no. 3 (Summer 2010), pp. 46–47. Dr. Yoshihara’s article “focuses narrowly on Chinese assessments of U.S. naval bases in Japan, excluding the literature on such other key locations as . . . Kadena” (p. 40). Even so, the use of ballistic missiles that I discuss fits well the mind-set he describes.
6. As detailed later in this article, China would need to reduce the CSS-6 payload somewhat to extend its range sufficiently to reach Kadena. See note 12.
7. Context makes clear that Admiral Walsh was using “missile defense” as this phrase is typically used—to refer to active missile defenses like Aegis BMD. The full text of the relevant passage from the Japanese newspaper *Asahi Shimbun* reads: “When asked how much of an actual threat China’s anti-ship ballistic missiles (ASBMs) pose to the U.S. Navy, he did not answer directly, saying only, ‘I think it represents a continued advancement and maturing of technology.’ He added: ‘If you remember, there were many, several years ago, who were critical of the missile defense program. Now we find the missile defense program as being something that’s essential to our ability to operate freely.’” See Yoichi Kato, “U.S. Commander Blasts Chinese Navy’s Behavior,” *Asahi Shimbun*, 16 June 2010.
8. Surprisingly, the open-source literature does not contain much evidence that either Chinese or American analysts have compared projected ASBM and ABM inventories and noticed China’s numerical advantages.
9. For a discussion of costs in an ASBM-vs.-SM-3 competition, see Thomas Culora, “The Strategic Implications of Obscurants,” *Naval War College Review* 63, no. 3 (Summer 2010), pp. 74–75.
10. The P-8 Poseidon, slated to replace the P-3, is also too large to shelter. AWACS is based on the E-3 Sentry aircraft, which is a modified Boeing 707; the P-3, a four-engine turboprop

- aircraft, is a modified Lockheed Electra airliner.
11. Kadena and aircraft based there might prove unavailable for reasons apart from a successful CSS-6 attack. For example, cruise missiles pose another potential threat to unsheltered aircraft. (For more detail on that threat, see John Stillion and David Orletsky, *Airbase Vulnerability to Conventional Cruise-Missile and Ballistic-Missile Attacks* [Santa Monica, Calif.: RAND, 1999], pp. 15–17.) Of course, the all-too-plausible prospect that Kadena and other Japanese bases will not survive to make a difference in U.S.-Chinese combat over Taiwan raises a political uncertainty. In combination with other factors, this prospect may lead Japan to deny the United States permission to use its bases.
 12. The CSS-6 delivers a 500 kg payload at a range of 600 km. The distance from Kadena to the closest point in mainland China is about 640 km. So Chinese missileers will have to reduce the payload somewhat to extend the CSS-6's range. For an analysis of trading off payload to increase ballistic-missile range, see R. L. Pope, R. D. Irvine, and S. J. Retallick, *Range/Payload Trade-Offs for Ballistic and Cruise Missiles*, DSTO-RR-0025 (Canberra: Australian Department of Defence, n.d.). Extrapolating from that article, I estimate that cutting the CSS-6 payload by about 12 percent will increase its range to 666 km.
 13. These analyses include the already-cited papers by Ehrhard and Work, Erickson and Yang, and Hagt and Durnin. See also Mark Stokes, *China's Evolving Conventional Strategic Strike Capability* (Arlington, Va.: Project 2049 Institute, 14 September 2009).
 14. SIGINT involves interception of communications, radar, and other forms of electromagnetic transmissions. Subcategories of SIGINT include ELINT and COMINT (communications intelligence).
 15. When operating under EMCON military units, such as carriers, restrict their electronic emissions to a certain level in order to "hide" from others' SIGINT assets.
 16. Hagt and Durnin, "China's Antiship Ballistic Missile," p. 94.
 17. *Ibid.*, p. 95.
 18. Ehrhard and Work, *Range, Persistence, Stealth, and Networking*, p. 200.
 19. Hagt and Durnin, "China's Antiship Ballistic Missile," p. 105.
 20. *Ibid.*, p. 91.
 21. *Ibid.*, pp. 92–93.
 22. *Ibid.*, p. 89.
 23. *Ibid.* Stokes says that "the DF-21D, a 1,500 to 2,000 km range ASBM [,] . . . could be available to the PLA by . . . 2010." Stokes, *China's Evolving Conventional Strategic Strike Capability*, p. 9.
 24. DoD's annual report *Military Power of the People's Republic of China* uses the term "CSS-5" to denote China's DF-21 missile. Its 2005 report (p. 45) says that China had from nineteen to twenty-three CSS-5s; its 2009 report (p. 66) says sixty to eighty. These ranges imply production of as many as sixty-one (80 – 19) or as few as thirty-seven (60 – 23) over four years, or from nine to fifteen per year.
 25. Mark Stokes cites an "unconfirmed" Chinese source that anticipates deployment of 204 ASBMs. These would equip two DF-21 ASBM brigades, each brigade having six battalions with seventeen launchers apiece. Stokes, *China's Evolving Conventional Strategic Strike Capability*, p. 29.
 26. Secretary Gates announced the goal of twenty-four Aegis BMD ships in April 2009. (See "DoD News Briefing with Secretary Gates from the Pentagon, April 6, 2009," DefenseLink.mil.) More recently DoD has mentioned a total of twenty-one to thirty-two BMD-capable ships; U.S. Defense Dept., *Quadrennial Defense Review Report* (Washington, D.C.: February 2010), p. 46.
 27. The Navy plans to improve the SM-3 over time. To date, it has bought Block I and IA SM-3s. It will next take delivery of Block IB missiles, which, according to the Missile Defense Agency, "will more readily distinguish between threat re-entry vehicles and countermeasures." (Lt. Gen. Henry Obering, statement before the Senate Armed Services Committee, 110th Cong., 2nd sess., 1 April 2008, p. 15.) At the end of 2015, the Navy will begin accepting delivery of the Block IIA missile. Block IIA missiles are faster and will have some capability against the longer-range intermediate-range and intercontinental

- ballistic missiles that Block I missiles cannot hit. (Missile details come from Ronald O'Rourke, *Sea-Based Ballistic Missile Defense* [Washington, D.C.: Congressional Research Service, updated 21 November 2008], pp. 6, 8.)
28. O'Rourke, *Sea-Based Ballistic Missile Defense*, p. 10.
 29. The Missile Defense Agency's director mentioned a goal of "approximately 70" SM-2 Block IV missiles in June 2009. See Lt. Gen. Patrick J. O'Reilly, USA, Director, Missile Defense Agency, [Testimony] *Before the Senate Armed Services Committee, June 16, 2009*, 111th Cong., 1st sess., p. 9, available at www.mda.mil/. For the figure of eighty, Rear Adm. Alan B. Hicks, "Aegis Ballistic Missile Defense Overview for the George C. Marshall Institute" (3 August 2009). Slide 10 of this presentation says that the U.S. Navy will "modify 70–80 SM-2 Block IV missiles."
 30. Hicks, "Aegis Ballistic Missile Defense Overview for the George C. Marshall Institute," slide 3. The slide contrasts the objective of 147 SM-3 missiles in the FY 2009 "President's Budget" (PB09) with the newer objective of 218 in PB10. The 220 figure includes 218 SM-3 Block I, IA, and IB missiles and two SM-3 Block IIA missiles. In discussing the now-superseded goal of 147 SM-3s by 2015, the Missile Defense Agency's FY 2009 "Budget Estimates Overview" (p. 20) provided additional detail about the SM-3 types that will constitute the first 147 delivered: "The program will still deliver a total of 147 SM-3 missiles, but the first 94 will be Block I/IA missiles, not the 75 as proposed in PB 08."
 31. Michael Bennett and Kevin Eveker, *Options for Deploying Missile Defenses in Europe* (Washington, D.C.: Congressional Budget Office [hereafter CBO], February 2009), p. 21. CBO mentioned the seventy-two-missile SM-3 requirement before DoD announced its decision to rely only on sea-based ABMs to counter the Iranian threat. However, CBO assumed seventy-two SM-3s in estimating implementation costs for such a decision. CBO envisioned ten SM-3s aboard six of the nine ships devoted to this mission and an additional twelve as spares. CBO also envisioned using SM-3 Block IIA missiles, which will not enter production until 2015. So it seems safe to assume that at least seventy-two of the less-capable Block I missiles would be required for deployments begun sooner.
 32. CBO assumed the Navy would use a modified version of the Littoral Combat Ship for this role. Table 1 reflects the assumption that the Navy would rely on ABM-configured *Arleigh Burke* destroyers and *Ticonderoga* cruisers.
 33. Historically, the combat performance of guided missiles has fallen short of what is expected based on peacetime test results. For example, RAND data show that the AIM-7's combat P_k in Vietnam was 0.08, compared to prewar estimates of 0.7. See John Stillion and Scott Perdue, "Air Combat, Past and Future," RAND Corporation Briefing, August 2008, slide 19.
 34. Culora, "Strategic Implications of Obscurants," p. 75.
 35. Hagt and Durnin, "China's Antiship Ballistic Missile," p. 105.
 36. U.S. Defense Dept., *Military Power of the People's Republic of China, 2009* (Washington, D.C.: March 2009), p. 66, says that China has sixty to eighty DF-21s, which DoD calls CSS-5s. The 2008 report (p. 24) says that "upwards of 50" of these missiles are reserved for nuclear missions. If that is correct, China might have as many as thirty (80 – 50) conventional DF-21s available.
 37. See Andrew M. Sessler et al., *Countermeasures: A Technical Evaluation of the Operational Effectiveness of the Planned US National Missile Defense System* (Cambridge, Mass.: Union of Concerned Scientists/MIT Security Studies Program, April 2000), p. 44. This study describes a large number of decoy and penetration-aid strategies for defeating exo-atmospheric interceptors.
 38. Stillion and Perdue, "Air Combat, Past and Future," slide 14.
 39. The Taiwanese National Ministry of Defense estimates that an SRBM-delivered 500 kg unitary warhead can create a runway crater ten meters deep and twenty meters wide. (See Bernard Cole, *Taiwan's Security: History and Prospects* [London: Routledge, 2006], p. 116.) I assume that such a crater is a cone with depth equal to radius and that displacement from such a warhead is proportional to warhead size. Given those assumptions, I

- extrapolate that a 436 kg warhead could produce a crater 9.5 meters wide. Given highly accurate delivery, six such warheads could crater and sever one of Kadena's runways at two different points.
40. This estimate rests in part on two RAND analyses. In their 1999 *Airbase Vulnerability* study (p. 14), John Stillion and David Orletsky estimate that a 500 kg warhead could deliver 825 bomblets for a destruction area nine hundred feet in diameter. In their 2008 "Air Combat" briefing, John Stillion and Scott Perdue state that thirty-four missiles with submunition warheads could "cover all parking ramps at Kadena" and "damage, destroy, or strand 75 percent of aircraft based there" (slide 10). Since I assume a smaller (436 kg) warhead would enable the CSS-6 to reach Kadena, I assume fewer bomblets (721) and a smaller destruction diameter (842 feet). Roughly forty of these smaller cluster warheads would cover the same area as the thirty-four 500 kg ones. See Stillion and Orletsky, *Airbase Vulnerability to Conventional Cruise-Missile and Ballistic-Missile Attacks*, and Stillion and Perdue, "Air Combat, Past and Future."
 41. In the late 1970s, the U.S. Air Force argued for buying more F-15s because of the Soviet threat. However, it was reluctant to invest in shelters at the same time, even though unsheltered F-15s on the ground would have been sitting ducks.
 42. U.S. Defense Dept., *Program Acquisition Costs by Weapon System: Department of Defense Budget for Fiscal Year 2010* (Washington, D.C.: May 2009), pp. 3–33.
 43. DoD's *Military Power* report for 2009 counted 230–270 CSS-6s in 2005 and 350–400 in 2009. These figures imply production of as few as eighty (350 – 270), or as many as 170 (400 – 230), over four years.
 44. William Murray describes various ways China might attack PAC radars on Taiwan. It could use similar systems (or develop longer-ranged ones) to do so on Okinawa. William Murray, "Revisiting Taiwan's Defense Strategy," *Naval War College Review* 61, no. 3 (Summer 2008), p. 18.
 45. Missile Defense Agency, *The Missile Defense Program* (Washington, D.C.: 3 August 2009), p. 12, available at www.mda.mil/.
 46. *Ibid.*, p. 15.
 47. China's inventories of missiles capable of being modified to hit Andersen are much smaller than its inventories of CSS-6s. Unless this situation changes, small numbers of THAAD missiles might contribute more to protecting Andersen than they could contribute to protecting Kadena.
 48. U.S. Army Dept., *2007 Posture Statement* (Washington, D.C.: 14 February 2007), available at www.army.mil.
 49. Craig Whitlock, "Pentagon Resists Army's Desire to Stop Development of MEADS Missile System," *Washington Post*, 9 March 2010.
 50. For an imaginative suggestion about how the Navy might exploit relatively cheap Army-developed obscurants to protect ships from missile attack, see Brett Morash, "Naval Obscuration" (Naval War College research paper, Newport, R.I., 21 June 2006). For an assessment of how the United States might benefit from developing and deploying effective obscurants, see Culora, "Strategic Implications of Obscurants," pp. 73–84.
 51. Personal communication, 21 September 2009.
 52. Continued American failure to make serious investments in Kadena passive defenses might conceivably affect Japan's willingness to permit U.S. combat operations from its soil. Why should Japan offend its nuclear-armed neighbor China if doing so will help the United States only temporarily, until CSS-6s put Kadena out of action?
 53. Of course, a thorough analysis of Kadena survivability would have to consider its entire logistics supply chain. Thus, hardened fuel storage ashore might not be a worthwhile investment if China could easily attack the ships used to resupply fuel. Carriers also depend on ships for fuel resupply, but again, carrier mobility makes interdiction much harder for China.
 54. See Ehrhard and Work, *Range, Persistence, Stealth, and Networking*, pp. 147–60.
 55. Murray, "Revisiting Taiwan's Defense Strategy," p. 13.

THE MOST DARING ACT OF THE AGE

Principles for Naval Irregular Warfare

Lieutenant Commander Benjamin Armstrong, U.S. Navy

As the American military confronts the challenges of the twenty-first century there is a great deal of discussion of counterinsurgency, hybrid conflict, and irregular warfare. In military history none of these concepts are new. Much of the recent scholarship and writing on these forms of warfare has focused on today's operations ashore, particularly in Iraq and Afghanistan. However, there are significant implications for naval warfare as well. The leaders of the sea services stated in the "Cooperative Strategy for 21st Century Seapower" that "preventing wars is as important as winning wars."¹ If the U.S. Navy is going to embrace this belief as it sails deeper into the twenty-first century, development of naval irregular warfare will become vital to its future success and relevance.

Captain Alfred Thayer Mahan wrote that the best use of a navy is to find and defeat an opponent's fleet, but from the earliest history of the republic the U.S. Navy has been involved in operations other than fleet-on-fleet engagements.² These irregular operations, in the "green" (littoral) and "brown" (riverine) waters of the world, have been conducted on a global scale, no matter the size or

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shape of the U.S. fleet. In 1839, during the Second Seminole War, the "Mosquito Fleet," under the command of Lieutenant John McLaughlin, conducted joint counterinsurgency operations in the Everglades, working with Army units.³ For almost half a century shallow-draft American gunboats patrolled the rivers of China, before being organized into the Yangtze Patrol Force in 1921.⁴ In the 1960s and 1970s thousands of sailors served in the Coastal Surveillance Force

(Task Force 115), the River Patrol Force (TF 116), and the Mobile Riverine Force (TF 117), conducting brown- and green-water operations and counterinsurgency missions along the coasts of South Vietnam.⁵ These are just a few examples, taken from the long history of irregular warfare in the U.S. Navy.

In January 2010 the Chief of Naval Operations released “The U.S. Navy’s Vision for Confronting Irregular Challenges.”⁶ The document recognizes the need to “define the strategic and operational tenets and approaches for our navy to apply across our general purpose and special operation forces.” These tenets and approaches must be founded in the historical lessons of over two centuries of irregular U.S. naval operations. The current counterinsurgency doctrine developed jointly by the Army and Marine Corps takes great pains to study and embrace the history of the mission.⁷ As the Navy comes to terms with its role in modern, asymmetric conflict, it too will return to its past.

In early 1804 the United States found itself embroiled in the first foreign test of American power and resolve, a test that it was failing. After a single irregular-warfare mission, however, everything changed. A bold raid led by Lieutenant Stephen Decatur against Tripoli harbor to burn the captured frigate USS *Philadelphia* changed the direction of the conflict and raised American prestige throughout Europe and the Mediterranean. Admiral Horatio Nelson, who was in command of the Royal Navy in the Mediterranean at the time, called the attack “the most daring act of the age.” This example of early American irregular warfare can suggest important principles for the twenty-first century as the Navy looks to redevelop its ability to conduct asymmetric missions.

DISAPPOINTMENTS AND DEBACLES

It did not take long after gaining its independence for the United States to become involved in its first overseas conflict. At the turn of the nineteenth century the northern coast of Africa—the Barbary Coast, as it was known—was made up of the sultanate of Morocco and the regencies of Algiers, Tunis, and Tripoli, all of which owed allegiance in one form or another to the Ottoman Empire. These tributaries, for the most part autonomous, were the homes of a developed culture of piracy and slave trade that stretched as far back as the fall of the Roman Empire. During the eighteenth century over 150,000 European Christians had been captured into slavery or held for ransom by the Barbary powers. By the time of the American Revolution a well established system of tribute was in existence by which the trading nations of Europe paid “tribute,” protection money, to the Barbary rulers in exchange for the safety of their merchant ships. The corsairs of the Barbary Coast, entrepreneurial men of the sea, recognized that now that the United States was free from Great Britain, American merchant ships no longer fell under the protection of the Royal Navy or the tribute paid by the

British Crown. Mediterranean raiders from the Ottoman tributaries of North Africa fell upon the extensive American merchant trade that passed near their shores, taking ships and cargo as booty and sailors for ransom.⁸

In May 1801, the pasha of Tripoli made it official when, after demanding over two hundred thousand dollars in tribute, he declared war on the United States of America. In response President Thomas Jefferson sent a series of naval squadrons to the Mediterranean to protect American merchant shipping. The first deployment, which began in 1801 under Commodore Richard Dale, was marked by frustration and failure. The force, termed a "Peace Establishment," operated under strict rules of engagement. American warships were allowed to intervene only when they directly witnessed an attack on an American merchant by a corsair.⁹ The primary success of the squadron came at Gibraltar, where it discovered Tripoli's naval commander anchored there with two vessels. Dale ordered Captain Samuel Baron to lie off the harbor with USS *Philadelphia*, bottling up the small Tripolitan force. The corsairs eventually gave up waiting for *Philadelphia* to leave, dismantled their ships, and discharged their crews.¹⁰ Meanwhile, Dale dispersed his three other ships across the Mediterranean, where they conducted convoys and cruised singly for corsairs. In the end they had little to show.

