

NAVAL WAR COLLEGE REVIEW



NAVAL WAR COLLEGE PRESS
686 Cushing Road
Newport, RI 02841-1207

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 2013	2. REPORT TYPE	3. DATES COVERED 00-00-2013 to 00-00-2013		
4. TITLE AND SUBTITLE Naval War College Review, Winter 2013, Volume 66, Number 1		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,,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 There is a powerful undercurrent of thought throughout our defense establishment that doubts the value of the study of history for addressing today's security challenges. It is sometimes said-and more commonly assumed-that the pace of technological development in this new age of networked communications and precision targeting is rapidly rendering obsolete the lessons of past international conflicts. In remarks delivered to the Naval War College's Twentieth International Seapower Symposium on 20 October 2011 as the inaugural Hattendorf Prize Lecture, the distinguished British naval historian N. A. M. Rodger defends the study of history by military professionals and contemporary statesmen. Like it or not, he argues, we cannot escape the grip of history, which continues to shape basic assumptions we make about today's world whether or not we recognize it fully. Professor John Hattendorf, chair of the Naval War College's Department of Maritime History, is the author most recently of Talking about Naval History: A Collection of Essays (Newport: Naval War College Press, 2011).				
15. SUBJECT TERMS				
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 145
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified		

NAVAL WAR COLLEGE PRESS ADVISORY BOARD

Adam Bellow
Jeffrey Kline
Gale A. Mattox
Robert A. Silano
Marin Strmecki
Dov S. Zakheim

NAVAL WAR COLLEGE REVIEW EDITORIAL BOARD

Donald Chisholm
Audrey Kurth Cronin
Peter Dombrowski
Stephen Downes-Martin
Col. Theodore L. Gatchel, USMC (Ret.)
James R. Holmes
Capt. Dennis Mandsager, JAGC, USN (Ret.)
William C. Martel
Col. Mackubin Owens, USMC (Ret.)
Cdr. Derek S. Reveron, USN
Capt. Peter M. Swartz, USN (Ret.)
Capt. David Teska, USCGR
Scott C. Truver
James J. Wirtz

PRESIDENT, NAVAL WAR COLLEGE
Rear Adm. John N. Christenson, USN

PROVOST
Amb. Mary Ann Peters

DEAN OF NAVAL WARFARE STUDIES
Robert C. Rubel

NAVAL WAR COLLEGE PRESS
Carnes Lord, *Editor*
Pelham G. Boyer, *Managing Editor*
Phyllis P. Winkler, *Book Review Editor*
Lori A. Almeida, *Secretary and Circulation Manager*
Frank Uhlig, Jr., *Editor Emeritus*

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>

Editor, Circulation, or Business
401.841.2236
press@usnwc.edu

Managing Editor
401.841.4552
managingeditor@usnwc.edu

Newport Papers, Books
associateeditor@usnwc.edu

Essays and Book Reviews
401.841.6584
bookreviews@usnwc.edu

Other Naval War College Offices
401.841.3089

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.

Contributors

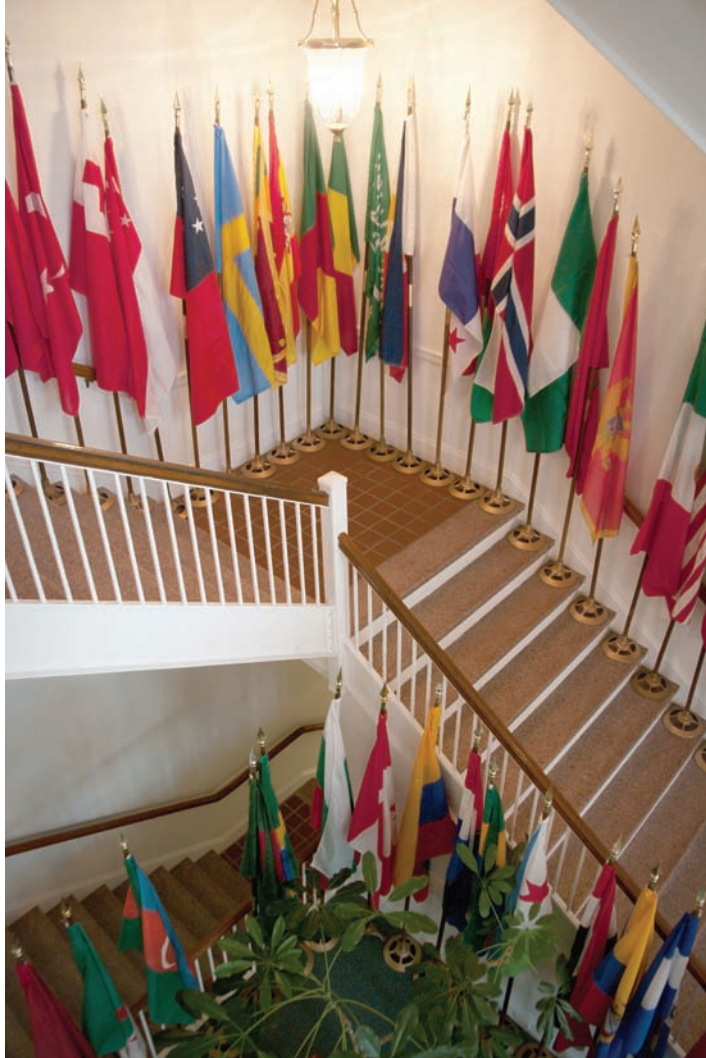
Please request the standard contributors' guidance from the managing editor or access it online before submitting manuscripts. The *Naval War College Review* neither offers nor makes compensation for articles or book reviews, and it assumes no responsibility for the return of manuscripts, although every effort is made to return those not accepted. In submitting work, the sender warrants that it is original, that it is the sender's property, and that neither it nor a similar work by the sender has been accepted or is under consideration elsewhere.

Permissions

Reproduction and reprinting are subject to the Copyright Act of 1976 and applicable treaties of the United States. To obtain permission to reproduce material bearing a copyright notice, or to reproduce any material for commercial purposes, contact the editor for each use. Material not bearing a copyright notice may be freely reproduced for academic or other noncommercial use; however, it is requested that the author and *Naval War College Review* be credited and that the editor be informed.

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



CONTENTS

From the Editors	3
The Hattendorf Prize Lecture: The Perils of History	7
<i>N. A. M. Rodger</i>	
President’s Forum	17
The Secretary and CNO on 23–24 October 1962	
Setting the Historical Record Straight	21
<i>Captain William H. J. Manthorpe, Jr., U.S. Navy (Retired)</i>	
It has long been reported and believed that during the Cuban missile crisis the Navy knew ahead of time but failed to inform national command authorities that the feared and highly dangerous confrontations at the quarantine line would not occur. Newly available research shows that this view is fundamentally misleading.	
Globalization, Security, and Economic Well-Being	41
<i>Stephen M. Carmel</i>	
To say that the world’s economies are interdependent does not adequately, or even remotely, express the true nature of today’s global economic activity. It is imperative that those charged with regulating and protecting the system of global trade have a good appreciation of what it is they are regulating and protecting.	
Replacing Battleships with Aircraft Carriers in the Pacific in World War II	56
<i>Thomas C. Hone</i>	
The fleet that matured in the Pacific War was not simply an adaptation, based on carriers, of the battleship force decimated at Pearl Harbor but something new—a modern, combined-arms force supported cohesively by infrastructure and doctrine.	
Sea Control through the Eyes of the Person Who Does It	
A Theoretical Field Analysis	77
<i>Christofer Waldenström</i>	
Is the notorious “flaming datum” the only way to know whether local sea control has been achieved? How can commanders keep track of all the threats, assets, givens, and options? Theory and analysis may be able to help.	
Commentary	
For Want of a Timely Call	101
<i>Captain John F. O’Connell, U.S. Navy (Retired)</i>	

Research & Debate

Parshall's "Whoppers" Examined:

Fact-Checking the Various Claims and Conclusions of Jonathan Parshall. 110

Martin Bennett

Book Reviews

*The Obamians: The Struggle inside the White House to
Redefine American Power*, by James Mann

reviewed by John A. Cloud 126

The George W. Bush Defense Program: Policy, Strategy & War,
edited by Stephen J. Cimbala

reviewed by Tate Westbrook 128

*Cyberspace and National Security: Threats, Opportunities,
and Power in a Virtual World*, edited by Derek S. Reveron

reviewed by Brett J. Patron 129

Maritime Piracy, by Robert Haywood and Roberta Spivak

reviewed by Edward Lucas 130

War and Human Nature, by Stephen Peter Rosen

reviewed by Martin L. Cook 131

The Oxford Handbook of Maritime Archaeology,
edited by Alexis Catsambis, Ben Ford, and Donny L. Hamilton

reviewed by John B. Hattendorf 132

Hitler's Hangman: The Life of Heydrich, by Robert Gerwarth

reviewed by Richard Norton 133

In My View 136

Reflections on Reading 138

FROM THE EDITORS

There is a powerful undercurrent of thought throughout our defense establishment that doubts the value of the study of history for addressing today's security challenges. It is sometimes said—and more commonly assumed—that the pace of technological development in this new age of networked communications and precision targeting is rapidly rendering obsolete the lessons of past international conflicts. In remarks delivered to the Naval War College's Twentieth International Seapower Symposium on 20 October 2011 as the inaugural Hattendorf Prize Lecture, the distinguished British naval historian N. A. M. Rodger defends the study of history by military professionals and contemporary statesmen. Like it or not, he argues, we cannot escape the grip of history, which continues to shape basic assumptions we make about today's world whether or not we recognize it fully. Professor John Hattendorf, chair of the Naval War College's Department of Maritime History, is the author most recently of *Talking about Naval History: A Collection of Essays* (Newport: Naval War College Press, 2011).

That conventional historical narratives are frequently flawed and in need of challenge and reinterpretation, as Rodger also suggests, is well illustrated by our lead article. William H. J. Manthorpe, Jr., in "The Secretary and CNO on 23–24 October 1962: Setting the Historical Record Straight," offers a meticulous reconstruction of one of the most storied incidents of the Cuban Missile Crisis, the alleged confrontation between Secretary of Defense Robert S. McNamara and then–Chief of Naval Operations Admiral George Anderson over the Navy's handling of the "quarantine" of Cuba. On the basis of personal interviews with contemporary participants as well as recently declassified intelligence, Manthorpe is able to dismiss the long-accepted idea that the CNO was culpably unresponsive to higher authority in withholding critical information about the movement of Soviet transport ships from his civilian superiors. Captain Manthorpe, USN (Ret.), a career naval intelligence officer, was himself one of the briefers of the CNO and senior Pentagon officials during the most dangerous crisis of the Cold War, of which this year is the fiftieth anniversary.

In "Globalization, Security, and Economic Well-Being," Stephen M. Carmel explores the structure of global trade as it has evolved in the period following World War II and its implications for international security. He argues that this second great age of globalization is fundamentally different from the age that

culminated in World War I in ways that are not generally appreciated. The twin technological revolutions of containerization and the Internet over the course of the last several decades have brought about a little-noticed transition from trade in goods to trade in “tasks,” thereby greatly complicating the assignment of provenance and ownership of goods and services throughout the global system. Any disruption of the now tightly calibrated global supply chain is liable to have large ripple effects that as a result are difficult if not impossible to predict. Unlike Norman Angell, the great prophet of the first age of globalization, Carmel does not draw the inference that global economic interdependence will deter war between major powers. Stephen M. Carmel is a vice president of Maersk Line, Limited, as well as a member of the Chief of Naval Operations Executive Panel. This article is adapted from an address delivered on 19 October 2011 to the Twentieth International Seapower Symposium at the Naval War College.

In “Replacing Battleships with Aircraft Carriers in the Pacific in World War II,” Thomas C. Hone also challenges the received wisdom, in this case concerning the transformation of naval war fighting by the United States in the course of World War II in the Pacific theater. His overall thesis is that it is a mistake to equate the story of the U.S. Navy in the Pacific War with the rise of aircraft carriers. There was, rather, a gradual evolution in both operational art and technology resulting in an effectively integrated combined-arms fleet that in many respects remains the model for today’s U.S. Navy. Thomas Hone, a retired Naval War College faculty member, recently coauthored *Innovation in Carrier Aviation*.

Finally, Christofer Waldenström, in “Sea Control through the Eyes of the Person Who Does It: A Theoretical Field Analysis,” provides an unusual operational-level analysis of the problem of exercising sea control in potentially contested waters, particularly in constricted littoral areas. The analysis is structured, using the analogy of driving an automobile, by identifying the various tasks that must be continuously performed by a naval commander in order to ensure that ships dependent on his protection maintain a “field of safe travel” until reaching their destination. Dr. Waldenström is lead scientist in the war-gaming section of the Institution of War Studies at the Swedish National Defence College.

WINNERS OF OUR ANNUAL ARTICLE PRIZES

The President of the Naval War College has awarded prizes to the winners of the annual Hugh G. Nott and Edward S. Miller competitions for articles appearing in the *Naval War College Review*.

The Nott Prize, established in the early 1980s, is given to the authors of the best articles (less those considered for the Miller Prize) in the *Review* in the previous publishing year. Cash awards are funded by the generosity of the Naval War College Foundation.

This year's winner was Vitaliy Pradun, for "From Bottle Rockets to Lightning Bolts: China's Missile Revolution and PLA Strategy against U.S. Military Intervention," which appeared in the Spring 2011 issue (\$1,000).

The second-place winner was Stephen Downes-Martin, for "Operations Assessment in Afghanistan Is Broken: What Is to Be Done?," which appeared in our Autumn 2011 issue (\$650).

Three articles were selected for honorable mention: "Captains of the Soul: Stoic Philosophy and the Western Profession of Arms in the Twenty-First Century," by Michael Evans (Winter 2011); "Places and Bases: The Chinese Navy's Emerging Support Network in the Indian Ocean," by Daniel J. Kostecka (Winter 2011); and "The Future of Aircraft Carriers," by Robert C. Rubel (Autumn 2011).

The Miller Prize was founded in 1992 by the historian Edward S. Miller for the author of the best historical article appearing in the *Naval War College Review* in the same period. This year's winner is Thomas G. Mahnken, for "Asymmetric Warfare at Sea: The Naval Battles off Guadalcanal, 1942–1943" (Winter 2011, \$500).

IF YOU VISIT US

Our editorial offices are now located in Sims Hall, in the Naval War College Coasters Harbor Island complex, on the third floor, west wing (rooms W334, 335, 309). For building-security reasons, it would be necessary to meet you at the main entrance and escort you to our suite—give us a call ahead of time (841-2236).

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION

Statement of ownership, management, and circulation (required by 39 USC. 3685, PS Form 3526-R, September 2007) of the *Naval War College Review*, Publication Number 401390, published four times a year at 686 Cushing Road, Newport, R.I., 02841-1207. General business offices of the publisher are located at the Naval War College, 686 Cushing Road, Newport, R.I., 02841-1207. Name and address of publisher is President, Naval War College, 686 Cushing Road, Newport, R.I., 02841-1207. Name and address of editor is Dr. Carnes Lord, Code 32, Naval War College, 686 Cushing Road, Newport, R.I., 02841-1207. Name and address of managing editor is Pelham G. Boyer, Code 32A, Naval War College, 686 Cushing Road, Newport, R.I., 02841-1207. Owner is the Secretary of the Navy, Navy Department, Washington, D.C., 20350-1000. The purpose, function, and nonprofit status of this organization and its exempt status for federal income-tax purposes have not changed during the preceding 12 months. Average number of copies of each issue during the preceding 12 months is: (a) Total number of copies: 8,846; (b)(1) Requested subscriptions (outside Newport County): 7,353; (b)(2) Requested subscriptions (inside Newport County): 218; (c) Total requested circulation: 7,571; (d)(1) Nonrequested distribution by mail (outside Newport County): 122; (d)(3) Nonrequested by mail other classes: 75; (d)(4) Nonrequested distribution outside the mail: 860; (e) Total nonrequested distribution: 1,057; (f) Total distribution: 8,628; (g) Copies not distributed: 218; (h) Total: 8,846; (i) Percent requested circulation: 88%. Issue date for circulation data: Summer 2012; (a) Total number of copies: 8,995; (b)(1) Requested subscriptions (outside Newport County): 7,417; (b)(2) Requested subscriptions (inside Newport County): 214; (c) Total requested circulation: 7,631; (d)(1) Nonrequested distribution by mail (outside Newport County): 121; (d)(3) Nonrequested by mail other classes: 71; (d)(4) Nonrequested distribution outside the mail: 960; (e) Total nonrequested distribution: 1,152; (f) Total distribution: 8,783; (g) Copies not distributed: 212; (h) Total: 8,995; (i) Percent requested circulation: 87%. I certify that all information furnished is true and complete.

Pelham G. Boyer, Managing Editor

THE HATTENDORF PRIZE LECTURE

“The Perils of History,” an expanded version of remarks delivered on 20 October 2011 at the Naval War College’s twentieth International Seapower Symposium as the Hattendorf Prize Lecture, 2011, by the inaugural laureate of the Hattendorf Prize, N. A. M. Rodger.

According to Hegel, we learn from history that we do not learn from history.* We also learn that historians are deeply unreliable, and never more so than when they are foolish enough to predict the future. Historians, in fact, would certainly be the worst possible guides to the policy maker, were it not for the alternative. But the alternative is not other people with better information but other people with no information, for it is the past that makes the present and the future. All of us, as individuals, as organizations, and as societies, have personalities that are made up of our experiences. It is memory that makes us what we are, and to lose memory is to lose personality. In this age of dementia, many of us are painfully familiar with what happens when people lose their memories, but though individuals can lose their minds, societies and organizations (like navies) never escape their past. All we know comes from our experience, and all our experience is of the past. The future, which it would be very convenient to know, is regrettably inaccessible; the present constantly slips between our fingers. Only the past makes us who we are, and it shapes our understanding of the world. The question is not whether we should or whether we can learn from the past; we have no choice, if we are to learn at all. Recent or distant, history is all we have to go on, and we cannot escape it.

To read the writings or listen to the speeches of public figures is to encounter a dense tissue of historical references and allusions. Sometimes they are conscious references to historical events that form, or are believed to form, part of the common stock of social memory. Occasionally they are the fruit of serious knowledge of the past, but more often they refer to some of the common myths that bind

* “What experience and history teach is this—that nations and governments have never learned anything from history, or acted upon any lessons they might have drawn from it.” Georg Wilhelm Friedrich Hegel, introduction to *Lectures on the Philosophy of History* (1832).

nations and societies together. Usually these myths have historical roots, but in the process of shaping national identity they tend to lose any close relation with the truth of what really happened. Where do they come from, these urban myths and long-exploded fallacies that form so much of the discourse of public life? Half-remembered primary-school lessons, anecdotes overheard in the pub, newspapers read over someone's shoulder seem to have more power to form opinion than any scholar could dream of. "Practical men, who believe themselves to be quite exempt from any intellectual influence," wrote J. M. Keynes, "are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back."* Our problem is not that we know too little history to understand the present but that we know too much, and most of it is wrong.

Even when it is right, moreover, the history that is put to use is often the wrong history. In September 2011 a short article appeared in the *Economist* that reviewed the situation of the euro, quoting an unnamed ambassador:[†] "I feel like a filing clerk in Berlin in 1945. The work of government goes on, even as the war approaches." Inspired by this remark, the anonymous author indulged in an extended range of military metaphors and allusions to events of the Second World War. Clearly he wanted to show off his knowledge of that war, but it was not obvious that it told the reader anything at all about the financial crisis. There is of course a very relevant history that could and should have been deployed—the history of currency unions. The history of the Zollverein (which led to the unified currency of the 1871 German *Reich*); of the Latin, Scandinavian, and East African currency unions (which all failed); of the West African franc and the Belgium-Luxembourg currency link (still flourishing)—all offer relevant lessons. The eighteenth-century New England monetary union shows that common currencies can circulate without political union, while the history of the United States over its first century shows that a political union does not require a common currency (at least initially). All these would have been highly instructive historical excursions; the Second World War was mere self-indulgence, and even if the journalist had been a real expert in it, it would still have been irrelevant.

What is more, real expertise is no guarantee that history will guide us in the right direction. There could be no better nor more apposite example of the expert historian than Captain Alfred T. Mahan, and yet in reading his great works we can easily see that he was wrong to assume that certain features of the world he had grown up with would last forever. For him the sea was always commanded

* J. M. Keynes, *The General Theory of Employment, Interest and Money* (London: Macmillan / Cambridge Univ. Press, 1936), p. 383.

† Charlemagne [pseud.], "In the Brussels Bunker," *Economist*, 17 September 2011.

by a single, dominant European naval power, and Britain was the only plausible candidate. He looked forward to the day when the U.S. Navy would be capable of joining an alliance with Britain, but he clearly did not expect that there would ever be more than a handful of serious naval powers. Though he lived in the first great age of free trade and liberal economics, he did not foresee that the result would be the creation of many advanced economies and modern navies all over the world. Nor did he realize that the growth of the U.S. Navy, to which he dedicated his career, would inevitably make it impossible for Britain or any other European power to dominate the seas of the world single-handed. Consequently he has relatively little to say to our age of naval coalitions.

Most common and most destructive of all, however, are not appeals to the lessons of real history, nor even conscious references to shared myth, but unconscious assumptions that reveal themselves in turns of phrase and habits of thought. This is history at the deepest and most universal level, the history that lies below the foundations of every intellectual construction and undermines so many of them. This is the history that everybody shares and nobody needs to think about; these are the assumptions that are never challenged. This history is everywhere, but much of it is bad history, and the longer it goes unchallenged, the more dangerous it becomes. This history provides people with ready-made solutions to new problems, and it “proves” that they are the right solutions.

Whatever the locus of action, from national government down to precinct, whether in an executive body or a legislative committee, some participants are almost sure to start with favorite, long-developed schemes. Their inclination will be to ignore whatever seems not to fit and to define the problem as one calling for solutions they have handy. Their arguments will be supported, more than likely, by analogies.*

The analogies will be drawn from experience, that is, from history, and most likely from the history that has the most emotional power.

Traumatic events dig deep foundations in the national psyche. In Britain the appeasement of Hitler has long been such an event. Sir Anthony Eden’s response to the Egyptian nationalization of the Suez Canal in 1956 was clearly shaped by his determination never again to appease a dictator. But events suggest that the precedent of Hitler was not very helpful in dealing with Colonel Nasser, and one cannot help thinking that if Eden had confronted and analyzed it he would have realized as much. In other crises since, the reflex never to appease a dictator has evidently served British governments rather better. For the United States the equivalent trauma is Pearl Harbor. It was the image that leaped to many minds

* Richard E. Neustadt and Ernest R. May, *Thinking in Time: The Uses of History for Decision-Makers* (New York: Free Press, 1986), p. 235.

on that “day of infamy,” 11 September 2001, when the terrorists attacked the Twin Towers, and it evidently shaped President Bush’s response, which was to declare war on somebody at once and invade somewhere as quickly as possible. Even at the time, many observers doubted if it was wise to raise a criminal gang to the status of a sovereign state or whether invasion of one or two countries, however unpleasant they were, was really the best response to an international terrorist movement.*

Today, Pearl Harbor visibly lurks just below the surface of much discussion of U.S. relations with China. Clearly there are excellent reasons for the United States (and the world) to pay close attention to China, but to me it seems that the case differs in most respects from that of Japan in the 1930s and that the mere fact that China constitutes a potential threat to U.S. interests from approximately the same part of the world is a bad reason for drawing conscious—or, more dangerously, unconscious—parallels with 1941. It is especially dangerous because of one notable difference: in 1941 the Pacific naval powers were (as a consequence of the Washington naval treaties) so far apart that they were largely out of each other’s range, but today the United States and China have many opportunities to clash in and around the China seas. A sudden emergency generated by some unexpected incident is the worst possible moment to be guided by unconscious historical parallels. Moreover, the Chinese too have their traumatic moments in history that are likely to shape their responses in any confrontation with an external power. In their case, it is the myth-history of the Opium War that is endlessly invoked to explain how to resist foreign aggression.[†] This history would be well worth study by American policy makers.

Since history is impossible to escape and bad history is difficult to avoid, the historian has at least the essential function of distinguishing the two, of warning against bad history and false analogy. Historians may have no special qualifications to predict the future, but at least they can check the misuse of the past. For strategists and policy makers, however, this may not be enough. I know from experience that people can be very annoyed with historians who insist how much better qualified they are than anyone else to avoid the dangers of predicting the future by false analogy with the past but then refuse to risk their reputations by making any predictions at all. The historian must always be intensely conscious that history never repeats itself exactly; historical parallels are never really

* A recent contribution to the large literature on this theme is John W. Dower, *Cultures of War: Pearl Harbor, Hiroshima, 9-11, Iraq* (New York: W. W. Norton, 2010).

[†] Peter Ward Fay, *The Opium War 1840–1842: Barbarians in the Celestial Empire in the Early Part of the Nineteenth Century and the War by Which They Forced Her Gates Ajar*, 2nd ed. (Chapel Hill: Univ. of North Carolina Press, 1997), pp. 299–303.

parallel, and the “lessons of history” are at best general warnings, not specific instructions. It has been well said that “history never repeats itself, but sometimes it rhymes.”* Historians cannot help noticing resemblances between the present day and the periods they study, and these may at least suggest pitfalls to avoid and possibilities to exploit.

I myself have recently been studying the nineteenth century, and I believe there are suggestive similarities between that era and our own in two dimensions: diplomacy and strategy, and economics and trade. In diplomacy and strategy we may concentrate on the leading European nations, for in the nineteenth century the great powers were still essentially European. The United States, as the century wore on, increasingly acquired the economic potential to act as a great power, but in practice it remained largely absorbed in its own internal development; it did not choose to involve itself deeply in world affairs, and (except during the Civil War) its armed forces were negligible. For almost forty years after the Congress of Vienna ended the Napoleonic War, the peace of Europe was largely assured by the “Concert of Europe”—meaning the loose, informal grouping of the victors in that war—to preserve stability and restrain French expansionism. This was then disrupted by the Russian war of 1852–55 (rather misleadingly called the Crimean War, since its origins lay in the Levant and its most decisive campaign was fought in the Baltic), followed by the German and Italian wars of unification.

In 1871 the creation of the German Second Reich marked the emergence of a new, powerful, and expansionist military power in Central Europe. For the last thirty years of the century and the early years of the next, Europe (and by extension the world as well) was increasingly destabilized by the rise of two hungry and ambitious powers, Germany and Russia, and by the decline and vulnerability of two extensive empires, Austria-Hungary and the Ottoman Empire. Comfortable, possessor powers like Britain and France had imperial ambitions and rivalries across the world but hoped to keep the peace within Europe by restraining aggressors and supporting existing frontiers. The British in particular feared that a collapse of the Ottoman Empire would allow Russia to expand to the Mediterranean and threaten the vital imperial sea route to India. Toward the end of the century the British became increasingly worried that Russian expansion in Central Asia would place the Russian army within direct striking distance of India—though the modern eye and modern maps suggest that the very long distances and very high mountains that separated them would have put an invasion far out of practical reach.