A second mission left Hampton Roads in 1802, under the command of Commodore Richard Morris. Although the president and Congress had relaxed the rules of engagement, "Morris' squadron behaved more like a touring company than a naval force."¹¹ Morris brought his wife along for the trip and spent plenty of time ashore with family. William Eaton, the American consul at Tunis (who would in 1805 lead the American attack on Derna), asked in a letter, "What have they [the squadron's crews] done but dance and wench?"¹² Morris's deployment was even less successful operationally than Dale's, despite having more ships and its more aggressive rules of engagement. This inactivity and reports of the squadron's behavior that reached Washington resulted in Morris's relief and official censure. In 1803 Commodore Edward Preble was dispatched to the Mediterranean with a third American squadron.¹³

The first great challenge that Preble encountered was the capture by Tripolitan forces of the forty-four-gun frigate *Philadelphia* under Captain William Bainbridge while negotiating with the Moroccans. In November 1803 Bainbridge had spotted a coastal raiding craft "very near the shore" running toward the harbor of Tripoli.¹⁴ *Philadelphia* gave chase, and the vessel hoisted Tripolitan colors. Bainbridge ran in as close to shore as he felt comfortable, carefully checking his charts, which indicated forty-two feet of water beneath his keel. As the Tripolitan ship neared the entrance to the harbor *Philadelphia* was obliged to bear off the wind, allowing the Tripolitan to escape, and ran aground on unmarked rocks in twelve feet of water.¹⁵

The Americans were unable to refloat the ship, even after casting the ballast and the majority of the guns overboard and cutting away the foremast. Gunboats sailed from Tripoli harbor and began to shell the grounded ship. According to the ship's officers, "every exertion was made, and every expedient tried, to get her off and defend her."¹⁶ Nonetheless, fearing for the safety of his crew as the enemy shells began to gain accuracy, Bainbridge surrendered his command to the Tripolitans. Local knowledge of the tides and currents allowed the enemy to float the ship and carry its prize and three hundred prisoners into Tripoli.¹⁷

Preble was faced with a difficult situation. The international prestige of the United States, and the Navy in particular, plummeted after the capture of *Philadelphia*. After the bumbling of the first two squadrons, American naval leadership appeared at best foolish, at worst incompetent. Preble was faced with two choices: either to mount an invasion of the city of Tripoli to retake *Philadelphia* and free Bainbridge and the prisoners or to develop a plan to destroy the frigate at its mooring in Tripoli harbor.

Reports indicated that *Philadelphia* lay deep in the harbor, "within pistol shot of the whole of the Tripolitan *marine*, mounting altogether upward of one hundred pieces of heavy cannon, and within the immediate protection of formidable land batteries, consisting of one hundred and fifteen pieces of heavy artillery."¹⁸ In the harbor a mixed fleet of nineteen gunboats, two schooners, two galleys, and a brig, with over a thousand Tripolitan sailors, lay at anchor or were moored to the quay. It was also estimated that the guns of the harbor fortress were supported by twenty-five thousand troops encamped in the city. Preble's squadron at the time was made up of only seven ships and eight gunboats. Including the small detachments of U.S. Marines on board he could muster a total of 1,060 men.¹⁹ Preble realized that there was little chance of success in mounting an invasion of the pasha's regency with the forces he had at his disposal.

A BOLD YOUNG OFFICER

The solution to the capture of *Philadelphia* came in the form of irregular warfare. Lieutenant Stephen Decatur, in command of the fourteen-gun schooner USS *Enterprise*, had recently captured a small Tripolitan ketch, *Mastico*. Originally built as a bomb ketch for Napoleon's 1798 invasion of Egypt, the small vessel had been purchased by Tripolitan merchants and converted to a commercial vessel; now, it easily blended with local craft.²⁰ Its capture was still recent and likely to be unknown in Tripoli's harbor. Decatur saw an opportunity.

The young lieutenant approached the commodore in the squadron's Sicilian base at Syracuse, where the flagship, USS *Constitution*, and *Enterprise* were both in port. Sending the American squadron in close enough to ensure the *Philadelphia*'s destruction by bombardment would place its ships in too great a danger

from the massed enemy guns. Nor did the Americans have enough force for a full assault on the city. Decatur suggested that, with men from *Enterprise* as crew, the captured ketch could slip into Tripoli's harbor, then board and recapture *Philadelphia*.²¹ Once he was in control of *Philadelphia* the lieutenant intended to sail it clear of the harbor and back into the service of the United States.

Preble considered the plan of the promising young officer and realized that it just might work. On 31 January 1804 the commodore renamed the captured ketch *Intrepid* and ordered Decatur to take command of an expedition against Tripoli harbor. Decatur was authorized to load stores for thirty days and draw a crew of seventy-five sailors and Marines. Preble instructed Decatur to take only volunteers, for the mission would be dangerous; he sent him five midshipmen from *Constitution*, as well as the flagship's Italian pilot. He also ordered the brig USS *Syren*, sixteen guns, commanded by Lieutenant Charles Stewart, to accompany Decatur and provide support as required. The commodore was clear in the purpose of the mission: he wanted *Philadelphia* destroyed—not recovered, as Decatur had proposed. His formal orders to Decatur stated, “The destruction of the *Philadelphia* is an object of great importance”; they gave strict instructions that “after the ship is well on fire, [Decatur was to] point two of the eighteen-pounders, shotted, down the main hatch, and blow her bottom out.”²² Attempting to sail the frigate clear of the harbor would pose too great a risk to his men, no matter how gallantly they were led.

Decatur took two days to load the stores, weapons, and explosives before *Intrepid* set sail in the company of *Syren*. The sixty-ton bomb ketch, designed as a coaster and generally unfit for long, blue-water voyages, had a difficult 250-nautical-mile crossing. Also, the men aboard *Intrepid* discovered, after they were under way, that many of the stores they had been issued were putrid and unusable. On 7 February, as they approached the North African coast, a gale struck the two American ships; *Intrepid*'s small size and poor construction nearly doomed the expedition. They survived the storm and the poor provisions, but word now spread that the force might have been discovered. The confidence of the men was severely tested. Lewis Heermann, a Navy surgeon asked by Decatur to join the mission, wrote later that among the men these challenges “laid the foundation of apprehensions of eventual failure.”²³

A DARING ATTACK

On 16 February, under a noonday sun, *Intrepid* approached within sight of Tripoli harbor. The weather had improved following the gale, but the horizon did not look promising and the crew suspected a second storm was coming. Decatur called a council of his officers to discuss their situation: dwindling stores, poor weather approaching, and a crew that was beginning to lose morale. They came

to the conclusion that they could not wait for *Syren*, which had separated from *Intrepid* after the storm and agreed to meet later that evening with boats to help screen *Intrepid*'s retreat after the mission. The winds were favorable for both a smooth entry into and exit from the harbor, and the storm clouds appeared to be a day off. Decatur ordered his crew to clear the decks and make ready for battle.

The men concealed themselves, mostly below, and at nightfall *Intrepid* made its approach into the harbor. Salvatore Catalano, the Italian pilot sent by Preble, had sailed the Mediterranean for decades and knew the harbor well. He guided the ketch through the anchored ships, the relatively massive hull of *Philadelphia* easily visible in the lights of the city. As *Intrepid* approached the frigate a sentry called out; Catalano called back in a local language, a Mediterranean sailor's patois of mixed dialects, and talked the vessel alongside. *Intrepid* made fast to *Philadelphia*, and the Americans struck.

The boarding party, made up of sixty sailors and Marines, poured from below decks and scaled the side of the frigate. Midshipman Richard Morris, who would later command USS *Adams* in the War of 1812 and be promoted to commodore, was the first to reach *Philadelphia*'s deck, "in a spirit of gallant emulation," followed closely by Midshipman Thomas MacDonough, who was to be the hero of the battle of Lake Champlain.²⁴ The Americans fell upon the Tripolitan guards with swords and knives, under strict orders from Decatur not to use firearms, for fear of alerting the rest of the harbor. The attack went like clockwork, as each of the men went rapidly about his assigned task. Twenty guards were killed, and one was taken prisoner; the men then began setting up the combustibles. Several Tripolitans, however, had escaped in a boat that was moored on the opposite side from *Intrepid* or had jumped overboard; the alarm went out across the harbor, and the fortress opened fire.²⁵

Catalano glanced around the harbor. The winds continued to favor their escape; the tides, current, and layout of the harbor were better than he had anticipated. He found Decatur and explained that they might be able to bring the frigate safely out of the harbor after all, even without its foremast and with only a skeleton crew. The lieutenant, however, had his orders.²⁶ *Philadelphia*—which his father, Captain Stephen Decatur, Sr., had commissioned in 1801—had to be destroyed.

Decatur ordered fires set in the storerooms, gun room, cockpit, and berth deck. The lieutenant ordered the men back aboard *Intrepid* as cannon shot from the fortress flew overhead. The rapidly spreading flames poured from the hatches and ports as Decatur himself crossed back to the ketch. When he cast off, the fire had begun to climb the frigate's rigging. Under Catalano's guidance *Intrepid* began to make its way to the channel, firing its four guns and muskets.

As *Intrepid* cleared the harbor it was joined by *Syren*'s boats, which had followed orders despite *Intrepid*'s earlier than expected attack and now covered the escape. *Philadelphia*, engulfed in flames and its cable burned through, drifted through the harbor, finally coming to rest against the fortress.²⁷ In the confusion there was little attempt to chase the escaping Americans. *Syren*'s men augmented the crew of *Intrepid* and transferred fresh stores as a gale began to close in. Together the American ships weathered the storm and began the long transit back to Syracuse.

NAVAL IRREGULAR WARFARE

Alfred Thayer Mahan taught naval officers that "the study of history lies at the foundation of all sound military conclusions and practice."²⁸ While Decatur's daring attack on Tripoli harbor cannot be exactly duplicated in modern naval operations, there are principles of naval irregular warfare that can be derived from the episode. As the Navy attempts to move forward with its "vision for confronting irregular challenges," it is important that historical principles become part of the discussion. Important as they could be to the success of future operations, however, these historical principles should not be considered rules or equations that will guarantee successful results. Principles determined from history are, as Mahan suggested, "not so much fetters, or bars, which compel [our] movements aright, as guides which warn when [we are] going wrong."²⁹

It has been suggested that Decatur's raid can be seen as the Navy's first "special operation." This is not the case according to today's doctrine, which defines special operations and special warfare as "operations conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or informational objectives by unconventional military means in hostile, denied, or politically sensitive areas."³⁰ While the mission was certainly unconventional and aimed to achieve a military objective in a hostile area, it was not carried out by a "specially organized, trained, and equipped" force. The crew of *Intrepid* was made up of volunteers hastily gathered from other American naval vessels. They brought with them standard training in early nineteenth-century naval warfare and had no specially designed equipment. The mission, then, is best classified as "irregular warfare" rather than an example of "special operations."

The strike against *Philadelphia* can be described as a "cutting-out expedition." These missions were not uncommon in the age of sail, and numerous examples can be drawn from American naval history. In 1778 Captain John Paul Jones, commanding USS *Ranger*, attempted to capture HMS *Drake* while at anchor in the roads at Carrickfergus, Ireland.³¹ In 1812 Lieutenant Jesse Elliot would cut out the brigs *Detroit* and *Caledonia* in one of the first naval operations

on the Great Lakes during the War of 1812.³² These missions were not traditional, open-water ship duels or squadron engagements. However, they were conducted by what today would be called a “general-purpose force,” making them perfect examples of irregular warfare in the early American period.

The first principle of naval irregular warfare that is demonstrated by Decatur’s raid emerges from the fact that *Intrepid*’s expedition was part of a conventional operation and was directly supported by regular naval forces. The Tripolitan corsairs refused squadron-level engagements and frequently ran from single-ship battles as well. The American squadron in the Mediterranean had established local command of the sea.³³ Decatur’s chances of success were much higher because of the local dominance established by Preble’s conventional naval forces.

More directly, without the assistance of USS *Syren* the mission would likely have failed. Most of the combustibles used to burn *Philadelphia* were prepared aboard *Syren* and transferred to *Intrepid* for the attack.³⁴ The larger warship stood by to provide protection during *Intrepid*’s escape and support during the storms that they soon encountered. Commodore Preble wrote in his reports that *Syren* had been vital to the success and that Lieutenant Stewart’s “conduct through the expedition has been judicious and highly meritorious.”³⁵

Naval irregular warfare, then, while it can be carried out by special operations forces, is an appropriate and important mission for conventional naval forces. It requires fleet support, but at the same time it directly contributes to the fleet’s mission.

When applying this principle to modern naval affairs it is important to highlight the balance required. A fleet must be able to achieve and maintain command of the sea. However, it is just as important to be able to use that command once achieved—for, among other vital purposes, irregular warfare. As Sir Julian Corbett pointed out in *Some Principles of Maritime Strategy*, naval forces are key elements of limited wars, which commonly require irregular capabilities.³⁶ The U.S. Navy has worked to expand its irregular-warfare capability, forming for that purpose the Naval Expeditionary Combat Command (NECC). But some members of the Navy seem to believe that this simple organizational act is “the answer”—that irregular warfare can simply be left to forward-deployed sailors from NECC. Its personnel, in fact, often feel cut off from the greater Navy. NECC cannot do it alone; the support, and even conduct, of naval irregular warfare by the general-purpose force is critical to “leveraging the maritime domain.”³⁷ Rear Admiral Phillip Greene, the director of the Navy Irregular Warfare Office, has written in an “op-ed” piece on the website *Defense News*, “What is often described as irregular warfare is actually part of the regular mission set for the Navy.”³⁸

The type of ship used in the attack points to a second principle of naval irregular warfare. *Mastico*, as *Intrepid* had been named prior to its capture, was maintained according to what today are called “commercial standards,” for merchant service along the coastal littorals and shallows of North Africa. While armed, it did not carry the heavy armament of a warship; neither did it have the heavy displacement or deep draft that would have limited its ability to escape from Tripoli harbor. The grounding of *Philadelphia* demonstrated the risks of using large warships, designed for fleet engagement, in the littorals.

Intrepid had its own limitations. Its construction quality and its design as a coaster created risk when it crossed the open Mediterranean during storm season. Twice storms nearly swamped it. *Intrepid*’s light armament required the commodore to send *Syren* for fire support. Vessels designed to operate close to shore or that offer amphibious capability are vital to irregular warfare but are risky to use for traditional open-water missions or in the line of battle; they must be used judiciously.

“The U.S. Navy’s Vision for Confronting Irregular Challenges” calls for new platforms and systems, and in turn a reallocation of resources, to conduct irregular warfare properly.³⁹ There appears to be a willingness to make the required changes to acquisitions plans. Changes that merit more study and possibly some form of implementation, if the Navy takes irregular warfare seriously, might be along the lines of “Influence Squadrons” or the “New Navy Fighting Machine.”⁴⁰ Also, the Navy frequently highlights the multimission capabilities of the *Arleigh Burke*-class guided-missile destroyer (DDG), arguing that the vessels could serve the fleet’s irregular-warfare requirement.⁴¹ At the dawn of the nineteenth century too the U.S. Navy had a large, multimission vessel that was technologically advanced and the envy of other nations—Joshua Humphreys’s “fast frigates.”⁴² However, USS *Philadelphia* was one of those frigates; Decatur’s raid was necessary because large, multimission combatants are not always the answer for fighting in the littorals. The new Littoral Combat Ship (LCS) is a start, a recognition that equipment and shipbuilding are important to meeting irregular-warfare challenges, but not the end.

A third principle of naval irregular warfare is that a particular quality of leadership is needed—“empowered” and aggressive junior officers. Stephen Decatur was one of several rising lieutenants whom senior officers and government officials considered as the “young officers” who would perpetuate “the glory and triumphs of the American flag.”⁴³ Less than five years prior to the burning of *Philadelphia* he had been promoted from midshipman. He had been in command of small vessels for less than two years when he approached Commodore Preble with his plan. That is, Stephen Decatur had nothing to lose by suggesting

this irregular mission—he was years away from consideration for further promotion that might have been jeopardized by a failure.

Junior officers have frequently been sources of innovation and creativity, but today there is a temptation, due to modern communications and information technology, for senior commanders to take larger roles at the tactical level. P. W. Singer has written about the “rise of the tactical general,” warning of its negative impact on initiative and effectiveness.⁴⁴ Due to the very nature of irregular missions—dispersed but part of a larger plan—it is vital that creative problem solving and leadership among junior officers be encouraged and rewarded. Whether the leader of a boarding team off the coast of the Somalia or a helicopter aircraft commander conducting counternarcotics operations in the Caribbean, tactical leaders’ actions can have strategic effects in so-called hybrid conflicts. If these “strategic junior officers” are micromanaged, they will lose initiative, and the effectiveness of irregular warfare will suffer.

Besides the temptation of modern technology to micromanagement, the direction of force structure and shipbuilding also appears to be limiting the development of daring and capable junior officers. The intention to replace the Navy’s patrol craft and minesweepers with the LCS has removed the last opportunity for command at sea for lieutenants and lieutenant commanders. The LCS, deemed too valuable to entrust to such inexperienced officers, will be assigned to officers in the grade of commander. Generations of senior naval officers have learned to balance aggressive leadership and risk from their experience in command of small ships—not just Stephen Decatur but also Chester Nimitz and the current chairman of the Joint Chiefs of Staff, Admiral Michael Mullen.⁴⁵ At a time when some serving and retired officers feel that the Navy’s leadership culture is taking risk-aversion to an extreme, daring and creative junior officers are unlikely to survive failure or to be rewarded for success.⁴⁶

A fourth and final principle of naval irregular warfare is that local and cultural knowledge, whether from members of the U.S. Navy or through local partnership, is vital for the success of missions like Decatur’s raid. Without Salvatore Catalano and his knowledge of the local customs and language, it would have been nearly impossible for *Intrepid* to get alongside *Philadelphia* without raising an alarm first. Catalano was a Sicilian merchant seaman, a native of Palermo, who had worked the routes between Tripoli and Malta for over a decade.⁴⁷ His firsthand knowledge of the tricky shoals and shallows of Tripoli harbor was coupled with his mastery of the local maritime dialect, a mix of Arabic, Berber, and other Mediterranean languages. He had served as a pilot aboard *Constitution* and *Enterprise*, with the blessing of the Kingdom of the Two Sicilies. During the Barbary Wars the cooperation of the Sicilians and the British at Gibraltar and Malta represented key partnerships for the Americans, providing not only

secure supply bases but also gunboats that would be used in Commodore Preble's attack on Tripoli later in 1804.⁴⁸

Today the employment of local sailors like Catalano offers an option, one that underlines the importance of maintaining theater-security relationships around the globe. Partnership with local forces can produce the knowledge necessary for success. A second source of this important knowledge is cultural expertise from the U.S. military's intelligence and foreign-area-officer communities. These specialists are growing in numbers and are vital to the planning and execution of irregular missions. These communities must continue to grow in order to support ships that are headed to theaters where irregular missions can be expected. Irregular-warfare missions are frequently joint affairs as well, as seen in the early demonstration of the "Navy-Marine Corps team" in Decatur's raid. While there may be no naval unit with the specialization or local knowledge required for a particular mission, experts from the other services or interagency resources may be able to provide them.

NAVAL IRREGULAR WARFARE: PAST AND PRESENT

When the Chief of Naval Operations released "The U.S. Navy's Vision for Confronting Irregular Challenges" he called on the service to identify and develop the doctrine, tactics, and equipment required to face the asymmetric challenges of the twenty-first century. An examination of America's naval past provides numerous examples of naval irregular warfare. American naval strategy prior to the Spanish-American War was not based on the decisive fleet engagement but on gunboat diplomacy, blockade, commerce raiding, riverine campaigns, and amphibious warfare. In the twenty-first-century context of naval power, much of America's early naval heritage would be considered irregular warfare or a hybrid of irregular and conventional campaigns.

In order to develop modern irregular-warfare strategies and operations successfully, the U.S. Navy needs to look to the past. The First Barbary War demonstrates four important principles for success in irregular warfare. It must be part of a greater naval strategy and be supported by regular forces. Vessels must be suited to the littoral environment, where these missions commonly occur. Leadership at a low level in the chain of command will ensure that missions do not become encumbered with oversight that can disrupt the effectiveness of the unit on scene. Finally, local cultural knowledge or partnership will help ensure that the specific expertise required for mission accomplishment is available. By remembering these principles as it plans for irregular-warfare missions and campaigns, the U.S. Navy will be better prepared to engage in the asymmetric and hybrid conflicts of the twenty-first century.

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FOUR LESSONS THAT THE U.S. NAVY MUST LEARN FROM THE *DREADNOUGHT* REVOLUTION

Angus K. Ross

There is only one thing harder than getting an old idea out of a military mind, and that is to get a new one in.

SIR BASIL H. LIDDELL HART

Four years ago, on 14 June 2006, at a Current Strategy Forum held at the Naval War College, the then Chief of Naval Operations (CNO), Admiral Michael Mullen, challenged the audience to think about a new strategy for the U.S. Navy.¹ Recalling the enthusiasm and fresh thinking that had surrounded the development of the World War II ORANGE plans against Japan and a later, Cold War, naval strategy, he urged that the time was ripe to take an equally fundamental look at the needs and constraints of the modern age and to codify a possible maritime contribution to emerging national objectives. Early work in this direction has produced the joint Navy/Marine Corps/Coast Guard document “A Cooperative Strategy for 21st Century Seapower” (hereafter CS-21), which was released in October 2007.² It is fair to say that the paper has had mixed reviews, and it is not the author’s intent here to add anything to that debate. Instead, it is

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hoped that this article—by taking the “Cooperative Strategy” simply as a broad statement of how sea power might be used in the next twenty years or so to defend the nation’s global interests and noting that any discussion of forces and force structure had been explicitly discouraged in its formulation—might help stimulate the next stage of the inquiry.³ This stage will need to address the tough questions of how, if at all, the U.S. Navy needs to adjust its “institutional fabric” in order to embody the principles contained in the document. Put simply: Will the essence of American

sea power, as we have come to know it, need to change, and if so, how? It is also important to appreciate at this stage that the Navy's institutional fabric, while it certainly contains force structure, is much more than mere platforms and capabilities. The way the Navy sees itself within the global context, the missions it sees as important, how it educates and develops its manpower, and even how it goes about convincing other institutions of its worth all will need patient reflection before the process can be called complete.

As a way of getting started, however, it might be instructive to look at how others have responded to previous times of great change in history—if only to see in advance some of the pitfalls. Since a general consensus has us moving today from an “industrial” to an “information” age, an obvious place to look might be the equivalent “watershed” era, the onset of the industrial age in the late nineteenth century. The aim should be to look for broad parallels: to see if there is anything that we can learn from their experiences that might better inform the modern debate and help us to avoid mistakes like those made at that time. There should be nothing prescriptive in this, since every time period has its own unique, prevailing set of personalities, politics, and geostrategic circumstances that, to a large extent, dictates the scope and scale of the possible responses. That said, there are certain recurring problems in these processes, the study of which can definitely improve our overall understanding of the dynamics at work. Finally, while the ultimate need for a joint approach is accepted, one of the key functions of service thinking is to look at problems from the perspectives of individual services and environments, so as to ensure that their own, unique contributions are identified and that joint provisions can be made accordingly. There is therefore value in defining a possible *naval* contribution at an early stage. This work therefore focuses exclusively on strategic thought as it pertains to possible naval operations.

Specifically, this article will look for parallels with the case of the Edwardian Royal Navy under Admiral Sir John “Jackie” Fisher in the 1904–1908 time frame (figure 1).⁴ This is a period and service that inevitably commands attention from modern American strategists. Although similar technological and strategic pressures were being felt all over the world, here was a naval power that had long enjoyed a position of maritime primacy; had a well established, tried, and tested maritime strategy for dealing with the global commons; and yet was facing a combination of fiscal and technological changes that threatened its traditional way of fielding and using its power. In short, with the twin prospects of a slowing economy and a massively increasing imperial defense budget, Great Britain was facing a need to make economies in its naval spending while at the same time confronting huge new challenges as the world's premier sea power.

Although reasoned strategic exposés were rare in the late Victorian era, the Royal Navy's long-standing approach to its responsibilities prior to Fisher's arrival can best be summarized as follows. The most fundamental naval role was of course the defense of the home islands against an invasion from Europe. This was to be entrusted to a fleet of battleships based in the English Channel, although it could be reinforced if necessary from the other powerful battleship fleet in the Mediterranean or the reserve fleet, as appropriate. For Britain, therefore, battleship primacy was of the utmost import, and the nation went to great lengths to maintain a superiority in these platforms such that "it should at least be equal to the naval strength of any two other countries."⁵ This "two-power standard," as it became known, meant in practice that the bulk of the resources allocated to the Royal Navy were channeled into battleship building, particularly when facing the very real threat of the combined fleets of France and Russia. Unfortunately, it also meant that naval strategy and the procurement of battleships became somewhat synonymous, particularly with politicians, with the overall detriment of the quality of naval strategic thought.

Equally, it is important to appreciate that the battleship building policy was also inextricably linked to Great Britain's overwhelming superiority in ship building. Britain was one of the first powers to industrialize, and having a clear need for overseas trade, its shipbuilding and shipping lines had taken an enormous lead over the rest of the world, such that by the late nineteenth century British-built or -owned ships accounted for some 80–90 percent of oceanic trade. Obviously the infrastructure generated to produce such a large fleet amounted to so massive a latent capacity in shipbuilding that it was possible for the British to produce complex warships more cheaply overall and far more quickly than anyone else. This advantage meant that a part of the late Victorian naval policy was the deliberate encouragement of batch building and conservatism in design—the theory being that should an opponent develop an innovation of interest, the Royal Navy, provided it could analyze the merits of the advance in time, was well placed to respond appropriately and field its own versions of the improvement at a quicker pace than the nation that had originally conceived the idea.

The development of empire in the second half of the nineteenth century, however, caused some difficulties with this policy, and it is true to say in general that the navy failed to keep pace. In particular, the defense of the overseas possessions themselves and the considerable commerce that ran between them were two areas that became increasingly important as secondary naval missions and yet were ill matched with this battleship preponderance. In fact, and as John Beeler has described, prior to the advent of the *Royal Sovereign* class in the 1890s,

a true oceangoing capital ship was simply not feasible from a technological point of view, even assuming that sufficient funds were available.⁶ This dilemma led to an additional need for whole classes of “cruising ironclads” (or “cruisers,” as they became known), an essentially new type but one whose speed and endurance produced a demand for it also as a scouting vessel for the battle fleet. Though these vessels were considerably cheaper at the outset than capital ships, they were destined to grow in complexity and size as their utility became evident. It should also be remembered that these classes were “over and above” the continuing need to meet the “two-power” obligations in battleships.

As a result of these fiscal pressures, there was a natural tendency to use the older, less sophisticated classes of cruisers on the imperial beat as “station” cruisers—following the rationale that a cruiser that was obsolescent for a scouting commission in a fleet pitted against first-class European opposition could still serve with credit abroad, where the likelihood of its encountering sophisticated opponents was considerably reduced. For a while this policy worked well, but with the advent of faster, long-range, armored cruisers developed by France specifically for distant-waters operations in the 1890s, the days of a ship living out its twilight years in glorious isolation abroad looked to be numbered. Unfortunately too, by this time the massive growth of the imperial responsibilities had led to many scores of these vessels being so employed; the prospect of replacing all these types in short order with first-rate, armored cruisers was a daunting one. It was this development more than any other that led to an increased financial draw on the naval budget and all the attendant scrutiny that this involved.

A recent analytical brief highlights this period as one in which the world was policed by an “undisputed global navy” (that of Great Britain) but offers little insight into how the Royal Navy actively attempted to offset these fiscal challenges by novel strategic thought.⁷ Worse still, by simply inferring that the British government “chose to limit its foreign and security policies to meet the German threat” it drastically oversimplifies the extensive debate that raged at the time and so risks dismissing useful lessons that might be learned from this example. In part, therefore, that work, among others, has provided inspiration to look at this period more closely.

While the need for savings was always an integral part of Fisher’s plan, it is vital to recognize that for him the main objective was always the continuance of Great Britain’s primacy as a maritime power. A fervent navalist with a strong sense of patriotic duty, he differed from most of his naval colleagues in that he had realized early on that the economies being demanded were necessary for the nation’s continuing health.⁸ In short, if maritime primacy were to be preserved, the only responsible way forward for the navy was to accommodate these savings by

FIGURE 1



Admiral Sir John "Jackie" Fisher
 U.S. Naval History and Heritage Command

adopting a radically different vision of future naval warfare—a vision he believed that advances in technology were on the verge of delivering. Specifically, Fisher worried about the continuing soundness of each of the three main naval missions mentioned above. The “anti-invasion” battle fleet looked to be increasingly threatened in coastal waters by the torpedo, while the station cruiser and commerce protector abroad were similarly under threat from the sheer speed and reactivity of the modern armored cruiser squadrons then under development by France and Russia. Worse still, however, was the manpower situation. In essence, and because of the growth in the numbers of these older cruisers scattered around the world, a large percentage of the navy’s available manpower was committed abroad on stations where it could learn little about the techniques and drills associated with modern warfare, or anything of fleet maneuvers. To Fisher this was an unforgivable waste in an era where naval warfare was increas-

ingly characterized by extreme suddenness.⁹ He believed that the Royal Navy simply could not afford to keep such a high percentage of its human capital essentially “untrained” in the art of modern naval warfare; besides, he needed these men at home in order to man the revolutionary new fleet he was about to develop.

As a result of these concerns, Fisher set to work on a truly comprehensive reform program that sought to prepare the Royal Navy for the new era. Underpinning these reforms was the idea that Great Britain could no longer afford, nor was it necessarily tactically sound, to provide a dedicated platform type for each of these three naval missions. The available speed and endurance of modern ships was opening the door to more general-purpose types. Furthermore, by the

FIGURE 2



HMS *Invincible*, 1909
 U.S. Naval History and Heritage Command

judicious use of the new technology and better training, he believed, it was possible to change radically the way in which these missions were addressed and still provide the savings demanded by the Treasury. Although space does not permit a full discussion of these interdependent reforms, the most pertinent here was a revolutionary new naval strategy centered around the twin technol-

ogies of the submarine and the “battle cruiser” (such as HMS *Invincible*, pictured in figure 2), a fast and lightly armored capital ship with a huge offensive punch, designed specifically for the global needs of imperial defense.¹⁰ It was on these battle cruisers that the offensive part of Fisher’s strategy depended: in short, if these vessels could be made fast enough to react in a timely fashion to events abroad and powerful enough to prevail against all modern vessels overseas, it should be possible to recall and replace all the station cruisers (and a significant amount of the battle fleet) with “reactive” squadrons of naval power projection and garner all the efficiency savings as a result.

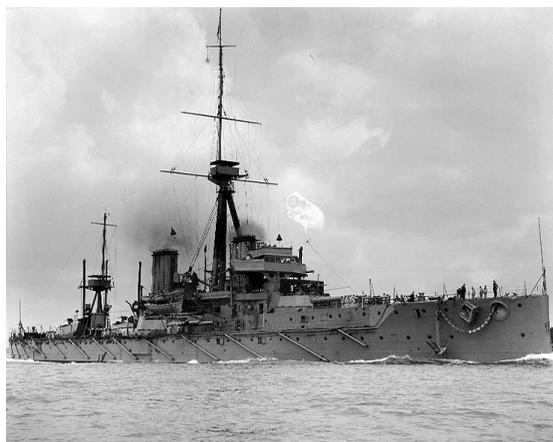
Sadly for Fisher, and although he was successful with a great many of the administrative parts of his reform package, a combination of unforeseen circumstances and pressures ultimately prevented him from radically changing the strategic ethos of the Royal Navy, or at least within a strategically useful timescale. As a result, many of the technologies and platforms being developed for his purposes seemed strangely out of place once they appeared. The inevitable consequence was that they were misemployed by a staunchly traditional Admiralty, unwilling to accept the need for change. Perhaps the most obvious victims were the battle cruisers, which, instead of heading up fast “flying squadrons” of global commerce protectors as Fisher had intended, were relegated to the traditional battle fleet, organized as a fast division with the mission of holding contact with a fleeing enemy.¹¹ This role, which ignored their intended strategic rationale and constrained them to lower speeds, made them acutely vulnerable to the better-protected battleships, and the results, in retrospect, should have been obvious. Paradoxically, though, *Dreadnought* (figure 3),

Fisher's first revolutionary platform, designed to showcase some of the very technology that would—in his mind, anyhow—put the battle-fleet idea out of business, went on to thrive as a type.¹² Whole classes of “dreadnoughts,” as they came to be known, were built by most of the leading naval powers of the day, despite the fact that the traditional battle line, as a strategic tool, was increasingly suspect, both in scope and substance.

The reasons why Fisher's radical new naval strategy failed to catch on make illuminating reading for today's would-be reformers. While some of the technological circumstances are clearly unique to that age, many of the broader strategic and institutional pressures have parallels in all time periods, and our recognition and understanding of them can therefore help us to prevent their worst effects in the future. Specifically, the issues of excessive reliance on technology, the need for strategic flexibility, the need for full and comprehensive dialogue, the danger of “lazy” assumptions, and the problems of personalities and distractions—all played parts in the failure of Fisher's strategic revolution, and all remain salutary lessons as relevant today as ever. The very fact, however, that

this revolution was attempted by the world's premier navy in order to maintain its position of maritime primacy makes it an essential reference point for those intent on similarly preserving the maritime primacy of the United States a century later. It is, after all, arguable that by not accepting the need for an innovative approach, Great Britain overstretched itself financially in attempting to apply time-honored solutions to an altogether more taxing, industrial-age naval scenario. As a result, the British were to be poorly placed to recover from the shock of the world wars, and their loss of naval primacy was virtually assured.

FIGURE 3



HMS *Dreadnought*, Photographed in 1906
U.S. Naval History and Heritage Command

THE FISHER REVOLUTION, IN A NUTSHELL

Any brief résumé of the main points of the Fisher revolution and how they have been interpreted by the historians must begin with the work of Arthur J. Marder. A historian with a diplomatic background, Marder approached British naval policy from the assumption that the larger, grand strategic premises had already been established beyond reasonable doubt. His landmark, five-volume treatise on the Fisher years (1961) has a single big theme, a theme that can be summarized as follows.¹³ Prior to the arrival of Fisher as First Sea Lord, Marder argues,

the Royal Navy was in the doldrums. Overwhelmed by the pace of technological change and lacking any cohesive strategic direction as the Russian and French naval situations changed (as we shall see), British naval policy wavered. Fisher, with an eye toward an expansionist Germany, managed in short order to reform the navy comprehensively and drag it into the industrial age in time to meet the challenge. The main vehicle in his modernization program was *Dreadnought*, a battleship of a design that embodied his twin ideals of speed and hitting power and that he felt Britain's superior shipbuilding resources could produce more quickly and cheaply than could any other nation's. Marder's key assumption is that Germany had already been identified as the main imperial threat to be countered. Thus in his view, the containing of its emerging battle fleet was what dictated the course of Royal Naval policy and gave Fisher's reforms, including *Dreadnought*, their true meaning.