Retrospect suggests that Britain’s preeminence was under growing threat from the 1870s at latest. British statesmen, however, like the vast majority of world

* The remark is usually attributed to Mark Twain, but there seems to be no good source for it.

leaders in every age, had learned their view of the world as young men and did not substantially change it as they grew older. The leaders of that generation had formed their outlook in the 1830s, 1840s, and 1850s, when it seemed that Britain had nothing to fear from Continental rivals and nothing to lose from what Lord Palmerston (twice prime minister) called “splendid isolation.” For them British preeminence was a given, a product of history and economic dominance that no one could doubt or challenge. There was no need to spend much money on the navy, still less the army, because only savages would be ignorant and foolish enough to challenge them. The only superpower dominated the world by political and economic rather than military strength. It has been well said that “superpowers in any age function much on strategic credit. Their writ, that is, runs much more on the basis of their reputation for effective coercion than on the actual exercise of power.”* Reputation was cheap and effective, there had been no credible military threat to Britain for half a century, and British political leaders of the generation of Disraeli and Gladstone found it difficult to take seriously the idea that there might be another in the foreseeable future.

This confidence rested on Britain’s economic superiority. By 1815 Britain was the world’s leading trading nation, with an unsurpassed financial strength that had allowed it to finance the entire allied war effort in the closing stages of the Napoleonic War. In the succeeding years of peace the Industrial Revolution gathered pace, and in the 1840s the repeal of the Corn Laws and the Navigation Acts threw open British shipping and overseas trade to international competition and ushered in the era of free trade. This was the first age of globalization, when the free movement of capital and technology and the progressive removal of barriers to trade led to a very rapid increase in international prosperity. It also led to the rise of new industrial powers abroad. From being in the 1840s the only advanced industrial economy in the world, Britain was by the end of the century only one of several, some of them having much greater populations, land areas, and stores of natural resources than its own.

It was obvious to contemporaries that British economic preeminence was under threat, and it seemed to many that ambitious rivals might easily translate that threat into military terms—or rather, naval terms, for all credible strategic threats to Britain were necessarily naval ones. By the 1880s the old-fashioned and quite unrealistic fears of an unexpected surprise attack across the Channel had been largely abandoned. In their place came a newer and more credible threat to Britain’s worldwide trade, to an economy now heavily dependent on imported food and raw materials and exported manufactures. Moreover, this threat no longer

* Colin S. Gray, *The Leverage of Sea Power: The Strategic Advantage of Navies in War* (New York: Free Press, 1992), p. 142.

came entirely from rival European powers. Advanced economies were rising in other parts of the world, some of them showing signs of spending their wealth and industrial capacity on modern navies. For two centuries the British had been able to dominate the seas of the world indirectly by keeping their main fleet at home, for defense against their neighbors, who were their only serious enemies. By the late 1890s two small but modern navies, those of the United States and Japan, were rising in distant seas that could not be dominated from Europe.

British strategists recognized their country's radical and unique dependence on seaborne trade but were divided in their response. Some feared attack and planned various strategies of defense. Others placed more or most of their trust in the development of international law. The rise of the global economy was paralleled in the second half of the nineteenth century by the rise of a new kind of international law, founded on international treaties signed by most, if not all, of the leading powers. The first of these was the Declaration of Paris of 1857, which professed to outlaw privateering (though the United States refused to sign and still claims the right to issue letters of marque). More important were the Hague and London Conferences of 1908–1909, which set out to write international rules to protect wartime trade, define contraband, and forbid blockade. The Declaration of London proposed to establish an International Prize Court that would have been the first international court with jurisdiction over sovereign states (though only if both parties chose to appeal to it).

The proposed Prize Court never came to fruition, and the force of these international agreements, like all their predecessors, rested on “customary international law,” which essentially meant the capacity of neutrals to restrain belligerent navies. Behind this expectation that neutral powers would have real influence over belligerents lay a clear understanding of the complexity and vulnerability of the web of international trade, on which all advanced economies were heavily, and mutually, dependent. Any form of economic warfare at sea, it was presumed, would ruin all the participants and render war impossible to sustain. In the era of globalization, therefore, modern war would have to be short if it were to be possible at all, and the capacity to keep it going would depend largely or entirely on neutrals' freedom to trade. The First World War was to falsify almost all of these expectations, in the process ruining the leading belligerents and wrecking the world trading system. In place of free trade it brought an age of protectionism, financial crisis, economic collapse, and another world war.

What, if any, resemblances may we find between this world and our own? First, we must obviously increase the scale from Europe to the whole world. That done, we may see some suggestive parallels between the postwar settlements of 1815 and of 1945. The Cold War was scarcely a “Concert of Europe,” but in both cases the wartime allies continued to dominate the postwar world and prevent

their rivalries from leading to war, except among client states on the strategic periphery. Once again a new age of free trade and surging economic growth lifted nations in some parts of the world from poverty into the status of advanced economies in two generations. Once again this huge advance in world prosperity depended entirely on ships trading across free and open seas. Once again it is very widely assumed that the complexity and interdependence of the modern world trading system makes it unthinkable that any advanced state would contemplate disrupting it by war. Today, however, the new age of free trade seems to be threatened by financial collapse and political instability in ways reminiscent of the 1890s. Ambitious rising powers once more press against the weaknesses of existing empires.

A comparison of Japan then and China now suggests itself—but I have already suggested that I think this is simplistic and dangerous. I think there may be more to be learned by comparing modern China* with Bismarckian Germany. Both are populous states in central positions with historic pretensions to imperial status, and with rapidly growing economic and military strength to back them. In both cases dazzling economic growth tends to conceal the extent to which the economies remain backward and dependent on foreign technology and finance. In both cases political unity and constitutional structures remain fragile, and foreign policy is marked by aggressive insecurity. Growing prosperity and power will no doubt continue to reconcile many tensions, but the Chinese regime would be vulnerable to any serious economic or political check. This is an uncomfortable reflection, for this is the classic situation in which unstable dictatorships attempt to rebuild crumbling support at home by reckless adventures abroad. The world has a heavy investment in China's economic growth and political unity. A China growing smoothly to become a prosperous and advanced economy with a large stake in world security and peace and a huge market open to trade would be very much in the interest of all. A nuclear-armed China sliding backward into poverty and instability presents incalculable risks. A large sector of public opinion in the United States regards China's strength as a threat, but it is China's weakness that ought to worry us.

So ought the fragility of the world economic system. Piracy and protectionism, to name only the two most obvious dangers, are capable of inflicting grave damage on world prosperity. The Somalis have shown how easy and profitable is piracy for ransom, in the tradition of the North African regencies, and there is plenty of scope for others to imitate them. Protectionism in the wake of a world financial crisis did much to bring on the Second World War, and there are populist politicians, in the United States and elsewhere, willing to try again. A

* Some elements of this comparison can also be applied on a smaller scale to Iran.

regional war, in, say, the Middle East, could have destructive effects on essential international trades, notably in oil. In these and other aspects the machinery of international free trade is delicate and easily deranged. Precedent suggests that international law, naval power, and the enlightened self-interest of trading nations are relatively feeble defenses. I do not want to predict that another major war is coming soon, but it is certainly not impossible, and if there is any truth in my comparison with the late nineteenth century, the analogy is not encouraging. Navies have unequaled flexibility as instruments of deterrence and diplomacy, and in the present state of the world it seems to me that their most urgent task is to win the peace.

N. A. M. RODGER

Dr. Rodger, a leading British naval historian and Fellow of the British Academy, is a Senior Research Fellow of All Souls College, Oxford. His recent books include The Command of the Ocean: A Naval History of Britain, 1649–1815 (2004) and The Safeguard of the Sea: A Naval History of Britain, 1660–1649 (1997).



Rear Admiral Christenson became the fifty-third President of the U.S. Naval War College on 30 March 2011. The fourth of six sons of a Navy Skyraider pilot and a Navy nurse, he graduated from the U.S. Naval Academy in 1981.

At sea, he commanded USS McClusky (FFG 41), Destroyer Squadron 21 in USS John C. Stennis (CVN 74), Carrier Strike Group 12, and the USS Enterprise (CVN 65) Strike Group. He most recently served as President, Board of Inspection and Survey. He also served as the antisubmarine warfare officer and main propulsion assistant aboard USS Cook (FF 1083); as aide to Commander, Cruiser Destroyer Group 1 in USS Long Beach (CGN 9); as weapons officer aboard USS Downes (FF 1070); as Destroyer Squadron 21 combat systems officer, in USS Nimitz (CVN 68); and as executive officer of USS Harry W. Hill (DD 986). He deployed eight times on seven ships, twice in command of McClusky.

Ashore, he commanded the Surface Warfare Officers School in Newport, and as a new flag officer he served as Commander, Naval Mine and Anti-submarine Warfare Command, Corpus Christi, Texas. He also served at the U.S. Naval Academy as a company officer, celestial navigation instructor, assistant varsity soccer coach, and member of the admissions board; at Headquarters, U.S. Marine Corps, in the Strategic Initiatives Group; and on the Joint Staff, in J5 (Strategic Plans and Policy) and as executive assistant to the assistant chairman.

He graduated with distinction and first in his class from the Naval War College, earning his master's degree in national security and strategic studies. He was also a Navy Federal Executive Fellow at the Fletcher School of Law and Diplomacy.

Rear Admiral Christenson has been awarded the Defense Superior Service Medal, the Legion of Merit (five awards), the Meritorious Service Medal (two awards), the Navy Commendation Medal (five awards), and the Navy Achievement Medal.

PRESIDENT'S FORUM



Professional Competence—What They Admire Most

MEDAL OF HONOR award recipient Vice Admiral James Bond Stockdale was the fortieth President of the Naval War College. I recently had the great honor of delivering the sixteenth annual Stockdale Lecture at the University of San Diego, with Mrs. Sybil Stockdale in the audience. I learned afterward in feedback about the lecture that during the “Q&A” I had provided a most unexpected answer to a midshipman’s question concerning leadership.

Over the course of my seven commands I have always loved the opportunity to meet with the men and women under my command. One of my favorite questions has always been, “Who is the sailor [“sailor” being defined as everyone from recruit to admiral] you served with at sea that you admired the most, and what were the qualities that made you select that person?” The question to me that evening in San Diego was, “What trait should be focused on to ensure future success?” Upon hearing the question my mind immediately accessed the thousands of actual answers I had heard to my own question, and the answer was obvious and overwhelming. Despite the fact that the theme of the lecture would presumably point me to answer “ethical leadership,” I replied with the truth as I see it—which is *professional competence*, meaning, usually and specifically, “they knew how to fight the ship.”

Upon reflection, however, I would argue that a sailor who fails to demonstrate ethical leadership is immediately passed over in any consideration of a list of “best leaders.” Ethical leadership is necessary even to enter the arena of leadership worth remembering. Also, it is important that the definition of “sailor” include everyone from recruit to admiral. In fact, the first couple of hundred times I asked the question I actually said, “. . . the *officer* you served with at sea that you admired most . . .,” until a sharp Army student at Newport’s Senior Enlisted

Academy asked me why my question was limited to officers. *Touché!* I changed the question, and from then on the answers always included admiration across all ranks of service.

Similarly, it would be a mistake to presume that professional competence is limited to knowing how to “fight the ship.” This naval war college was founded by Admiral Stephen B. Luce in no small part because what is meant by professional competence for naval officers continues to change over their years of service. Knowing how to fight a ship, a fleet, a navy, a nation, a coalition—these things sailors must know if they are to serve their nation well until their last days in uniform. Our Chief of Naval Operations, Admiral Jonathan W. Greenert, knows it, and his tenets “Warfighting First,” “Operate Forward,” and “Be Ready” reflect this spirit and make clear the order of priority.

This past August, the Naval War College hosted a remarkable event. In conjunction with the Navy’s Fleet Synchronization Conference (which is hosted by Fleet Forces Command and normally takes place in Washington), the CNO requested that the Naval War College conduct a “Required Operational Capability” session, or “ROC drill.” ROC drills are commonly used by the Army as a kind of mini-rehearsal of a prospective operation, using markers on a map to represent units. These markers are moved around in accordance with the plan so that commanders and their staffs can more easily visualize the physical and temporal relationships among the units as the operation progresses, helping them to spot potential conflicts and problems beforehand. The Chairman of the Joint Chiefs of Staff, an Army officer, has taken to using this technique on a grand scale to achieve coordinated thinking among the services and the combatant commanders. Admiral Greenert had participated in these joint ROC drills in the past and decided the technique would be useful within the Navy, so he tasked the College, with leadership by Fleet Forces Command, to set one up.

The War Gaming Department turned to and produced an amazing map of the world on a canvas twenty-four feet by forty-four feet, with 670 scaled ship models and markers representing all current forces and those expected to be available several years hence. The war gamers did extensive research into projected readiness levels and positioning of all the Navy’s forces and produced a lay-down on the map that the admirals (virtually all three- and four-star officers) could use to visualize operations and discuss how they would conduct them and support each other in both steady-state situations and contingencies. The event was very well received by the CNO and fleet commanders, and we expect that ROC drills will become a routine occurrence.

Quite apart from their immediate practical utility, these events represent the rebuilding of an institutional relationship that served the Navy so well in the years between the two world wars. In that era, games and studies at the College

were reported to the Navy Staff and the General Board, and in a number of different ways these results were incorporated into fleet experimentation. Feedback from the fleet would influence the direction of subsequent studies at the College. This triad—College, Navy Staff, fleet—was highly effective in preparing the Navy for the war to come. After the war, in part due to the emergence of highly technical and semiautonomous warfare communities, the triad gradually broke apart. The introduction of the ROC drill may serve to revive this mutually reinforcing relationship, a prospect that promises to enhance Navy effectiveness and efficiency as well as facilitate the process of innovation.

In many ways the Naval War College is experiencing a renaissance in terms of its influence on Navy thought. The founding of the College of Operational and Strategic Leadership, the creation of a true command and staff course, the Maritime Advanced Warfighting School, the revival of the Global War Game, and a host of other initiatives—now including the ROC drills—signal a bright future for the College and its contribution to the Navy and the nation.

JOHN N. CHRISTENSON

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

William Manthorpe served for twenty-four years as a naval intelligence officer. During the Cuban missile crisis he was an intelligence briefer to the Chief of Naval Operations, the Secretary of Defense, and other senior officials. He retired as a captain. Subsequently, he served for sixteen years as a Senior Executive in the Office of the Chief of Naval Operations as the Director of Net Assessment, Special Assistant to the Vice Chief of Naval Operations, and, finally, as the Deputy Director of Naval Intelligence. He is currently researching and writing on various aspects of intelligence and naval history.

THE SECRETARY AND CNO ON 23–24 OCTOBER 1962

Setting the Historical Record Straight

Captain William H. J. Manthorpe, Jr., U.S. Navy (Retired)

The Cuban missile crisis was a defining moment in the career of the Chief of Naval Operations (CNO) at the time, Admiral George W. Anderson, Jr. His leadership of the Navy during the crisis has become the most prominent role accorded to him in history. Yet his relationship during the crisis with the Secretary of Defense, Robert S. McNamara, has been cited as the factor that brought to a premature end his tour as CNO and his naval career. Among the events that affected the admiral's relationship with the secretary during the crisis were those that took place on 23–24 October 1962 in CNO's Intelligence Plot (IP)—part of the Office of Naval Intelligence (ONI), located adjacent to but separate from CNO's operational Flag Plot and charged with providing all-source intelligence to the CNO, cleared Navy staff, and others.

Unfortunately, much of what has been written about what went on in CNO IP during those two critical days is inaccurate in two significant aspects—first, what occurred between the admiral and the secretary during the evening of the 23rd; and second, what transpired between the IP staff and the secretary overnight and during the morning of the 24th.

With regard to the evening of the 23rd, the earliest book on the Cuban missile crisis, Elie Abel's *The Missile Crisis*, described an event that, in the context of his narrative, took place on 24 October.¹ That event had two parts. One involved Admiral Anderson taking the secretary aside and explaining why a destroyer was out of position. The second part involved a description of the secretary aggressively questioning the admiral about how the quarantine would be conducted and the admiral responding defensively and heatedly. The date of 24 October and the details of that event were repeated shortly thereafter by Graham Allison in his *Essence of Decision: Explaining the Cuban Missile Crisis*, long considered the definitive book on the subject.² In interviews with both authors and again in his

oral history collected by the John F. Kennedy Presidential Library, the admiral acknowledged the first part of the story. But he said that his recollection of the words and actions attributed to him when questioned by the secretary about the quarantine operations were not as portrayed in the accounts.³ Both authors noted the admiral's denial but used the story, as told by Abel on the basis of unidentified sources, in their books.⁴

Thus the date of 24 October and the story of that event have been included, in some form, in almost all histories of the Cuban missile crisis. Indeed, despite subsequent interviews with both principals, they have even appeared in the official history of the Office of the Secretary of Defense, in a history of the Joint Chiefs of Staff (JCS), in the authorized biography of Admiral Anderson, and on the website entry recording his burial at Arlington National Cemetery.⁵ It is only recently that published research has shown that the event actually occurred on 23 October, not the 24th.⁶

With respect to what occurred on the morning of the 24th, Robert Kennedy, in his *Thirteen Days*, described how the president and his advisers gathered in the White House, tensely awaiting the arrival of the first Soviet ships at the quarantine line and worrying about how the presence of a Soviet submarine would affect events as the quarantine was enforced. The book recounts how, at the last minute, ONI informed the president and the group that the Soviet ships had turned back. That brought the reputed exclamation by Secretary of State Dean Rusk, "We're eyeball to eyeball and I think the other fellow just blinked."⁷ As a result of that story a number of historical accounts have suggested that IP, on behalf of Admiral Anderson and the Navy, did not adequately inform the secretary and president of the activities of the Soviet ships that had been approaching the quarantine line.⁸ Those accounts are based on clearly secondhand information by representatives of other intelligence agencies, individuals who had no direct knowledge of what occurred in IP.⁹

Thus it seems appropriate to set the record straight, on the basis of firsthand recollections (as complete and accurate as fifty-year-old memories will allow) of those who were actually in CNO IP with the admiral on those days and on official documentation prepared when memories were fresh.¹⁰

22 OCTOBER: THE FUSE OF CRISIS IS IGNITED

Monday, 22 October, was a day of final diplomatic, policy, and operational preparations before the president's evening speech announcing the establishment of what he would call a "quarantine" of Cuba. But for IP it was most significant as the day when the submarine presence in the area of the Navy's deploying quarantine forces became apparent. The first report was of a visual sighting of a Soviet Zulu-class (NATO designation) long-range, diesel-powered attack submarine

refueling from a naval support tanker, *Terek*. That submarine had been operating off the mid-Atlantic coast and was preparing to return to home waters. The Navy's underwater Sound Surveillance System (SOSUS) then gained contact on another submarine, which when sighted by a patrol aircraft was identified as a Foxtrot-class (NATO designation) diesel-powered attack submarine.¹¹

On the basis of those operationally derived reports,

CNO immediately alerted his Fleet Commanders to the possibility of submarine attack with: "I cannot emphasize too strongly how smart we must be to keep our heavy ships, particularly carriers, from being hit by surprise attack from Soviet submarines. Use all available intelligence, deceptive tactics, and evasion during forthcoming days. Good luck."¹²

At 7 PM that evening, President John F. Kennedy told the nation that "unmistakable evidence has established the fact that a series of offensive missile sites is now in preparation" in Cuba. Therefore, he announced, "to halt this offensive buildup, a strict quarantine on all offensive military equipment under shipment to Cuba is being initiated. All ships of any kind bound for Cuba from whatever nation or port will, if found to contain cargoes of offensive weapons, be turned back."¹³

Immediately after that speech and for the rest of the night, IP became a hotbed of briefing activity. Soon after the broadcast, a call came from the Defense Intelligence Agency watch in the Joint Chiefs of Staff situation room that Secretary McNamara was en route to IP with the CNO, the Secretary of the Navy, and others for a briefing on the submarine and merchant ship situation. The party was duly briefed on the merchant-shipping activity, as shown on the IP plotting boards. The submarine intelligence briefer, Lieutenant Commander John R. "Jack" Prisley, then briefed the secretary personally on the submarine situation, kneeling next to his chair and using a special handheld folding plotting board. That evening briefing established what was expected to be the regular schedule of formal IP briefings for the secretary: they were to occur each morning at about 9 AM, before he went to the White House, and at about 10 PM, before he retired to his office for the night. Following the briefing, Secretary McNamara visited the office of the CNO for discussions of the quarantine and the establishment of surveillance.¹⁴

23 OCTOBER: A DAY OF TENSE WAITING

At about 3 AM on Tuesday morning, 23 October, when all seemed quiet, the door to IP opened and in strode Secretary McNamara and a couple of his assistants. He did a quick tour and then dropped himself into a chair in front of the plotting board, on which was displayed an ocean chart and a map of Cuba. After staring at the plot for a few minutes he began to question the ONI duty officer,

Commander Robert E. “Bob” Bublitz. The secretary’s principal concern seemed to be the Cuban navy’s eight Soviet-supplied Komar (NATO designation) guided-missile boats. As part of his regularly assigned duties, Commander Bublitz had been responsible for the collection of intelligence on those boats, and he was able to respond fully and accurately to the secretary’s questions. Seemingly dissatisfied that the duty officer was so sure of himself, the secretary harrumphed, got out of his chair, and left the plot without another word.¹⁵

As the morning of the 23rd progressed, the atmosphere became tense as the Navy and IP waited to see what the Soviets would do in response to the president’s announcement. Would the Soviet merchant ships maintain their courses and speeds toward Cuba? How would they act as they approached the quarantine line? How would they react when challenged? How would the Soviet submarines now known to be taking up positions near the quarantine line act to support the merchant ships or respond when prosecuted by our operating forces?

At about 9:45, with Lieutenant Thomas Rodgers on hand as the principal briefer and Lieutenant Commander Prisley as the submarine briefer, the secretary was apprised of the merchant-ship and submarine situations. The Flag Plot operations briefers covered the plans for Navy low-level overflights of Cuba. McNamara then went directly to the White House to meet with the president and his advisers.¹⁶

Meanwhile, reports had been arriving indicating that in the early morning hours of the 23rd, Moscow time, a message of very urgent precedence had been sent to a number of Soviet merchant ships. Also, the Soviet intelligence-collection trawler *Skhval*, operating in the Atlantic, had received and relayed a flash-precedence message. But the reports of those unusual communications offered no insights into their purposes, because in those days the National Security Agency (NSA) produced only “information, not intelligence.”¹⁷

Apparently as a result of those urgent messages, the ships began relaying urgent messages to others, and from others to Moscow, and reporting their own positions. Thus throughout 23 October, intelligence reporting provided the latest direction-finder (DF) positions of many ships, as well as their last reported true positions and previous DF positions.¹⁸ That information was plotted in IP and then “dead-reckoned” ahead to project estimated dates and times of arrival at the quarantine line. At that time, while the purpose of the unusual and urgent Soviet communication activity was unknown, it was assumed that it was related to instructions for the ships as to how they should approach the quarantine line and respond to U.S. intercept attempts.

Thus, during the National Security Council (NSC) meeting on that evening, the President instructed McNamara to review all details of instructions to the Fleet Commanders regarding procedures to be followed in the blockade. There was

extended discussion of actions to be taken under various assumed Soviet resistance activities such as (a) failing to stop, (b) refusing to be boarded, (c) ships turning around, heading in another direction, etc.¹⁹

Secretary McNamara then held a press conference in which he announced that an effective quarantine would be established at 10 AM Eastern Daylight Time on the 24th. He also announced that

the Joint Chiefs of Staff have designated Admiral George Anderson, Chief of Naval operations, as their Executive Agent for the operation of the quarantine and the quarantine forces. In turn, Admiral [Robert] Dennison, Commander in Chief, Atlantic is the responsible Unified Commander. And operating under him in direct charge of the quarantine force will be Vice Admiral Alfred Ward, Commander of the Second Fleet.²⁰

THE EVENING OF 23 OCTOBER: TENSION ERUPTS

Following that press conference, as the *CNO Report* briefly notes, “at 2045 [8:45 PM], Secretary McNamara had requested information concerning the first ships which would be intercepted, and Admiral Anderson consulted with Admiral Dennison on the matter.” That entry indicates that Secretary McNamara was interested in how the operations of the quarantine would be implemented, but its unusual brevity suggests that the details of how he expressed that interest and what went on after he did so would be inappropriate for an official report. Although, accordingly, what actually happened that night in Flag Plot and IP between Secretary McNamara and Admiral Anderson was not officially recorded, an account of what supposedly happened was provided by Abel and has long been included in almost every story of the Cuban missile crisis since. But it has always been said to have occurred on the 24th, not the 23rd, when at least some of what Abel and others have described actually happened.

Admiral Anderson later said that the event was “not even of sufficient importance for me to write down in my diary.”²¹ But others did the job for him. The best items of evidence that the event did not take place on 24 October but rather on the 23rd are, first, the brief, circumspect entry in the *CNO Report* for the 23rd indicating that a McNamara-Anderson meeting did occur; and second, the CNO’s *Office Log* for the 24th, which reports that by the time of the secretary’s arrival in Flag Plot that evening the admiral had already departed for home and that Admiral Claude V. Ricketts, the Vice Chief of Naval Operations, was the duty CNO. Thus, no McNamara-Anderson meeting could have occurred that night.²²

Additionally, though they date the event to the 24th, all the published accounts provide good internal evidence that the event actually occurred on the evening of the 23rd. The Abel story says, “McNamara asked about the first interception: exactly what would the Navy do?” The *History of the Office of the Secretary of Defense*

relates, “According to McNamara’s account, when the CNO informed him that a Soviet vessel would reach the quarantine line the following day, McNamara asked what he would do when it got there.” Since the quarantine was to be implemented on the morning of the 24th, questions about the “the [upcoming, in context] first interception” and “what he would do” when a Soviet ship reached the quarantine line the “following day” all must have been asked on the evening of the 23rd. They would not have been asked on the night of the 24th, by when it was clear

that the Soviet ships would not be penetrating the quarantine line.

There is no doubt that on the evening of the 23rd McNamara and Anderson had a meeting, one that Anderson termed an “incident” and Defense Department

The belief of historians that there was a “failure of intelligence cooperation” and their perplexity as to why ONI held up information critical to the president’s decisions appear to be unfounded.

historians have called a “confrontation.” That event did include Anderson taking the secretary aside to explain a submarine contact, and it also included a contentious discussion of quarantine operations. But it occurred quite differently than Abel’s unnamed sources and the elaborations of others have reported. Certainly, as Abel originally said, “Witnesses only disagree.”

That evening, at the time of his regular evening brief, the secretary went to Flag Plot first, where he apparently began questioning whether a destroyer was out of place.²³ The admiral, not wanting to discuss that matter with the secretary in the crowded Flag Plot, took him into IP, accompanied by Deputy Secretary of Defense Roswell Gilpatric, Secretary of the Navy Fred Korth, and their respective military executive assistants. It is possible that the Under Secretary of Defense for Public Affairs, Arthur Sylvester, followed that group in. McNamara and Anderson sat in chairs at a small table in front of the sliding display boards, with others standing behind or to the sides.

As usual, Prisley knelt next to McNamara with his plotting folder to give his submarine intelligence presentation, explaining also why the destroyer was out of the line. When Prisley had finished but was still kneeling beside him, McNamara took out his thin Eversharp pencil and used it as a pointer to tell Admiral Anderson to move certain destroyers to certain positions and to move aircraft surveillance to a certain area. The CNO tried three times to tell the secretary that Admiral Dennison, to whom he had given operational control, was experienced and capable, needing only to be told what the secretary wanted to accomplish—he would move the forces as necessary. Twice the admiral asked the secretary what it was he wanted to accomplish by those moves, so he could tell Admiral Dennison. Finally McNamara asked the CNO whether he knew what an order was, and the admiral replied, “Yes, sir”; McNamara repeated his directions, saying, “This is

an order,” and walked out. The CNO then took Prisley, along with his plotting folder, next door to Flag Plot to use the secure phone to give Admiral Dennison the secretary’s orders.²⁴

As a result of that telephone call, the *CNO Report* states,

they [Anderson and Dennison] decided that they should go after the Soviet vessels *Kimovsk* and *Gagarin*, effecting contact at about the same time on the 24th. The approximate locations of both ships were known by direction finder fixes and they felt search aircraft would have a good chance of spotting them. The [antisubmarine aircraft carrier] *Essex* group would be used to intercept them.