Comprehensive though Marder's treatment is, certain aspects of contemporary documents hint at a different interpretation. Chief among these was the disquieting fact that Fisher, in both private and official correspondence, seemed to indicate that the role of the battleship as the sole arbiter of naval power was becoming questionable on a number of counts. For one, he cited the increasing range of the Whitehead torpedo and the consequence that the whole concept of operating heavy ships off an enemy coast in waters infested with torpedo craft and submarines was becoming unacceptably risky.¹⁴ When the only way to threaten a battleship had been with a more powerful exemplar of the same type, battleship primacy had made sense, but to Fisher's way of thinking, those days were now long past. The advent of fast torpedo craft and the long-range torpedo had effectively put the proud battle fleet within the killing reach of even small navies on limited budgets, leaving its rationale problematic.¹⁵ Fisher therefore looked for what we would call today a "capabilities based" appraisal: a hard look at the fundamental necessities of the sea fight and how these might best be provided—perhaps by the adoption of a completely different set of platforms. For Fisher, of course, the two essentials in any sea fight were speed and hitting power.¹⁶

More recent scholarship has asked questions that Marder did not address. Jon Sumida, in a crucial analysis of the impact of finance and technology on British naval policy (1989), makes the case that it was the impending fiscal crisis that Great Britain faced in the early years of the last century and the consequent limits on naval spending that pointed to a radical rethinking of how the naval mission should be resourced.¹⁷ In short, it had become impossible to continue the construction of up-to-date warships in the numbers and varieties required to protect all of Britain's maritime interests. The choice was therefore simple: either the Royal Navy would have to drop some commitments, prioritizing its

efforts, or else it would have to look for imaginative ways of doing more with less. This impending crisis was perhaps most ably summarized by Lord Selborne, the First Lord of the Admiralty: “They [the Sea Lords] must cease to say ‘This is the ideal plan; How can we get enough money to carry it out?’ They must say instead ‘Here is a sovereign; How much can we squeeze out of it that will really count for victory in a naval war?’”¹⁸

At about the same time, the parallel development of the submarine has been taken up by Nicholas Lambert, who in a series of articles and a book (1999) has provided another of the connections that make Fisher’s intended strategy hang together.¹⁹ In doing so, he convincingly explores the strategic problems facing Fisher. What sort of fleet was necessary to defend all of Britain’s maritime interests in this changed era, and how might this best be provided for on a declining budget? Lambert concludes that Britain had three main imperatives—to defend the homeland, to protect the empire, and finally to safeguard the vast network of interconnected global trade routes. As explained earlier, Fisher realized that the conventional approach to these needs—that of employing three specialist platforms, the battleship, the “station cruiser,” and the armored cruiser—was no longer affordable or even tactically sound. The battle fleet was becoming increasingly vulnerable to the torpedo in the shallow waters around the homeland, while the speed and range of modern heavy warships meant that less-capable cruisers scattered on stations around the world on basically diplomatic duties were increasingly at risk. These vessels were neither strong enough to fight nor fast enough to run away from the fast squadrons of armored cruisers that could now threaten them.²⁰

Fisher’s solution was elegant and simple, and it played to the new naval strengths of the day. If submarines and torpedoes were making the shallow seas unacceptably risky for the battle fleet, then Britain should move its battle fleet out of harm’s way and rely on the same, new technologies to pose an equivalent threat to any potential invader. In essence, the coastline of Great Britain was to be entrusted to a sea-denial flotilla of torpedo craft, but mainly submarines. Similarly, if the sheer mobility of modern steamships was threatening the station cruiser on the empire “beat,” the answer was to develop faster, more powerful armored cruisers that could respond, in squadron strength and quickly, to events in vital regions. The key here lay in utilizing the enormous advantages possessed by Britain on account of its many key possessions overseas, something that separated it from all competitors. If based at what he called the “five keys that lock up the world” (the imperial fortresses of Gibraltar, Singapore, Alexandria, Dover, and the Cape of Good Hope), Fisher reasoned, squadrons of these new battle cruisers would provide all the necessary naval strength that Britain might require on a regional basis.²¹

In this way, and because of the improved reaction times and combat power embodied within the battle cruisers, Fisher further deduced that the navy could do away with all the numerous station cruisers altogether—in effect, consolidating its naval power into a few squadrons of fast, powerful ships. Basically, the Mahanian idea of concentration at the center in a fleet of powerful battleships was being flipped onto its head. In Fisher's plan the sea-denial strategy protected the center, releasing large capital ships for a more active defense of the vulnerable periphery and the vital trade routes across the global commons.²² In other words, naval concentration was still achieved not at the center but on the periphery, which, in Fisher's view, made more sense for an industrial nation that was uniquely dependent on an import economy. In so doing, two new platforms, submarines and (what Fisher originally called) "super" cruisers, would have to be developed and perfected to replace the three traditional types that had performed these missions. The great selling point was, of course, savings; submarines were considerably cheaper than heavy ships, and the "super" cruisers, though expected to be expensive, particularly in manpower, were effectively to replace all varieties of cruisers and battleships as well.

Fisher's own clarity of purpose notwithstanding, it is nevertheless inescapable that Great Britain did not radically alter its naval strategy, or at least not within a timescale that would have given such a shift real strategic value.²³ Instead, it plunged headlong into yet another round of battleship escalation, while at the same time attempting to maintain parity across the board in all classes of naval vessels. The results were predictable, and financial exhaustion was averted only by the onset of a European war and the consequent readjustment of national priorities. In this light, it is unfortunate that naval historians have tended to analyze this period in terms of the merits or otherwise of a supposed "dreadnought revolution" and not, as might arguably have been more correct, as the aftermath of a failed "battle cruiser revolution."²⁴ It is argued here that only by looking at it from this latter perspective will the correct institutional lessons on handling change be drawn. So what exactly went wrong, and why?

TECHNOLOGY, TIMING, AND THE PROBLEMS OF STRATEGIC UNCERTAINTY

Given the problems encountered with the battle cruiser's fire-control system accuracy at long range, it is tempting to conclude that this was just another in the long line of instances where technological promises came to naught, thus leaving a strategy without its necessary enabler. While there are certainly aspects of this in the Fisher story, it would be a gross oversimplification if accepted without regard to the changing strategic situation. After all, the British were certainly innovating at the time, producing revolutionary advances in gunnery,

submarines, and propulsion, and all with remarkable rapidity. Second, British industry was doing a commendable job of actually delivering these technologies, as workable weapons systems and in time to make a difference strategically—or at least, it was doing a better job than the competition, which is, after all, the crucial point here. It would therefore be not only wrong but misleading simply to dismiss these successes as irrelevant. Far more important to our understanding of the dynamics involved, though, are the reactions of policy makers in the Admiralty to these technological promises. Did they, in fact, pose the right strategic questions in order to make the best possible use of what was likely and realistic in the near term?

Using a related case, Erik Dahl, writing in these pages, examined whether the controversies surrounding the French “Jeune École” movement of the late 1800s might hold any lessons for a transforming American military today, and specifically for the proponents of network-centric warfare (NCW), which seems to have been the main naval contribution to the transformation arguments thus far.²⁵ This is a useful and convenient starting point for the type of debate being advanced here, although by simply concluding that the Jeune École was “ahead of its time technologically” and that its proponents were guilty of “misjudging the pace of change in naval warfare,” Dahl may have missed an opportunity. Specifically, he seems to have overlooked the most fundamental and important lesson that can be drawn from the whole Jeune École experience—that in times of great political and strategic uncertainty, such as we again face today, it does not pay to develop a navy with too narrow a strategic focus or too specialized a mission set. After all, the only irrefutable historical consequence of this whole event, as Dahl recognizes, was surely that the French, in their intermittent pursuit of a specialized form of warfare against a single opponent (Great Britain), failed to foresee that were the grand-strategic situation to change, their innovative fleet was likely to be rendered strategically irrelevant and their nascent military-industrial complex would have insufficient time to adjust.²⁶ In effect therefore, they were not asking the right strategic questions in the appropriate global context. This is essentially what caused the French navy to flounder for forty years and France to lose its position as a leading naval power.

To some extent, but with one important exception, Fisher’s battle-cruiser idea suffered from a similar strategic “overspecialization,” and once again this was revealed by an unanticipated strategic shift. In the three decades prior to these ships’ conception, both the French and the Russians, whose navies had been hopelessly outclassed by the British battle fleet and who lacked the resources to compete in this realm, had made a considerable effort to challenge Great Britain instead by preparing for commerce raiding on the global commons. Here they had correctly assessed that their enemy would be much weaker.

By building a whole series of fast commerce destroyers, these powers, whether acting alone or in an alliance together, had posed a threat that was to give the battleship-centric British considerable headaches.²⁷ Great Britain's early answer had been simply to outbuild these two powers in similar armored cruisers, and it was this program, on top of the maintenance of a superior battle fleet, that had led to the fiscal crisis so ably described by Sumida. However, by 1905 France was becoming increasingly aligned with Britain, in fear of the rising Germany, and Russia was temporarily out of the naval picture, having suffered devastating losses in the Far East. This left only Germany, and lacking the necessary global infrastructure of bases, it was in no position to threaten Britain's global commerce in the way that France and Russia once had, although it unquestionably had the technology. In fact there is considerable evidence that the German naval strategists had long before discounted a naval war against British trade.²⁸ Regrettably for Fisher, however, this all happened too quickly for the naval procurement cycle.

The truly unfortunate part of this story is that notwithstanding the merits of the strategic thinking that had underwritten their development, by the time Fisher's battle cruisers actually emerged some four years later, these quirks in international politics had made them seem strangely irrelevant. Naval affairs were once again, if perhaps artificially, dominated by an enhanced version of an altogether more familiar brand of naval power—the dreadnought battleship. Could or should this reversion have been foreseen? The answer would seem to be qualified: yes and no. Yes—the British had taken a calculated risk that the future would, as envisioned, require a more proactive role for their navy on the global commons. In developing a more specialist capability to that end they had eschewed their tried and tested policy of letting the others do the innovating while trusting in their markedly superior shipbuilding abilities to mount an appropriate response within the requisite time frame.²⁹ Even at the time, there were many who believed that this was the wrong strategic choice.³⁰

But, with due deference to their lordships, and going back to the exception mentioned earlier: no—Great Britain was different. It was the premier maritime power of its day, and thus the traditional “wait and see” approach might not have been the best one under the circumstances. The French, who were attempting to compete from a position of naval inferiority, had to always respond, to a certain extent, to whatever stance the more powerful navies took, but the British had no such encumbrance. They were uniquely free to make naval strategic choices, secure in the knowledge that whatever steps they took, they could invariably drive their competitors into areas that were even less advantageous to them. This, after all, is one of the advantages of supreme military power: it gives you strategic choices and allows you to select those that cause the maximum disruption for

your rival. The British therefore, facing as they were a whole series of difficulties related to the uncertainties of the era, may in fact have erred by not relying on this hard-won strategic safety net more thoroughly. Arguably it was time for them to maximize their innovation, while they still stood a chance of finding a more durable way to retain their primacy.

Perhaps the one concrete mistake that they did make, however, was to provide a skeptical Admiralty Board with an altogether familiar and superficially convincing alternative, that of enhancing the battle fleet itself with *Dreadnought*-type battleships. Had the members of the Fisher team had the courage of their leader's convictions and gone solely for the battle cruiser, without an "interim" battleship design, it is interesting to speculate what the competing naval powers would have done in reply.³¹ Germany, with its battleships becoming vulnerable to the planned British submarines and therefore possibly irrelevant for supporting any projected invasion of the British Isles and with its global naval infrastructure unable to support capital ships in distant waters, would have been in a quandary for sure. Arguably, however, and given what we now know, the worst case for the British would have seen the Germans rising to the challenge and competing, hull for hull, but in battle cruisers. The intriguing question, though, remains: Would this have served them well strategically, as against the British, and if not, what might they have done about it? While we can never know for sure, there is an interesting possibility that, with no immediate prospect of resolution of the foreign-base issue, the Germans might have been more willing to entertain the sort of naval limitations that were being discussed in the margins of the Hague Conference of 1907. These speculations aside, the essential point is that this sort of analysis makes excellent fodder for those contemplating today the best path for the U.S. Navy. Like the Royal Navy in the Edwardian era, the U.S. Navy is today's premier naval power and therefore shares its predecessor's unique freedom to make strategic choices that are inconvenient for their rivals.

Moreover, in Fisher's time there is no doubt that technology's fickle side played a role. After all, if these lightly armored "super" cruisers were to prevail in combat against armored cruisers and older battleships, they would need to deliver knockout blows from beyond the reach of their opponents. However, while they could use their speed advantage to position themselves, the ability to score hits from long range had been proving elusive, to say the least. Significantly, however, Fisher believed that once again technology was fast coming up with the answer. His gunnery background and enthusiasm for the long-range accuracy problem told him that a true-course calculator being developed by Arthur Pollen, the "Argo clock," was about to provide a revolutionary solution to the problems of long-range hitting.³² It is important to appreciate that the whole rationale of a lightly protected ship striking with impunity depended completely

on this fire-control problem being solved in short order.³³ In essence, there could be no effective battle cruisers without first having an accurate, long-range gun. Thus Pollen's invention, or an equivalent, was absolutely vital to Fisher's plan. As it happened, through a combination of technical difficulties, delays, and parochial competition, the issue of long-range hitting was not completely solved until the battle cruiser as a warship type had already been deemed questionable at best.³⁴

In sum, given the patent difficulties surrounding accurate predictions of international politics and the likely effects this might have on strategy, not to mention the problems of matching technological expectations with real and tangible results, arguably the only points a modern strategist can take away are fairly general. For example, it is unquestionably a historical fact that armed forces that become overspecialized with respect to a given foe under unique but temporary strategic circumstances (e.g., the French above) run the risk of being "marginalized" should those circumstances change. This is simply the result of the time it takes to procure new tools to fit the new strategic imperatives, as compared to the rapid development of those new imperatives in the first place. This argues for the retention of a more general, although arguably less efficient, overall capability set. Equally, however, there seems to be a strong argument that encourages large powers, particularly those in predominant positions, to "force the pace" by maximizing their innovative capabilities. By pursuing more efficient strategies, they can push their competitors, who must compete from different baselines, into even more unfavorable circumstances than their own. At first glance, these approaches may seem like polar opposites—"damned if you do, damned if you don't"—but perhaps they are better looked at as balancing factors, guidelines that can help but should not be used too prescriptively.

LAZY ASSUMPTIONS, SECRECY, AND THE NEED TO BE A "LEARNING" INSTITUTION

A second set of difficulties surrounds a somewhat contradictory problem that is nevertheless inescapably linked to the situation described above. It is the situation raised when a nation's strategists make intellectually "lazy" assumptions—essentially holding that their current strategic thought, doctrine, and tactics will be perfectly adequate to deal with the new situations, technologies, and circumstances they are facing. In other words, they tell themselves that there is nothing fundamentally different about the emerging situation that might require a fresh viewpoint or anything radically different to be done militarily. This, of course, is merely reinforced by the natural bureaucratic inertia of large institutions like navies. The danger is that strategists might misinterpret or, worse, overlook the potential advantages being offered by the new technologies and tactics in the

light of the changing circumstances. In short, they may convince themselves that the new opportunities offer only incremental or evolutionary improvements to the way in which business has always been conducted when in fact real alternatives are at hand that could generate disproportionate and asymmetric advantages. They therefore miss their chance, through a sort of “hegemonic complacency.”

In this case the Royal Navy, preoccupied with the minutiae of naval technology and the prospects for a second Trafalgar, seemed to be very slow as an institution to recognize that the industrial age had changed the entire notion of naval warfare forever, with particular implications for a nation with the world’s largest navy and a global trade dependency. From this point onward, naval decisions were going to depend less on decisive engagements at sea per se than on how such engagements might impact the broader and more mundane business of safeguarding the nation’s economy and generating necessary combat power in its widest sense. In short, the business of exercising “command of the seas” had widened considerably. For a country for which naval might underwrote its very survival as a great power, this was a surprising oversight.

Fisher may have appreciated the need for a radical change, but he certainly made it no easier for the institution to move in this direction by shrouding his thoughts in secrecy and forming committees of like-minded individuals to give his projects the merest fig leaves of objectivity and legitimacy. Disdainful of explaining himself to anyone, Fisher kept his ideas close to the chest.³⁵ This was presumably an element of control, so that until the last moment, he might work in the margins to “engineer” the endorsements he wanted. Whether this preference was motivated by concern for security or for more personal gain it is impossible to say. What is clear, however, is that it was unusual, if not unprecedented, in British naval policy making. It certainly had an adverse effect on public awareness and perception of the naval issues of the day, a consideration that in Great Britain’s case was significant.³⁶ Inevitably too, it generated resentment and suspicion, particularly from Fisher’s peers with other ideas, a tension that was eventually to impair his ability to function as an effective leader of the navy.³⁷

One option that might have helped him clarify the various technological, institutional, and manning pressures would have been a formally constituted naval staff. The idea had been mooted for a number of years; Fisher himself had long talked of such a thing in connection with the development of war plans, going as far as to propose an additional member of the Admiralty Board who would be “absolutely dissociated from all administrative and executive work and solely concerned in the preparation of the Fleet for War.”³⁸ It was fast becoming clear that, with the increasing administrative burden of training and equipping an industrial-age navy, the First Sea Lord’s traditional responsibility for both

those matters and the fleet's war plans and readiness was simply too much for a single man, no matter how capable. However, Fisher, once established as the First Sea Lord, was not at all helpful in the establishment of a "War Plans Division" at the Admiralty; in fact, he is on record as opposing such a move.³⁹ The reasons for this change of heart are unclear, although it is difficult to avoid the conclusion that it had at least something to do with the inevitable loss of authority for the titular "head of the navy." Instead, Fisher persevered with his unofficial committees, which, though easing the physical burdens involved, did nothing to foster a corporate sense of shared responsibility as an official staff would have done. Worse, they failed to "institutionalize" or guarantee the development of strategic thought when the First Sea Lord was otherwise occupied.