Another approaching ship, *Poltava*, was to be assigned for interdiction to [the heavy cruisers] *Newport News*, *Canberra*, and four destroyers. It was believed that the intercept would be made late on the 24th.

In a memorandum relating these plans, Admiral Anderson said that there was a hazard of possible submarines in interdicting the first two ships, but pointed out that the interception would be made by a Hunter/Killer Group.

In that memorandum to the Secretary of Defense, Admiral Anderson also made an attempt to avoid another operational decision-making session with the secretary, by stating, “From now on, I do not intend to interfere with Dennison or either of the admirals on scene unless we get some additional intelligence, which we are hoping for.”²⁵

The realization that this event occurred on 23 October makes it easier to understand how it developed as it did. The secretary’s support of the blockade had probably been the deciding vote in the president’s decision to establish a quarantine.²⁶ Just hours before he had been told by the president to “review all . . . instructions to the Fleet Commanders.” Thus, he was asking detailed questions and giving detailed orders because of what he viewed as his personal responsibility to ensure the success of the quarantine operation. The admiral, for his part, likely considered that, the president having reviewed the Navy’s plans for the quarantine on the 21st, the authority and responsibility for conducting the quarantine had been delegated to him and the Navy. The president had said, “Well, Admiral, it looks as though this is up to the Navy.” Anderson must have felt that his reputation was linked to the success of the operation, having replied to the president, “The Navy will not let you down.”²⁷ Furthermore, he and the secretary had again discussed the plans on the evening of the 22nd.²⁸ Finally, it must have seemed to the admiral that authority and responsibility for execution of the quarantine had just been publicly delegated to him and the Navy by the secretary’s just-concluded press conference.

In light of those differing beliefs about the operational chain of command and the fact that both men felt personally responsible for ensuring a favorable outcome to the operation, it is easy to understand how any discussion could have become contentious.²⁹ Both were tense and tired, awaiting a confrontation between a Soviet merchant ship and an American warship in just twelve hours—a confrontation that, given the presence of Soviet submarines, could spark an exchange of weapons leading to war. In such an event, the two men had different ultimate goals: the secretary wanted to ensure that when an interception occurred, armed confrontation was avoided, whereas the admiral wanted to be sure that if one occurred, the forces were adequately deployed and ready to handle it. Thus the secretary would have been angered by what he considered the admiral's evasive, unsatisfactory, and, some say, belligerent answers as he tried to carry out the president's directive to "review all . . . instructions to the Fleet Commanders" and to ensure caution. On the other hand, the admiral would have been angered at the secretary's apparent attempt to revise deployment plans and exercise operational control from Washington just twelve hours before the arrival of the merchant ships at the quarantine line and possible armed encounters with submarines. Understandably, tempers flared on both sides.

Admiral Anderson may have suspected that details of the meeting would become the stuff of leaks, rumors, and gossip. IP was immediately instructed by the CNO's executive assistant, Captain Isaac C. "Ike" Kidd, Jr., to make sure that no one except the secretary, deputy secretary, CNO, and senior flag officers from CNO's office were given admittance in the future. The CNO's *Office Log* for 25 October shows that Rear Admiral John McCain, Jr., then the Navy Chief of Information, discussed with Captain Kidd plans for Under Secretary Sylvester to have coffee with CNO and be briefed in Flag Plot. Captain Kidd said, "Flag Plot ok, but not IP."

THE NIGHT OF 23–24 OCTOBER: WHAT DID THEY KNOW, AND WHEN DID THEY KNOW IT?

Because of the purposeful arrival in IP of the admiral bringing the secretary from Flag Plot to explain the position of the destroyer, followed by the secretary's rapid departure, the usual evening intelligence brief covering the positions and movements of the approaching Soviet merchant ships was not given. Unfortunately, there are no notes of what that brief would have included.³⁰ But at about the scheduled time of that briefing, the Central Intelligence Agency (CIA) summarized the merchant-shipping situation: "Of the nine ships involved in the 'very urgent' encrypted communications yesterday two have already arrived in Cuban ports. We have not noted any unusual activity on the part of the seven other ships involved in these communications that would reflect any instructions they may have received."³¹

According to CIA, the latest “known position” for *Kimovsk* was roughly three hundred nautical miles (nm) east of the planned quarantine line, as of 3 AM Washington time. For *Poltava* the latest “known position” had been obtained at 11 AM Washington time, roughly eight hundred nautical miles northeast of the quarantine line. These reported known positions were based on the ships’ required daily position reports, rather than DF. Thus the most reliable positions at the time of the evening briefing were eighteen and ten hours old, respectively. Using those positions, a dead-reckoning (DR) plot in IP would have shown

Finally McNamara asked the CNO whether he knew what an order was, and the admiral replied, “Yes, sir”; McNamara repeated his directions, saying, “This is an order,” and walked out.

that *Kimovsk* would arrive at the quarantine line by about 1000 (or 10 AM) on the 24th, as expected. But a DR plot would have shown that *Poltava* could not arrive at the quarantine line as had been

expected—indeed, not until sometime on the 26th. There was no “known position” available for *Gagarin*, the third ship of primary interest.

In addition to those known positions, however, a DF position had been obtained on *Kimovsk* at 4:23 PM Washington time showing it still about three hundred miles from the quarantine line, or just about where it had been sixteen hours earlier.³² Clearly the ship had slowed or stopped for most of the day. But since the position had been derived from DF, the true position, course, and speed of *Kimovsk* could not be determined. Dead-reckoning *Kimovsk* westward at ten knots from that position would have made it clear that the ship could not arrive at the quarantine line by 1000 on the 24th, at that speed. However, if *Kimovsk* increased speed westward after reaching that position it could arrive sometime later in the day. Thus, on the evening of the 23rd the secretary would have been briefed (by the author, who was the briefer that evening) that *Kimovsk* had slowed or could have stopped during the day; that because information on the ship’s course and speed was not available, it could not be determined whether, where, or when the ship would arrive at the quarantine line; but that arrival sometime on the 24th could not be ruled out. The secretary would have been told also that *Poltava* had also stopped and could not arrive until the 26th, and that there was no position available for *Gagarin*.

But the secretary did not take that brief. The author completed his twelve-hour shift as briefer and retired, leaving his notes for the overnight crew.

On this the critical night before the quarantine was to be initiated, IP was fully manned with highly qualified hands. In addition to the IP watch officer and the ONI duty officer, Commander Howard W. “Howdy” Holschuh would have been present. Early in the crisis he had been relieved of all his regular duties in ONI and assigned to IP on a twenty-four-hour basis as the officer responsible for plotting and analyzing merchant-shipping intelligence and briefing members of

the CNO's staff on it. His efforts provided the basis for the merchant-shipping portions of the regular briefings to the CNO and secretary. Furthermore, Captain Maurice H. "Mike" Rindskopf, the Assistant Director of Naval Intelligence (DNI) for Production, was also present that night. Early in the crisis he had been assigned to represent the DNI in overseeing ONI's activities related to the missile crisis. Finally, IP would have been in close touch via secure phone with the Naval Field Operational Intelligence Office (NFOIO) colocated with NSA in order to receive speedy analysis of the Naval Security Group (NSG) reporting.

The official NSA history states, "Late the same day NSG direction finding indicated that some of the Soviet merchant vessels heading for Cuba had stopped dead in the water, while others appeared to be turning around. At this point, the Office of Naval Intelligence (ONI) felt that this information had to be verified before it was reported."³³ On the basis of the NSA account, it would appear that during the night of 23–24 October, aside from *Kimovsk*, NSG reported DF positions on additional ships that showed them near their previous known positions.³⁴

Then, the NSA history continues, citing the account of Dino Brugioni, "John McCone [the Director of Central Intelligence] was awakened in the middle of the night and informed that the Navy had unconfirmed information [presumably that the ships had slowed or halted], but this was not passed to the White House or the secretary of defense until noon [actually, as we will see, it was passed earlier, certainly by 1030] of the following day, once ONI had 'confirmed' the information. When he found out, McNamara was furious, and he subjected Admiral Anderson, the Chief of Naval Operations, to an abusive tirade." The NSA account concludes that "so many years have passed that it is impossible to determine why the Navy held up information that seemed critical to the president's decisions."

That brief account does not fully or accurately describe the activities of the night and has led at least one historian of the crisis to conclude that it "illuminates a failure of intelligence cooperation" and negligence on the part of ONI.³⁵

In his fuller account, Brugioni states, "The CIA Watch Officer, Harry Eisenbiess, checked with the Office of Naval Intelligence. They were also in receipt of the NSA information but could not confirm change of course. On-the-spot visual verification would have to wait until morning. The Navy thought it might be a Soviet play."³⁶ To check with ONI, the CIA watch officer would have communicated with IP, where the new positions already would have been plotted by the watch officer, analyzed by the duty officer and Commander Holschuh, and discussed with NFOIO.³⁷ That night, while of course interested in all the ships, IP was mostly focused on supporting the CNO, Flag Plot, and the quarantine forces with information on those of immediate high interest—*Kimovsk*, *Poltava*, and *Gagarin*. The rationale for waiting for visual confirmation would likely have been that it was already known that *Kimovsk* would not be arriving at the quarantine

line on time and that *Poltava* had stopped and would not be arriving on the 24th at all. *Gagarin* was unlocated but like the other ships was farther east and not expected at the quarantine line the next morning. Visual surveillance of them all by quarantine force aircraft at first light would leave plenty of time to confirm their courses, speeds, and expected times and places of arrival at the quarantine line and then for the on-scene commander to position forces for intercept. Thus, for the IP watch, there was no need to alert decision makers in the middle of the night to give them inconclusive information when good information for decision making by the on-scene commander and Washington was not yet available but could come early in the morning.

Despite the ONI view, according to Brugioni,

Eisenbiess was convinced of the validity of the NSA information and in the wee hours of the morning of 24 October went to McCone's home. McCone[,] aroused from a sound sleep, was told that at least five of the Soviet ships had changed course and were headed back to Russia but that the Navy could not verify the NSA information. McCone said he would convey the information to the White House immediately.³⁸

Given McCone's statement, he must have intended to call the White House himself or to have a senior agency official check with the CIA watch and then inform the White House Situation Room. That would have been required, because during the early days of the Cuban missile crisis

the Situation Room began taking a more active hand in crisis alerting and in keeping the president informed. It was basically an arm of the CIA, however. All SIGINT [signals intelligence] products of interest to the president and the National Security Council staff passed through CIA, which forwarded key items after it had taken off the NSA header. . . . [B]ut NSA was not directly involved.³⁹

McCone was not the only decision maker awake that night. As he had done the night before, Secretary McNamara came to IP about 3 AM. There is no full record of what ensued, but one of the officers present would have given him a briefing, using the notes prepared for the earlier, aborted brief. Thus the secretary would have certainly been told now what he could have learned at 9 PM—that *Kimovsk* had slowed or stopped during the day but that lack of information on the ship's course and speed made any estimate of its arrival at the quarantine line on the 24th inconclusive, though arrival on that day could not be ruled out; that *Poltava* had also stopped and could not arrive until the 26th; and that no position was available for *Gagarin*. Other DF positions on additional ships having apparently been obtained, they would also have been reported. Given that all these reports were based on DF positions, which can indicate general location but not course or speed, it is unlikely that without further confirmation a naval intelligence briefer would conclude that the ships had reversed course.

But because of the secretary's keen interest in the operational aspects of the quarantine he would have asked questions, so that the possibility of a standstill or turnaround must have been discussed. As a senior officer with considerable planning and operational experience, Rindskopf would have assured the secretary that aerial surveillance from *Essex* was expected to provide firm visual updates on most of the ships at first light. If the ships had turned, that could be confirmed well in advance of their expected arrivals at the quarantine line. If the secretary went next door to Flag Plot and expressed concern, he would have received a similar assurance there. But while those assurances may have been given, Rindskopf has repeatedly recalled, "I found myself . . . reporting to SECDEF [Secretary of Defense] McNamara . . . at 0300 [3 AM] . . . that the Soviet ships carrying missiles to . . . Cuba and the accompanying F-class submarines had actually reversed course."⁴⁰ That would have been his personal "estimate" of the situation, and it is unknown to what extent the secretary accepted it.

MORNING, 24 OCTOBER: THE DAY OF RECKONING

That morning the *CNO Report* indicates that at "about 0900, SECDEF received a standard merchant ship briefing." Deputy Secretary Gilpatric also attended that briefing, and his handwritten notes show that the intelligence that the secretary could have gotten on the evening of the 23rd and presumably did get in the early morning hours of the 24th had not changed.⁴¹ With regard to *Kimovsk*, the secretary was told of the DF position late on the 23rd and that the ship had not been sighted. Given the anxiety that all must have felt as the time for implementation of the quarantine approached, the unexpectedly inconclusive position of *Kimovsk* and the lack of a sighting report from the quarantine force must have elicited some comment from the briefer, question from the secretary, or perhaps a remark by Vice Admiral Charles D. Griffin, the Deputy CNO for Operations and CNO representative that morning, about the uncertainty and probable delay of the arrival time of the ship at the quarantine line. Nevertheless, for some reason Gilpatric noted that the ship was "due 10:30 AM inside the barrier." *Gagarin* had not been sighted but was assumed to be behind *Kimovsk*. Apparently, a DF position had been obtained on *Poltava* that placed it within eighty miles of its last known position and 850 miles from the quarantine line; thus the deputy secretary noted that its arrival time was estimated to be 4 AM on the 27th. The notes also show that the secretary was informed that there was one submarine in the vicinity of the barrier.

Thus, on the basis of what transpired during the night of 23–24 October in CNO IP, the belief of historians that there was a "failure of intelligence cooperation" and their perplexity as to why ONI held up information critical to the president's decisions appear to be unfounded. CIA and IP cooperated on the analysis

of the incoming DF messages during the night. While ONI originally did not intend to wake the CNO and secretary to report a possible turnaround based on inconclusive and unconfirmed DF reports, once the secretary appeared in IP the senior person present who agreed with the CIA view told him of the possibility. Thus, two key decision makers—McCone and McNamara—had been informed in some manner and to some degree of a changing situation with respect to the merchant ships. CIA may have passed its views to the White House Situation Room. Regardless of all that, it is unclear what the president's decision could have been until definitive information was received from the quarantine forces about the positions and activities of the Soviet ships.

The *CNO Report* indicates, "At the same time [probably as the briefing was going on, i.e., about 9:30], Flag Plot [actually, IP] received the first directional fix report that some Soviet ships bound for Cuba had reversed course. This information was inconclusive and Mr. McNamara was not informed."

Since DF reports had been coming in all night, this was likely the first report confirming that a ship had actually turned back, by providing a new DF position well to the east of both the last known and previous DF positions, which had been considered inconclusive. Since that information apparently was received in IP while the briefing to the secretary was going on, the watch officer, a lieutenant (junior grade), had to wait to gain access to the boards to plot the incoming report and would have wanted a more senior officer to consider it and discuss it with the NFOIO before informing the Secretary of Defense. The secretary departed the briefing and went directly to the White House to await the implementation of the quarantine at 1000.

1000, 24 OCTOBER: THE IMPLEMENTATION OF THE QUARANTINE

The *CNO Report* indicates that the CNO was meeting with the JCS as

the moment of the quarantine's beginning arrived and passed, and matters continued without untoward incident until . . . [Commander Task Group] 44.3 in [the attack transport] *Cambria* [APA 36] reported a disappearing radar contact and that he suspected he was being followed by a submarine. The information was passed immediately to CNO, who left the JCS meeting and returned to his office.

At about the same time, it became apparent from radio directional fixes that some of the Soviet ships en route to Cuba had either slowed down or had altered or reversed their courses. Initial indications of these facts were confirmed by separate plots maintained in Flag Plot [IP] and in the Navy Field Operational Intelligence Section [*sic*—Office, i.e., NFOIO] at Fort Meade. The duty officer set about to notify the Secretary of Defense, the Secretary of the Navy, and CNO, through the Director of Naval Intelligence, of the possibility that some of the Soviet ships were not going to penetrate the quarantine line.

The CNO's *Office Log* also shows that

NSA [actually NFOIO, colocated with NSA] notified Flag Plot [IP] that the Russian ships had turned back. The word was received by message and plotted. Flag Plot [IP] notified SECDEF, JCS, and SECNAV [the Secretary of the Navy—likely their offices by telephone]. RADM Lowrance [Rear Admiral Vernon L. Lowrance, the Director of Naval Intelligence] who was there decided to deliver the report in person to CNO and left for the latter's office. RADM Lowrance arrived before the CNO [who was walking back to his office from the JCS spaces so as to be available, because of the submarine contact report] and gave the report to VADM Griffin [the CNO representative] who left immediately for Flag Plot [IP] with ADM Lowrance. Neither told anyone else of the report.⁴²

Meanwhile, the members of the NSC were gathered at the White House, awaiting the implementation of the quarantine. According to the firsthand account of the attorney general, Robert Kennedy:

It was now a few minutes after 10:00 o'clock. Secretary McNamara announced that two Russian ships, *Gagarin* [consistently reported as unlocated, farther to the east, and never briefed as possibly arriving by IP] and *Komiles* [*sic*—*Kimovsk*] were within a few miles of our quarantine barrier. The interception of both ships would probably be before noon Washington time. Indeed the expectation was that one of the vessels would be stopped and boarded between 10:30 and 11:00 o'clock.

Then came the disturbing Navy report that a Russian submarine had moved into position between the two ships. . . .

I think these few minutes were the time of gravest concern for the President. . . .

Then it was 10:25—a messenger brought a note to John McCone. "Mr. President, we have a preliminary report which seems to indicate that some of the Russian ships stopped dead in the water."

Stopped dead in the water? Which ships? Are they checking the accuracy of the report? Is it true? I looked at the clock. 10:32.⁴³

Kennedy says that McCone stepped out of the room to get more information and that upon returning he reported, "The report is accurate, Mr. President. Six ships previously on their way to Cuba at the edge of the quarantine line have stopped or have turned back toward the Soviet Union. A representative from the Office of Naval Intelligence is on his way over with the full report."

The representatives arriving from ONI with the information were likely to have been Commander George Stroud, the head of IP, and Lieutenant Thomas Rodgers, who had just completed the briefing and was the person most current on the information.

Despite the tension in the White House concerning the imminence of a confrontation at the quarantine line, as described by Robert Kennedy, it does not seem that either McCone, McNamara, or the White House Situation Room had told the president or the assembled group about the anomalous ship position reports received during the night, about which they all had been informed. Although the information they had been given was not conclusive, it surely suggested that the situation with regard to ships approaching the quarantine line was at least uncertain and that their arrivals were not imminent. For his part, McNamara,

in his briefing, as reported by Kennedy, did not accurately provide the information from the briefing that he had just attended and did not include any of the uncertainty that had been conveyed to him by ONI. For his part, McCone

There is no doubt that on the evening of the 23rd McNamara and Anderson had a meeting, one that Anderson termed an “incident” and Defense Department historians have called a “confrontation.”

seems to have been surprised, despite allegedly having been awakened the night before and been informed that some ships had stopped.⁴⁴

It was at this meeting that, Abel and Allison report, the Secretary of State, Dean Rusk, said, “We’re eyeball to eyeball and I think the other fellow just blinked.”⁴⁵ That literal face-off, of course, never happened. While those in Washington were awaiting information, out in the Atlantic, as expected by IP, the operational forces had now visually sighted *Kimovsk*, *Gagarin*, and *Poltava* and determined that they had turned back. At 0930, when it was expected to be nearing the quarantine line, *Kimovsk* was already more than seven hundred miles northeast of the line, heading northeastward at sixteen knots.⁴⁶

Secretary McNamara was undoubtedly unhappy about not having been the bearer of the good news to the president, since it came from Defense Department organizations—NSA and ONI. Having just come to the White House from an IP briefing, certainly he would have liked to have brought the available news to the White House.⁴⁷ But as for Brugioni’s story of McNamara subjecting Anderson to an “abusive tirade,” there is no record or independent confirmation that it happened. Seemingly, the appropriate time for it to have happened would have been that day. But there is no record of the two men meeting on 24 October.⁴⁸ If such an incident had occurred, however, Admiral Anderson could have remarked that the secretary had known about the turnaround before he did.⁴⁹

While Secretary McNamara may not have been satisfied with the performance of IP, Admiral Anderson felt differently. The CNO’s *Office Log* indicates that on the morning of 26 October “CAPT Kidd called ADM Lowrance to tell him the CNO had taken note of the tremendous job his people were doing in coming up with

info on merchant ships. He asked if there was an objection to kudos for the job that particular section was doing.”

NOTES

1. Elie Abel, *The Missile Crisis* (Philadelphia: J. B. Lippincott, 1966), pp. 154–55.
2. Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (Boston: Little, Brown, 1971), p. 131.
3. George W. Anderson, Jr., interview by Joseph E. O'Connor, 25 April 1967, John F. Kennedy Presidential Library [hereafter JFK Library] Oral History Program.
4. For the admiral's disclaimers see Abel, *Missile Crisis*, p. 151, and Allison, *Essence of Decision*, p. 309 note 132.
5. For the Office of the Secretary of Defense, Lawrence S. Kaplan, Ronald D. Landa, and Edward J. Drea, *History of the Office of the Secretary of Defense*, vol. 5, *The McNamara Ascendancy: 1961–1965* (Washington, D.C.: Department of Defense, 2006), pp. 5–7. Interviews with both McNamara and Gilpatric are cited; the interview with the secretary took place on 24 July 1986. Also cited are interviews with Admiral Anderson by Walter S. Poole on 7 November 1978 and by Maurice Matlof and Roger Trask on 31 May 1984. For the JCS, Walter S. Poole, “Cuban Missile Crisis: How Well Did the Joint Chiefs of Staff Work?,” Naval History Center *Colloquium on Contemporary History Project*, available at www.history.navy.mil/. Also Walter S. Poole, “How Well Did the JCS Work?,” *Naval History* (Winter 1992). Poole, who interviewed both Gilpatric and Anderson, noted that there were “two totally irreconcilable versions of what took place.” For Anderson: Lawrence Korb, “George Whelan Anderson, Jr.,” in *The Chiefs of Naval Operations*, ed. Robert William Love, Jr. (Annapolis, Md.: Naval Institute Press, 1980). Korb interviewed Admiral Anderson on 5 September 1968. “George Whelan Anderson,” *Arlington National Cemetery*, www.arlingtoncemetery.net/gwanders.htm.
6. Michael Dobbs, *One Minute to Midnight: Kennedy, Khrushchev and Castro on the Brink of Nuclear War* (New York: Random House, 2008).
7. Robert Kennedy, *Thirteen Days: A Memoir of the Cuban Missile Crisis* (New York: W. W. Norton, 1969).
8. Regrettably, those accounts include *American Cryptology during the Cold War, 1945–1989* (Washington, D.C.: National Security Agency, n.d.), book 2, document 3, p. 325. The entire six-book document is accessible in redacted form on the NSA website at www.nsa.gov/public_info/_files/cryptologic_histories/cold_war.pdf; it has also been posted more accessibly as “National Security Agency Releases History of Cold War Intelligence Activities,” Briefing Book 260, *George Washington University: National Security Archives*, www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB260/index.htm (or directly at www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB260/nsa-3.pdf). See especially the introduction to that posting: Matthew W. Aid, “Commentary,” 14 November 2008. See also Dino Brugioni, *Eyeball to Eyeball* (New York: Random House, 1991), pp. 389, 399.
9. The NSA account in *American Cryptology*, book 2, p. 329, draws mainly on Brugioni, *Eyeball to Eyeball*, p. 399, augmented by a 1984 interview with Lt. Gen. Gordon A. Blake, USAF (Ret.). Brugioni's account is unsourced except for one CIA memo said to be in the JFK Library but that cannot be located by the library's staff or the author. During the missile crisis Brugioni was the deputy chief of the National Photographic Interpretation Center, a busy, full-time job that involved no direct connection with IP. His sources would have been secondhand. During the crisis Lieutenant General Blake was the director of NSA and in that position would have been passed on reports of IP activities from his NSA subordinates unhappy with what they considered delays in the Navy's confirmation of the meaning of the individual reports they were providing.

10. This article is drawn from a manuscript prepared for the history files of the Office of Naval Intelligence, covering the history of the Chief of Naval Operations IP for the period 1961–63, when the author was assigned to that organization. It is based on the author’s direct observation, on firsthand accounts of others assigned there, and on documentation created by the Office of the Chief of Naval Operations (OPNAV) at the time. The OPNAV documentation consists of, first, *The CNO Report on the Quarantine of Cuba* (an after-action report compiled from information in logs maintained by representatives of Flag Plot and Intelligence Plot—hereafter cited as *CNO Report*); and second, the *CNO’s Office Log* (apparently maintained contemporaneously by a petty officer in the CNO’s office). Both the author and Dobbs worked with the *CNO Report* and the *CNO Office Log*. Both of these documents are available at the Operational Archives Branch of the Naval History and Heritage Command, Washington, D.C. Additionally, the *CNO Report* is available online at *Naval History and Heritage Command*, www.history.navy.mil/. Dobbs posted the pertinent *Office Logs* for the period online at www.gwu.edu/~nsarchiv/nsa/cuba_mis_cri/dobbs/oct%2024%20navy%20logs.pdf. Additionally, the information developed in the preparation of the original manuscript was compared with numerous published histories of the Cuban missile crisis. A number of differences were noted as to events in the CNO IP during the crisis between accounts derived from those primary sources and those of certain published histories. Several of the more important of those differences are highlighted by this article.
11. This was the first SOSUS detection during the crisis. That is indicated by a 26 October Commander in Chief, Atlantic message reporting the “Current ASW Status” and listing SOSUS contacts and visual confirmations on Soviet submarines since 22 October, suggesting that the 22nd was the date of the original contact. A Commander Oceans System Atlantic (COS) message of 27 October provided an “Appreciation of SOSUS Activity in Western Atlantic from 230001Z to 273100Z [*sic*, 271300Z]” that again suggests that SOSUS contacts began on 22 October. For copies of these messages, see “The Submarines of October,” endnotes 9 and 11, *George Washington University: National Security Archives*, www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB75/index2.htm. SOSUS contacts are lines of bearing. Lines of bearing from several stations are required to define a good “SOSUS probable area,” in which the submarine is, in order to direct aircraft to it. Nevertheless, SOSUS Naval Facility Grand Turks is usually credited with making this first contact.
12. *CNO Report*.
13. “President John F. Kennedy’s Speech Announcing the Quarantine against Cuba, October 22, 1962,” available at www.mtholyoke.edu/acad/intrel/kencuba.htm.
14. *CNO Report*.
15. Cdr. R. E. Bublitz, e-mail exchanges with the author, June 2009, February and March 2010.
16. *CNO Report*. The reference to “overflight” concerns the operations briefer’s discussion of plans for the first Navy low-level photo-recce missions by Light Photographic Squadron 62 flying F8U-1P Crusaders. See Norman Polmar and John D. Gresham, *DEFCON-2: Standing on the Brink of Nuclear War during the Cuban Missile Crisis* (Hoboken, N.J.: Wiley, 2006), pp. 139–44.
17. *American Cryptology*, book 2, document 3, p. 352.
18. These messages originated from the Naval Security Group station USN 22. Each contained all three elements. They were not received directly but were forwarded by NSA after being checked for validity. Some of these messages reporting ship positions on the 23rd are available at *National Security Agency*, www.nsa.gov/public_info/cuban_missile_crisis/23_october_soviet_vessels.pdf.
19. “McCone, Memorandum for the File: Executive Committee Meeting on 23 October 1962, 6:00 p.m.,” in *CIA Documents on the Cuban Missile Crisis 1962*, ed. Mary S. McAuliffe (Washington, D.C.: Central Intelligence Agency, 1992).
20. *CNO Report*.
21. See Anderson, interview (JFK Library).
22. By comparing the *CNO Report* for the 23rd with the *Office Log* for the 24th, it is evident that a meeting of the secretary and admiral did occur on the 23rd and that one could not have occurred on the 24th, because the

CNO left the Pentagon early that evening. The pertinent entries in the CNO's *Office Log* on the 24th are: "1855: CNO put out word for maximum relaxation in the office for the night because he didn't expect anything important was going to happen. 2035: CNO departed for the night. At 2120, Mr. McNamara called Admiral Ricketts, the duty CNO. . . . About 2145 Mr. McNamara and Mr. Gilpatric visited Intelligence Plot." Only Dobbs, *One Minute to Midnight*, p. 72, gets it right: "Most accounts of the missile crisis claim, for example, that the confrontation took place on Wednesday evening . . . —after the quarantine had already come into effect. But a study of Pentagon diaries and other records demonstrates that this is impossible. Anderson was not even in the building on Wednesday evening at the time he is alleged to have had his acrimonious encounter with McNamara."

23. Dino Brugioni, the only historian who offers an account of a meeting on the evening of the 23rd, records, "At 9:45 PM on October 23, Secretary McNamara was briefed in Flag Plot on the location of the Russian merchant ships and the location of blockading forces. He expressed particular interest in the location of the aircraft carriers *Enterprise* and *Essex* and their nine destroyer escorts" (*Eyeball to Eyeball*, p. 387). While Brugioni provides this information on what may have been the start of the 23 October meeting, he follows Abel's lead in describing the rest of that meeting, including additional details, as occurring on 24 October (pp. 415–17).
24. Capt. John R. Prisley, USN (Ret.), e-mail exchanges and interview with the author, June and October 2009. The author was present, standing nearby, during this encounter and can confirm that there were no raised voices and that the admiral, arguing his case, was not disrespectful. There is disagreement over what was said as the two left the room. See Anderson's JFK Library interview, in which he says that he made a remark intended to be humorous, and Gilpatric's recollection in Kaplan, Landa, and Drea, *History of the Office of the Secretary of Defense*, pp. 5–7, which indicates that the admiral used "some sort of strong expletive." With regard to Gilpatric's version, Poole says, "Anyone who has interviewed Admiral Anderson knows how vehemently he rejected this account." See Poole, "Cuban Missile Crisis."
25. *CNO Report*.
26. On 16 October, McNamara was advocating air strikes. See "20th Century #18 Cuban Missile Crisis: Transcript of a Meeting at the White House, Washington, October 16, 1962, 11:50," *Yale Law School: Avalon Project—Documents in Law, History and Diplomacy Project* [hereafter *Avalon Project*], www.avalon.law.yale.edu. The first indications of McNamara's change of position were apparent to CIA director McCone on 18 October. See "Memorandum for File, 19 October 1962," in *CIA Documents on the Cuban Missile Crisis 1962*, ed. McAuliffe. For McNamara's support of the blockade and the president's decision, see "20th Century #34: Minutes of the 505th Meeting of the National Security Council, 20 October, 2:30–5:10 PM," *Avalon Project*.
27. For a summary of Admiral Anderson's presentation to the NSC, see "20th Century #38 Cuban Missile Crisis: Minutes of 506th Meeting of the National Security Council, Washington, October 21, 1962, 2:30–4:50 PM," *Avalon Project*. See also Curtis A. Utz, *Cordon of Steel: U.S. Navy and the Cuban Missile Crisis* (Washington D.C.: Naval Historical Center, 1993), inside front cover, available at www.history.navy.mil/.
28. As noted above from *CNO Report*.
29. According to Korb ("George Whelan Anderson, Jr.," in *Chiefs of Naval Operations*, ed. Love, p. 328), "The conflict between Anderson and McNamara concerned the Navy's conduct of the blockade. Although Anderson enthusiastically supported the decision to create a blockade, he found three aspects of it disturbing. First, the blockade line was drawn too close to Cuba. . . . Second, the blockade was conducted in a manner that violated two sacred naval doctrines: going through the chain of command to convey orders, and the autonomy of the commander on the scene. . . . Third, the blockade was not enforced in accordance with standard naval procedures." See page 324 of the cited source for Anderson's views on the relationship of the office of the secretary and the services.
30. After the crisis, the IP handwritten briefers' notes, the daily message series known as *CNO Briefing Notes*, and other materials were

turned over to those preparing the official *CNO Report*, who, unfortunately, do not appear to have saved them upon completion of that effort. However, most CIA memos have been preserved by the agency and the JFK Library. Likewise, all of the Daily Intelligence Summaries of the Commander in Chief, Atlantic Fleet covering operational aspects of the quarantine are preserved in the operational archives at the Naval History and Heritage Command. As Dobbs found, "The U.S. Navy has done the best job of the four armed services in making its missile crisis records available to the public, despite the fact that its budget for historical research is only a fraction of the amount available to the Air Force. I spent a couple of weeks combing through the records at the Naval Historical Center [now the Navy History and Heritage Command], which include . . . daily intelligence summaries." Unfortunately, these holdings do not include CNO IP intelligence summaries.

31. "Soviet Shipping to Cuba," CIA memorandum, 24 October 1962, reporting the "known positions" of "Soviet Ships Currently Enroute to Cuba: As of 2100 [9 PM] 23 October 1962," box 46, National Security Files, Countries: Cuba, Subjects: CIA Memoranda, 10/23/62–10/25/62, JFK Library. This memo was dated 24 October, indicating that it was not completed and signed until after midnight but also suggesting that no additional significant positions had been received at the last minute.
32. The NSG report of this DF position has not been located. But evidence of its existence can be inferred from a CIA memo in the JFK Library: "The Crisis USSR/Cuba; 26 October; Report of Soviet Ships to/from Cuba: Course Reversed." It indicates that the "Reversed Time/Dist from Cuba" for *Kimovsk* was "10/232023Z" at "815 nm." The irregular time suggests that this position was the result of a DF. At the time of intercept the course of the ship would have been unknown. Only on the 26th, by postanalysis of earlier and subsequent position reports, would it have indicated that the ship had "reversed."
33. *American Cryptology*, book 2, p. 329.
34. None of these messages have been found by the author.
35. Aid, "Commentary."
36. Brugioni, *Eyeball to Eyeball*, p. 389.
37. Adm. B. R. Inman, USN (Ret.), was a lieutenant at NFOIO during that period. When asked whether IP and NFOIO would have been in contact that night, his reply was "almost certainly yes." Admiral Inman, e-mail to author, 23 January 2010.
38. Brugioni, *Eyeball to Eyeball*, p. 389. He documents his account in endnote 16 of chapter 6 by citing a "Central Intelligence Agency Memorandum: The Crisis USSR/Cuba, October 25, 1962, John F. Kennedy Library." Unfortunately, comprehensive searches of the forty pages of CIA Cuban missile crisis memos in National Security Files, Countries: Cuba, Subjects: CIA Memoranda, 10/23/62–10/25/62, box 46, at the JFK Library by the library staff and the author could not locate that memo. Nor is it included in *CIA Documents on the Cuban Missile Crisis 1962*, ed. McAliffe. Nevertheless, according to Kenneth Absher, during the crisis Brugioni was chief of a unit responsible for providing all-source collateral information to photo interpreters and thus probably was involved in liaison with the CIA watch and would have been aware that this occurred. Kenneth Michael Absher, *Mind-Sets and Missiles: A First Hand Account of the Cuban Missile Crisis* (Carlisle, Pa.: U.S. Army Strategic Studies Institute, September 2009), p. 38.
39. *American Cryptology*, book 2, p. 352. Dobbs, *One Minute to Midnight*, says that it was only after the turnaround that "NSA received urgent instructions to pipe its data directly into the White House Situation Room" (p. 91).
40. Rear Adm. Maurice H. Rindskopf, USN (Ret.), "Reflections of a URL Intelligence Subspecialist," *Naval Intelligence Professionals Quarterly* (Fall 2004), p. 13. In an e-mail to the author in February 2010 he described his memory of this briefing as "vivid" and provided background.
41. In his research Dobbs uncovered these notes, and he has posted them at *National Security Archive*, www.gwu.edu/~nsarchiv/nsa/cuba_mis_cri/dobbs/gilpatric%20/oct%20/24pdf.
42. Although this entry in the CNO's office log was recorded as having been entered at 1040, it summarizes activity that occurred earlier, probably between 1000 and 1030.

43. Kennedy, *Thirteen Days*, pp. 68–72.
44. A review of the transcript of the tapes of this meeting suggests that McCone had not been expecting this information. The tapes are in the Scripps Library at the University of Virginia, at *Miller Center for Public Policy*, millercenter.org/scripps/archives/presidentialrecordings/kennedy1962/24_62. Because the White House Situation Room was staffed by CIA personnel, the staffer delivering the information from ONI naturally took the note to McCone. But the transcript of the tapes indicated that upon McCone's return to the room the president asked, "Where did you hear this?" and that McCone replied, "From ONI."
45. Abel, *Missile Crisis*, p. 152; Allison, *Essence of Decision*, p. 131.
46. See Dobbs's analysis and plot, *One Minute to Midnight*, pp. 88–91. Dobbs says, "This is the first book to use archival evidence to plot the actual positions of Soviet and American ships on the morning of October 24, when Dean Rusk spoke of the two sides coming 'eyeball to eyeball'" (p. xiv). He also says, "The mistaken notion that Soviet ships turned around at the last moment in a tense battle of wills between Kennedy and Khrushchev has lingered for decades. The 'eyeball to eyeball' imagery served the political interests of the Kennedy brothers emphasizing their courage and coolness at a decisive moment in history" (p. 88). Finally, he says, "The myth of the 'eyeball to eyeball' moment persisted because previous historians of the missile crisis failed to use those records to plot the actual positions of Soviet ships on the morning of Wednesday, October 24" (p. 91).
47. Dobbs, *One Minute to Midnight*. "ExComm members were disturbed by the lack of real-time information. McNamara in particular, felt the Navy should have shared its data hours earlier, even though some of it was ambiguous. He had visited Flag Plot before going to the White House for the ExComm meeting, but intelligence officers had termed the early reports of course changes 'inconclusive' and had not bothered to inform him" (pp. 89–90). Dobbs adds, "Communications intercepts started arriving direct from the National Security Agency following complaints from Kennedy and McNamara about the delay in reporting the turnaround of Soviet ships" (p. 108).
48. According to the *CNO Report*, at "about noon, Mr. McNamara returned to Flag Plot for a briefing on the information received concerning the Russian ships reversing course." But, according to the *CNO Office Log*, at that time the CNO was in his office, first with General Taylor and then with the DNI waiting to receive a draft of an intelligence message, which he then took to the Secretary of the Navy. At 1528, the *Office Log* indicates, the secretary arrived in Flag Plot and Vice Admiral Griffin went to meet him. At the time Admiral Anderson was in a JCS meeting. Later in the evening the *Log* shows that the CNO left for home at 1818; the *CNO Report* shows that Secretaries McNamara and Gilpatric did not visit IP until 2124.
49. While the secretary learned of the turnaround at the White House around 1030, the *CNO Office Log* shows that the admiral heard of it, by phone from General Taylor, only at 1043, because he had been walking back to his office from the JCS meeting in response to the report of the submarine contact, to be on hand in Flag Plot.



GLOBALIZATION, SECURITY, AND ECONOMIC WELL-BEING

Stephen M. Carmel

Globalization and interconnected economies are topics of keen interest to me, both from my academic background and also from my position in international shipping. The container and advances in information technology, coevolving with advances in business organization, are perhaps more than any other combination of factors responsible for trade as we know it today—characterized by disaggregated supply chains and trade focused on tasks, not goods—a topic explored in detail later. Before going in depth about globalization, security, and economic well-being, a quote from one of my favorite authors will set the stage: “Economies have become so interdependent due to advances in transportation and communication technology that actions in one country produce nearly instantaneous effects in many others. Consequently conflict between states is futile

since damage to one economy necessarily translates into damage to others, including that of the aggressor.”

You might be tempted to ascribe this argument to Thomas Friedman in *The World Is Flat* (Farrar, Straus, Giroux, 2005) or another from the multitude of gospels of globalization popular today, but in fact it is the argument advanced by the Nobel Prize-winning British economist Norman Angell in his famous *The Great Illusion*, published in 1910. At the time Angell published his book, the world was hurtling toward the catastrophe of World War I, which brought the first great age of globalization to a close. I study Angell’s work because he was a perpetual optimist, a brilliant

Mr. Carmel is Senior Vice President, Maritime Services at Maersk Line, Limited (MLL), responsible for all technical and operating activities. He previously held positions in operations and finance for U.S. Marine Management, Inc., and Maersk Line, Limited. He began his career sailing as a deck officer and master, primarily on tankers. Mr. Carmel graduated from the U.S. Merchant Marine Academy in 1979. He also holds an MA in economics and an MBA from Old Dominion University in Norfolk, Virginia, and is currently a PhD candidate in international studies with a concentration in international political economy. Mr. Carmel is a member of several industry and academic associations and the Chief of Naval Operations Executive Panel (N00K).

thinker, and a skilled economist, and his story reminds us that even the best and brightest can get something as complex as the global economy drastically wrong. Today when people contemplate globalization and interconnected, interdependent economies, the outsourcing of jobs, trade displacing locally produced goods, access to vital commercial pathways, and the other hallmarks we consider unique to our age, it is important to remember we have been through this before and that leaders of the day badly misunderstood the dynamics then in play.

The first great age of globalization is generally considered to have begun with the repeal of the Corn Laws in Britain in 1846. This was also the height of the Industrial Revolution, with discontinuous advances in methods of production. The huge leaps in transport and communications technology Angell spoke about were the steamship, the railroad, and the telegraph—all every bit as disruptive then as disaggregated supply chains, containerization, and the Internet are today. While today we worry about access to the Strait of Hormuz and the Suez Canal, then it was the Bosphorus and Strait of Gibraltar. Then, as now, tensions arose as developing economies were accused of using cheap local resources to invade the distant markets of more advanced countries.

At that time, the roles were somewhat reversed, and it was the flood of cheap agricultural products from a comparatively backward but rapidly developing United States into the more mature and sophisticated markets of England and Europe that was the issue. Among other effects, this trade released local newly surplus labor from agricultural work and triggered rural-to-urban internal labor migrations in those countries, England in particular, which in turn fed the insatiable demand for cheap labor to keep the cogs in the machinery of the Industrial Revolution turning. Social dynamics in those countries were permanently altered, as was the global distribution of power, launching the golden age of the British Empire. Much as is the case today, advances in one facet of economic activity produced unanticipated consequences both within and across borders. Alexander Gerschenkron, in his seminal work *Bread and Democracy in Germany* (Cornell Univ. Press, 1989), lays out how the ways in which countries dealt with those consequences set in motion the train of events that culminated in World War I, even while the most learned men of the day, such as Angell, failed to comprehend the nature of globalization, what it meant, and the effect it was having on society. Consequently the leaders of the day were incapable of correctly responding to the policy and security challenges they faced.

There are those who counter that this time is different from the last in a fundamental way. The last age of globalization was built entirely on advances in technology. This time, the advances in technology are buttressed by a stabilizing institutional structure such as the World Trade Organization (WTO) for trade, a structure that is intended to institutionalize all aspects of global integration,

including trade. Anyone placing stock in that view should be greatly concerned over the spectacular failure that is the Doha Round and over the proliferation of bilateral and regional trade agreements in place of broad multilateral advances. Our trading system has become what Jagdish Bhagwati, one of the preeminent trade economists of our time, calls a “spaghetti bowl” in his *Termites in the Trading System* (Oxford Univ. Press, 2008)—a complex, increasingly opaque mass of overlapping, sometimes contradictory, trade relationships that produce consequence pathways difficult to anticipate. Such agreements are also called “preferential trade agreements,” for the positive spin, but another view calls them “discriminatory trade agreements,” as they are meant to exclude all but the privileged few who are members, contrary to the intent of the WTO and the multilateral trade process. So if the institutional structure of the WTO is what makes some think this time is different, the foundation of that institution is in an advanced state of decay, and every bilateral trade agreement knocks another large chunk out of it.

The first great age of globalization lasted about two-thirds of a century. The second great age of globalization, where we are now, began with the end of World War II. It took a quarter-century to get back to where we had left off at the close of the first in terms of overall economic integration, but in some areas the loss was permanent. The United Kingdom, for example, is still not at the same level of export intensity that it previously was. Since the beginning of this age of globalization, we have witnessed discontinuous changes in the global political economy, driven again by dramatic advances in communications and transport technologies coevolving with advances in methods of production and business organization. We are nearly at the point on the time line of globalization, about two-thirds of a century, where the last age imploded, plunging the world into three decades of darkness. Given that we are approaching the point at which the last age of globalization failed, it is a useful exercise to examine the characteristics of the current one. Given the events we are witnessing around the world, one wonders whether there is some natural age limit for a globalization process after which the strain on society gets to be too much and our ability to manage complexity is overtaken by the complexity we face. The system then demands some sort of reset, and perhaps we are at that point now. Such resets are never graceful.

The U.S. Navy’s “Cooperative Strategy for 21st Century Seapower” notes that today’s global economies are tightly interconnected but does not explain the meaning of that phrase, something Angell and his contemporaries clearly got wrong in their age.¹ Many understand globalization as cheap sneakers on Walmart shelves made by exploited labor in far-off places. This is a reflection of the general understanding of interdependence, one promoted heavily by some segments in society and all too readily accepted by the public in times of

economic turmoil, as we see now. This view focuses on division of labor, some level of exploiting comparative advantage, with all making what they make best and trading what they have for what they need, and in the process becoming mutually and voluntarily dependent on each other, their well-being intertwined—the Ricardian wine-and-cheese-trade relationship from Economics 101. Or, as a just-released report from the Council on Foreign Relations describes it, “Globalization also allows each country to concentrate its scarce resources of people and ideas in those activities with which it is well suited compared with the rest of the world. It can then export these goods and services for imports of other products that can be enjoyed in greater variety and at lower prices.”²

This is, however, a strikingly narrow view of globalization, and in truth it is a definition more fitting of the last age of globalization than the current one. This age is vastly more complicated than that. We no longer simply trade what we make for what we do not make but need. We now trade in order to get what we need *to make what we make*. Before, we were self-sufficient in some but not all of what we needed, and we could trade the excess of what we made to fill the gaps. Now, we are self-sufficient in nothing but make everything—the trade in tasks mentioned earlier. I belabor the point because this is a major leap in complexity as compared to the last age of globalization. It is apparently not as well appreciated as it should be, as evidenced by the definition the Council on Foreign Relations uses, and it has profound implications across a number of policy areas. It might be appropriate to make a pen-and-ink change to your copy of the new maritime strategy and strike out words like “interdependent economies” and replace them with “interdependent production process across economies.”

If the last age was too complex for policy makers to manage competently, imagine how much more so this one is—the tremendous advances in global economic complexity have not been matched by corresponding advances in political or policy skill, evidence of which you can see by simply picking up a newspaper virtually anywhere in the world these days. The current age of globalization is certainly showing signs of stress, buffeted by the same but magnified forces of demographics, politics, change in the global political order, and international instability that disrupted the last. As the last great age showed us, the forward march of globalization is neither inevitable nor reversible: we cannot slide easily backward into a better previous time when the pressure gets to be too much, and when globalization breaks, it does so violently, permanently altering the trajectory of history.

The balance of my article will therefore be spent exploring a few pertinent high-level economic aspects of globalization in an attempt to understand them. (It is important to note that while I view globalization as an economic process, owing to my academic and professional background, many in other disciplines

view it as a different set of forces.) Along the way we will dispel some of the common myths surrounding globalization that persist and sadly influence both public opinion and policy. To paraphrase Norman Angell, policy is not driven by facts but by the public's opinion of facts.

The first myth we should address, and perhaps one of the most relevant to readers of this quarterly, is that 90 percent of world trade moves by water. That is simply not true. A more correct rendering of that phrase would be that 90 percent of world trade in physical goods (merchandise trade) as measured by volume moves by water. When measured by value, the number is closer to 65 percent. The first key issue is that of trade in physical goods versus total trade. In 2010, according to the WTO, there was \$18.8 trillion in total world trade, of which \$3.7 trillion, or about 19.5 percent, was in services. These services are considered very high value and critical (e.g., transportation services, financial services, and communications). Much of this trade moves on fiber-optic backbones, not ships—and in fact, as you will see further on, goods can no longer move on ships without a robust and parallel flow in information. This means that cyber warriors are doing every bit as much to ensure the smooth flow of trade as are those standing watches on the bridges of ships in the Strait of Hormuz.

The second key issue associated with this myth is that given the difference in trade as measured by value versus volume, it is clear that a lot of high-value goods move by means other than water, principally air. The importance to the global economy of aviation supply-chain networks cannot be overemphasized. Such supply chains are responsible for the global movement of such critical items as pharmaceuticals and medical equipment, electronics, automotive parts, and computers. It is also clear that we must pay attention to global supply-chain critical nodes other than the more commonly discussed port system in marine supply chains. The largest air cargo terminal in the world is Nashville, Tennessee, and the third largest is Anchorage, Alaska. These places do not register on the list of critical nodes in the marine supply chain. Air supply chains are faster in cycle times, meaning they fail faster in the event of disruption. They also carry goods with more time sensitivity and lower tolerance for supply-chain disruption.

One example that certainly made the news is the Iceland volcano eruptions of spring 2010. The airspace closure resulting from the ash cloud was hugely disruptive for travel in Europe, but it was also devastating to farmers in Kenya. Europe is the major market for fresh fruits, vegetables, and flowers from Kenyan farms, and such products are delivered via an aviation supply chain that was shut down—meaning rotting product on runways. It is not hard to extrapolate failed farms to social unrest and to the outbreak of conflict in the Horn of Africa due to a volcano in Iceland. I would guess that Kenyan farmers and peace in the Horn of Africa were not high on the list of endangered stakeholders when the potential for

an eruption was first contemplated in Iceland, but that is the way causality pathways work now. In the United States, 40 percent of all finished pharmaceuticals, 80 percent of all ingredients for drugs mixed here, and 100 percent of the most common isotopes for nuclear-medicine procedures are imported and delivered via an aviation supply chain and are dispensed within hours of landing. This means that grounding all flights in response to an aviation security threat would rapidly translate into a health-care crisis.

The aviation supply-chain business continues to innovate, as the pharmaceuticals industry shows. In response to soaring demand, drugs are currently the biggest growth segment for air cargo, and service offerings are being refined and specialized (“specialized” being a code word for an increasingly efficient but rigid and unforgiving supply chain). A recent example is the innovation of highly specialized containers with active temperature-control features allowing the transport of pharmaceuticals in temperatures between two and eight degrees Celsius. Clearly this type of cargo is highly perishable, hence time sensitive, and completely intolerant of delays in the supply chain, however induced.

At this point readers in the maritime-security world may be asking themselves, “Why is this guy writing about aviation supply chains? That’s not what we do.” First, we keep seeing that 90-percent-by-water statistic, but also you can no longer meaningfully separate various supply-chain vectors; in practice these are not stovepiped but are all interdependent processes. You cannot have international trade in physical goods without a robust international trade in services. Aviation supply chains depend on marine supply chains to function properly, and marine supply chains are likewise dependent on aviation supply chains. Both depend on robust truck and train connectors. A friend of mine in the cruise-ship industry tells me of a cruise ship coming into Miami. As usual, a Coast Guard boarding party met it outside the port. But the party decided to review paperwork more extensively than usual, resulting in the ship’s being delayed. Airlines in Miami orient their schedules around cruise-ship arrival times; consequently, flights were held, and soon enough the disruption rippled across the entire U.S. air-passenger network. This is just one example of how different transport vectors interact in ways you might not expect.

A critical mistake made in supply-chain security thinking is that sometimes you can break it apart and study individual components to understand the behavior of the overall system. You cannot make that assumption, and decisions made that way will be flawed. Likewise, vulnerability is not about the physical ease or difficulty of attack on any particular node or vector in the supply chain. It is not—instead, vulnerability is a matter of how the system behaves, how it fails, and how quickly it can be made to recover once a particular node or vector has

been disrupted. That is a very different view. Some things we may view as tangential must be accommodated, because the system will fail if we do not.

The goods that move by water (to return to them) are no longer simply boxes of manufactured goods made in competition with local labor, and that leads to our next myth, by far the most important—the idea that the “made in” label has any relevance at all in today’s version of trade. Unfortunately, much policy is driven by that meaningless anachronism from the first age of globalization. During that age we actually traded goods, and the “made in” label had meaning. But now, as mentioned, we trade in tasks: a specific widget is actually manufactured in a variety of places, the “made in” label denoting only where it received final assembly. Here is the most dramatic effect of the combination of containerization and the Internet. More than 50 percent of containerized trade is now in component-level goods, meaning parts or inputs into factories rather than ready-for-retail goods heading for store shelves. Roughly 45 percent of a Boeing 767 aircraft with a “Made in America” label plate is actually composed of imported parts. In the 787 Dreamliner that figure is more like 70 percent, including such crucial parts as wings and engines; Boeing’s role in that airplane has been described as reduced to little more than project management, design, assembly, and test operation.

In the U.S. air-tanker program that was recently in the news, for example, the Boeing plane in question, billed as made in the United States, is actually made in eight countries. The U.S. Congressional Research Service did a study for Congress on the key issues of that airplane program and provided a list of countries where various components are made. The Czech Republic is listed as the source of airframe parts; I am no airplane expert, but my understanding is the airplane will not work well without an airframe. Likewise, the flaps, also critical parts, are made in Indonesia. The avionics are not specifically listed, but of course, we know that the “made in” label is not completely true anyway; they contain components made from rare earths (all avionics do), which are virtually sole-sourced in China, which in turn is not on the list of contributing countries. My guess is that for each of those eight countries listed, if you followed the trails of the components with their respective “made in” labels, they would take you to a multitude of other countries. Clearly, the notion that the production of the air tanker is not subject to events in faraway places is false. A “Made in America” label plate does nothing other than manage a perception.

The fact is, we frequently have no idea where something “made in America”—or anywhere else—is really made. A loaf of bread sold in a local market can have ingredients from up to fourteen different countries. Perhaps the only stage of its production in the United States is the bakery, which puts the “Made in America” label on it. Perhaps the only thing that the American business provides is the heat

necessary to bake it—and there is a good chance that those BTUs came from oil from Canada, so even the heat is imported. All we can say for sure is that the last stop on the loaf’s production path is in the United States, before being turned over to the customer—and there is nothing wrong with that.

Another facet of trade in tasks is that in many areas positive economies of scale exist, meaning there may be only one or a few plants globally that produce low-value but critical components. The effects of disruption of a single plant in one part of the world that produces some innocuous but critical component, like an electronic power switch, can cascade to disrupt production processes all over the world. It is important to note that the system does not distinguish among disruptions owing to natural disasters, criminals, or bad policy. The system reacts to them all the same way, and that reaction is not good. While criminals get the press, a far greater danger to our collective freedom to leverage global pathways of commerce are the twin “isms” of nationalism and protectionism, with unwarranted fear close behind.