In this light, and despite his early support for a naval war college, he never took advantage of the assistance that might have been possible from this body, nor did he seem interested in its teaching or developing naval strategy for his later consideration.⁴⁰ Instead, he seemed satisfied with infrequent correspondence with members of the faculty who shared his viewpoint, as a way of gaining their endorsements. The net result was that there was little or no connection between the bright young minds in the service and the business of developing naval strategy *per se*. In fact, the crucial value of informed strategic debate was not inculcated in the navy as a whole, and its absence continued to elicit little comment. Put another way, the Edwardian Royal Navy was not a "learning institution"—one in which the input of ideas high and low on the command chain is both encouraged and expected, and one where the appropriate mechanisms are firmly in place to ensure the widest possible dissemination. This was a critical shortcoming that, when coupled with Fisher's penchant for secrecy and "behind the scenes" activity, did not serve the institution well when it was trying to make sense of changes of such magnitude and complexity.

In the end, these failings became self-fulfilling prophecies. At the crucial juncture, when the battle-cruiser strategy needed its fullest possible explanation and support, Fisher was fatally distracted by chronic and increasingly virulent disagreements with his senior admiral afloat, Lord Charles Beresford. Although brought to a head over the issue of war plans, the disagreements went far deeper and centered on an increasing resentment by senior officers of the overbearing and imperious way in which the office of the First Sea Lord could drive through a program of reform without a healthy and active debate in service circles.⁴¹ For the battle-cruiser idea, this turbulence was fatal, as there was no one else to carry the torch. Similarly, and because the rationale of the new industrial-age mission of commerce protection had not been debated widely, the logic of Britain "forcing the pace" in this direction, on the grounds that Britain would benefit more

than its competitors, was lost on the wider naval establishment. As a result, the fact that the difficulties suffered by the French and Russians had only created a temporary, not a lasting, interlude was not appreciated. In short Britain, following an outdated imperative, missed the opportunity to take a huge initiative in naval strategy, one that it was uniquely placed to capitalize upon.

Finally and before concluding, mention has to be made of a seemingly valid counterpoint to all of this—the simple fact that despite not having responded in a particularly innovative fashion to the technological promises of the age, Great Britain surely won the naval arms race and successfully headed off the threat from imperial Germany. In fact, it can also be argued that had the reformers actually been more successful and the Admiralty managed to divert more money toward submarines in particular, the net result might have been—given the arguably exaggerated estimates of the capabilities of submarines for sea denial at the time—*more* and not less vulnerability to concentrated naval pressure in home waters. While it is almost impossible to predict accurately the outcome of the submarine contest that might have resulted, the two happy outcomes mentioned above owe more to the strategic limitations imposed on Germany by its “risk fleet” strategy than they ever did to any British activity. Great Britain was indeed lucky that its opponent turned out to be, if anything, even less prone to accept naval strategic innovation beyond the battleship than Britain was. Had this not been the case, and had it faced a set of strategists as globally aware and agile as those in some quarters of the French navy, events might have turned out quite differently. In other words, Britain’s success in the First World War occurred in spite of, and not because of, the quality of its naval thought.

WHAT CAN THE U.S. NAVY LEARN FROM THIS CASE?

To achieve maximum impact in a complex and multifaceted subject, the four main recommendations that have been discussed above are restated in a deliberately simplified way, paired for convenience, and rendered in a rather unconventional “bullet” form.

Avoid “Lazy” Assumptions; Become a “Learning Institution”

Although a lot of historians have criticized the Edwardian Royal Navy for a “paucity of professional thinking,” this charge rather misses the mark.⁴² As ideally this article has shown, there seemed to be no shortage of the right ideas around, but somehow the authors of those ideas, Fisher included, were simply unable to convince the institution of the need for a fundamental shake-up in naval thinking. As a result, the navy as a whole did not see itself in a new light—as performing different types of missions to effect the same ends. Looked at another way, it was not a “learning institution,” capable of the necessary analysis

and discussion to support the large leaps of faith needed to confront the new age. In fact, the key point of the late Victorian engineering revolution—namely, the hugely increased mobility of large steamships—was almost completely missed by the Admiralty. The result was a disappointing and expensive merger of the new capabilities into the existing, obsolete service rationale, a compromise that ultimately left the nation poorly placed to regain the initiative a few decades later.

This is a lesson that the U.S. Navy simply has to grasp. As the British case proves, once an institutional failure of this sort takes place, it is almost impossible to recover. This is because the long timeline needed for the development of the new capabilities, coupled with the massive expenditures required, set against a finite, and often declining, defense budget, effectively poses a “one shot” decision—sink or swim! When the merits or otherwise of your first move finally become clear, the parameters will have moved on still farther—and you will be either on the “power curve” or hopelessly behind it. If you are behind, the only future seems to be a loss of primacy and ultimately of strategic relevance, which is effectively what happened to the Royal Navy after the First World War. In this light, the nation that maintains a healthy amount of both technological and doctrinal innovation in all mission areas is most likely to be best poised to reap the eventual benefits.

As for Technology, Innovate—but Don’t Overspecialize

The U.S. Navy of the twenty-first century obviously needs to nurture and develop a more questioning professional service culture. The key is widespread and thorough professional education right across the strata of decision makers, such that a culture of risk taking and evaluation at all levels is encouraged. This is not to say that the Navy should throw money at a whole range of increasingly outlandish projects in the hope that “something sticks”—far from it! It should, however, critically and continuously assess the potential scope of each advance and how it might affect America’s position, doing “just enough” research to keep the country consistently better placed than others to make a hard move when either the technology matures or changing circumstances demand.

Perhaps the most important point for the U.S. Navy to grasp is the strategic freedoms conferred by its position as the premier sea power. As the possessor of the world’s largest navy, the United States is in a uniquely advantageous position; its sheer size and the natural inertia within the system will continue to shield it while it makes these transitions, something that is simply not true for any other nation. For its competitors, by contrast, a rapid achievement of systems parity with the U.S. Navy (or a key superiority, in some specific area—for example, antiship missiles) is the goal, and any research that might threaten this is automatically shunned. This makes these nations innately less able to respond

to change, no matter how innovative they may appear on the surface—because they are constrained by an overriding pressure that is simply absent from the American considerations.

The British were halfway there, in that they were innovating, but their poorly educated and parochial officer corps was simply incapable of collectively making the necessary switch in thinking from the battle line to global power projection as the key naval mission area. The U.S. Navy cannot afford to fall into the same trap, basically assuming that its sheer size—for all its benefits that we have noted—somehow confers an exclusive and inherent “right” to the rather different type of sea control outlined in CS-21.

Finally, and inexorably linked to the above, there is the question of how to approach emerging technology. This article has highlighted the difficulties of relying on radical and unproven advances during periods of strategic uncertainty. However, beyond the purely mechanical difficulties of predicting when given technologies will mature, there is the broader issue of the sorts of questions the strategist should be exploring. There has been a tendency in the past few decades to develop mission sets that make the best use of available equipment, rather than seeking technological solutions that best address the widest range of possible strategic outcomes. Put another way, in our eagerness to find answers to “today’s problems” and incorporate new technologies, it is possible to become too fixated on a specific mission set, against a particular foe—and then be essentially outmaneuvered by a shift in the broader strategic environment. We would then find our military optimized for operational and strategic circumstances that are no longer very pertinent to national interests. This is the classic “being overly prepared to fight the last war,” or the war that you *want* to fight, as has been seen time and time again in history. To a certain extent this is an inevitable consequence of the human learning process, one that is unlikely to be entirely eliminated, but we nonetheless need to be on our guard, particularly when opinions become excessively polarized as a part of the surrounding political debate.

In the end, though, the case we have examined was not simply another instance of good intentions let down by technology. It is a salutary warning of the powerful and often unforeseen impacts that a combination of human elements, changing strategic imperatives, and the characteristically erratic and risky promises of technology can have upon even a well structured and mature strategic plan. Such institutional and bureaucratic considerations are of crucial importance; they can collectively undermine even the best “classical” strategic ideas, just as surely as can the passage of time. After all, Fisher was, in the words of Marder, “an extraordinary man, not to be judged by normal standards.”⁴³ A gifted administrator, blessed with immense moral courage and an insatiable

energy and drive, even he was diverted from his well considered strategic quest by this insidious combination. How much more vulnerable are we likely to be ourselves! For these reasons, therefore, we must take time to analyze such moments from history lest we be destined to repeat their mistakes in our own time.

NOTES

1. The epigraph is cited in Arthur Marwick, *The Explosion of British Society, 1914–1962* (London: Pan, 1963), p. 14.
2. J. T. Conway, G. Roughead, and T. W. Allen, “A Cooperative Strategy for 21st Century Seapower,” October 2007, available at www.navy.mil/, repr. *Naval War College Review* 61, no. 1 (Winter 2008), pp. 7–19, available at www.usnwc.edu/press/.
3. For a comprehensive treatment of how the new maritime strategy was actually formulated, see Robert C. Rubel, “The New Maritime Strategy: The Rest of the Story,” *Naval War College Review* 61, no. 2 (Spring 2008), pp. 69–78.
4. Admiral Sir John Arbuthnot Fisher (1841–1920), first Baron Fisher of Kilverstone, joined the Royal Navy in 1854, served in wars in China and Egypt as a midseniority officer, was promoted to rear admiral in 1890, commanded the Mediterranean Fleet in 1900–1902, and served as First Sea Lord October 1904 to January 1910 and again October 1914 to May 1915. Perhaps the most interesting (albeit not the most comprehensive) biography of Fisher is the one written by his former assistant, Captain (later Admiral) Reginald H. Bacon, *The Life of Lord Fisher of Kilverstone* (London: Hodder and Stoughton, 1929). Bacon was also the first captain of Fisher’s technology demonstrator, HMS *Dreadnought*. The most authoritative biography is, of course, Ruddock F. Mackay, *Fisher of Kilverstone* (Oxford, U.K.: Clarendon, 1973).
5. A quote from the First Lord of the Admiralty, Lord George Hamilton, taken from the Naval Defense Act debates in 1889. See *Parliamentary Debates* (1889), vol. 333.
6. See John Beeler, *Birth of the British Battleship: British Capital Ship Design, 1870–1881* (Annapolis, Md.: Naval Institute Press, 2001). In particular, chapter 3 outlines the technological difficulties with the plant and chapter 10 the difficulties with endurance and the provision of adequate coaling supplies and dry docks.
7. Daniel Whiteneck et al., *The Navy at a Tipping Point: Maritime Dominance at Stake?* CAB D0022262.A3/1Rev (Alexandria, Va.: Center for Naval Analyses, March 2010). The description of the Royal Navy’s global reach is on pp. 10–11, while the inference that it re-oriented itself solely on Germany is on p. 42.
8. A good example of how he saw the relations between the empire, the navy, and the economy as being crucial for the health of Great Britain can be found in his “Notes by Sir John Fisher on New Proposals for the Committee of Seven,” written in Portsmouth on 14 May 1904 and reproduced in P. K. Kemp, ed., *The Papers of Admiral Sir John Fisher* (London: Ballantyne for the Navy Records Society, 1960) [hereafter *Fisher Papers*], vol. 1, p. 18.
9. For Fisher’s thoughts on the “suddenness” of modern naval warfare’s requiring “an instant readiness for war,” see *Fisher Papers*, vol. 1, pp. 16–27, and also a letter to Lord Selborne written in April 1904. For the latter see Arthur J. Marder, ed., *Fear God and Dread Nought* (London: Jonathan Cape, 1952) [hereafter *FGDN*], vol. 1, pp. 310–11.
10. For Fisher’s insistence that the whole reform package be implemented “en bloc,” see *Fisher Papers*, vol. 1, pp. 16–21, which includes the “*The Scheme! The Whole Scheme!! And Nothing but the Scheme!!!*” exhortation. Time and space do not permit a detailed description of all the aspects of his reforms, but for the uninitiated, the main points can be summarized as follows: officer training and entry schemes

- to be consolidated so as to produce modern, technically proficient thinkers; old, obsolete ships to be scrapped en masse, thereby reducing operating costs and releasing manpower (for new ships) and jetty space/facilities; the naval reserve to be reconstituted as “nucleus crews” (two-fifths of complement) for the continuous manning of modern ships cycling through reserve status, thereby improving fleet readiness; the current, home defense (anti-invasion) alignment of the battle fleet to be replaced by using submarines and flotilla craft for home defense, thus freeing up the capital ships for global trade protection; and new classes of battle cruisers to be developed to form these “flying squadrons” stationed at Britain’s key points of interest around the world, ready to surge naval power wherever it was needed—for which great speed, hitting power, and endurance were required. Finally, these squadrons were to be controlled by a revolutionary new wireless link, “the war room system,” to the planners in Whitehall. The term “battle cruiser” used in this article actually comes from a later point in the story, when it was recognized that these vessels would have to serve in the battle line. In this time frame they were more correctly termed “armored cruisers,” but in order to distinguish them from these earlier ships, which were still being built at the time, the author has used the terms “battle” or “super” cruiser.
11. Some of the resistance that was to be offered to these vessels was apparent even before the first were completed. In Brassey’s *Naval Annual* for 1907, for example, the editor was of the opinion that the *Invincible* class, having the armament of a battleship, would never be released for cruiser duties: “any admiral having *Invincibles* in his fleet will be certain to put them in the line of battle,” even though their lack of protection would make them vulnerable. On this basis alone, he recommended that the type not be repeated. See Thomas Brassey, ed., *Naval Annual* (Portsmouth, U.K.: J. Griffin, 1907), p. 9.
 12. For a discussion as to why Fisher ended up devoting a lot of energy to promoting HMS *Dreadnought*, arguably at the expense of his battle cruiser, see the author’s recent article “HMS *Dreadnought* (1906): A Naval Revolution Misinterpreted or Mishandled?” *Northern Mariner/Le marin du nord* 20, no. 2 (April 2010), pp. 175–98. This is a complicated story, but in essence the article argues that *Dreadnought* was pushed as an interim type because it made more sense at the time to get the technology (turbine propulsion and all big guns) to sea quickly rather than wait for the longer build time of the *Invincibles*. Given the overall resistance to the battle cruiser idea, it was simply not possible to get the Admiralty solidly behind the type in time to make a difference.
 13. Marder’s classic work on the Fisher era is his *From the Dreadnought to Scapa Flow: The Royal Navy in the Fisher Era, 1904–1919*, 5 vols. (London and New York: Oxford Univ. Press, 1961–70). The majority of his observations on Fisher can be found in the first volume, *The Road to War*.
 14. In a letter to Arthur Balfour, the British prime minister, Fisher explains the sea-denial potential of submarines in shallow seas: “In the course of a few years [it was then 1904] no Fleet will be able to remain in the Mediterranean or the English Channel! But at the same time submarines at Malta, Gibraltar, Port Said, Alexandria, Suez and Lemnos will make us more powerful than ever.” *FGDN*, vol. 1, p. 294. Other letters with similar sentiments appear on pp. 253, 305–10.
 15. Much has been made by some scholars as to the considerable exaggeration of the capabilities of both torpedoes and their delivery platforms during this period, but this concern is irrelevant to the arguments being advanced here. The point is that Fisher, as a torpedo enthusiast, supposed that these weapons would very soon have these capabilities, if they did not already. It therefore made eminent sense that he would take these likelihoods into account in both his strategic and materiel reasoning. In point of fact Jon Sumida quotes the ranges for torpedoes (eighteen-inch) at five thousand yards in 1906 and double that by 1908; see his “A Matter of Timing: The Royal Navy and the Tactics of Decisive Battle, 1912–1916,” *Journal of Military History* 67, no. 1 (January 2003), p. 88.
 16. Perhaps the best contemporary explanation of Fisher’s thinking on speed and gun power in large ships is found in a lecture by Julian

- Corbett to the Royal United Service Institution that was published in July 1907 (see *RUSI Journal* 51, part 2 [July–December 1907], pp. 824–33). This lecture was instigated by Fisher himself, in response to criticisms being received from both within the Admiralty and outside. Another good contemporary discussion on the pros and cons of high speed in capital ships can be found in Brassey's *Naval Annual* for 1906, pp. 144–55.
17. Jon T. Sumida, *In Defence of Naval Supremacy: Finance, Technology, and British Naval Policy, 1889–1914* (Boston: Unwin Hyman, 1989), esp. chap. 1, pp. 3–35.
 18. Quoted in *ibid.*, p. 26. Lord Selborne was the civilian First Lord of the Admiralty when Fisher was appointed to Whitehall in October 1904 as the senior Naval Lord. The relationship was somewhat akin to that between, in today's U.S. Navy, CNO and the Secretary of the Navy—although, if anything, Selborne was closer to being the Secretary of Defense, on account of the huge predominance of the Royal Navy in the defense of Great Britain at that time.
 19. Lambert first expounds his theories in a pair of articles written in 1995. The most important to our discussion is “Admiral Sir John Fisher and the Concept of Flotilla Defence,” *Journal of Military History* 59 (October 1995), pp. 639–60. His whole plan is revealed in a later book-length monograph, *Sir John Fisher's Naval Revolution* (Columbia: Univ. of South Carolina Press, 1999), esp. chap. 3.
 20. Fisher is extremely disparaging about the smaller, obsolescent cruiser types that were traditionally used in their twilight years to perform useful services in the policing of the distant empire. Calling them the “snail” and “tortoise” classes, he points out the waste of resources incurred by maintaining them and of manpower in manning them (crews that needed to be trained to fight) and the fact that were they to be challenged by armored cruisers—an eventuality becoming very real with the “suddenness” of modern naval war—they would be eaten up as armadillos eat up ants! See “Naval Necessities” (written 1903), in *Fisher Papers*, vol. 1, p. 30.
 21. See “Naval Necessities,” app. H, “The Strategic Distribution of the Fleet,” a paper circulated to the Admiralty Board in November 1904 and reproduced in *Fisher Papers*, vol. 1, p. 161. The “five keys” were Singapore, the Cape of Good Hope, Alexandria, Gibraltar, and Dover. These were “imperial fortresses” (as originally described by John Colomb) and possessed the necessary dockyards and coal, not to mention protection, to make basing a fleet there a viable proposition. Possessions like these were almost unique to Britain at the time.
 22. For a thorough description of the strategic rationale behind the submarine and battle-cruiser combination see Jon Sumida, “Geography, Technology, and British Naval Strategy in the *Dreadnought* Era,” *Naval War College Review* 59, no. 3 (Summer 2006), pp. 89–102.
 23. In the later stages of his first monograph, Lambert demonstrates that in the eleventh hour before the First World War (January 1914), Winston Churchill, the cabinet, and the Admiralty worked out a possible “deal” that would largely substitute submarines for at least two of the battleships ordered in the 1914 naval estimates. Some historians maintain that this episode demonstrates that Fisher was actually successful in changing Royal Navy strategy. But it was “too little, too late.” The dreadnought race had already run its course, and the High Seas Fleet and the soon-to-be-renamed Grand Fleet were locked in a strategic “face-off” that had effectively paralyzed innovative strategic thinking on either side. See Lambert, *Sir John Fisher's Naval Revolution*, pp. 295–300.
 24. An exception here would be Charles Fairbanks, Jr., who makes this very point. See his “The Origins of the *Dreadnought* Revolution: A Historiographical Essay,” *International History Review* 13, no. 2 (May 1991), pp. 246–72, esp. p. 247.
 25. Erik Dahl's “Net-centric before Its Time: The *Jeune École* and Its Lessons for Today,” *Naval War College Review* 58, no. 4 (Autumn 2005), pp. 109–35. The words *jeune école* mean, literally, “young school.” This was a group of reform-minded, midgrade officers in France, who, under the leadership and tutelage of Adm. Théophile Aube, were angry at the complacency and inactivity in the naval leadership and anxious to implement reforms

- emphasizing merit over birthright. This group also looked to restore France's maritime pride by challenging Great Britain. Their methodology was to target areas where Britain was weak, specifically focusing on torpedo attacks to weaken the blockading battle line and on commerce raiding against Britain's huge merchant fleet. Central to their concept was decentralization, whereby younger officers, in command of smaller and more lethal ships, were to have more say in the direction that the navy took. In strategic terms, their concentration on the secondary effects of a collapse in the shipping-insurance market was masterful. With Great Britain carrying considerably more than 50 percent of the whole world's sea trade, it stood to reason that its economic interests would suffer disproportionately high penalties from any loss of confidence in the ocean-trading market.
26. *Ibid.*, pp. 122–25. Although Dahl does not recognize that it was primarily the shifting of focus from Great Britain to Germany, in terms of the likely naval opposition, that really doomed the *Jeune École* rationale, he does explain that the school ultimately failed in its quest to restore the French navy to prominence.
 27. The armored cruisers of the Russian *Rurik* and French *Jeanne d'Arc* classes were typical, and had the nations worked in conjunction, squadrons of these ships in the Pacific, Mediterranean, and Atlantic would have posed a credible threat, at least insofar as their capabilities were understood by the British Admiralty. For a good summation of this threat, see Theodore Ropp, *The Development of a Modern Navy: French Naval Policy, 1871–1904* (Annapolis, Md.: Naval Institute Press, 1987), pp. 240–53, 284–98.
 28. Alfred von Tirpitz, the incoming naval minister, in a memorandum to the kaiser dated 15 June 1897 and entitled “General Considerations on the Constitution of Our Fleet according to Ship Classes and Designs,” had expressly ruled out commerce raiding as a suitable strategy against the British. He termed it “hopeless, because of the shortage of bases on our side.” See Jonathan Steinberg, *Yesterday's Deterrent: Tirpitz and the Birth of the German Battle Fleet* (London: Macdonald, 1965, and New York: Macmillan, 1966), pp. 208–23.
 29. For a historian with this opinion, see John Brooks, “Dreadnought: Blunder, or Stroke of Genius?” *War in History* 14, no. 2 (April 2007), pp. 157–78. Brooks makes the point that in the strategic context of 1905, evolutionary designs for the battleships and cruisers of the 1905–1906 estimates would have made more sense, and he speculates, with the benefit of hindsight, that they might have delayed and reduced the intensity of the dreadnought race between Britain and Germany.
 30. See, for example, an article by William H. White (a previous director of naval construction and the designer of the *Royal Sovereign* class of battleships, which had set the pattern for the genre prior to the advent of *Dreadnought*), “Admiralty Policy and the New Naval Estimates,” *Nineteenth Century* 59 (April 1906), pp. 601–18. On page 613 he makes the point that with cordial relations with France and the United States and with Russia in the doldrums, the present was *not* the time to force the pace: “Our unrivaled shipbuilding powers enable us to pause and judge the situation, because even starting at a later time than the others, Britain can still build a useful superiority faster than anyone else.”
 31. There is evidence in Fisher's correspondence that although he always personally believed that the leap to the battle cruiser could be made without an interim stage, he was finally in a minority of one in his Committee on Ship Design in the fall of 1904. See a letter written to the journalist Arnold White in 1908, in *FGDN*, vol. 2, pp. 188–89. Some earlier references from Lord Selborne, minuted on his copy of Fisher's “Naval Necessities,” and intended for Fisher, may also have been relevant here; words to the effect that “the Japanese don't seem to agree with you about battleships [their demise]” may have cautioned him. *Fisher Papers*, vol. 1, p. 41.
 32. The crucial point is that Fisher was surely aware of these advances before he made his dreadnought decisions in 1905. Looking back through his correspondence, although the earliest mention of it comes from 1906, it is clear that the Admiralty had been interested in the device since 1904 and was largely satisfied with the inventor's claims. John Jellicoe, a Fisher protégé and fellow gunnery officer, had been instrumental in promoting Pollen's equipment; it is therefore inconceivable that

- Fisher had not been kept informed of progress. See Fisher's letter to the new First Lord, Lord Tweedmouth, recommending that the apparatus receive national patent protection, in *FGDN*, vol. 2, p. 87.
33. For a thorough description of the Pollen apparatus, see Jon T. Sumida, "British Capital Ship Design and Fire Control in the Dreadnought Era: Sir John Fisher, Arthur Hungerford Pollen, and the Battlecruiser," *Journal of Modern History* 51, no. 2 (June 1979), pp. 212–17. See also John Brooks, "All Big Guns: Fire Control and Capital Ship Design," *War Studies Journal* 1 (1996), pp. 36–52. Sumida's summation has largely been corroborated in the more recent Norman Friedman, *Naval Firepower: Battleship Guns and Gunnery in the Dreadnought Era* (Annapolis, Md.: Naval Institute Press, 2008).
 34. For an explanation that supports the pragmatic conclusion that the Fisher team was right to proceed with the battle cruiser on the basis that "no insuperable difficulties could exist in the solving of the long range fire control problem" see Brooks, "All Big Guns," pp. 36–52. For an explanation that takes issue with this, as well as with numerous other technological points, while explaining the "Dreyer table" controversy, see a review essay by Jon Sumida, "Gunnery, Procurement, and Strategy in the Dreadnought Era," *Journal of Military History* 69, no. 4 (October 2005), pp. 1179–87. These two papers represent the current positions on either side of the unresolved interpretation of the fire control story.
 35. See for example his famous quote in a letter to Arnold White. "*The one great rule in life is NEVER EXPLAIN! Your Friends don't want an explanation. They believe in you. The friends who want an explanation ain't fit to be friends. Your enemies won't believe any explanation! I never in all my life have ever yet explained, and don't mean to!*" *FGDN*, vol. 2, pp. 388–89.
 36. In this light, it is important to appreciate that British naval policy in this period was a subject of intense interest to the professional classes. Leaders (editorials) in newspapers, debates in both houses of Parliament, and columns in society magazines were regularly devoted to the "naval issues" that were perplexing amateur and professional alike. It is also fair to say that the Admiralty took note of (and used) these avenues regularly—particularly under Sir John Fisher.
 37. See in particular an anonymous article, "A Retrograde Admiralty," *Blackwood's Edinburgh Magazine* 177 (May 1905), pp. 597–607. It was widely attributed to Rear Admiral Sir Reginald Custance, lately the Director of Naval Intelligence, who was extremely critical of Fisher's methods. Custance criticizes Fisher for deliberately undermining the authority of the other Admiralty Board members, in particular the Controller of the Navy, a junior member but the one charged with the material health of the fleet. He was therefore effectively turning the board into a personal dictatorship. He also offers contrary opinions on each and every one of Fisher's main reforms. There is evidence that the article particularly incensed Fisher. Similar sentiments are also seen in the well researched article by William White, "Admiralty Policy and the New Naval Estimates," cited above. White condemns the secrecy surrounding *Dreadnought* as dangerous and indeed superfluous to military security, summing up, "A policy withdrawn from discussion and criticism is not likely to be the best."
 38. For a perceptive look at the whole issue of a naval war staff and Fisher's schizophrenic behavior in this regard, see Paul Haggie, "The Royal Navy and War Planning in the Fisher Era," *Journal of Contemporary History* 8, no. 3 (July 1973), pp. 113–31, esp. p. 115, and *FGDN*, vol. 1, p. 232.
 39. Haggie, "Royal Navy and War Planning in the Fisher Era," p. 116.
 40. *Ibid.*, p. 130.
 41. The anonymous "A Retrograde Admiralty," cited above, was typical.
 42. Bryan Ranft, in "The Protection of British Seaborne Trade and the Development of a Systematic Planning for War, 1860–1906," accuses the late-Victorian Admiralty of an "alarming poverty of thought." See Bryan Ranft, ed., *Technical Change and British Naval Policy, 1860–1939* (London: Hodder and Stoughton, 1977), pp. 3–4. This has been a popular sentiment with historians in the wake of the First World War, and while much can be attributed to a revulsion, natural at the

time, for all things military, it should also be remembered that a part of the specific remit of the First Lord was to review, comment upon, and explain the professional merits or

otherwise of the various plans and strategies of his service.

43. *FGDN*, vol. 1, p. 12.

REVIEW ESSAYS

UNCOVERING NO SUCH AGENCY

John R. Schindler

Aid, Matthew M. *The Secret Sentry: The Untold History of the National Security Agency*. New York: Bloomsbury, 2009. 432pp. \$30

The National Security Agency (NSA) has been for decades America's largest, best-funded, and most secretive intelligence service. Since its establishment in 1952 as an independent agency under the Department of Defense (DoD), charged with providing signals intelligence (SIGINT) and information security for the U.S. government, NSA has operated essentially in silence.

The wall of secrecy surrounding nearly all that the agency does has deterred most scholarly inquiry. While it has been generally known that the NSA provides the lion's share of intelligence to the DoD, details have been lacking by design. Before the publication of James Bamford's *The Puzzle Palace* in 1982 there was no monograph available, and that gossipy tome, culled largely from NSA unclassified newsletters, left unanswered most questions about what the agency really does. For historians and anyone wishing to assess NSA's effectiveness as the world's most powerful SIGINT collector and analyst, the knowledge gap has been yawning.

Along comes Matthew Aid, a first-rate researcher who some years ago took upon himself the large task of telling a story that his subtitle describes as "untold." There is a bit of cheek in this, as in the entire Aid enterprise, since the story he tells has already been told in great detail by the NSA itself—specifically, by its Center for Cryptologic History (CCH), which has

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produced hundreds of historical studies, mostly classified, recording and analyzing virtually everything of note that the U.S. Cryptologic System has produced. The cryptologic history publications stand out in the U.S. Intelligence Community for their customarily impeccable honesty about the agency's successes and failures. In recent years, NSA has declassified and released numerous CCH monographs, in whole or in part; in the last five years what is available in the public domain about NSA and its operations has expanded unprecedentedly, and these newly available CCH books and articles are the cornerstone of Aid's work.

That said, the author is to be applauded for his years of digging in archives and tracking down virtually everything published in English about the NSA. No one can fault Aid for lack of thoroughness—his basic history is clear and rings true. If the story he recounts is not exactly untold, it should nevertheless be of high interest to any student of modern military or diplomatic history, and there is plenty of fodder for both lovers and haters of the agency. The reporting is not generally acid etched, and Aid is not attempting especially to disparage the NSA (as Tim Weiner did to the Central Intelligence Agency in his absurdly biased *Legacy of Ashes*, 2007). The NSA saga, as handed down by CCH through Aid to the reader, is meandering and complex.

Upon its foundation, NSA had little access to high-grade Soviet cipher systems, thanks to the compromising in 1948 of a briefly successful program known as BOURBON by the Soviet spy Bill Weisband, who told Moscow about it. Thereafter, NSA spent years and millions of dollars recovering from this setback, slowly and with difficulty. Seldom during the Cold War was NSA able to provide the timely, detailed, and high-grade intelligence on the Soviet Union that American and British SIGINT agencies had gathered on Germany and Japan during World War II. The author admits that this had less to do with NSA's shortcomings than with very good Soviet encryption and communications security, in addition to persistent espionage compromises of U.S. SIGINT programs from the 1940s through the 1980s. What the code breakers achieved, with great effort, was too often undone by traitors.

NSA support to American war fighters presents a similarly mixed bag. Tactical support to deployed units by national-level agencies, which is taken as a given today in Iraq and Afghanistan, hardly existed during the Korean War and was still in its infancy during Vietnam. Aid correctly praises NSA for its outstanding SIGINT support to American soldiers and Marines battling insurgents in Baghdad and Kandahar, but he is otherwise starkly critical of the agency's efforts in recent years. He paints in unduly harsh terms a "lost decade," 1991 to 2001, when the NSA, like so much of the Department of Defense and the intelligence community, struggled for relevance and redefinition after the Cold War victory.

However, that portrayal is charitable and balanced compared to Aid's depiction of NSA's war on terror.

According to *The Secret Sentry*, NSA has become a profound threat to American freedoms and civil liberties that, in its spare time, does SIGINT and information assurance. This would be news to anyone who has worked in the U.S. Cryptologic System since the mid-1970s. The overarching need to protect civil liberties *even at the expense of intelligence collection and production* is hammered into the heads of all junior analysts: "We have a frightful number of lawyers," explained General Mike Hayden, NSA director from 1999 to 2005 (and CIA director from 2005 to 2009) and an impressive leader and manager who is profiled too critically in Aid's work.

In the last chapter the book veers into current events in a polemical fashion that is at odds with the scholarly tone that mostly prevails. There is so little available regarding supersensitive SIGINT counterterrorism operations since 9/11 (the operations are so tightly compartmented that even most NSA analysts know little if anything about them) that any unclassified conclusions seem premature at best.

At bottom, *The Secret Sentry* offers a detailed, if selective, analysis of the NSA and its coverage outside the post-9/11 era, one that is generally fair if not always balanced. Aid seems to want to find fault with the NSA, deeming it throughout its history as either "going deaf" or unable to analyze the information it collects in such abundance, or both—although he frequently offers praise for the agency's many intelligence successes since 1952.

This subtle bias leads to the most curious fact of this curious book. The dog that fails to bark, here, is Aid's own history with the NSA, a salient story that the author fails to disclose, even though it was reported by the *Washington Post* in 2006. Twenty-one years earlier, Matthew Aid, as an Air Force analyst and Russian linguist assigned to an NSA field site in the United Kingdom, was arrested, court-martialed, and convicted of unauthorized possession of classified information and impersonating an officer. Sergeant Aid had been taking top secret code-word materials home with him, which earned him over a year in prison and a dishonorable discharge. When one knows his past, the author's detailed understanding of SIGINT and detectable bias against NSA become less mysterious.

While Aid's disreputable personal history with the National Security Agency does not discredit his scholarship, it does raise questions of agendas and motives. At a minimum, the facts ought to have been disclosed by the author. One wonders why his publisher did not consider such a sensational backstory to have any relevance, particularly for an author professing to reveal hidden truths.

The Secret Sentry is a serviceable and generally readable “biography” of the NSA, written by a determined researcher whose feelings about the agency can be charitably described as complex. Readers, however, would be better served by referring to the original, now declassified, CCH publications from which so much of this book is derived.

On grounds of full disclosure, this reviewer wishes to note that he too served with the National Security Agency for nearly a decade, as an intelligence analyst and counterintelligence officer. During my time of service I had no involvement with the Aid case.

PAUL JOHNSON'S BRIEF LIFE OF CHURCHILL

Henry M. Rector

Johnson, Paul. *Churchill*. New York: Viking, 2009. 181pp.
\$24.95

Paul Johnson's most recent biography of Winston Churchill provides a thumbnail sketch of the British statesman's life and achievements. At only 166 pages of text, it cannot do justice to the epic scope of Churchill's roles both as a peacetime statesman and as a war leader, but it does offer judgments, some of them in implicit counterpoint to recent revisionist treatments of Churchill's career.

Johnson writes that although Churchill, as Britain's prime minister during World War II, was nothing less than the savior of Britain, he was also the beneficiary of certain conditions that were not of his own making. By the outbreak of war, for example, public opinion had turned against the military "brass hats," whose management of World War I had taken a catastrophic toll on British lives. This meant that despite the resentment of some military leaders, Churchill had a relatively free hand in strategic and military matters. He also benefited from national unity. After the pacifism of the 1930s was discredited, the British people grasped that they were in a struggle for national survival and rallied around the prime minister and a national government, including all parties.

Churchill was personally suited to wartime leadership in ways that none of his contemporaries could equal, and his strategic communication skills and work ethic were unrivaled. Also, Johnson credits Churchill with personal initiative in wartime policies that were crucial to the Allied victory. First, his innovation and expertise in airpower enabled him to organize a crash program for British air superiority. Second, Johnson argues that Churchill was correct

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to prioritize early offensive campaigns in North Africa and the Mediterranean. In addition to securing Allied access to oil in the Middle East and eventually removing Italy from the Axis, these campaigns diverted German assets and attention from the primary theater, Europe. Third, Churchill was adept in his management of alliances. After Germany launched Operation BARBAROSSA, Churchill did not let his implacable hostility to Bolshevism prevent him from forming an alliance with the Soviet Union.

And, famously, Churchill artfully cultivated President Franklin D. Roosevelt and American amity well before the attack on Pearl Harbor. No one except Churchill, Johnson writes, could have made these indispensable contributions to the Allied victory, which Churchill believed to be assured upon America's entry into the war.