Disruptions to supply chains no longer mean just not having your favorite brand on the shelf; they now mean closed factories, unemployment, and social stress in areas far removed from the initial disruption. The value-added of goods with a “Made in China” label can be as low as 6 percent and usually does not exceed 20 percent, meaning that most of what is in such products comes from someplace other than China. Increasingly that is the United States; China is our largest customer by a very wide margin in terms of containerized exports and a major customer of our agricultural products. The now ubiquitous iPhone has a “Made in China” label on it, but China is actually responsible for a relatively small amount of the production effort for an iPhone—something on the order of 5 percent. Japan is actually responsible for the majority of it, with Germany and Korea as close runners-up.

The United States itself is also a major contributor to that production pattern. A Federal Reserve Bank of Chicago study at the height of the “Great Recession” showed that the proportion of the average value of a typical car sporting a “Made in America” label actually generated in the United States is only about 75 percent. But that figure is highly contentious, and U.S. domestic content ranges widely. A Toyota Sequoia, a “Japanese” car, was noted to have 80 percent U.S. content (the highest of any car); the Jeep Patriot, an “American” car, had only 66 percent (the irony of its name is amusing).³ So if you want to buy an American car, you need to buy it from a Japanese company. In addition, in terms of the actual assembly process those cars, “made” in Detroit, probably cross the U.S.-Canadian border five times, meaning not only that the parts are sourced globally but that actual assembly is something of an international activity.

As an indicator of how policy can affect trade, approximately one million dollars of trade crosses the U.S.-Canadian border every minute, twenty-four hours a day, 365 days a year. The thickening of that border as a result of post-9/11 security procedures has erased all cost advantages achieved through the North American Free Trade Agreement, bringing a huge deadweight loss to both the American and Canadian economies.

Overall, the WTO estimates that about 80 percent of the value of goods exported by the United States represents U.S. domestic content, a statistic that excludes such indirect-value components as energy. To compare that with the roughly 20 percent of a typical Chinese export highlights the complexity of today's trade relationships and complicates finger-pointing over who are the offenders in what are perceived as unfair trade relationships.

One implication of all this is that economic sanctions affect not just targeted countries but every country along a sanctioned good's supply chain, often including the country invoking the sanctions to begin with. The fact is that the targeted country is likely to feel directly relatively little of the actual overall effect of the sanction. It also causes some level of discomfort to read articles and news such as of a RAND report recently released offering as a potential cyber-warfare tactic the disruption of a target country's shipping system in order to inflict economic pain—the implication being that such pain would be contained to the target country.⁴ As the foregoing demonstrates, it could not be so contained but would in fact amount to an attack on a multitude of countries, widely divergent in economic-versus-security relationships. It is difficult to determine who would be on what side in such circumstances.

The root of the issue is the way we measure things—our methods of accounting have not kept up with global business practices. Since we now trade in tasks—involving a very fine level of supply-chain disaggregation to the activity level, where the distinction between goods and services gets blurry—the old measure of production, gross domestic product (GDP) in real or nominal currency, presents an inaccurate picture of actual economic activity.⁵ More importantly from both a policy and public perception standpoint, it gives a distorted picture of actual trade imbalances. This is critically important, because as Alejandro Jara, deputy general of the WTO, puts it, “We know in times of crisis the pressure from public opinion can push in the wrong direction. In the absence of objective statistics demonstrating the interconnectivity of the modern production system, it is to be feared that false and obsolete will remain the panoply of the most popular remedies.” Every complex problem has a simple solution, one that is easy to understand, is easy to explain, and fits well in a sound bite but is totally wrong. That is where we are today.

The problem in a nutshell is that the old measure of GDP was based on gross flows, hence double- or triple-counting some aspects of economic activity and failing to take into account trade in intermediate goods. A more informative statistic is the value-added content of trade, whereby the flow of goods is recorded by assigning to each country of origin the value it imbeds in final goods, rather than just attributing all the value to the last places that touch them. The WTO is working on such a system of measurement, but trade tension and poorly designed policy will be the order of the day until policy makers understand, adopt, and communicate it to their respective constituencies.⁶ Adoption of such a measure of trade flows would also highlight something that few seem to appreciate fully, because of the distortions induced by current accounting. That is, there is a stark difference now between many countries' security alliances and their economic alliances. With whom a country is allied from a military perspective and on whom its economy depends to function are now frequently completely at odds. Security alliances and high politics are the province of the government elite, but economic alliances are the province of the general population and are where cultural and social, as well as economic, bonds are built. Thus, while virtually all countries say that in a serious crisis the security alliance would prevail, in the end we simply will not know which side a given country will take until that time comes and the internal battle between elites and the populace is waged.

A related myth is the notion that the phrase "owned by" has any meaning when applied to the owners of means of production these days. Frequently now the owners of means both of production and of distribution are international, with the location of "headquarters" being more an accident of history than some current, overt business decision. The roots of ownership and economic beneficiaries of productive activity are no longer easily identifiable. A fascinating recent example of this sort of "globalized ownership" is what has been described as "the battle for the future of copper" that played out in 2012 when Minmetals, a Chinese state-owned mining company, launched a hostile takeover of Equinox Minerals. In itself this was cause for great interest, as hostile takeovers are not the typical strategy for Chinese firms. Equinox is an Australian company that has a nominal office in Toronto and is listed on the Toronto Stock Exchange. One of the world's top twenty copper producers, Equinox has as its main asset a massive copper mine in Zambia and is building a copper-gold mine in Saudi Arabia. At the time Minmetals launched its hostile takeover bid, Equinox itself was in the middle of attempting a hostile takeover of Lundin Mining, a Toronto-listed firm whose primary mining activity is in Sweden and Portugal, with smaller interests in Ireland and Spain.

It is clear how very complicated international ownership structures can get these days and consequently how unpredictable can be the effects of policies like

sanctions. In the Equinox example, nine countries were involved. From a security perspective, there were some in Canada who called on the government to block the Minmetal bid as contrary to national security—even though none of Equinox’s assets were actually in Canada and beneficial ownership was in Australia, making the national security angle hard to comprehend. In reality, the only thing Canadian about Equinox was a file at the Toronto Stock Exchange.

This is reminiscent of a Chinese National Offshore Oil Company (CNOOC) attempt in 2005 to buy the U.S. oil producer Unocal, a company headquartered in San Francisco, California, but whose assets were primarily in the Gulf of Thailand. That proposed transaction generated huge amounts of anxiety in the United States and eventually action in Congress to block it, born of a desire not to surrender U.S. oil assets to a foreign company—though none of Unocal’s oil assets were actually in the United States. CNOOC went on instead to buy Calgary-based PetroKazakhstan, Inc., a Canadian company whose assets were, as the name suggests, in Kazakhstan. It was in fact the largest private integrated oil firm in that country, although it also owned a stake in Canada’s oil sands. So the oil from Canada used to bake that bread mentioned earlier was probably bought from a Chinese oil company.

The Dubai Ports World (DPW) fiasco is also an instructive case. Here a failure to appreciate international linkages in the shipping industry and the political reaction to the proposed takeover of a third-tier terminal in New York by Dubai Ports World, as part of a large acquisition of P&O assets, turned what should have been a nonevent into a potentially serious disruption to U.S. supply chains connecting to the Horn of Africa, Iraq, and Afghanistan. What everyone failed to realize was that DPW controlled Salalah, in Oman, a critical transshipment node in material flowing to Iraq; Port Qasim, Pakistan, a critical supply-chain node for goods flowing to Afghanistan; and Djibouti, the port of entry for goods supporting U.S. activity in the Horn of Africa. So if DPW wanted to disrupt U.S. supply chains, it did not need to buy a third-rate port in the United States (already owned by a foreign company, by the way) to do that—it could, and can, do it at will in the many foreign ports it controls on which the U.S. military is dependent.

By focusing on the local rather than global picture, a serious potential disruption to military supply chains was manufactured where none should have been. Fortunately, the DPW folks reacted with admirable restraint and defused the situation, but that may not happen the next time, when circumstances and actors may be different. As we think through complex ownership structures like Minmetals/Equinox, it is important to remember these are firms engaged in the normal course of business in full compliance with international and relevant domestic laws. If this is what the ownership picture looks like for legitimate firms trying to be transparent, imagine how it would look with illegitimate actors

deliberately trying to conceal and deceive. One industry notorious for this is, of course, my own, where ownership is frequently nested in multiple shell companies spanning several countries. The registry, or flag, of the ship is unrelated to wherever ownership really sits, and the ship is operated by a management firm headquartered in yet another country employing crew members from none of the above—and that for a legitimate operation. The number of seams to be exploited for unsavory purposes is obvious, but so also is the potential to disrupt legitimate shipping, acting in conformance with international law, in an effort to close those seams.

The foregoing discussion was meant to point out that we no longer know with any certainty where anything is truly made, hence where supply-chain disruptions might occur or how disruptions might propagate through the global production system. Further, there is no way to know where the effect of deliberate actions, sanctions, cyber attacks, or physical attacks will ultimately be felt, or who will be on what side in the event of conflict. The world is a far more complicated place than you would expect from looking at a “made in” label.

Another topic that needs to be explored is the nature of physical supply chains. It is a fact that in global trade the most efficient method of moving goods from A to B is rarely a straight line. Trade is moved in networks of networks that are themselves interconnected and completely dependent on the smooth flow of information across yet other networks. Disruptions in a rail network ripple out and manifest themselves as disruptions to ship networks. Disruptions in one port propagate out into disruptions into other ports. Ports themselves are not perfect substitutes for each other, owing to advances in ship technology, with attendant implications for resilience. Containers often move through relay ports, entering on one ship and leaving on another, and yet never “leaving” the port—that is, never going through the typical security apparatus found at the gates. The large Asian ports process in excess of eighty thousand containers every day. Individual ships carry fifteen to eighteen thousand containers, enough to fill a train 110 kilometers long if off-loaded at once, carrying cargo for thousands of customers whose identities are just numbers or bar codes on the containers. Prince Rupert, on the west coast of Canada, is a new containerport with enhanced rail infrastructure supported by upgraded roads and highways. Prince Rupert provides direct service to CentrePort, a state-of-the-art intermodal inland port in Winnipeg, Manitoba. This advanced multimodal system is designed to off-load a container directly from the ship in Prince Rupert to a train and have its contents in Chicago within a hundred hours. Prince Rupert is also one of the very few containerports in North America that can handle the largest post-Panamax ships (i.e., too big for the Panama Canal) common in the Asia/Europe trade, a capability in which the United States is woefully lacking.

Container shipping is a step in the manufacturing process, an extension of the factory itself, a conveyor belt between factories linking assembly lines. While speed is important, the critical issues are consistency, reliability, and predictability. Uncertainty is to be avoided at all costs, as uncertainty requires buffer stocks to compensate for it, stocks that are expensive and to be held to the absolute minimum. That means when we say in my company that we will have your box to you Tuesday, we mean Tuesday, because we know if we are late, you may have to shut down a manufacturing line. As in any conveyor belt linking assembly lines, a disruption to any part of the system becomes a disruption to the whole system. The sheer volume of activity can overwhelm even the most robust physical detection system, unless it slows the process down to a crawl, presenting significant disruptions to trade.

Another important issue to consider is that a significant component of the total value imbedded in transportation is information. Today's modern system of trade is completely dependent on the uninterrupted flow of accurate information. Without it, trade simply will not happen. So while we have spent billions hardening ports and thickening borders, the most vulnerable portion of the global system of trade is the information component. Container yards are now fully automated, largely run by robots. In the container yard I see through my office window, if a human is detected inside the yard (by automatic sensors, of course) everything is automatically shut down. This intricate dance is controlled by incredible levels of information and computer technology. A container itself has nothing on it other than a box number and a bar code, and without access to computerized information systems you can have no idea where it came from or where it is going. Consider those eighty thousand containers flowing through a large Asian port every day, or the eighteen thousand on a ship you may be boarding, identified only by numbers, and the critical importance of information should be clear.

The other aspect of information that is increasingly important is the role, hinted at above, of shipping as extensions of the manufacturing process. Like every part of the process, manufacturers need information about what is happening at that particular step in order to control it properly, and that information is an important component of the total value of a shipper's service. You do not need a complex plot, with a bomb on a pier, to disrupt trade; you need a three-hundred-dollar computer and a connection to the Internet. One no longer needs to achieve physical proximity to cause physical damage.

Ship, port, and connecting transportation technology continue to coevolve with production methods and business management practices. The container completely revolutionized world trade and altered balances of power in ways that have not yet completely played out but that draw worrying parallels to the ways

the steamship altered balances of power in the last globalization age. One area I think about often is the technology that will make containers obsolete. I do not know what that technology will be, and I doubt it will come from my industry, but it is the technology that the ships you are building today will have to contend with.

To say that the world's economies are interdependent does not adequately, or even remotely, express the true nature of today's global economic activity. Vulnerabilities exist everywhere, the most serious being those obscured by the very complexity of the system. But it is imperative that those charged with regulating and protecting the system of global trade have a good appreciation of what it is they are regulating and protecting. The system will propagate disruptions, and there will be failures as a result of actions taken by those that mean to do us or the system harm, such as transnational actors or terrorist groups. But like any complex, adaptive, self-organizing system, given time and latitude the system will rewire itself and recover from such actions. The global system is far too large and complex for such groups, on their own, to do lasting harm. There is, of course, one set—and only one set—of international actors who really have the capacity and wherewithal to do permanent damage or even destroy the trading system. That group is the states themselves. I reject out of hand the notion that conflict among major powers is no longer possible; I do not make the same mistake Angell did. States will always do what is in their best interest to do, and when they calculate it is in their best interest to fight, they will do so. This means they will calculate first the probability that in fighting they will be better off if they win, and second, the probability that if they fight they *will* win.

Thirty years ago the information needed to make those calculations was relatively clean. That is no longer the case today. As we noted in the GDP discussion, a significant measure of both economic prowess and trade imbalance used today is badly distorted and does not provide accurate information on which to base policies that in the past have led to conflict and in fact directly contributed to the demise of the last age of globalization. The wide and growing gap between security and economic alliances for individual states no longer allows states to gauge accurately which side their bread is truly buttered on or to estimate accurately on which side a potential ally or adversary will judge his own to be buttered. The demise of the meaning of the “made in” label means we can no longer gauge with any accuracy where the incidence of a specific trade sanction will fall or where failures in the global supply chain may manifest themselves. The continued use of a “made in” label that does not convey accurate information may actually make things worse, by giving a false sense of security that we know where critical things we need are made, hence where we can afford to take risks in foreign policy. Trade in tasks means we can no longer accurately predict where and what will be the

effects of particular courses of action, an ambiguity that can, among other things, influence the final choice between a security or economic relationship.

The spaghetti bowl of bilateral and regional trade agreements that have replaced multilateral advances has resulted in pathways for trade disruptions that cannot be anticipated with any certainty. When we measure the wrong things and measure them incorrectly, the potential for miscalculation is high. As the last age of globalization showed us, globalization is not inevitable, and it is not reversible, but it is breakable. It also showed us—and it is the one thing Norman Angell got right—that when it breaks, the consequences are catastrophic.

NOTES

- This article is adapted from an address delivered on 19 October 2011 to the Twentieth International Seapower Symposium at the Naval War College in Newport, Rhode Island.
1. 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.
 2. Council on Foreign Relations, *U.S. Trade and Investment Policy*, Task Force Report 67 (New York: Independent Task Force, September 2011).
 3. See “What Is an American Car?,” *Wall Street Journal*, 26 January 2009. Also see Thomas Klier and James Rubenstein, “Who Really Made Your Car?,” *Chicago Fed Letter* (October 2008), www.chicagofed.org/.
 4. James Dobbins et al., *Conflict with China: Prospects, Consequences, and Strategies for Deterrence* (Santa Monica, Calif.: RAND, November 2011).
 5. Trade in tasks generally means breaking down the production process into very fine units of value add (tasks) and distributing where that activity or set of tasks occurs. Frequently there is a significant information component in such tasks. The economics literature is growing on this topic as a branch of offshoring theory. A good general introduction can be found in the 2011 OECD paper *Trade in Tasks* (Paris: Organisation for Economic Co-operation and Development, 2011), available at www.oecd-ilibrary.org/.
 6. See “Measuring Trade in Value-Added: An OECD-WTO Joint Initiative,” *OECD*, 15 March 2012, www.oecd.org/.

REPLACING BATTLESHIPS WITH AIRCRAFT CARRIERS IN THE PACIFIC IN WORLD WAR II

Thomas C. Hone

This is a case study of operational and tactical innovation in the U.S. Navy during World War II. Its purpose is to erase a myth—the myth that Navy tactical and operational doctrine existing at the time of Pearl Harbor facilitated a straightforward substitution of carriers for the battleship force that had been severely damaged by Japanese carrier aviation on 7 December 1941. That is not what happened. What did happen is much more interesting than a simple substitution of one weapon for another. As Trent Hone put it in 2009, “By early 1943, a new and more effective fleet organization had become available.” This more effective fleet, “built around carrier task forces,” took the operational initiative away from the Japanese and spearheaded the maritime assault against Japan.¹

This was clearly innovation—something new. But it was not an outright rejection of the past. Instead, it was a mixture of innovation and adaptation, drawing on existing doctrine where that made sense and creating new doctrine where that was called for. The end result was the foundation of the U.S. Navy that is familiar to us today.²

*Dr. Hone is a retired member of the faculty of the Naval War College and a former member of the Senior Executive Service in the Office of the Secretary of Defense. As a civilian official, he won awards for his performance from the Navy and the U.S. Air Force. He is a coauthor of *Innovation in Carrier Aviation* (2011) and *American & British Aircraft Carrier Development, 1919–1941* (1999).*

PRE-WORLD WAR II CARRIER CONCEPTS

In the fall of 1937, then-captain Richmond K. Turner, a member of the faculty of the Naval War College, presented a lecture entitled “The Strategic Employment of the Fleet.” His argument was straightforward: “The chief strategic function of the fleet is the creation of situations that will bring about decisive battle, and under conditions that will ensure the defeat of the enemy.”³

Aircraft carriers had an important role to play, especially by raiding enemy forces and bases. As Turner pointed out, raids could “inflict serious damage” on an enemy and “gain important information.” At the same time, carrier raids could “carry the threat of permanency or future repetition.” Turner argued that raids were “a distinct type of operation” and that raiding “occupies a tremendously important place in naval warfare.”⁴

In his 1937 pamphlet “The Employment of Aviation in Naval Warfare,” Turner recognized that the performance of carrier planes had improved and was still improving, which meant that “nothing behind the enemy front is entirely secure from observation and attack.” Improved performance also implied that carrier aircraft could put air bases on land out of commission and achieve “command of the air” *in a region*. War games and exercises that set one carrier against another were misleading. “For us to attain command of the air around a hostile fleet in its own home waters we must not only destroy its carrier decks, but also all the airdromes or land-based aviation in its vicinity.”⁵

What aviation had brought to naval warfare, according to Turner, was not only the ability to strike enemy ships and bases from the sea but, especially, the ability to gain information about the enemy while preventing the enemy from doing the same with regard to friendly forces. But gaining control of the air would not be possible if a fleet’s air units were dispersed or spread among too many missions. As he put it, “We should, as with other means of action, be sure to employ a concentration of enough airplanes to produce the desired effect.”⁶

But how was that concentration to be achieved? Turner admitted that there “seems to be no one best place to locate our carriers to prevent the enemy from destroying them,” and he acknowledged that exercises had demonstrated that carriers were most valuable as offensive weapons.⁷ The fleet problems had shown that the side that found and attacked the other side’s carrier or carriers had a great advantage thereafter.⁸ But how could carriers best be protected? How could they be supported logistically? It was well understood by combat aviators that more fighter aircraft did not necessarily translate into an automatic advantage in air-to-air combat. Numbers had to be translated into combat power through the use of proper scouting, bombing, and air-to-air combat tactics. The same notion applied to carriers. There were simply not enough carriers before World War II to know how best to maneuver and employ *clusters* of them.⁹

Despite the unknowns associated with aircraft carrier operations, U.S. carrier doctrine was relatively advanced by April 1939, when Vice Admiral Ernest J. King, Commander Aircraft, Battle Force, issued the guidance document “Operations with Carriers.” For example, it defined the primary mission of carrier aircraft as gaining and maintaining “control of the air in the theatre of naval operations. Missions of a defensive nature militate against the accomplishment of this

mission.” If the limited number of carriers went off to conduct a major raid, the battleship force would have to accept the risk.¹⁰

“Operations with Carriers,” which drew its inferences from the evidence provided by the Navy’s fleet problems, also noted that successful carrier raids against land bases and targets were “practicable.” However, experience in exercises had shown that carriers operating in close support of an amphibious operation “are usually considered important objectives by the enemy and are usually destroyed before the completion of the operations. This follows largely from a lack of strategic mobility” of the carriers.¹¹ In addition, there was no certain way to know how to position carriers once they were conducting flight operations. To handle aircraft, carriers had to steam into the wind and maintain a constant course until all were launched or taken aboard. That might make them particularly vulnerable to attack by enemy aircraft, submarines, or even surface ships.

Despite the unknowns attached to carrier operations, several things were clear from the prewar fleet problems. First, it was essential for any carrier to get in the first strike against an enemy. That was because carriers under concerted air attack were almost impossible to defend.¹² Second, therefore, it was critical to conduct effective scouting in order to find the enemy’s carriers *first*. Third, carriers did not belong in night surface engagements. As Fleet Tactical Publication 143 (*War Instructions*) of 1934 put it, “Aircraft carriers should endeavor to avoid night action with all types of enemy vessels and should employ every means, speed, guns, and smoke, to assist them in this endeavor.”¹³ This meant that carriers would have to operate separate from battleships at night if there were any possibility of a night surface engagement. But how were the movements of these separate forces to be coordinated? Fourth, tying the carriers to an amphibious operation involved very high risk. *Carriers were safest and most effective if they were allowed to roam and to attack—to take, and then stay on, the offensive.*

U.S. CARRIER OPERATIONS IN 1942

In 1942, U.S. carriers in the Pacific performed the missions foreseen before the war:

- *Raids.* Strikes were flown on the Marshalls and Gilberts in February and then attacks on Wake and Marcus Islands. Lae and Salamaua were struck on 10 March, and Task Force (TF) 16 carried Army twin-engine bombers to within striking range of Tokyo on 18 April.
- *Ambushes.* The battle of the Coral Sea (4–8 May) was an attempted U.S. Navy carrier ambush of a Japanese carrier force covering an amphibious operation. Midway (3–6 June) was also an American ambush, but of the main Japanese carrier force.¹⁴

- *Covering invasion forces.* Around Guadalcanal, at the battles of the Eastern Solomons (23–25 August) and Santa Cruz (26–27 October), U.S. and Japanese carrier forces fought with one another and with land-based air units to gain and hold air superiority. U.S. forces sought to hold Henderson Field; the Japanese land and sea forces struggled to take it or permanently close it. Both sides used carrier aviation to cover amphibious operations and raid the enemy's carriers.

There was nothing doctrinally new in these critical battles. As the late Clark Reynolds demonstrated in 1994, Admiral King's strategy in the Pacific was to maintain an aggressive and active "fleet in being" in order to hinder and harass the Japanese.¹⁵ King's direction to Admiral Chester Nimitz to take calculated risks meant that Nimitz and his subordinates would use carrier task forces *at the operational level of war* to raid critical Japanese targets and then retreat. For their part, to forestall future raids, the more numerous Japanese carriers would attempt to destroy the U.S. carriers. That could (and did) set the stage for U.S. ambushes. The battles of the Coral Sea and Midway were tactical ambushes that attained Admiral Nimitz's operational-level goals. "By the middle of July 1942, Admirals King and Nimitz therefore had four carriers . . . with which to defend Hawaii and Australia against Japan's two surviving heavies and three light carriers. The odds were even."¹⁶

However, defending the U.S. force that had invaded Guadalcanal placed American carrier commanders in the vulnerable position of staying near enough to the amphibious assault to defend it. That was not what the 1939 "Operations with Carriers" had recommended. It was essential for U.S. forces on Guadalcanal to get land-based aviation up and running from Henderson Field so that carriers could roam and raid. The Japanese knew that and therefore used their forces to try to prevent it. So long as Guadalcanal was being contested, U.S. carriers would have to stay near enough to the island to shield it from Japanese attacks; they would have one foot nailed to Guadalcanal, while their opponents could maneuver freely. As a consequence, the U.S. Navy lost two carriers and saw *Enterprise* put out of action for over three months.

Thinking about carrier operations continued even as the battles raged. As John Lundstrom has discovered, Vice Admiral Frank Jack Fletcher put together a concept of optimal carrier tactics in September 1942, and Nimitz passed Fletcher's assessment on to Vice Admiral William F. Halsey, the area commander, who apparently "concurred with most of Fletcher's positions."¹⁷ Nimitz took Fletcher's comments, Halsey's reaction, "and extracts from action reports of the 26 October Santa Cruz battle" and sent them "to all Pacific Fleet aviation type commanders, task force commanders, carrier captains, and others . . . who led carriers in battle."¹⁸ Nimitz invited comments, and he got them.

At about the same time, Rear Admiral Frederick C. Sherman, who had captained *Lexington* at Coral Sea and was now Halsey's subordinate, developed a paper entitled "Principles of Handling Carriers." When he took command of Task Force 16—built around carrier *Enterprise*—on 24 November 1942, he gave his subordinates copies of this paper "with elaboration."¹⁹ By 1 December, according to Sherman, he had a rough draft of a means of using fighters to defend carriers.²⁰ On 16 December, Sherman learned that he would also get command of the newly repaired *Saratoga*; he wrote, "Now is my chance to operate a two-carrier task force which I have been advocating since the war started over a year ago."²¹ On the 18th he noted that it was necessary "for two carrier task forces operating together to shake down if they are to do it efficiently," and on 28 December he told his diary, "Have been drawing up a plan for operating a five-carrier task force. It looks feasible and fine for defense. It is the only way the air groups of 5 carriers can be conducted. I hope to get a chance to try it out."²²

Sherman would have an uphill struggle. Opinion about the optimal size of carrier task forces was divided among the senior carrier and carrier task force commanders. As the staff history of the fast carrier task force prepared in 1945 by the office of the Deputy Chief of Naval Operations (Air) would point out, Vice Admiral Fletcher disagreed with his subordinate, Captain Arthur C. Davis, who had commanded *Enterprise* in the Eastern Solomons battle. Davis argued that "the joint operation of more than two carrier task forces is too unwieldy. This applies to both the inherent lags in visual communications and the lags and complications in tactical handling." Davis did not think that changes in doctrine and training could eliminate these problems.²³ Fletcher replied, "Our recent experience indicate[s] that three carrier task forces can be handled almost as easily as two; and I feel certain that four could be operated together without too much difficulty."²⁴

But Captain Davis, not so optimistic, was particularly concerned about keeping carriers separate when they were being attacked by enemy aircraft. As he said, "it should unquestionably be the exception rather than the rule that carrier task forces operating jointly be less than ten miles apart, and this distance should be of the order of fifteen or twenty miles when action is thought to be imminent." Fletcher countered, "To an attacking air group, it makes little difference whether the carriers are separated by 5 or 20 miles but to the defenders it makes a great deal. By keeping the carriers separated 15–20 miles there is always the danger that the full fighter force may not be brought to bear decisively against the enemy attack as happened at Midway."²⁵

After the battle of the Santa Cruz Islands, the still-unresolved debate carried on. Rear Admiral George D. Murray, who had lost *Hornet*, his flagship, to Japanese bomb and torpedo attacks, argued that two-carrier task forces were too slow

to take the offensive when that was imperative. Rear Admiral Thomas C. Kinkaid, who had commanded the *Enterprise* task force, did not agree. His position was that “by having two carriers together one carrier can take care of all routine flying while the other maintains her full striking group spotted and ready to launch on short notice.”²⁶ As Lundstrom finds, there was no consensus among the carrier and task force commanders, “with opinion almost equally divided between concentration and dispersion.”²⁷

1943: THINGS CHANGE

A number of ideas, technologies, and significant people came together in the spring of 1943 in a way that would begin to change dramatically first carrier task forces and eventually the Navy.