Johnson argues that Britain's allies share blame in two matters for which Churchill has often been criticized. The first is the air campaign against Germany. He writes that Churchill pursued the bombing, including civilian targets, enthusiastically and was supported in this wholeheartedly by the British public. Although the bombing campaign did not significantly impair German industrial output until the outcome of the war was already clear, Johnson argues, it was nonetheless justified. This was because after the July 1943 attack on Hamburg the air defenses for western Germany that became necessary were provided at the cost of air superiority on the eastern front. Johnson goes on to describe the February 1945 bombing of Dresden as "an atrocity" but argues that Churchill carried this out mainly in fulfillment of a commitment made to Stalin at Yalta.

Johnson also maintains that the United States shares blame for the consequences of delays in launching the Normandy invasion. This delay, Churchill's critics argue, allowed the Red Army to advance far into Central Europe, ultimately bringing those territories behind the Iron Curtain. Churchill, recalling the failed Dardanelles expedition in World War I, was reluctant to proceed with the invasion until he had an overwhelming force at his disposal. After D-day, the Allies could not make up the time that assembling this force had cost, and Churchill could not overcome Eisenhower's insistence on a ponderous "broad front" advance into Central Europe. This meant that the Red Army got to Berlin, Prague, Vienna, and Budapest first.

Johnson has little to say about a subject that has been a focus of Churchill's revisionist critics, namely, his role as architect of Britain's special relationship with the United States. He does note that Roosevelt was "oversuspicious of Churchill and undersuspicious of Stalin" and offers the contrarian view that "the death of FDR . . . came as a relief, especially as Harry S. Truman, brisk, decisive, much better informed on strategy, proved infinitely easier to deal with."

Of course, Churchill had already secured a place in the history of British strategy and warfare before his service as prime minister in World War II. Johnson assesses Churchill's role in two of the most controversial episodes of his pre-World War II career.

The first of these was the disastrous Dardanelles expedition of 1915, which Churchill masterminded as First Lord of the Admiralty. Johnson blames the fiasco on the operation's irresolute implementation by military commanders. However, in Johnson's account, Prime Minister Herbert Asquith was the real

villain of the piece. Asquith, already contemplating jettisoning Churchill as the price of a new coalition government, refused to allow Churchill to assume command, as he had done during the siege of Antwerp in October 1914. Asquith was only too eager to fire Churchill once the Dardanelles expedition turned into a shambles.

Johnson's take on this episode is incomplete, however. It is certainly true that the First Sea Lord, Admiral Sir John "Jackie" Fisher, was at his most erratic during the planning for the operation and that the war minister—Field Marshal Herbert Kitchener, Earl Kitchener—who had authority to commit ground troops, vacillated in his support. Likewise, the in-theater commanders were inept. However, Churchill should have foreseen that his plan was too daring to be attempted without more robust backing and implementation, and this arguably justified his dismissal.

Johnson also faults Churchill for dismissing a potential Japanese threat during the interwar period. As chancellor of the exchequer, Churchill put the Royal Navy on a tight budget. In an uncharacteristic lapse of imagination and insight, Churchill made no objection when the government of David Lloyd George allowed the Washington Naval Disarmament Treaty to supersede the Anglo-Japanese alliance, which the Japanese saw as disadvantageous. Johnson describes Churchill's categorical rejection of any Japanese threat during these years as a "complete mystery" and attributes British vulnerability in Asia between 1940 and 1942 directly to it. This lack of foresight ultimately led to the sinking of two capital ships and the fall of Singapore.

Johnson reserves his greatest scorn for blunders that Churchill committed in British domestic politics, particularly in the 1930s. Chief among these was his impassioned, quixotic defense of Edward VIII during the abdication crisis of 1936, which culminated in Churchill's disastrous intervention in the House of Commons. This impaired his credibility at a time when he was about to deliver his unwelcome, if prescient, warnings about Hitler's ambitions.

Since Johnson's take on Churchill's career is not particularly original, his offering differs from other biographies mainly in its brevity, and therein lies its deficiency. Nevertheless, *Churchill* is a readable study for those who are daunted by the overwhelming scale of other works on this twentieth-century giant.

BOOK REVIEWS

THE FACES OF LEADERSHIP

Williams, Dean. *Real Leadership: Helping People and Organizations Face Their Toughest Challenges*. San Francisco: Berrett-Koehler, 2005. 296pp. \$29.95

There seems to be no shortage of disappointing leaders these days. Tony Hayward of the BP oil well disaster, General Stanley McChrystal in Afghanistan, and our Wall Street CEOs are recent examples. The thoughtful book *Real Leadership* offers insight into why these accomplished leaders stumbled: their leadership mind-sets and behaviors were poignantly inadequate given the situational context and complexity.

Dean Williams, of Harvard's Kennedy School and member of Harvard's Center for Public Leadership, draws from a wide range of academic experience and research. Many of the author's perspectives are notably influenced by Harvard colleague Ronald Heifetz, who has written and lectured extensively about adaptive leadership.

Early in the book Williams introduces the concept of "counterfeit leadership." Counterfeit leaders offer superficial, quick-fix solutions for complex problems. They are prolific launchers of "false tasks" that do little to improve the situation, distract the organization from facing reality, and diffuse the leaders' moral obligations. These leaders

habitually stay within their comfort zones by relying on positional power and factional loyalty. They sidestep the essential work of executing meaningful change. Counterfeit leaders are not intentionally deceitful, but rather, as in theater, they act out popular scripts to accommodating audiences.

In contrast, "real leaders" provide wisdom and energy. They take responsibility for mobilizing people to confront reality, which requires that they engage in the tough task of provoking people to modify their values, preferences, traditions, and priorities.

The process of *Real Leadership* is quite pragmatic and demands three commitments: deep understanding of reality ("diagnostic competence"), self-knowledge ("personal case"), and constant reassessment (metaphorically called "mirrors"). Williams places a great deal of emphasis on thorough, reality-centered diagnostics.

The book explains six types of specific leadership challenges. These six categories are not meant to imply definitive boundaries but rather to differentiate

unique leadership situations. Each leadership challenge presents a diagnostic profile and recommends intervention strategies. For example, one category is called the “activist challenge.” This is a situation where the organization refuses to acknowledge or respond to changes in reality though its performance or survival depends on it.

This is an informed, well structured, and immensely readable book about adaptive leadership. It is pragmatic, while providing keen perspectives and insights. A deeper discussion of power and authority and their influence on adaptive leadership would have been beneficial, but the book’s refreshing diversity of illustrative leadership examples is a rich contribution.

Although this work was published five years ago, its content is still relevant and applicable, perhaps even more than ever, because of increasing disillusionment with contemporary leadership. It prompts us to consider critically whether some closely held values and assumptions are paradoxically detrimental. (An excellent and recent book about adaptive leadership is *The Practice of Adaptive Leadership*, by Ronald Heifetz, Alexander Grashow, and Marty Linsky, Harvard Business Press, 2009.)

HANK KNISKERN
Naval War College



Schmitt, Gary J., ed. *The Rise of China: Essays on the Future Competition*. New York: Encounter Books, 2009. 191pp. \$21.95

Gary J. Schmitt is a resident scholar at the conservative Washington think tank the American Enterprise Institute

(AEI), where he is also the director of the Program on Advanced Strategic Studies. Prior to coming to AEI he was a member of the professional staff of the U.S. Senate Select Committee on Intelligence, serving as the committee’s minority staff director.

As its title indicates, this edited volume examines various facets of China’s rise to Asian and global eminence and the implications of that rise for established powers, led by the United States. This work not only performs a service by exploring the contours of Chinese power but furnishes a barometer suggesting how right-leaning China scholars think about U.S. strategy toward a newly assertive Beijing. This book constitutes an excellent primer on East Asia’s future and America’s place in the region.

Among the contributing authors are well-known China hands like Ashley J. Tellis (Carnegie Endowment for International Peace) and Dan Blumenthal (AEI’s U.S.-China Economic and Security Review Commission). Despite the authors’ hawkish reputations, however, the book takes a determinedly measured tone, which constitutes one of its most appealing traits.

Schmitt leads off by observing that it is not the rise of *China* but of the *People’s Republic of China* that inspires forebodings in Asia and the West. The swift rise of any power disturbs the existing equilibrium, making for uncertainty and friction. The ascent of the United States to world power over a century ago gave rise to testy Anglo-American relations for a time, before British leaders concluded that the Royal Navy could not maintain a squadron in the Western Hemisphere strong enough to overpower the armored,

steam-driven fleet being built in American shipyards.

The result was a grudging British retreat from the New World. Then as now, historical, political, and cultural affinities lubricated the gears of Anglo-American diplomacy. If London and Washington found it hard to manage their relations, how much harder must the challenge be that lies before liberal America and autocratic China—how to sort out their differences without undue rancor. The type of regime matters. How Sino-American relations will unfold in the coming years is far from clear.

For me the most forward-looking and thus most interesting chapters are concentrated toward the book's end. Schmitt, for example, examines the prospects for multilateralism in Asia, a region long typified by a hub-and-spoke alliance system centered on the United States. Schmitt downplays the potential for an Asian NATO but maintains that the region is halfway to an Asian variant of the Helsinki Accords, which set the rules for the late Cold War. If this is so, Asian multilateralism could possibly enfold Beijing, fostering regional concord. AEI demographics expert Nicholas Eberstadt observes that the Chinese nation is graying and that Beijing's one-child policy is taking its toll on the most productive age groups. Taken together, the essays gathered here suggest that straight-line projections of China's rise are apt to mislead. This book is strongly recommended for newcomers to China studies, as well as to old hands who want a refresher on recent developments.

JAMES R. HOLMES
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Koplow, David A. *Death by Moderation: The U.S. Military's Quest for Useable Weapons*. New York: Cambridge Univ. Press, 2010. 263pp. \$28.99

Death by Moderation is a focused, academic work that starts with the premise that conditions in today's world have shown the limitations of increasingly powerful weapons in achieving U.S. national goals. In response to that problem, the U.S. military is attempting to develop weapons that are less powerful and more accurate—and therefore more “useable,” in the author's words.

After several chapters that set the stage—issues involving revolutions in military affairs, deterrence, and the law of armed conflict—a series of chapters deal with particular types of usable weapons. The author has chosen five such weapons: precision-guided munitions, low-yield nuclear weapons, smart antipersonnel land mines, antisatellite weapons, and nonlethal weapons. There is also a discussion on cyber war, although not in a separate chapter. The book ends with the chapter “What to Do about Useability,” in which Koplow provides answers to his many questions.

The chapters begin with a scenario, either historical or hypothetical, as a framework for the following discussion. Given the constraints of space, Koplow does an excellent job of describing the technical details of the weapons under review. When applicable, he reviews their actual uses in combat. He places particular emphasis on whether or not more usable weapons will reduce what he calls “self-deterrence” and result in the increased likelihood of conflict

using such weapons. Each chapter is a self-contained unit that ends with a separate bibliography and a list of applicable treaties. This approach is particularly valuable for a reader who wants to review quickly only one of the subjects covered.

The author does a good job presenting both sides of the issues surrounding these weapons. He clearly views these issues from a legal, arms-control perspective, as opposed to that of someone who might have actually to employ the weapons in combat. This is hardly surprising, given the author's background. Koplow is a professor of law at Georgetown University Law Center and director of the Center for Applied Legal Studies. He has the added credentials of service in both the Arms Control and Disarmament Agency and the Department of Defense.

A quick look at chapter 6, on smart antipersonnel mines, illustrates the book's strengths (which are major) and its weaknesses (which are minor). The scenario is hypothetical and involves a country called "Kafiristan." In my view, such cases are less powerful than his historical ones, such as the use of precision-guided bombs against heavily defended bridges in North Vietnam. This chapter provides a useful primer on land-mine warfare, including important definitions explaining self-destructing, self-neutralizing, and self-deactivating mines. It also discusses the two current, but competing, treaties on the subject: the 1980 United Nations Convention on Certain Conventional Weapons, which was signed by the United States, and the more restrictive 1997 Ottawa Treaty, which the United States did not sign.

Whether one agrees or not with Koplow's conclusions, *Death by Moderation* is a valuable addition to the literature because it forces the reader to think about a number of important issues that will be around for the predictable future.

THEODORE L. GATCHEL
Naval War College



Thies, Wallace J. *Why NATO Endures*. New York: Cambridge Univ. Press, 2009. 321pp. \$90

The study of alliances is central to our understanding of international relations. Wallace Thies, a reputable NATO scholar, argues that the "iron law of coalitions"—that alliances are formed to resist enemies and do not outlast them—must be rethought because of NATO's record-breaking performance over the past six decades. The title, *Why NATO Endures*, therefore understates the sweeping conclusion of this concise and readable essay.

Thies's rhetorical technique is to document how contemporaneous observers have characterized six tumultuous incidents in NATO's existence as life-threatening crises, then to evaluate with the clarity of hindsight the alliance's self-healing tendencies. In each case, NATO emerges as a stronger alliance with improved vitality.

The analysis draws from both historical sources and political-science research to contrast traditional alliances with NATO. Thies's principal points are both simple and profound. The European alliances of past centuries were cut from different cloth than was the North

Atlantic alliance. Early alliances seemed designed to be transitory. There was no need for cooperation, integration, preparation, or even friendship among Bismarckian-era allies in a multipolar world. Offensive wars were fought for territory and treasure. However, this situation was turned on its head when two superpowers developed alliance systems in an ideological struggle where contesting armies had thermonuclear weapons and needed to be ready to fight for national survival on a moment's notice. Further, NATO's members were liberal democracies empowered to take positions independent of the United States on any number of issues and were willing to air these differences in public.

The author's well-informed encapsulation of the six "fatal" crises that NATO has weathered over the years provides scholars and interested general readers insight, perspective, and juicy anecdotes. The author's technique of laying out the problem in each case and following with "what actually happened" makes for a series of intriguing and illuminating vignettes in diplomatic history. Watching them unfold in real time, without the benefit of opened archives and clear hindsight, was not nearly as satisfying or rewarding.

A second cavil with the book's title (and the more important one) is that it is conclusive only in the past tense. The book is certainly a persuasive explanation as to why NATO *endured*. It offers a plausible countertheory for the creation of successful and enduring alliances. However, only one of the crises addresses the post-Cold War world in which we find ourselves today. Indeed, many of the circumstances that

attended NATO's creation and sustenance have either vanished or are eroding. Its *bête noire* (Russia) has ceased to be NATO's enemy for two decades, and the anxieties created by imminent destruction have been replaced by lesser threats, such as transnational terrorism and crime. It remains to be seen if the "self-healing tendencies" of democracies are sufficient to enable NATO to endure in an entirely different kind of world. The reader will benefit from Thies's well argued discussion of this point.

THOMAS FEDYSZYN
Naval War College



Wheeler, Winslow T., and Lawrence J. Korb. *Military Reform: An Uneven History and an Uncertain Future*. Palo Alto, Calif.: Stanford Univ. Press, 2009. 256pp. \$24.95

In *Military Reform*, two national security experts reflect on initiatives intended to reform defense planning across the entire enterprise. For decades Winslow Wheeler and Lawrence Korb have observed, studied, and participated in defense reform, gaining a weathered perspective on the ideas, events, and actions taken by national security organizations within government. This work describes the conditions necessary or common in the national security environment in cases where individuals or institutions have exhibited interest in reform.

Wheeler and Korb review the issues that underpinned defense reform initiatives over several decades. They describe the actions of key individuals who championed reform ideas and the issues and stakes of those who opposed or resisted.

Each reform movement that the authors study is recounted in a style like that of a novel. Wheeler and Korb take the time to develop reformers like characters in stories. The value of this approach is that the reader gains added insight into the people involved in these ideas and decisions and into the impact that their experiences, knowledge, and personalities had on the period of reform.

Military Reform conveys the complexity of interests and institutions that compete in national defense. Defense planning is a collaborative process that includes the armed services and agencies of the Department of Defense and Congress. Through the use of case studies of past reform initiatives, the authors capture the impact of the actions of these organizations from the perspectives of organizational behavior, process, and competing interests.

For example, chapters 2 and 3 assess the actions and influence of key members in Congress and the Congressional Military Reform Caucus, as well as of the senior leadership within the Department of Defense in the early 1980s. The authors' assessment details the actions taken to control rising acquisition costs in several defense programs. This case study illustrates the impact that politics has on defense reform, the need for a reform leader or champion, and the impact that the news media can have in amplifying reform issues.

Ultimately, the authors conclude that the realities of the political environment can trump the actions of reformers, because members of Congress are politicians and so tend to view reform issues as political challenges or opportunities for compromise or political gain. Members of Congress and

congressional committees have legislative processes and oversight authority that can significantly impact the objectives and mitigate the effects of reform. Further, though the media can amplify issues, their tendency to focus on the "newsworthiness" of reform issues results in a lack of "staying power."

Defense reform is not only impacted by Congress and the media, however. Chapters 4 and 5 discuss the impact of previous defense reviews conducted by the Department of Defense, blue-ribbon panels commissioned by the executive branch, and thematic trends such as "transformation" or the "revolution in military affairs."

The organizations within the Pentagon possess a remarkable ability to resist change. Senior Pentagon officials are bureaucrats, tending to view issues and problems either as threats to established programs and funding sources or as opportunities for increases in funding. The bureaucratic management necessities of the Department of Defense and competition for budget and mission lead to perceptions that reform is a threat to the organization.

The book concludes with a description of what defense reform is and is not, in terms of budget, technology, and organizational behavior. This work takes a pragmatic approach in the study of defense reform, assessing the complex and competitive nature of the reform endeavor within government. It is also timely: the 2010 Quadrennial Defense Review report, released by the Defense Department in February, and the current national security environment both reflect several of the qualities analyzed in the book.

SEAN SULLIVAN
Naval War College



Holwitt, Joel Ira. *Execute Against Japan: The U.S. Decision to Conduct Unrestricted Submarine Warfare*. College Station: Texas A&M Univ. Press, 2009. 262pp. \$37.50

Joel Ira Holwitt is a lieutenant who has just completed the Submarine Officer Advanced Course and will soon report to USS *New Mexico* (SSN 779), in Groton, Connecticut, as navigator. This book was his PhD dissertation at Ohio State University, where he studied under Dr. John Guilmartin. It is a serious work that is researched in the tradition of *The Blue Sword* (1982) by Dr. Mike Vlahos, *War Plan Orange* (1991) by Edward Miller, and the more recent *Agents of Innovation* (2008) by John Kuehn, all of which deal with the interwar period and the roles played by the War Plans Division, the Naval War College, and the General Board.