The people first. Admiral Nimitz was still looking for an assessment of carrier doctrine and tactics based on the experiences of the previous year. Vice Admiral John Towers, the Navy’s senior aviator, was committed to giving it to him. But Towers was not the only senior aviator reviewing what had been learned during carrier operations in 1942. In his diary entry for 20 January 1943, Rear Admiral Sherman had noted that he and Vice Admiral Halsey “agreed perfectly” on carrier tactics. By 15 March 1943, however, Sherman—the champion of maneuvering multiple carriers together in coherent task forces—had received a letter from Halsey “reversing himself on separation of carriers to receive attack.” Sherman regarded Halsey’s revised views as “unsound.”²⁸ The disagreement between them shows how uncertain the matter was.

As historian Lundstrom notes, “The key problem was coordinating simultaneous flight operations from different carriers.” Sherman and his chief of staff, Captain Herbert S. Duckworth, working with Commander Robert Dixon, *Enterprise*’s air operations officer, organized exercises to show that this could be done—that carriers steaming together could launch and recover aircraft without their air groups interfering with one another.²⁹ Sherman’s goal was clear—“to create a standardized doctrine so that different carriers could swiftly integrate into a powerful task force.”³⁰

What Sherman and Duckworth had to modify were the “Standard Cruising Instructions for Carrier Task Forces” of 1 January 1943. Those instructions assumed that there would usually be no more than two carriers in a task force. With two carriers, one could send up inner air patrols, scouting flights, and—when required—a combat air patrol, while the other carrier’s air group stood ready to launch strikes. The two carriers could rotate between being the “duty carrier” and the strike carrier. The ships in the task force would exercise with the carriers until they could “turn with the duty carrier *without signal*.” The duty carrier, to limit the time it deviated from the task force’s base course owing to turns into the

wind, would “adjust her position . . . in order to reduce separation [from the rest of the task force] to a minimum.”³¹

The instructions also required multiple carriers in a task force to separate “during air attacks or immediately prior thereto,” each carrier taking with it “those cruisers and destroyers that can form screens in the shortest possible time.”³² This was prewar doctrine, with the addition of lessons learned during the carrier operations of 1942—that is, *adaptation*. It was repeated in Rear Admiral DeWitt C. Ramsey’s “Maneuvering and Fire Doctrine for Carrier Task Forces” of 22 April 1943: “In the event of a threatened attack on a disposition containing two or more carriers it is imperative that carriers separate, each carrier being accompanied by its own screen of ships previously assigned.” Moreover, “each carrier group shall control its own air operations and fighter direction. . . . Distances between carrier groups shall be maintained between five and ten miles insofar as practicable.”³³

But change—*innovation*—was coming. Events were forcing it. On 1 March 1943, Admiral King’s headquarters issued the second classified “Battle Experience” bulletin, *Solomon Islands Actions, August and September 1942*. It was critical of how screening destroyers assigned to protect carriers from submarine attacks were maneuvering. Once the carrier they were escorting had launched or recovered aircraft, the escorts had been experiencing difficulty taking up the optimal positions for protecting the carrier from submarine torpedo attack, allowing Japanese submarines to penetrate the destroyer screen.³⁴

Two weeks later, on 15 March 1943, Admiral King’s staff issued Battle Experience Bulletin No. 3, *Solomon Islands Actions, October 1942*. This classified analysis, with its focus on the battle near the Santa Cruz Islands in October 1942, did not resolve the issue of how to best use the capabilities of multiple carriers in battle. Vice Admiral Halsey, the senior carrier commander, believed that carriers *Enterprise* and *Hornet* had been “too far apart for mutual cooperation and not far enough apart for deception.”³⁵ As Halsey observed, “due to the wide separation of the carriers communications collapsed and fighter directing failed.”³⁶ But Towers, by 1943 the type commander for aircraft in the Pacific, argued that “the files of the War College, the [Navy] Department, and the Fleet contain many thousands of pages of discussion of the merits of separation of carriers vs their concentration. . . . I do not believe that an attempt to rehash this controversy can serve any useful purpose here.” Towers favored the accepted tactic—keeping two carriers together until the approach of an air attack and then dispersing them, bringing them back together once the attack was over.³⁷

Rear Admiral George Murray, who had commanded TF 17 (*Hornet* and its escorts), supported Vice Admiral Towers: “It is too much to expect that a combat air patrol of one task force can be controlled and coordinated with the same

degree of efficiency by the fighter direction officer of another task force. The teamwork between the fighter direction officer and his own combat air patrol is such an intimate one, because of constantly working together, much of the efficiency of this combination is lost when the fighter direction is taken over by an entirely separate organization.”³⁸ However, Osborne B. Hardison, the captain of *Enterprise*, took a different view, insisting that “*what is urgently needed is a sound doctrine.*” At Santa Cruz, on 26 October, the fighter direction team on *Enterprise* had done what they had been trained to do, but their best effort had been overcome by events: “With some 38 of our fighters in the air, and with enemy planes in large numbers coming in from various directions and altitudes, and with friendly planes complicating the situation, then the system breaks down.”³⁹

Something had to be done to resolve this months-long debate. The “something” was an idea developed before World War II—“extensive trials and experiments.” Rear Admiral Sherman and Captain Duckworth arrived at Pearl Harbor with *Enterprise* and found the new large carrier *Essex* (CV 9) there, soon to be followed by sister ships *Yorktown* (CV 10) and *Lexington* (CV 16). At about the same time, three new *Independence*-class light carriers reached Pearl Harbor. Sherman and Duckworth, watched by Towers, at last had enough ships and planes to run experiments. The ships themselves had some new technology: four-channel very-high-frequency (VHF) radios for the fighter-direction teams, position-plan-indicator radar scopes for the new SK (air search) radars, a methodology for using the newly developed combat information centers (CICs), and an understanding of how to use the SG (surface search) radar to facilitate safe maneuvering at night and in thick weather. There was also the new fighter, the F6F Hellcat, and information: friend or foe (IFF) transponders for all aircraft.⁴⁰

The results of their experiments were fed into a team of three officers that had been created by Admiral Nimitz on 13 April 1943 to rewrite the “Standard Cruising Instructions for Carrier Task Forces.” One of the three was Captain Apollo Soucek, who had been executive officer of *Hornet* at Santa Cruz. With his colleagues, Soucek decided that they would—as their letter of 18 May to Admiral Nimitz put it—exceed their “instructions to the extent that all existing Pacific Fleet Tactical Bulletins and numerous Fleet confidential letters” needed to be overhauled. The result of their labors was *Pacific Fleet Tactical Orders and Doctrine*, known as PAC-10.⁴¹

PAC-10 was a dramatic innovation. It combined existing tactical publications, tactical bulletins, task force instructions, and battle organization doctrine into one doctrinal publication that applied to the whole fleet. Its goal was to make it “possible for forces composed of diverse types, and indoctrinated under different task force commanders, to join at sea on short notice for concerted action against the enemy without interchanging a mass of special instructions.”⁴² PAC-10’s

instructions covered one-carrier and multicarrier task forces, and escort- or light-carrier support operations of amphibious assaults. It established the basic framework for the four-carrier task forces—with two *Essex*-class ships and two of the *Independence* class—that would form the primary mobile striking arm of the Pacific Fleet.⁴³ However, it did this within the structure of a combined naval force, a force composed of surface ships—including battleships and carriers.⁴⁴

PAC-10 dealt with the issue of whether to concentrate or separate carriers under air attack by redefining the problem: “Whether a task force containing two or more carriers should separate into distinct groups . . . or remain tactically concentrated . . . may be largely dependent on circumstances peculiar to the immediate situation. No single rule can be formulated to fit all contingencies.”⁴⁵ That is, it basically said that the problem was not to develop hard and fast doctrine that would cover *all* situations but to create guidance that could be tailored to the situation at hand. PAC-10 also took advantage of the fact that fighter-direction technology and techniques had matured. It was now possible for a fighter director to maintain a continuous plot of all detected aircraft, evaluate plots and warn friendly ships of “impending air attack,” control “the number and disposition of combat patrols,” take best advantage of the radar technology then being installed on all the large carriers, and direct “the interception of enemy aircraft.” All new air units were to be trained for participation in air defense of a carrier under the direction of fighter directors. As PAC-10 put it, “with the composition of Task Forces rapidly changing, it is essential that a new air unit be able to join a force and assume its duties without receiving a mass of new instructions which are inconsistent with prescribed practice.”⁴⁶

PAC-10 solved two problems. First, “the creation of a single, common doctrine allowed ships to be interchanged between task groups.” Second, “shifting the development of small-unit tactical doctrine to the fleet level and out of the hands of individual commanders increased the effectiveness of all units, particularly the fast-moving carrier task forces.”⁴⁷ Put another way, PAC-10 was what Admiral Nimitz had wanted for almost a year. It allowed him to hand to Vice Admiral Raymond Spruance a force that the latter could wield as he wished—with “lightning speed,” speed that he could use to take the Japanese by surprise and keep them off balance *operationally* as well as tactically.⁴⁸

1943: PUTTING THE CHANGE TO WORK

The title of Battle Experience Bulletin No. 13, the description and analysis of the attack on Wake Island on 5–6 October 1943, gives the game away: *Dress Rehearsal for Future Operations*.⁴⁹ That was it—the initiation in combat of the new combined (and carrier-led) task force based on PAC-10. The new force had been given its first test in the 31 August 1943 raid on Marcus Island, when *Essex*,

Yorktown, and light carrier *Independence* combined their air groups, but the sustained attack on Wake was proof that the transformed force could take the offensive against Japanese land-based naval aviation and its torpedo-carrying night-attack aircraft.

Why Marcus and Wake? Neither raid would telegraph the coming amphibious operation against the Gilberts, and Marcus was far enough away from the Marianas to give the new carriers the chance to strike and withdraw to assess their “lessons learned” without having a major Japanese carrier force to contend with. The surviving planning documents give great credit to the ability of Japanese sea-based and land-based aviation to initiate and respond to attack. Wake was therefore the critical test, because it was in range of Japanese land-based naval aviation. Wake was only 537 miles from Eniwetok, 594 miles from Kwajalein, and 640 miles from Wotje, all of which were thought to hold major land-based (and long-range) air components. Wake was also just over two thousand miles from Pearl Harbor. Once committed to attack Wake, the U.S. carrier force could not easily or quickly withdraw to safer waters.

The carrier commander for the Wake raid was Rear Admiral Alfred E. Montgomery. There were three carrier elements of his task group: one built around *Essex* and *Yorktown*, a second based on *Lexington* and light carrier *Cowpens*, and a third based on light carriers *Independence* and *Belleau Wood*. There were also two bombardment groups, composed of cruisers and destroyers, and a task unit composed of fleet oilers. Montgomery had at his disposal a combined force of surface, aviation, and logistics task units, as well as the support of patrol planes based on Midway Island.⁵⁰ The aircraft from the carriers began their air assault by gaining air superiority over Wake. As Rear Admiral Montgomery put it in his report, “Well before noon 27 fighters had been shot down and all air opposition appeared to be ended.”⁵¹ Moreover, the fighters flying from *Independence* and *Belleau Wood* successfully protected both the carriers and the surface ships bombarding Wake from long-range bomber attacks. The patrols from these carriers were so successful that Montgomery could claim that “no ship of this force was ever attacked by enemy air.”⁵²

Though the raid was a complete success, not everything worked well. Charts of the area around Wake were not adequate, for example. The VHF circuits became saturated because of inadequate radio discipline, and there were problems coordinating the movement of surface ships and the stationing of fighters to protect them. But carrier night fighters had turned out to be a success, as had the use of flight deck catapults on all the carriers.⁵³ The utility of PAC-10 was affirmed. So was the value of having combat information centers *on all ships*, including surface ships covered by patrolling aircraft.⁵⁴

Lundstrom quotes Captain Duckworth as saying that the essential tactical lessons for using multiple carriers had been demonstrated in 1942 and that “all we did was apply them in the summer & fall of 1943.”⁵⁵ But two other often-mentioned developments were essential if multicarrier U.S. task forces were to raid far and wide across the Central Pacific. The first was the growing size and sophistication of Vice Admiral William L. Calhoun’s Hawaii-based Service Force, which kept the carriers and their escorts supplied with fuel and ordnance and provided maintenance at forward anchorages. The second was the growing industrial capacity of the Pearl Harbor Navy Yard. The yard’s ability to repair ships damaged in battle is well documented, but the yard was also able to make sure that new ships could get their defects corrected *before* they went to combat. For example, between 21 and 30 October 1943, *Yorktown* was docked so that its SC-2 radar antenna could be repaired. The flight deck catapults on the light carriers also needed to be inspected and repaired, and there were other “fixes” required for equipment problems on the big carriers *Bunker Hill* and *Lexington*.⁵⁶

The basic issue was whether and how the whole carrier force could successfully support the planned offensive in the Central Pacific. Could the fast carriers raid widely, keeping the Japanese on the defensive, while the escort carriers supported the amphibious forces? Or would the new carriers have to do what Vice Admiral Fletcher had been compelled to do in the Guadalcanal campaign—stay tied to the amphibious assaults? To make matters even more uncertain, it was not clear how, when, and in what manner the enemy would respond to the initial American moves. If the Pacific Fleet went after the Gilberts, would the Imperial Japanese Navy’s carrier and battleship forces sortie from Truk to engage it? Admirals Spruance and Towers both considered that a realistic option for the Japanese, though they disagreed about how best to deal with it. Towers apparently wanted to take the initiative and use the fast carrier force to strike the Japanese at Truk *before* they could gather their forces for a fleet engagement.⁵⁷

More generally, was Spruance’s Central Pacific Force (later the Fifth Fleet) ready for its mission? Could the amphibious force, the land-based air arm, the fast carriers, and the surface ships acting as fire support for the assault troops work together effectively? Where the raids on Marcus and Wake had tested the fast carriers, the assault on the Gilberts would test the whole force. The memory of the Guadalcanal campaign influenced planning for the Gilberts invasion, but as John Lundstrom points out, the offensive power of U.S. forces—especially the carrier forces—had improved dramatically in one year. Rear Admiral Charles A. Pownall’s six *Essex*-class carriers and five *Independence*-class light carriers fielded almost seven hundred aircraft, and eight new escort carriers had among them just over two hundred planes. Vice Admiral Fletcher, by contrast, had commanded only 234 carrier aircraft while defending Guadalcanal in 1942.⁵⁸

The assault on the Gilbert Islands was a success. Even the weather cooperated. An “east-southeasterly wind of 12–15 knots . . . greatly facilitated our carrier air operations; reduced by one half the fuel expenditure of the carrier task groups . . . and so permitted us to build up a fuel reserve that removed any concern over shortage of fuel.”⁵⁹ Though the “forces destined for the operation were widely dispersed at the beginning of the assembly and training period,” they were trained and brought together in time to conduct the operation.⁶⁰ The commander of the force that assaulted Tarawa, Rear Admiral Harry W. Hill, complimented the performance of the carrier striking groups and especially praised the performance of the escort carriers, which had supported the ground forces.⁶¹ Vice Admiral Towers echoed this praise, adding that “for the first time in history Carrier Night Fighters, operating from a Carrier at sea, were successfully employed against our enemy.”⁶²

Towers, Rear Admiral Arthur W. Radford, and others had argued long and hard against the plan to use the carriers as a shield against Japanese attacks from the Marshalls directed against the amphibious units attacking and occupying the Gilberts. Towers wanted to strike by surprise the Japanese airfields in the Marshalls before the invasion and then continue to strike them. As it happened, the carrier task forces were surprisingly good at combining antiaircraft fire and radical maneuvers to blunt the Japanese night attacks by torpedo-carrying aircraft.⁶³ These measures, combined with night-fighter defense, meant that the fast carriers could protect themselves from the tactic that was the basis of Japanese night anticarrier doctrine. Put another way, the weaknesses in carrier defensive measures revealed initially during the raid on Wake were being steadily overcome.

The fast carrier task force had largely proved itself by the end of 1943. The elements of the force, which included powerful surface escorts, could disperse to raid Japanese bases and then concentrate to shield the amphibious units that were taking away the land bases that the Japanese needed to maintain an effective defense. For example, on 5 November, before the amphibious assault on the Gilberts (to begin on 20 November 1943), Rear Admiral Sherman’s two-carrier task force struck the Japanese base at Rabaul, in the Bismarck Archipelago. Then Sherman’s force was joined by Rear Admiral Montgomery’s three carriers from Spruance’s Central Pacific Force to strike Rabaul yet again, on 11 November. After that mission, both task forces hightailed it for the Gilberts, arriving in time to support the amphibious assaults as scheduled. Once the Gilberts had been secured, the carriers of Rear Admiral Pownall’s Task Force 50 attacked Wotje and Kwajalein, in the Marshalls, and then Nauru, west of the Gilberts. The improved defenses of carrier task forces and the ability of different carrier air groups to coordinate their strikes meant that “it was possible to disperse [carrier task forces] and strike multiple targets simultaneously.”⁶⁴

MORE PROGRESS IN 1944

The successful campaign against the Marshalls showed that the new fleet design, centered around carrier task forces but including battleships, cruisers, and destroyers, was a success. The mobility of the carrier task forces, coupled with the ability of the amphibious forces to make landings “over widely scattered areas,” kept the Japanese from “mounting a successful defense at any one place” and prevented effective coordination of their land-based defenses and their seaborne forces.⁶⁵ As the U.S. Navy moved forward, it created bases for many squadrons of land-based long-range Army and Navy bombers, and those aircraft mounted further and frequent attacks on Japanese installations.

The U.S. Navy’s carrier task forces increased the tempo of their raids after the conquest of the Gilberts. The fast carrier task force (TF 50), composed of six *Essex*-class and six *Independence*-class carriers and commanded by Rear Admiral Marc A. Mitscher, gained control of the air over Kwajalein and Majuro on 29 January 1944, bombarded Wotje and Taroa, and covered the assaults on Roi and Namur on 1 February. On 16–17 February, TF 50 raided the main Japanese base at Truk, thereafter covering the U.S. amphibious assault on Eniwetok. On 21 February, as part of an effort to squelch Japanese air attacks staged from bases in the Marianas, the newly designated Task Force 58, under Rear Admiral Mitscher, began attacking Japanese air bases on Saipan, Tinian, Rota, and Guam.⁶⁶

Task Force 58 was created to concentrate “the main combatant strength of the U.S. Pacific Fleet in fast carriers, fast battleships, cruisers, and destroyers,” in order to “guard against any attempt by the Japanese Fleet” to disrupt U.S. amphibious operations.⁶⁷ At the same time, the elements of this task force, in cooperation with land-based aircraft flying from the Gilberts, were used to neutralize enemy bases. According to Admiral King’s staff, “This program was actually carried out to the letter, and was completely successful.”⁶⁸ Put another way, Task Force 58 was both sword and shield.

The planning for the Marshalls campaign also accounted for the possibility of a major fleet action. In case the Japanese battleships appeared, “the plan called for all battleships and cruisers (except some [antiaircraft cruisers] and some of the destroyers) from both the Carrier Force and from the Joint Expeditionary Force to form the battle line directly under Admiral Spruance.”⁶⁹ The adoption of PAC-10 had made this possible, and the plan for the Marshalls campaign shows the effects of PAC-10’s implementation. Task Force 58, for instance, “comprised actually all the new battleship strength of the Pacific Fleet, plus a considerable part of the cruiser and destroyer strength.”⁷⁰ Yet the plan assumed that the battleships and cruisers could be pulled out of TF 58 in short order and used as a coherent surface force against a similar force of Japanese ships. *Such a dramatic tactical change had not been possible in 1942.*

The new Pacific Fleet matured in the Marshalls campaign for a number of reasons. First, the doctrine in PAC-10 facilitated effective tactical cooperation among combatants and task forces. Second, Admiral Nimitz had restructured his headquarters in the fall of 1943 to provide his subordinate commanders with accurate and useful intelligence on the Japanese. The creation of the Joint Intelligence Center Pacific Ocean Area (JICPOA) had “ended the dispute between [Washington] D.C.-based intelligence activities and those at Pearl Harbor.”⁷¹ Nimitz’s staff also revised the way that intelligence (including signals intelligence) would flow to the operations planners. By the time that planning for the Marshalls operation was under way, Vice Admiral Spruance’s staff could request and expect to receive accurate and detailed information about Japanese forces and their bases.⁷²

Third, Vice Admiral Calhoun’s Service Force had gained the ships and the skills necessary to sustain the rapid offensive in the Central Pacific. Calhoun’s command had created and deployed Service Squadron 10, which anchored in the lagoon at Majuro after Admiral Turner’s amphibious force had captured Kwajalein in January. Service Squadron 10 was at the end of a long logistics “pipeline” that delivered ammunition, food, and replacement aircraft from the continental United States to Hawaii and other bases and then to the carrier task forces at sea.⁷³ Service Squadron 8 was the mobile source of oil and aviation gasoline. Together, the mobile service squadrons gave the fast carrier task force an extraordinary mobility—a mobility that in 1944 allowed the Pacific Fleet to combine its Central Pacific offensive with General Douglas MacArthur’s South Pacific drive toward the Philippines from New Guinea.

The records of operations in the winter of 1943–44 also indicate a growing sophistication in air operations planning. For example, plans for strikes against carriers in 1942 had stressed coordinating the attacks of torpedo and dive-bomber squadrons so that a “pulse” of combat power arrived over the target, dividing and saturating the enemy carrier’s defenses. This was difficult to do; U.S. carrier aircraft did not do it at Midway, for example. However, by the time that Task Force 58 task groups attacked Jaluit and Truk in February 1944, the emphasis was on “a continuous flow of striking groups into the target area, preceded by an initial fighter strike each morning.”⁷⁴ Given the mission, which was raiding defended Japanese bases, this stress on the effective flow of aircraft delivering ordnance was sound. So too was the concern for night torpedo attacks by Japanese aircraft. Night fighters were available to counter these Japanese night attacks, but the decision to use these aircraft was left to the task group commanders. As annex C of the operations plan for these raids noted, it was hazardous to recover the fighters at night and dangerous to steam steadily into the wind with Japanese

night-fighting forces (which included submarines and surface ships, as well as twin-engine bombers) in the vicinity.⁷⁵

In May 1944, Vice Admiral Mitscher issued special task force instructions (known as FastCar TFI-1), noting that they followed but did not replace the direction provided by the instruction USF-10(A), which was the U.S. Fleet version of PAC-10.⁷⁶ FastCar TFI-1 was based on the assumption that for the immediate future, multicarrier operations would consist of “heavy carrier raids on major enemy bases . . . and heavy raids on enemy bases and areas followed immediately by assault and occupation by Amphibious forces.”⁷⁷ The pattern for these raids had been tested and found reliable: “After complete control of the air is attained, then strike aircraft are used to support the actual assault operations. . . . In either of the above cases, the Task Force Air Plan provides for the coordination of the many attacking groups in order to obtain a maximum delivery of strikes on the primary objectives in an orderly and continuous flow. This can best be accomplished by roughly dividing the air groups in half and launching ‘deck loads’ at a time, each ‘deck load’ a complete striking group.”⁷⁸

TFI-1 also dealt with the risk taken by task groups (which together made up the task force) when they separated in order to launch and recover strikes. Because they would often lose direct communication with each other when they separated, doctrine did not have the task force commander always act as the Force Fighter Director, and therefore it was essential that each task group have an effective fighter-director staff. As TFI-1 put it, “Unless otherwise directed by the Task Force Commander, each Task Group will assume independent control for fighter direction purposes.” This doctrine would not work, however, unless each fighter-direction team maintained a continuous plot of *all* friendly aircraft. Otherwise, friendly fighters from one task group would likely engage friendly fighters from other task groups.⁷⁹

With the Marshalls secured, the Marianas were next, and Admiral Spruance, the commander of the attacking U.S. forces, had to assume that the Japanese might seek a decisive fleet engagement after first wearing down his carrier aviation. At the same time, Spruance’s carrier forces had to shield the amphibious assault from any Japanese “end run” against it. In what came to be called the battle of the Philippine Sea, Admiral Spruance therefore chose to shield the amphibious force—despite the argument by Vice Admiral Mitscher that U.S. carriers could destroy the Japanese carrier force and, *in so doing*, best shield the amphibious units assaulting Saipan. Spruance was to be criticized for not doing what Mitscher advised, but his decision was consistent with his concept of the Central Pacific campaign as a series of amphibious assaults that would move U.S. land-based aviation close enough to the Japanese home islands to begin long-range bombing.

What is more interesting is Operation Plan 14-44 of 1 August 1944, Admiral Halsey's scheme to assault Peleliu, in the Palau Islands. The immediate objective was to begin the process of isolating the Philippines in anticipation of their eventual conquest. But the operations plan made it clear that Halsey's planners hoped that the Japanese fleet would come out to fight: "In case opportunity for the destruction of a major portion of the enemy fleet offers or can be created, such destruction will become the primary task."⁸⁰ Annex A ("Battle Concepts") to 14-44 assumed that the Japanese would in fact attack, that Japanese "carrier strikes in force may be expected but the enemy is not likely to close for decisive surface action unless he has been successful in inflicting heavy damage by air strikes on our forces." Annex A also assumed that "our fast carrier forces will have had time to complete their initial bombardment missions and are substantially intact prior to an enemy threat developing but may not have had time for completion of refueling and replenishment."⁸¹

The plan outlined in annex A had Mitscher's fast carrier task force (TF 38) "seek out the enemy and launch a concentrated air strike against his major units." For this to be most effective, the carriers were to "be maneuvered in such a manner as to permit the simultaneous launching by all groups present of the maximum air strike against the enemy at the earliest daylight period to insure completion prior dark." Mitscher would command this operation if it took place.⁸² If there were a major daylight surface engagement, Vice Admiral Willis A. Lee's Task Force 34, the "Heavy Surface Striking Force," would attack the Japanese.⁸³ If the Japanese chose to attack at night, as their surface forces had done at Guadalcanal, Lee's TF 34 would engage them. If they tried to reinforce Peleliu with "Tokyo Express" runs by destroyers and light cruisers, then TF 35, a force of cruisers and destroyers under Rear Admiral Walden L. Ainsworth, would intercept them.⁸⁴ What is important about this operation plan is that it was a whole-force plan. It followed the injunction of PAC-10 to bring all available combat power to bear on the enemy, using forces that shared a common tactical doctrine.

Halsey's focus on bringing the Japanese fleet to a dramatic engagement was just as clear in Battle Plan No. 1-44 of 9 September 1944—the plan in place for the battle of Leyte Gulf. That plan assumed that the Japanese fleet "or a major portion thereof is at sea and there is possibility of creating an opportunity to engage it decisively." As Halsey directed, the Third Fleet "will seek the enemy and attempt to bring about a decisive engagement if he undertakes operations beyond close support of superior land based air forces."⁸⁵ The "optimum plan," for Halsey, was to strike the Japanese with both his aviation and surface forces, and he was willing to withdraw the amphibious units in order to fight his desired decisive engagement.⁸⁶ As annex A to Third Fleet's plan 1-44 put it, "The plan for coordinated use of forces does not discourage use of carrier strikes if enemy is

found within range of aircraft. Particular effort, however, will be made to gain a position from which a predawn carrier strike may be launched concurrently with release [*sic*] of fast heavy striking force from a favorable attack position.”⁸⁷

The image of Admiral Halsey’s fleet that is contained in his September 1944 battle plan is that of a combined force—not a carrier force but a combined force. The mission of that combined force was the same in 1944 as it had been in the many operational-level war games conducted at the Naval War College in the two decades before World War II—to bring the Japanese fleet to decisive battle and defeat it. Though the “long-awaited clash of battle lines never occurred,” the fast battleships “were an essential element of the Navy’s plan for decisive battle and therefore collectively an essential part of the campaign.”⁸⁸ Put another way, what took place during the war was not a simple substitution of carriers for battleships but the creation of a modern, combined-arms fleet, one that included submarines and land-based aviation. *That was the innovation.*

INTEGRATION TO FORM A NEW ORGANIZATION

The first argument of this article—the one to which most of the article has been dedicated—is that what Navy officers developed in the Pacific in World War II was not a carrier force but a *combined* force. Indeed, all the elements of this force grew in sophistication during the war and because of the war. Before the war, for example, carriers were hit-and-run weapons—raiders. This was not a trivial role, as Navy officers recognized, and it remained a central mission of carriers all through the war. But before 1944 there were hardly enough carrier aircraft for naval officers to become adept at planning and staging mass air attacks, especially against land targets. Shielding amphibious forces was perceived before World War II as a dangerous mission for carriers. But by 1944—certainly by the time Admiral Halsey’s planners were preparing the assault on Peleliu—the Pacific Fleet’s air forces were prepared both for a carrier battle and for protecting an amphibious assault.

By 1944, the Navy’s fast carrier task forces were a major operational-level weapon. *Combined with surface escorts and sustained by mobile service and supply units*, carrier task forces could roam widely and gain air superiority over large areas. The carrier task forces were therefore put to work sustaining the amphibious offensive against Japan in the Central Pacific. The purpose of the Central Pacific campaign was to put land-based, long-range bombers in range of Japanese cities and simultaneously to force the Japanese fleet to devote its resources to defending against the wide-ranging U.S. carrier task forces—instead of defending against the effective submarine offensive against Japanese shipping. In the process, the Pacific Fleet’s air and surface striking units destroyed or immobilized the striking power of the Japanese fleet.

The second argument of this article is that the *total* force created under Admiral Nimitz was the basis of the modern Navy. Under Nimitz, the total, combined fleet was created and successfully used. But also under Nimitz, the Pacific Fleet created a modern support “infrastructure”—the intelligence, logistics, maintenance, and planning organizations so essential to the operation of a highly mobile and powerful forward-deployed striking force. The two developments went hand in hand. Halsey’s Battle Plan No. 1-44, for example, could not have been feasible without the intelligence, planning, communications, and logistics support developed under Nimitz’s leadership. Similarly, all of Nimitz’s efforts to create a fleet-support infrastructure would have been of little use if the Navy had not had the talents of several superb (though not faultless) operational commanders.

Fleet officers also created PAC-10, a doctrine that pulled together the fleet as it had never been united before. Yet PAC-10 did not freeze tactical and operational-level thinking—quite the reverse. PAC-10 did what doctrine should do, which is to give a force tactical cohesion so that it has energy to spare for dealing with the inevitable unexpected challenges. One such challenge emerged in late 1944—the kamikaze, which was in effect a manned missile.

I do not believe that the historians of the changes in the Pacific Fleet during World War II have captured this insight. There are good biographies of Nimitz, Mitscher, Spruance, Towers, and Fletcher. But often the biographers have been participants in the inevitable disputes that preoccupied and sometimes divided the top commanders themselves. Thomas Buell, for example, defended Spruance; Clark Reynolds defended Towers; E. B. Potter (and Samuel Eliot Morison) admired Nimitz; and Lundstrom carefully investigated Fletcher’s actions during the war to amend what Lundstrom thought had been unfair criticisms. Though interesting, useful, and sometimes extraordinary research efforts, their biographies have distracted students of naval warfare from what really mattered, which was the creation of a modern combined-arms navy with operational reach. This article is an effort to shift the focus from particular “champions” to the process that the senior officers went through, which was one of integrating technology, tactics, and human beings to form a new organization.

This process was messy, and those engaged in it were often critical of one another’s views (and sometimes bitterly so of each other’s motives). But they kept at it, and the growing maturity of the fleet that they were creating is evident from its written records. But the story of that growing maturity has, in my opinion, been obscured by a mythology that portrays the rise of the combined force as in fact the rise of a carrier force. Today’s officers do not really know where the Navy they command came from. The evidence of where that Navy came from exists, it is true, but it is obscured by a mythology continued in books, articles, and films. This is unfortunate, to say the least, and this article has been an attempt to move

away from that mythology and toward useful insights into the development of the modern U.S. Navy.

NOTES

1. Trent Hone, "U.S. Navy Surface Battle Doctrine and Victory in the Pacific," *Naval War College Review* 62, no. 1 (Winter 2009), p. 67. It was this article that prompted the author to write his own.
2. In a letter (2 July 2011) to the author, Frank Uhlig, Jr., points out that the present article says little about submarines, especially their contribution as scouts in major carrier battles in the Pacific in World War II and the need for submarine officers to rethink their offensive doctrine. It is an excellent point. If any arm of the Navy went through a transformation in World War II, it was the submarine force.
3. Capt. R. K. Turner, "The Strategic Employment of the Fleet," staff presentation, Naval War College, 28 October 1937, p. 6, box 5, Record Group [hereafter RG] 14, Naval War College Naval Historical Collection, Newport, R.I.
4. *Ibid.*, p. 19.
5. Capt. R. K. Turner, "The Employment of Aviation in Naval Warfare," September 1937, pp. 6, 12, box 5, RG 14, Naval War College Naval Historical Collection.
6. *Ibid.*, p. 41.
7. *Ibid.*, p. 42.
8. Albert A. Nofi, *To Train the Fleet for War: The U.S. Navy Fleet Problems, 1923–1940* (Newport, R.I.: Naval War College Press, 2010).
9. See Thomas C. Hone, Norman Friedman, and Mark D. Mandes, *American & British Aircraft Carrier Development, 1919–1941* (Annapolis, Md.: Naval Institute Press, 1999).
10. Commander Aircraft, Battle Force, "Operations with Carriers," April 1939, p. 3, box 110, entry 337, "USN and Related Operational, Tactical and Instructional Publications," RG 38, National Archives, Washington, D.C.
11. *Ibid.*, p. 11.
12. See Wayne P. Hughes, Jr., *Fleet Tactics* (Annapolis, Md.: Naval Institute Press, 1986), chap. 4.
13. U.S. Navy Dept., *War Instructions, U.S. Navy*, FTP 143 (Washington, D.C.: repr. 1942), p. 42, box 46, entry 336-A, "USN Technical Publications," RG 38, National Archives [emphasis original].
14. *The Battle of the Coral Sea, Strategic and Tactical Analysis*, NAVPERS 91050 (Newport, R.I.: Naval War College, 1947); *The Battle of Midway, including the Aleutian Phase, Strategic and Tactical Analysis*, NAVPERS 91067 (Newport, R.I.: Naval War College, 1948). As the Coral Sea analysis noted, "the basis of the Allied plan was a pure raiding operation." The Midway analysis noted that the experience of both prewar exercises and wartime operations had shown the value of getting in the first attack.
15. Clark G. Reynolds, "The U.S. Fleet-in-Being Strategy of 1942," *Journal of Military History* 58, no. 1 (January 1994).
16. *Ibid.*
17. John B. Lundstrom, *Black Shoe Carrier Admiral: Frank Jack Fletcher at Coral Sea, Midway, and Guadalcanal* (Annapolis, Md.: Naval Institute Press, 2006), p. 497.
18. *Ibid.*
19. Vice Adm. Frederick C. Sherman, "World War II Diary," p. 7, Command File, World War II, Individual Personnel, box 98, Naval History and Heritage Command, Washington, D.C. [hereafter NHHC].
20. *Ibid.*, p. 9.
21. *Ibid.*, p. 12.
22. *Ibid.*, p. 15.
23. Lt. Andrew R. Hilen, Jr., USNR, "Remarks on the Development of the Fast Carrier Task Force," part 1 of Deputy Chief of Naval Operations (Air) Historical Unit, *Essays in*

- the History of Naval Air Operations*, vol. 1, *Carrier Warfare* (Washington, D.C.: October 1945), p. 7. The quotation by Captain Davis is from Commander in Chief, U.S. Fleet, *Secret Information Bulletin No. 2*, p. 12-27; both Navy Department Library, NHHC.
24. Hilen, "Remarks on the Development of the Fast Carrier Task Force," p. 8.
 25. *Ibid.*, p. 9.
 26. *Ibid.*
 27. Lundstrom, *Black Shoe Carrier Admiral*, p. 498.
 28. Sherman, "World War II Diary," pp. 21, 29.
 29. Lundstrom, *Black Shoe Carrier Admiral*, p. 498.
 30. *Ibid.*
 31. Pacific Fleet Confidential Letter ICL-43, "Standard Cruising Instructions for Carrier Task Forces, U.S. Pacific Fleet," p. 4, CincPac File, Pac-13-cfm, A2-11/A16-3 (P), box 4679, entry 107, "CINCPACFLT Confidential and Secret Correspondence Files," RG 313, National Archives [emphasis original].
 32. *Ibid.*, p. 8.
 33. Commander Task Force Fourteen, letter to Commander-in-Chief, United States Pacific Fleet, subject "Maneuvering and Fire Doctrine for Carrier Task Forces," 22 April 1943, p. 4, A16-3, box 99, serial 051, RG 38, National Archives.
 34. United States Fleet, Headquarters of the Commander-in-Chief, *Solomon Islands Actions, August and September 1942*, Battle Experience Bulletin No. 2, 1 March 1943, p. 13-22, Navy Department Library, NHHC.
 35. United States Fleet, Headquarters of the Commander-in-Chief, *Solomon Islands Actions, October 1942*, Battle Experience Bulletin No. 3, 15 March 1943, p. 21-6.
 36. *Ibid.*, p. 21-10.
 37. *Ibid.*
 38. *Ibid.*, p. 21-12.
 39. *Ibid.*, pp. 21-38, 21-39 [emphasis original].
 40. Lundstrom, *Black Shoe Carrier Admiral*, p. 498. Also see Clark G. Reynolds, *The Fast Carriers* (New York, N.Y.: McGraw-Hill, 1968), pp. 54-55. For more details on the new technology, see Hilen, "Remarks on the Development of the Fast Carrier Task Force," p. 15. For the beginnings of the CIC, see Commanding Officer, report to the Commander in Chief, United States Fleet, via the Commander, South Pacific Force and the Commander in Chief, subject "Use of Type SG Radar during Night Action," 19 November 1942, p. 1, in World War Two Action and Operational Reports, *U.S.S. Fletcher*, box 984, serial (S)-2, RG 38, National Archives.
 41. Pacific Fleet Board, letter to Commander in Chief, United States Pacific Fleet, subject "Revision of Pacific Fleet Cruising Instructions," 18 May 1943, A16-3/P/A17, World War 2 Plans, Orders and Related Documents, box 22, RG 38, National Archives.
 42. Commander in Chief, U.S. Pacific Fleet, *Current Tactical Orders and Doctrine U.S. Pacific Fleet*, PAC-10 (n.p.: June 1943), change 3, p. v, box 22, RG 38, National Archives.
 43. *Ibid.*, p. I-3.
 44. *Ibid.*, p. IV-3 (part IV contained the "Fighting Instructions").
 45. *Ibid.*, p. IV-5.
 46. *Ibid.*, p. VI-4.
 47. Hone, "U.S. Navy Surface Battle Doctrine and Victory in the Pacific," p. 76.
 48. Thomas B. Buell, *The Quiet Warrior* (Annapolis, Md.: Naval Institute Press, 1987), p. 201.
 49. United States Fleet, Headquarters of the Commander-in-Chief, *Bombardment of Wake Island, 5 & 6 October 1943*, Battle Experience Bulletin No. 13, 28 March 1944.
 50. *Ibid.*, pp. 63-6 through 63-9.
 51. *Ibid.*, p. 63-16.
 52. *Ibid.*, p. 63-17.
 53. *Ibid.*, pp. 63-34, 63-39, 63-42.
 54. *Ibid.*, p. 63-91.
 55. Lundstrom, *Black Shoe Carrier Admiral*, p. 499.
 56. "Salvage Diary from 1 March 1942 through 15 November 1943," entries for 23 October (*Belleau Wood*), 21 October (*Yorktown*), miscellaneous repairs to several carriers during October, *Arizona* Memorial, National Park Service, Industrial Department War Diary Collection, National Archives.

57. Buell, *Quiet Warrior*, p. 202. See also United States Fleet, Headquarters of the Commander-in-Chief, *Supporting Operations before and during the Occupation of the Gilbert Islands, November 1943*, Battle Experience Bulletin No. 15, November 1943, p. 67-8 and p. 67-9, which are excerpts from the "Assumptions" portion of the operations plan. Also Clark G. Reynolds, *Admiral John H. Towers: The Struggle for Naval Air Supremacy* (Annapolis, Md.: Naval Institute Press, 1991), p. 436.
58. Lundstrom, *Black Shoe Carrier Admiral*, p. 499.
59. Battle Experience Bulletin No. 15, p. 67-7.
60. *Ibid.*, p. 67-9.
61. *Ibid.*, p. 67-253.
62. *Ibid.*, p. 67-99.
63. *Ibid.*, p. 67-100.
64. Hone, "U.S. Navy Surface Battle Doctrine and Victory in the Pacific," p. 74.
65. United States Fleet, Headquarters of the Commander-in-Chief, *Supporting Operations for the Occupation of the Marshall Islands including the Westernmost Atoll, Eniwetok, February 1944*, Battle Experience Bulletin No. 17, 16 October 1944, p. 70-2.
66. *Ibid.*, p. 70-3.
67. *Ibid.*, p. 70-18.
68. *Ibid.*, p. 70-19.
69. *Ibid.*, p. 70-20.
70. *Ibid.*, p. 70-23.
71. Jeffrey M. Moore, *Spies for Nimitz: Joint Military Intelligence in the Pacific War* (Annapolis, Md.: Naval Institute Press, 2004), p. 15.
72. *Ibid.*, p. 22 for the flow of information, and p. 23 for the scheduling of intelligence support.
73. Fleet Adm. Ernest J. King, *U.S. Navy at War, 1941-1945: Official Reports to the Secretary of the Navy* (Washington, D.C.: U.S. Government Printing Office, 1946), "Second Report," pp. 155-57, and "Third Report," part 3. See also Thomas Wildenberg, *Gray Steel and Black Oil: Fast Tankers and Replenishment at Sea in the U.S. Navy, 1912-1995* (Annapolis, Md.: Naval Institute Press, 1996).
74. Commander Task Force Fifty-Eight, to Commander-in-Chief, U.S. Fleet, via Commander-in-Chief, U.S. Pacific Fleet, subject "CATCHPOLE and HAILSTONE Operation—Action Report of," 8 March 1944, p. 7, box 213, RG 38, National Archives. See also p. 1 of the "Task Force Air Plan," attached to the report.
75. *Ibid.*, annex C, "General Doctrines," paras. 5, 6.
76. Commander Fast Carrier Task Forces, United States Pacific Fleet, "Task Force Instructions" (FastCar TFI-1), 24 May 1944, cover letter signed by Vice Admiral Mitscher, box 113, entry 337, "USN and Related Operational, Tactical and Instructional Publications," RG 38, National Archives.
77. *Ibid.*, part 3, "Cruising Instructions," p. 2.
78. *Ibid.*, p. 3.
79. *Ibid.*, part 6, "Supporting Doctrine," p. 34.
80. Commander, Third Fleet, Operation Plan 14-44, 1 August 1944, p. 3, World War 2 Plans, Orders and Related Documents, box 57, RG 38, National Archives.
81. *Ibid.*, annex A, p. 1.
82. *Ibid.*, pp. 2-3.
83. *Ibid.*, p. 3.
84. *Ibid.*, p. 4.
85. Commander, Third Fleet, Battle Plan No. 1-44, 9 September 1944, p. 1, World War 2 Plans, Orders and Related Documents, box 57, RG 38, National Archives.
86. *Ibid.*, p. 2.
87. *Ibid.*, annex A, "Concept of the Plan," p. 2.
88. Hone, "U.S. Navy Surface Battle Doctrine and Victory in the Pacific," p. 95.

SEA CONTROL THROUGH THE EYES OF THE PERSON WHO DOES IT

A Theoretical Field Analysis

Christofer Waldenström

This article suggests a new perspective on the old problem of protecting ships at sea, for two reasons. First, although screen tactics and other defensive measures have been developed and used for many years, this new perspective will be useful in addressing two developments since the late nineteenth century: attackers are no longer just other ships but also aircraft, submarines, and, recently, missiles with very long ranges launched from the land; also, torpedo boats, coastal submarines, and mines have complicated operations in congested and archipelagic waters. The second reason for a new approach is that in order to support commanders in the problems of sea control we need to study the issues they encounter while solving them. This requires a description of each task that commanders have to do; without such a description it becomes difficult to determine which actions lead to increased control and which to loss of control, which in turn makes it harder to identify whether commanders are running into trouble and if so, why. The new analytical method introduced here represents an

attempt at such a description. As such, it may enrich and extend traditional thinking about sea control and how to achieve it, especially in littoral waters.

Sea control is generally associated with the protection of shipping, and it refers normally either to a stationary patch of water, such as a strait, or to a region around a moving formation of ships. Today it is quite well understood how to protect such a region of water. To handle aircraft and missiles, defenses are organized in several layers, with an outer layer of combat air

Dr. Waldenström works at the Institution of War Studies at the Swedish National Defence College. He is an officer in the Swedish Navy and holds an MSc in computer science and a PhD in computer and systems sciences. His dissertation focused on human factors in command and control and investigated a support system for naval warfare tasks. Currently he is working as lead scientist at the school's war-gaming section, and his research focuses on learning aspects of war games.

patrols to take out enemy aircraft before they can launch their weapons. Next is a zone where long- and short-range surface-to-air missiles take down missiles that the enemy manages to fire. Any “leakers” are to be handled by soft-kill and hard-kill point defenses—for example, jammers, chaff, and close-in weapon systems. For submarines and surface vessels the logic is similar, but here maneuver is also an option. Since the attacking surface ship or submarine moves at about the same speed as the formation, it is possible to stay out of reach of the enemy. Maneuver seeks to deny detection and targeting and to force attacking surface ships and submarines to operate in ways in which they cannot muster enough strength to carry out their mission or are more easily detected.¹

A prerequisite of a successful layered defense is detection of the enemy far enough out that all the layers get a chance to work. The restricted space of congested and archipelagic waters, however, may prevent the outer “strainers” from acting on the enemy. This gives small, heavily armed combatants opportunities to hide, perhaps among islands, and fire their weapons from cover, leaving only point defenses to deal with the oncoming missiles and torpedoes, with little room for maneuver.² This increases the risk of saturation of defense systems and may allow weapons to penetrate.

The problems associated with archipelagic and coastal environments have been recognized since the introduction of the mobile torpedo.³ The torpedo gave small units the firepower to destroy ships much larger than themselves and made it possible for a small fleet to challenge a larger one, at least if it did not have to do so on the open ocean. To deal with such an inshore threat, the British naval historian and strategist Sir Julian Corbett suggested in 1911 that a “flotilla” of small combatants had to be introduced to deal with this type of warfare, because capital ships could no longer approach defended coasts, as they had when ships of the line dueled with forts.⁴ Today, the introduction of long-range missiles, mines, stealth design, and the ability to coordinate the efforts of land-, sea-, and air-based systems have further intensified this threat.⁵

Littoral environments seem to change the problem of sea control, at least in some aspects.⁶ Sensors, weapons, and tactics developed to handle threats on the open ocean may be less appropriate in congested and archipelagic waters. Radar and sonar returns are cluttered, missile seekers are confused, and targeting is complicated by the existence of islands and coastlines close to the ships to be protected. The land-sea environment introduces variables that make the sea-control problem hard to solve using methods developed for an open ocean. As the uncertainties and intangibles mount up, quantitative approaches become less feasible, and we can only rely on human judgment.⁷ That is why it is important to study what commanders find difficult when executing sea-control missions in littoral environments.

It has been shown to be fruitful, when studying the problems people face when trying to solve a task, to have a model of the task that describes what the decision maker is required to do.⁸ Whether that task description takes the form of a document—a formal description or formula—or an expert, the approach is similar—you compare people’s behavior to the description and try to identify where and why they differ. Since experts differ, formal descriptions are preferable, if feasible. For the sea-control task, the description can either list the problems that the commander must solve in order to get ships safely to their destinations or define the variables of interest and the states they must be in for sea control to be considered established.

To get a description of what is required to establish sea control one can study what doctrine has to say. A major U.S. Navy doctrinal publication, *Naval Warfare*, characterizes sea control as one of the service’s core capabilities and states that it “requires control of the surface, subsurface, and airspace and relies upon naval forces’ maintaining superior capabilities and capacities in all sea-control operations. It is established through naval, joint, or combined operations designed to secure the use of ocean and littoral areas by one’s own forces and to prevent their use by the enemy.”⁹ *British Maritime Doctrine* has a similar description of sea control: “Sea control is the condition in which one has freedom of action to use the sea for one’s own purposes in specified areas and for specified periods of time and, where necessary, to deny or limit its use to the enemy. . . . Sea control includes the airspace above the surface and the water volume and seabed below.”¹⁰ A North Atlantic Treaty Organization publication, *Allied Joint Maritime Operations*, relates the level of control to the level of risk: “The level of sea control required will be a balance between the desired degree of freedom of action and the degree of acceptable risk.”¹¹ Two academic analysts offer a more minimalistic view, arguing that tying the definition of sea control to specific military objectives creates contrasts between the challenges posed by, for example, littoral environments and blue-water environments.¹² To accommodate these contrasts and allow for the full range of operations, they put forward “the use of the sea as a maneuver space to achieve military objectives” as a definition of sea control.

However, two issues make it hard to use these descriptions for studying the problems commanders face in sea-control tasks. To say so is not to criticize their doctrinal utility but rather to point out that for the purposes of this article, their meanings need to be expressed in a somewhat more formal way. The first issue is related to how the definitions describe when sea control has been established. All these definitions describe sea control from a general perspective, as a *state*, implying a line between when that state has been reached and when it has not. As result, it would be possible to use such a description to determine whether sea control has been established, at least in theory. A necessary precondition of such

a description, however, is that it contain concepts—or to be more specific, a set of variables—that can be observed from the outside. For each variable there must be specified the value it must have, or the condition it must be in, in order to say that the overall state has been reached. Only then are we able to use the definition to measure whether a commander has succeeded in establishing sea control.

The second issue regards the “general,” “outside” perspective that characterizes all these descriptions—a conceptual view, detached from the environment, the task, and the decision maker. In a sea-control task, however, several factors, variables, need to be considered in order to determine the degree to which the commander has managed to solve it: geography, type and duration of the operation, the enemy’s units and weapons, own resources, and the size of the region are just a few examples. A description covering all possible aspects of sea control and all possible situations would probably be quite complicated, containing many variables and many states; new variables not considered at the beginning might even have to be added as they arise.¹³ This is not an attractive situation for a scientific concept. Another approach would go in the other direction, stripping the definition of variables and formulating it on a very general level (the academic definition cited above is such an attempt).¹⁴ Such a definition covers a wide range of situations, but it is not very specific and provides no guidance as to when sea control has been established.

It would seem, then, that defining sea control from a general perspective is not helpful for present purposes. The point is to not separate the definition of sea control from the person trying to achieve it, or from the environment, or from the task. Such a definition would assume the perspective of the commander, describe sea control as a task that the commander has to accomplish, and lay out what is required to accomplish that task.¹⁵ Such a definition could, as we have postulated about the analytical definition we need, either describe the problems that the commander must solve in order to protect the ships or be a representation of the sea-control task. Such a description would allow systematic investigation of the effects of different tasks and different environments on the commander’s ability to establish sea control.

In fact, I argue, to investigate the concept empirically, sea control is best described from the inside. Taking the perspective of commanders trying to achieve control makes it possible to investigate systematically the problems they face and in turn, perhaps, to derive guidance for the design of training and support systems. The point of departure for such a description is the idea that securing control at sea is analogous to establishing a “field of safe travel,” a concept that has been proposed to describe the behavior of automobile drivers.¹⁶ This approach can be useful for investigating the problems commanders at sea face, and it may enrich and extend traditional thinking about sea control and how to achieve it, especially in littoral waters.

THE FIELD OF SAFE TRAVEL

Driving a car has been described analytically as locomotion through a terrain or a field of space. The primitive function of locomotion is to move an individual from one point of space to another, the “destination.” In the process obstacles are met, and locomotion must be adapted to avoid them—collision may lead to bodily injury. Locomotion by some device, such as a vehicle, is, at this level of abstraction, no different from walking, and accordingly it is chiefly guided by vision. This guidance is given in terms of a path within the visual field of the individual, such that obstacles are avoided and the destination is ultimately reached.

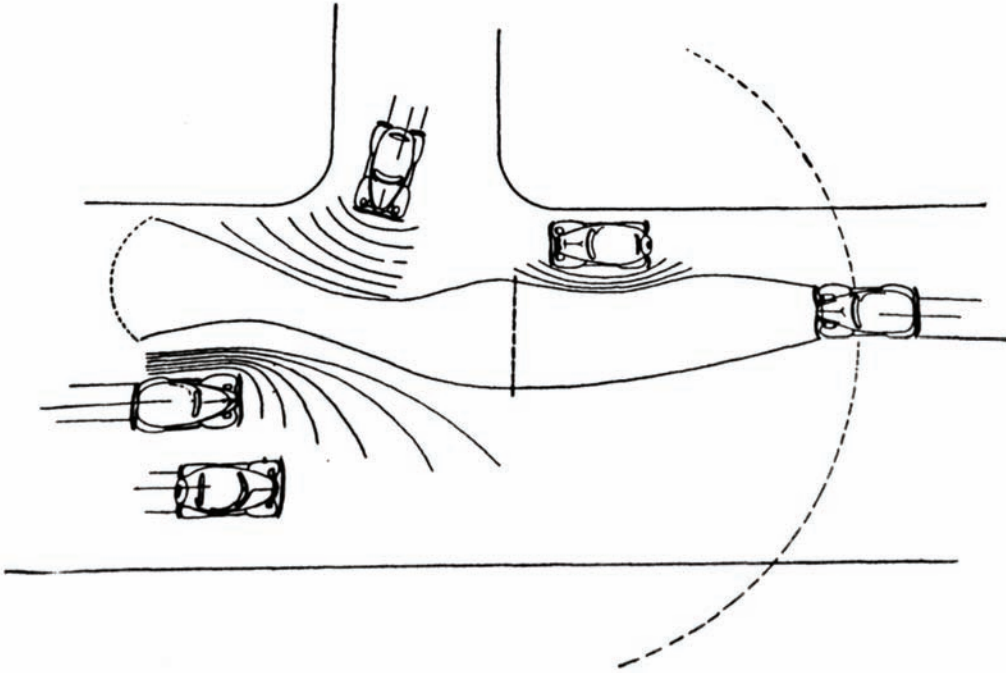
The visual field of a driver is selective, in that the elements of the field that are pertinent to locomotion stand out and are attended to, while irrelevant elements recede into the background. The most important part of this pertinent field is the road. It is within the boundaries of the road that the “field of safe travel” exists.¹⁷ The field of safe travel is indefinitely bounded and at any given moment comprises all the possible paths that the car may take unimpeded (see figure 1). The field of safe travel can be viewed as a “tongue” that sticks out along the road in front of the car. Its boundaries are determined by objects that should be avoided. An object has valence, positive or negative, in the sense that we want to move toward some (positive valence) and away from others (negative valence). Objects of negative valence have a sort of halo of avoidance, which can be represented by “lines of clearance” surrounding it. The closer to the object the line is, the greater the intensity of avoidance it represents. The field of safe travel itself has positive valence, the more so along its midline.¹⁸

The field of safe travel is a spatial field. It is, however, not fixed in physical space but moves with the car through space. The field is not merely a subjective experience of the driver but exists objectively as an actual field in which the car can operate safely, whether or not the driver is aware of it. During locomotion it changes constantly as the road turns and twists. It elongates and contracts, widens and narrows, as objects encroach on its boundaries.