This book is an in-depth historical look at how the United States and the U.S. Navy's decision-making process worked in the run-up to Pearl Harbor. It is a well documented and fascinating story that brings to life some naval personalities perhaps not well known to today's officers. Most interesting for students at the U.S. Naval War College and naval officers who work in today's inter-agency system, it is another look into how the Navy's leadership has functioned and the constructive role that the Naval War College has played in influencing the thinking of the leadership. Students of history and policy too will find this an interesting story, not only because the German decision to implement unrestricted submarine warfare actually was one of the major causes for the American entry into the First World War but also because there appears to

be no documentation indicating that those leaders whom we would today call the "national command authority" ever actually participated in the decision to implement this policy.

There exists a memorandum dated March 1941 from Admiral Edward Kalbfus (researched by Naval War College faculty and students), recommending a strategy of unrestricted submarine and aerial warfare against Japan, that was clearly rejected by the General Board. The report, however, was retained by the Chief of Naval Operations (CNO), Admiral Harold "Betty" Stark, and it ultimately influenced his decision to deliver the memo to the commander of the Asiatic Fleet, Admiral Thomas C. Hart.

As a serving flag officer, I found it fascinating to see how real life worked in the run-up to the war. For example, for me the most interesting story was how the CNO transmitted his "commander's intent" to Admiral Hart, a most experienced submariner. Stark knew that the State Department would never consent to unrestricted submarine warfare and so decided against raising the issue directly before the United States entered the war. Instead, he sent a letter to Admiral Hart; Stark's war planner, Rear Admiral Kelly Turner, also discussed it with Captain James Fife, another highly respected submariner, who delivered the information to Admiral Hart and his staff personally in the Philippines. There was no way that Admiral Hart could mistake Stark's intent. This put Hart in a position to anticipate his orders, in a way the best commanders will. Hart sent U.S. submarines to sea, ready for war patrol, immediately after the initial Japanese attack.

The other interesting aspect of this work deals with the difference between prewar training of our submariners and what they actually did in combat. In a section called “The Accidental Commerce Raiders,” Holwitt points out that commanders had been conditioned by article 22 of the London Naval Treaty—which many thought meant that if they torpedoed merchants without warning, they would actually be held liable, “hunted down and captured or sunk as pirates.” So, according to this account, commanders were taught to be cautious and were essentially trained for naval combat against high-speed, heavily armored combatants and not against commercial shipping. The result was that very few of the tactics eventually used were developed before the war.

Execute Against Japan should be required reading for naval officers (especially in submarine wardrooms), as well as for anyone interested in history, policy, or international law. Lieutenant Holwitt has already briefed some of our Naval War College students. His research shows how and why our experience in the First World War did not prepare us for the next one, and this is its essential lesson. It is a lesson worth some reflection.

REAR ADMIRAL JAMES P. WISECUP, U.S. NAVY
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Mueller, Michael. *Canaris: The Life and Death of Hitler's Spymaster*. Annapolis, Md.: Naval Institute Press, 2007. 320pp. \$34.95

Who was Wilhelm Canaris? The naval cadet from the Ruhr who rose to vice admiral and directed the Abwehr,

German military intelligence, for nine years remains one of the most intriguing figures in twentieth-century military history. German journalist and documentarian Michael Mueller unravels several of the mysteries that surround Canaris's life, though many remain.

Mueller acknowledges the shortfall. Despite solid research and fresh archival material, his account “neither answers all the questions, nor resolves all the contradictions.” The paucity of primary sources and the tendency of intelligence operators habitually to brush their tracks owe much to the circumstances of Canaris's arrest and execution. Only remnants survive of Canaris's service diaries, discovered by investigators in the aftermath of the 20 July 1944 plot to assassinate Hitler.

Mueller's narrative informs, illuminates, and entertains. Canaris's early career at sea was marked by escapades of derring-do in South America and Spain. An officer of his time, Canaris absorbed the credo of the sea service, and it served him well. He had a clear talent for languages and social rapport, and his superiors noted the vitality of his wide-ranging networks. Before long, he became “too valuable to send to sea.”

An astute and calculating observer, Canaris navigated multiple career-threatening crises that began as the defeated German fleet returned to Kiel in 1918. In the closing years of the Weimar Republic, Canaris again leveraged his luck, evading a series of potentially devastating political scandals. He did not emerge unscathed, however; his growing reputation made both naval officials and politicians nervous.

If rivals watched with gimlet eyes, Canaris's political patrons had reason to look the other way. He was soon enmeshed in the government's efforts to circumvent the naval-armament provisions of the Versailles treaty that had ended World War I. With his international networks delivered, Canaris won only muted applause in Berlin.

Grand Admiral Erich Raeder was leery of Canaris, who he feared was compromised politically. Mueller acknowledges the awkwardness between the two officers but emphasizes Raeder's professionalism. Raeder's own memoir supports that judgment. Setting his personal feelings aside, Raeder intervened to elevate Canaris to the head of the Abwehr.

At first Canaris walked the razor's edge between collaboration with the Nazi regime and open resistance. The spring of 1938 was the turning point. The cumulative effect of the Blomberg and Fritsch scandals, destroying the careers of the war minister and the commanding general of the Wehrmacht, respectively, was too much for an old-school naval officer. Still in uniform, Canaris became the heart of the opposition circle in Abwehr headquarters.

Canaris's career-long wrangling with his political and diplomatic counterparts will resonate with military intelligence officers today. His death in the bloodletting unleashed by Claus von Stauffenberg's failed attempt on Hitler's life is startling only for its accidental nature. The real surprise is that he was untouched until the Abwehr was dissolved in mid-1944.

Who was Wilhelm Canaris? A loyal servant of "the other Germany" or a right-wing Nazi sympathizer? What

accounts for Himmler's indulgent, even protective, attitude toward Canaris and his circle? The wily yet principled admiral is an incomplete puzzle. However, Mueller puts new pieces on the table, while nudging others into place.

Readers will appreciate Muller's abundant reference notes, exhaustive bibliography, and index. Sadly, the work is marred by the absence of rigorous copyediting and fact-checking; names in particular suffer. But these are minor quibbles. Mueller's work is an important contribution to the literature, and the Naval Institute deserves a laurel for bringing it to these shores.

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Harari, Yuval Noah. *Special Operations in the Age of Chivalry: 1100–1550*. Suffolk, U.K.: Boydell, 2007. 224pp. \$90

Yuval Noah Harari published this book in the midst of the ongoing struggles among the Hezbollah militia from Lebanon, the Palestinian Hamas militias, and the Israeli army. These contemporary events, especially the special operations undertaken by all sides, provide the backdrop to this work. With regard to medieval special operations, not much has been written, and Harari endeavors to fill this void by focusing his work on a general readership rather than a strictly scholarly audience.

The title of this book is eye-catching but immediately raises questions: What does the author mean by "special operations," and what is meant by "the Age of Chivalry"? The author's use of the phrase, which dates back to the high and late Middle Ages, is really nothing

more than a literary choice. It is easy for the reader to get distracted in the discussion regarding the term and the notions of chivalry and chivalric virtues. Harari does not imply that the employment of deception, guile, kidnapping, and assassination as means of political and military operations was contrary to the code of conduct. Rather, he says that they were not the normal methods of operation but were in that sense unconventional and therefore special. He notes specifically that the code of chivalry never stood in the way of success or victory and that medieval special operations almost always necessitated foul play. This brings us to the second and more substantial issue—Harari’s definition of special operations.

The author defines special operations as combat operations that are limited in area, size, and duration and that, relative to the resources expended, have disproportionate strategic and political results. Additionally, he notes, they are by their nature covert and unconventional. While covertness is a given, because a small force cannot hope to accomplish its mission if discovered, the concept of unconventionality causes a problem. Not all medieval battles were fought between two opposing forces lined up three battalions abreast, with a melee following a few volleys of arrows and charges of knights. The large, set-piece battle was in fact relatively rare; the small-unit raid was more the norm. This issue is not whether the operations are “special” but rather whether the examples used actually meet a modern definition of special operations. Modern special operations are similar to Harari’s definition in that they are designed to achieve covertly a

political or strategic end, but both the operation and the effect are planned, and the operations are usually carried out, by specially trained forces, not necessarily by small detachments of conventional soldiers. By his less rigorous definition, nearly all small actions could be regarded as “special.”

Harari’s preface and first chapter, which together account for nearly one-third of the book, define medieval special operations and then list a plethora of examples, such as small-unit raids, political intrigues carried out by military forces, assassinations, hostage takings, kidnappings, and associated rescues. He focuses on inland special operations targeting infrastructure or people or national symbols (either people or strategic places). However, his methodology for selecting examples is unclear. As a result, chapter 1 is long on examples but short on the analysis of their impacts—the one true weakness of the book.

Of the other cases specifically explored, the assassination of King Conrad of Jerusalem by the Nizaris (Assassins) in 1192 and the destruction of the imperial flour mill at Auriol by the French in 1536 are more in line with the contemporary definition of special operations. These examples feature specially trained troops executing plans that had strategic and political goals and involved limited resources. It is in these cases that the true value of this work is evident.

Harari successfully shifts the reader’s attention from the glory of the large, set-piece battle to the implications of the actions of small forces of soldiers, no matter whether their operations were special or not. The author’s

writing style is captivating, and the book meets its stated aim of providing a popular history of medieval special operations. Harari, whether intentionally or not, demonstrates the importance of being able to fight hybrid wars.

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Luttwak, Edward N. *The Grand Strategy of the Byzantine Empire*, Cambridge, Mass.: Belknap, 2009. 512pp. \$35

In the Western historical imagination, the Eastern Roman Empire, which ruled from Constantinople (now Istanbul, Turkey) from AD 330 until 1453, has received mostly disdain and neglect. The term “Byzantine” carries some negative connotations. One dictionary defines “byzantine” (lower-case *b*) as “characterized by a devious and usually surreptitious manner of operation.” In the often-quoted judgment of a Victorian historian, “Its vices were the vices of men who had ceased to be brave without learning to be virtuous. . . . The history of the Empire is a monotonous story of the intrigues of priests, eunuchs and women, of poisonings, of conspiracies, of uniform ingratitude, of perpetual fratricides.”

The academic study of Byzantine history, the preserve of a rather inbred community, requires mastery of difficult medieval Greek, the intricacies of Orthodox theology, and other esoteric specialties. But in recent years the work of a new generation of talented Byzantinists has given us English translations of many long-inaccessible primary sources, including an extensive body of military texts.

In 1976, military analyst and historian Edward Luttwak published *The Grand Strategy of the Roman Empire: From the First Century AD to the Third*, advancing a controversial thesis that the empire developed a conscious and consistent strategy of “defense in depth,” based on lines of frontier forts, backed by regional and central mobile armies.

In this new work, on the Eastern Empire’s grand strategy, Luttwak explains that after the collapse of the Western Empire in the fifth century, Eastern emperors no longer enjoyed this luxury. Faced by endless waves of nomadic horse archers from the steppes, plus Sassanid Persia (the persistent traditional enemy to the east), the empire could not afford to fight decisive battles or wars of attrition, which would only deplete the costly, carefully trained imperial army. Trying to annihilate the present enemy would only smooth the way for the next tribe migrating out of Central Asia. The empire’s most natural ally was whatever tribe was stacked up *behind* the horde currently assailing the Danube frontier.

The empire developed an “operational code” that combined shrewd diplomacy, careful intelligence, defensive siege craft, and well-placed bribery, with military force as a last resort. When battle could not be avoided, Byzantine generals practiced “relational maneuver,” a style of fighting based on insight into the strengths and weaknesses of each enemy.

The rise of Islam in the seventh century represented a deadly new threat, based on an aggressive religious ideology. With strongly disaffected religious minorities in its Syrian and North African provinces, the empire was particularly vulnerable. Luttwak explains how a

succession of warrior-emperors managed this threat for almost seven centuries.

A short but sharply argued chapter, “Leo VI and Naval Warfare,” reviews the very limited surviving texts on Byzantine sea power and provides a lucid account of “Greek fire,” the empire’s much-misunderstood “secret weapon.”

Luttwak’s analysis is particularly sharp on the relation of religion and statecraft. Unlike in the medieval West, where church and state contended bitterly for centuries for dominance, the Orthodox Church was usually an integral part of the imperial order: the patriarch of Constantinople was appointed by the emperor and served at his pleasure. Orthodoxy was a source of “cultural confidence” for Byzantine

soldiers and a practical instrument for taming uncivilized barbarians.

The Grand Strategy of the Byzantine Empire is a work of solid scholarship, creative imagination, and practical military analysis. It should be of more than antiquarian interest to those who believe that the present confrontation between Islam and the West may become a multigenerational conflict. The empire endured so long because it took war very seriously, avoided it whenever possible, and realistically analyzed the cultures that surrounded it.

The book’s only weakness is its maps, which are muddy and crudely drawn. The reader will benefit from keeping at hand a good historical atlas, such as the *Penguin Atlas of Medieval History*.

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OF SPECIAL INTEREST

THE EDWARD S. MILLER RESEARCH FELLOWSHIP IN NAVAL HISTORY

The Naval War College Foundation intends to award one grant of \$1,000 to the researcher with the greatest need and who can make the optimal use of the research materials for naval history located in the Naval War College's Archives, Naval Historical Collection, Naval War College Museum, and Henry E. Eccles Library. Further information on the manuscript and archival collections and copies of the registers for specific collections are available on request from the Head, Naval Historical Collection (e-mail: evelyn.cherpak@usnwc.edu). The recipient will be a Research Fellow in the Naval War College's Maritime History Department, which will provide administrative support during the research visit. Submit detailed research proposal that includes a full statement of financial need and comprehensive research plan for optimal use of Naval War College materials, curriculum vitae, at least two letters of recommendation, and relevant background information to Miller Naval History Fellowship Committee, Naval War College Foundation, 686 Cushing Road, Newport, R.I. 02841-1207, if possible by 1 September 2010. For further information, contact the chair of the selection committee at hattendorff@usnwc.edu. Employees of the U.S. Naval War College or any agency of the U.S. Department of Defense are not eligible for consideration; EEO/AA regulations apply.

REFLECTIONS ON READING

Professor John E. Jackson is the Naval War College's manager for the Navy Professional Reading Program.

For most of recorded history, the term “reading” has referred to the process of decoding marks inscribed on stone or clay tablets, papyrus, linen, or paper in order to extract the knowledge the writer was attempting to share. The link among thought, speech, and the written word was identified by the Greek philosopher Aristotle, who said, “Spoken words are the symbols of mental experience, and written words are the symbols of spoken words.” Many pages of writing bound together into book format have been the most ubiquitous and longest-lasting form of communication for the past thousand years. Today, however, emerging technology is providing other alternatives. While the heart of the Navy Professional Reading Program (NPRP) is a library of sixty printed and bound books that have been distributed widely throughout the fleet, other options are also available for sailors who want to participate in the program.

Audiobooks. In Aristotle’s day, “spoken words” were exchanged during one-to-one conversations or within small groups who sat enthralled as orators and storytellers conveyed information through the oral tradition. The ability to record and replay the human voice enabled many more people to share in a common experience. The modern audiobook utilizes voice actors (or the authors themselves) to present its content in a highly dramatic fashion. These audiobooks are particularly appealing to the visually impaired and to individuals who can listen to books while on travel. Admiral Michael Mullen, chairman of the Joint Chiefs of Staff, has expressed a fondness for listening to audiobooks during his seemingly endless travels. Many of the titles in the NPRP library are available on prerecorded audio tapes and compact discs (which can be purchased in the Navy Exchange or commercial bookstores) or can be downloaded into MP3 players and iPods. At least twenty-two titles are currently available *at no charge* to sailors who access the Navy Knowledge Online (NKO) website, at www.nko.navy.mil.

E-books. Over the past five years, many high-tech companies have been working to create efficient electronic devices capable of downloading and displaying the written word. Probably best known is the Kindle, from Web giant Amazon.com, which will download books in less than sixty seconds from virtually anywhere, using its “Whispernet” or via a “Wi-Fi” hot spot. The Kindle will hold as many as 1,500 books in its memory, and hundreds of thousands of titles are available, many at no charge. In July 2010, Amazon announced that for the first time it had sold more e-books during the month than it had sold hardback books! Amazon believes that e-book sales will soon eclipse paperback sales as well. The Reader (from Sony Corporation) and the Nook (from Barnes & Noble) are also competing for shares of the e-book market. The latest, and perhaps the most formidable, competitor is the iPad (from Apple), which performs not only as a book reader but also as a video player, Web-surfing device, and music player. Additionally, many “smartphones” can also be used to read e-content, although their smaller screens make extended reading difficult. As with audiobooks, over a dozen e-book versions of NPRP titles (and thousands of other books) are available for free download on NKO, through the courtesy of the Navy General Library Program.

There are a number of pros and cons to e-books. Some readers simply miss the feel and weight of a bound book in their hands. Printed books can be read, underlined, and shared with friends and family members, and a collection of beautifully bound books can create a warm and inviting personal library. On the other hand, hundreds of e-books can be carried in one hand, and new titles are available in a matter of minutes. E-books are often less expensive than printed books, and they are more ecologically friendly, since no trees are felled to make the paper, no fuel is burned moving the books from printer to bookstore to consumer, and no space is taken up in the landfill when the books are no longer needed.

Observers believe that the trend will be for e-book sales to continue to grow, while sales of printed books will decline, but the ultimate outcome of this battle is unclear. No one believes that the days of the printed book are numbered, as there will likely always be readers who reject the lure of e-book technology. The Navy Professional Reading Program promotes reading in all formats, as well as listening to audiobooks. The real payback from reading is the knowledge and increased worldview one gets from all of the books in the NPRP library. We encourage you to experiment with all the reading options—to borrow books from your command library, to download them for free on NKO, or to purchase them

in print or electronic versions for your professional library. Any way you go, you will be a better sailor and better citizen for your efforts.

JOHN E. JACKSON