It is now possible to investigate how the concept of a “field of safe travel” applies to naval warfare. As stated above, the purpose of sea control is to take control of maritime communications, whether for commercial shipping or naval forces. The practical problem for a commander is consequently to protect commercial vessels and warships as they move toward their destinations. These ships will be referred to as “high-value units.”

The analogy is straightforward: to make sure that the high-value units get safely to their destinations the commander must create a “field of safe travel” where they can move without risk of being sunk. At the simplest level, without the complication of hostile opposition, the problem of maneuvering a high-value unit is exactly the same as that of driving a car: make sure that it gets to its destination without running into something (that is, for a vessel, colliding or running

FIGURE 1
THE FIELD OF SAFE TRAVEL AND THE MINIMUM STOPPING ZONE OF A DRIVER IN TRAFFIC



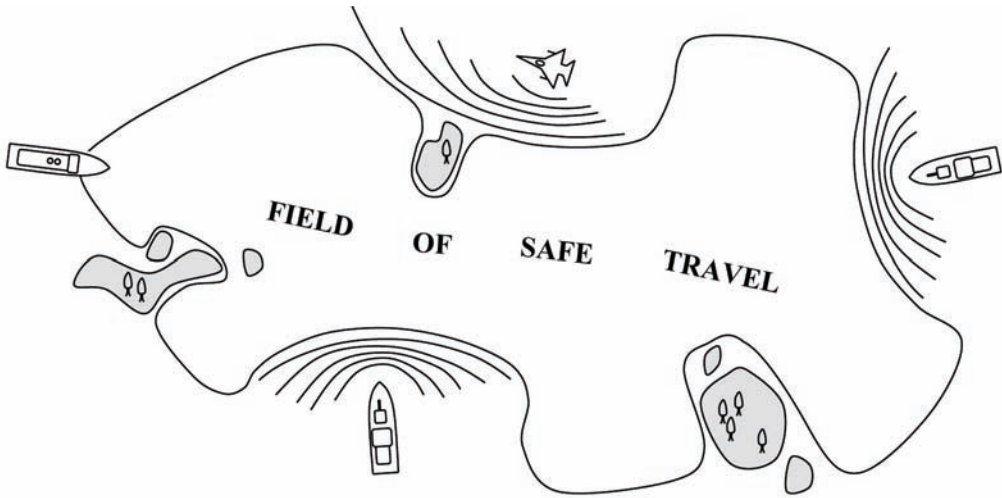
Original figure caption: "If, in this and the following figures, the page is turned around and the figure is viewed from what is now right, the reader may the better be able to empathize the situation, since he will then have the point of view of the driver of the car whose field of safe travel is under discussion." From *American Journal of Psychology*. Copyright 1938 by the Board of Trustees of the University of Illinois. Used with permission of the authors and the University of Illinois Press.

aground). As such, there is no difference between a high-value unit's field of safe travel and an automobile's.

The fields of individual ships are, however, not of interest here and will not be further discussed; our focus is the field of the commander of the naval operation. In that field, the most pertinent element of the environment is not the terrain (though coasts and islands delimit how the ships can move) but the enemy. Consequently, the boundaries of the commander's field of safe travel are determined most importantly by enemy units that threaten to sink the commander's high-value units (see figure 2). In contrast to fixed objects in a driver's field of safe travel, islands and coastlines may actually have positive valences for a commander, as they can offer protection. Nevertheless, the definition of the field remains the same: *the commander's field of safe travel comprises all the possible paths that the high-value units can take unimpeded.*

Though the analogy is straightforward, there are several differences between the driver's field of safe travel and that of the commander. First, the driver of a car has limited ability to influence the shape of the field of safe travel and can only see and react to obstacles that encroach on the field. Commanders, on the other hand, can actively shape the field of safe travel and have powerful means

FIGURE 2



For the commander of a naval operation, the field of safe travel is delimited not only by the terrain but also by, most importantly, threatening enemy units.

to do so: they can scout threatening areas to determine whether enemy units are present, and if they detect a threat they can eliminate it by applying deadly force. Second, the commander is up against an enemy who means to do harm. An opponent who uses cover and deception can make it more difficult to establish the requisite field.

Third, the commander's field of safe travel cannot, like the field of a driver of an automobile, be directly perceived; it is too vast. Instead, the commander must *derive* the field, using data provided by sensors carried by the units in the force. As will be seen later, this difference complicates matters for the commander. Nevertheless, it is important at this point to notice that the field of safe travel is not merely a subjective experience of the commander but exists as an objective field where the commander's ships can move safely.

THE MINIMUM SAFETY ZONE

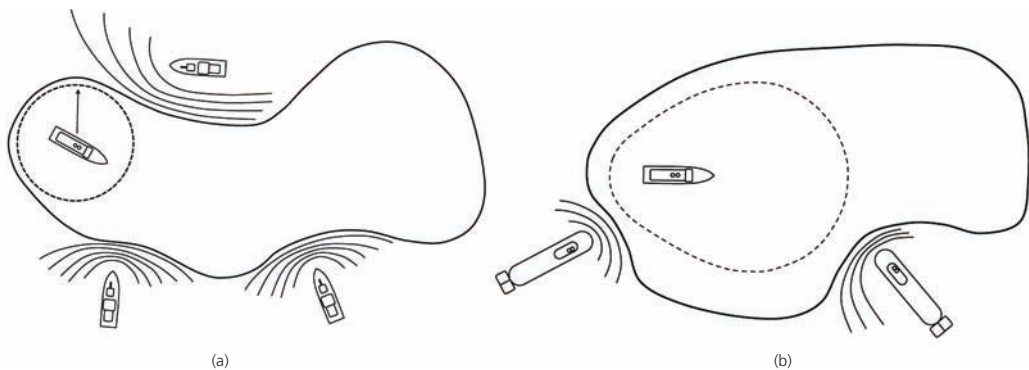
In driving, collisions are avoided by one of two methods—changing the direction or stopping the locomotion.¹⁹ Changing direction is done by steering. Sometimes, however, the field of safe travel is cut off, for example, when another car turns onto the road from a side street. In these situations steering is not enough, and the driver has to slow down to avoid a collision. Another field concept describes how drivers decelerate—the “minimum stopping zone,” which denotes the minimum spatial field a driver needs to bring the vehicle to a stop (see figure 1).²⁰ Deceleration (or the degree of braking) is proportional to the speed at which the forward boundary of the field of safe travel approaches the edge of the minimum stopping zone.

The commander uses a related field concept to determine whether action is needed to prevent the high-value units from being sunk—the “minimum safety zone” (see figure 3). The minimum safety zone is a field the size of which is determined by the range of a specific enemy weapon; there exists one minimum safety zone for each type of enemy weapon. The field denotes how close to the high-value units an enemy unit carrying that weapon can be allowed before the enemy unit can sink the high-value units using that specific weapon.²¹ For example, suppose an enemy ship has an antiship gun with a range of ten thousand meters. In this case, the minimum safety zone for that gun would be a circle with a radius of ten thousand meters around each high-value unit.

From this it follows that there exist as many fields of safe travel as there are minimum safety zones; minimum safety zones and fields of safe travel always come in pairs. For example, the enemy may have a long-range antiship missile that can be fired from surface ships and a medium-range torpedo that can be fired from submarines. This creates two separate pairs of fields of safe travel and minimum safety zones—one for the antiship missile and one for the torpedo. Consequently, to make sure that the high-value unit is not sunk, *each minimum safety zone must be completely contained within its corresponding field of safe travel* for the duration of the voyage.

Also, the shape of the minimum safety zone varies according to the type of weapon it represents (see figure 3). The shape is determined by the relative speeds of the weapon and the target and their relative headings when the weapon is fired. Suppose a high-speed antiship missile is fired toward a slow-moving high-value unit (see figure 3a). It will take the missile about five minutes to reach its target if the speed of the missile and the range to the target are, respectively, 645 knots and about fifty-four nautical miles. The distance the high-value unit can move during this time at twenty-five knots is about four thousand meters. Thus, the

FIGURE 3



The dotted line denotes the minimum safety zone. Its size is determined by the range of an enemy weapon. The minimum safety zone must be completely contained within its corresponding field of safe travel for the duration of the transit, or there will be a risk of loss. In (b) the shape of the minimum safety zone depends on the relative velocities (speed and firing angle) of the weapon and high-value units. To fire a torpedo when the target is moving away, the submarine must come much closer than must a submarine firing at a target moving toward it.

difference in time between when the missile is fired with the high-value unit heading toward it or moving away is negligible; the minimum safety zone can be considered circular. Now consider firing a medium-range torpedo at the same high-value unit. The torpedo has a speed of, say, fifty knots and a range of twenty-five nautical miles. If the enemy unit fires this torpedo when the high-value unit is heading toward it the theoretical range becomes about thirty-seven nautical miles (it takes thirty minutes for the torpedo to travel its maximum distance, in which time the high-value unit can move 12.5 nautical miles closer). On the other hand, if it fires when the high-value unit is moving away, the range drops to only 12.5 nautical miles. Thus, the shape of the minimum safety zone for the torpedo will be more or less elliptical, with the high-value unit positioned toward its far end (see figure 3b).

What minimum safety zone the commander uses when encountering a new contact depends on how well the contact is classified. If the commander knows what type of enemy unit is approaching, the proper, specific minimum safety zone is applied. If there is uncertainty, the commander must assume the largest minimum safety zone for that class of contacts. For example, if the commander knows that only surface ships can carry long-range antiship missiles, the minimum safety zone for those missiles must be assumed for an unidentified radar contact—that is, of the class of surface contacts. For the submarine screen, however, the minimum safety zone can be based on the medium-range torpedo—the class of underwater contacts.

For the driver of an automobile, braking is a reaction to the threat of crashing into an object and it is initiated when the forward boundary of the field of safe travel recedes toward the minimum stopping zone. In a similar way, the commander of a naval operation reacts when the field of safe travel recedes toward the minimum safety zone—that is, when a threat develops toward the high-value units. In contrast to the automobile driver, however, the commander has three ways of handling a threat: move the high-value units away from the threat, order subordinate units to take action against the threat, or receive the attack and defend. Either way, to establish whether a threat is developing, the commander must be able to determine whether the field of safe travel is receding toward the minimum safety zone.

THE FIELD OF SENSORS

To determine whether the field of safe travel is receding toward the minimum safety zone, the commander must be able to observe the objects present in the naval battlefield. Today, the naval battlefield comprises more than just the surface of the sea. Threats of all sorts can come from either beneath the surface or above it. The driver of a car determines from the pertinent visual field whether the field of safe travel is receding toward the minimum stopping zone.²² For a commander,

however, it is not possible to perceive directly the elements of the operations area—the naval battlefields are far too vast. Instead, as noted above, the objects present have to be inferred, on the basis of sensor data.²³

Thus, there exists a “field of sensors” that the commander uses to establish whether the field of safe travel approaches the edge of the minimum safety zone. The field of sensors is an objective spatial field the boundaries of which are determined by the union of the coverage of all sensors that provide data to the commander. The importance of the sensor field is also emphasized in one theory of perception-based tactics that has been advanced (though without discussion of its spatial dimensions).²⁴ As the sensors that build up the field have different capabilities to detect and classify objects, the field of sensors will consequently consist of regions in which objects can be, variously, detected and classified with varying reliability. (These regions could be seen as fields in their own right, but for now we will leave them as is.) Nevertheless, to establish the boundary of the field of safe travel and determine whether it is receding toward the minimum safety zone, the commander must *organize the field of sensors in such way that it is possible both to detect contacts and to classify them as nonhostile before they get inside the minimum safety zone.*

Factors Limiting Detection

Several factors limit the detection of enemy units. First, terrain features can provide cover. Units that hide close to islands are difficult to detect with radar. In a similar way, a submarine that lies quietly on the bottom is difficult to distinguish from a rock formation with sonar. The weather is another factor: high waves make small targets difficult to detect; fog and rain reduce visibility for several sensors, such as visual, infrared, and radar; and temperature differences between layers in the atmosphere and in the water column influence how far sensors can see or hear. Yet another factor is stealth, or camouflage, whereby units are purposely designed to be difficult to detect with sensors. Sharp edges on a ship’s hull reflect radar waves in such ways that they do not return to the transmitting radar in detectable strength. Units are painted to blend into the background, propulsion systems are made silent, ships’ magnetic fields are neutralized, and exhaust gases are cooled—all to reduce the risk of detection. Being aware of these factors makes it possible for commanders to use them to advantage. Units might be positioned close to islands while protecting the field of safe travel, or the high-value units might select a route that will force the enemy units to move out at sea, thus making themselves possible to detect.

Factors Limiting Classification

To avoid being classified, the basic rule is to not emit signals that allow the enemy to distinguish a unit from other contacts around it. Often naval operations are

conducted in areas where neutral or civilian vessels are present, and this makes it difficult to tell which contacts are hostile. To complicate matters, the enemy can take advantage of this. For example, an enemy unit can move in radar silence in normal shipping lanes and mimic the behavior of merchants, so as to be difficult to detect using radar and electronic support measures. Suppressing emissions, however, only works until the unit comes inside the range where the force commander would expect electronic support measures to classify its radar—no merchant ever travels radar silent. To detect potential threats the commander establishes a “picture” of the normal activities in the operations area. Behavior that deviates from the normal picture is suspect and will be monitored more closely. Thus, contacts that behave as other contacts do will be more difficult to classify.

THE FIELD OF WEAPONS

As mentioned above, the commander has three choices for handling a detected threat: move the high-value units away from the threat, take action to eliminate the threat, or receive the attack and defend. In the two latter cases the threat can be eliminated either by disabling it or by forcing it to retreat. Either way, the commander must have a weapon that can reach the target with the capability to harm it sufficiently. It is immaterial what type of weapon it is or from where it is launched, as long as it reaches the target and harms it sufficiently. Thus, the weapons carried by the commander’s subordinate units, or any other unit from which the commander can request fire support, create a “field of weapons” in which targets can be engaged. Like the field of sensors, the field of weapons is a spatial field, bounded by the union of the maximum weapon ranges carried by all units at the commander’s disposal. The field of weapons is further built up by the variety of weapons, which means that the field consists of different regions capable of handling different targets. For example, there will be regions capable of engaging large surface ships, regions capable of destroying antiship missiles, and other regions capable of handling submarines. Nevertheless, to prevent the high-value units from being sunk, *the field of weapons must be organized in such way that it is possible to take action against hostile units and missiles before they get inside their corresponding minimum safety zones*. For example, the threat posed by air-to-surface missiles can be dealt with by protecting two minimum safety zones. The commander can take out the enemy aircraft before they get a chance to launch the missile—that is, shoot down the aircraft before they enter the minimum safety zone created by the range of the missile they carry. If this fails the commander can take down the missiles before they hit the high-value units—that is, shoot down the missiles before they get inside the minimum safety zone created by the distance at which the missile can do damage to the high-value units.

It is now possible to specify how the fields of sensors and weapons work together: the field of sensors and the field of weapons must be organized in such a way that for each field of safe travel hostile units can be detected, classified, and neutralized before they enter the corresponding minimum safety zone. One scholar of naval tactics and scouting touches on what can serve as an illustration. Closest to the ships that should be protected is a zone of control where all enemies must be destroyed; outside the zone of control is a zone of influence or competition, something like a no-man's-land.²⁵ Outside the zone of influence is a zone of interest where one must be prepared against a detected enemy. Scouting in the first region seeks to target; in the second, to track; and in the third, to detect. Important to notice is that the field of sensors and the field of weapons are carried by, tied to, the commander's units, which simultaneously bring the fields to bear with respect to all pairs of fields of safe travel and minimum safety zones. This complicates matters for the commander. As the fields of safe travel and minimum safety zones are stacked, actions taken to tackle a threat to one minimum safety zone may create problems for another. The competition of units between the pairs of minimum safety zones and fields of safe travel may lead to a situation where a managed air-warfare problem creates a subsurface problem. This bedevilment is not unknown to the naval warfare community: "The tactical commander is not playing three games of simultaneous chess; he is playing one game on three boards with pieces that may jump from one board to another."²⁶

To illustrate the problem, suppose that the situations in figure 3 occur simultaneously; there is both a surface and a subsurface threat to the high-value unit. In this case the field of sensors has to be organized so that contacts can be detected and classified in a circular field with a radius of a hundred kilometers (for the antiship missile, figure 3a) and also within a smaller and elliptical field (figure 3b, in the torpedo case). For example, radars and electronic support measures have to be deployed to detect and identify surface contacts, while sonar and magnetic-anomaly detection have to be used to secure the subsurface field. Accordingly, the field of weapons has to be organized so that contacts can be engaged before entering the respective minimum safety zones—antisubmarine weapons for subsurface threats and antiship weapons for surface threats.

Not only weapons can be used to shape the field of safe travel; another means to influence it is deception. Deception takes advantage of the inertia inherent in naval warfare. First, there is the physical inertia whereby a successful deception draws enemy forces away from an area, giving an opportunity to act in that area before the enemy can move back. Second, there is the cognitive inertia of the enemy commander. It takes some time before the deception is detected, which gives further time. Deception can, thus, be seen as a deliberate action within the enemy's field of sensors to shape the field of safe travel to one's own advantage. For successful deception it is necessary that commanders understand how their

own actions will be picked up by the enemy's field of sensors and that they be aware of both the enemy's cognitive and physical inertia. The commander has to "play up" a plausible scenario in the enemy's field of sensors and then give the enemy commander time to decide that action is needed to counter that scenario (cognitive inertia) and then further time to allow the enemy units to move in the wrong direction (physical inertia). The central role of inertia will be further discussed later.

Having defined the fundamental fields it is now possible to formulate what is required from commanders to establish sea control. The skill of securing control at sea consists largely in *organizing a requisite set of pairs of correctly bounded minimum safety zones and corresponding fields of safe travel shaped to counter actual and potential threats, and in organizing the field of sensors and field of weapons in such way that that for each field of safe travel, hostile contacts can be detected, classified, and neutralized before they enter the corresponding minimum safety zone.*

FACTORS LIMITING THE FIELD OF SAFE TRAVEL

So far it has been said that it is the enemy that limits and shapes the field of safe travel. This is, however, not the whole truth. The field of safe travel is also shaped by other physical and psychological factors.

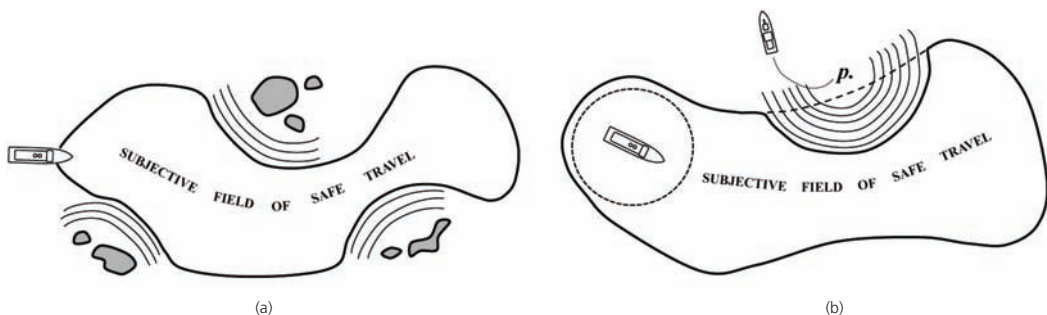
Terrain Features That Reduce Capability to Detect and Engage Targets. To be able to sink the high-value unit the enemy must detect, classify, and fire a weapon against it. All this must happen in rapid succession, or the high-value unit may slip out of the weapon's kill zone. This means that to fire a weapon against the high-value unit the enemy must organize its field of sensors and its field of weapons so that they overlap the high-value unit at the time of weapon release. In this way the field of safe travel is built up by all the paths that take the high-value unit outside the intersection of the enemy's field of sensors and the enemy's field of weapons. This further means that the boundaries of the field of safe travel are determined in part by terrain regions where high-value units can go but enemy weapons cannot engage them—for example, an archipelago that provides protection against radar-guided missiles. The boundaries are also determined by the enemy's capability to detect the high-value units, and thus terrain features can also delimit the field of safe travel in that they protect the high-value units from detection. For example, the archipelago mentioned above also provides protection against detection by helicopter-borne radar, as long as the ships move slowly. (If they start to move quickly, however, they will stand out from the clutter of islands.) It is also important to notice that a minimum safety zone is resized in the same way as the corresponding field of safe travel—if the enemy cannot see the high-value unit or has no weapon that can engage it, the enemy unit can be allowed closer in.

Terrain Regions Where Enemy Units Can Hide. Like enemy units, potential threats also throw out lines of clearance. One such potential threat is a terrain feature where the enemy might have concealed units and from which attacks can be launched (see figure 4a). Such regions—for example, islands where enemy units can hide close to land—contain *potential* threats. There may or may not be actual threats there, the objective field of safe travel may or may not be clear, but since commanders can only react to their subjective fields, the latter are properly shaped and limited by these barriers.

Enemy Units That Are Spotted and Then Lost. Another potential threat that will radiate clearance lines arises from the movement of enemy units. It is possible for a contact that has been detected and classified to slip out of the field of sensors—for instance, by turning off its radar after being tracked by electronic support measures. The potential movement of such a unit shapes the field of safe travel. Suppose an enemy unit was detected at position p at time t (see figure 4b). As the enemy is outside the field of safe travel, it does not pose a threat to the commander at this time. Now, the contact slips out of the field of sensors, and contact with it is lost. As time passes and the commander fails to reestablish contact, the region where the unit can be is a circle that grows proportionally to the maximum speed of the enemy unit. Eventually the region grows to such a size that it is not possible for the force to pass without the minimum safety zone intersecting with it. In figure 4b the subjective field of safe travel is correctly shaped by the potential threat, but the objective field of safe travel is clear—the enemy unit has turned around and is heading away.

Legal Obstacles and Taboos. The field of safe travel is also limited by international law. One such legal obstacle is the sea territory of neutral states. A neutral state has declared itself outside the conflict the commander is involved in, and

FIGURE 4



Terrain features that serve as good attack points for the enemy also radiate lines of clearance, and they shape the field of safe travel (a); enemy units may or may not be present. In (b) the field of safe travel is impinged by the potential location of enemy units. When an enemy unit slips out of the field of sensors, it creates an area of potential threat that grows as time passes. These potential threat areas also determine the boundaries of the commander's subjective field, although here the enemy never encroached on the objective field and is now well clear of it.

this prohibits the parties of the conflict from using its sea territory for purposes of warfare. Such regions delimit the fields of safe travel and thus restrict where the commander's units can move. On the other hand, they do not pose a threat to the high-value units and can safely be allowed to encroach on the minimum safety zone.

Neutral Units in the Operations Area. Today, as noted, naval operations take place in areas where neutral shipping is present. Like the sea territory of neutral states, neutral shipping is protected by international law. A consequence of this is that neutral shipping in the area also influences the shape of the field of safe travel. The commander is of course prohibited from attacking neutral merchants. This is not a problem in itself—if a certain contact is classified as neutral, we cannot engage it. Nevertheless, it has implications for where high-value units are allowed to move. As neutral shipping cannot be engaged, we are forbidden to use it for cover—for instance, to move so close to a merchant vessel as to make it difficult for the opponent to engage without risk of sinking the merchant. This means that neutral shipping creates “holes” in the field, where combatants are not allowed to move. If the commander does not track the merchant vessels continuously, these holes grow proportionally to the merchants' maximum speed, as they do for enemy units spotted and then lost.

Mines. Mines shape the field in the same way that ships do. They can be seen as stationary ships with limited weapon ranges; the minimum safety zone for a mine would be the range at which a ship could pass it without being damaged if the mine detonated. Laying mines shapes the commander's field, and the commander must react, either by taking another route or by actively reshaping the field—that is, by clearing the mines. Clearing mines has the same effect as taking out enemy ships; the field of safe travel expands into the area that has been cleared. Of course, the enemy can use this for purposes of deception, pretending to lay mines, sending a unit zigzagging through a strait, and making sure that the commander's field of sensors picks this up. If the deception is successful, the commander's subjective field is shaped incorrectly.

THE COGNITIVE PROBLEMS FACING THE COMMANDER

There are two important aspects that make the commander's situation different from the automobile driver's. First, as we have seen, the commander does not have direct perceptual access to the fields in the same way as a driver has. Second, it takes the commander longer to react to changes in the fields and to influence their shapes. Together these properties create a significant cognitive problem.

As mentioned earlier, the commander must access the objects and the environment indirectly. This defines the first problem that has to be solved: How does

one create a representation of the environment, based on information provided by the fleet's sensors, that allows the commander to see the field of safe travel? The basic building blocks are already in place in the navies of today. To provide the commander with a view of the battlefield, information provided by the fleet's sensors is merged and displayed on screens in the warships' combat information centers. The idea is that all ships should share the same merged view of the battlefield—the common operational picture (COP)—to allow unambiguous coordination, tracking, and targeting. At any moment, the COP is the best possible view of the battlefield that the force can produce; it contains all contacts that are tracked by the force, together with information about their types (such as cruisers, destroyers) and identities (unidentified, friendly, or suspect). It is the information provided by COP that the commander uses to see the field of safe travel. The problem, of course, is how best to display the fields. That is an empirical question that remains to be solved elsewhere; nevertheless, we can suggest a beginning.

The second problem with which the commander has to cope is the time it takes to influence the shapes of the fields—they all have some inherent inertia. In principle there is no difference between the tasks the commander must solve and those of a driver of a car. Both must react to changes in the field of safe travel. The major difference lies in the speed with which the shape of the fields changes—the commander's field changes much more slowly. Its greater inertia arises from the fact that the naval battlefield is large compared to how fast the units in it can move. This is in stark contrast to the situation facing an automobile driver, for whom the field changes quickly but who can react quickly, adapting speed or heading to accommodate the changes. Most of the time this is no problem, because the field does not change faster than the driver can react; if it does, driving becomes dangerous.

The commander faces exactly the same problem. To get the high-value units safely to their destinations, the commander must adapt to changes in the field or take action to shape it appropriately. If the commander does not react in time, enemy units may get to positions where they can engage the high-value units. In that situation, the operation becomes dangerous.

To illustrate the differences, however, consider a driver who in a fraction of a second sees a car pull out at a corner and encroach on the field of safe travel. The driver reacts immediately and starts turning the steering wheel. Instantly the driver's car starts turning, and after a few moments the new heading brings the car to the middle of the field. Everything is over in a matter of seconds. For a commander the time scale is completely different. A subordinate unit must first detect an approaching enemy. The contact must be checked to make sure it is not the same as an old one, and a new track has to be created at its position. The new track must be sent to the fleet's information-merge point, where it is integrated in

the COP. The updated COP has to be transmitted to the rest of the fleet, at which point it is possible for the commander to see the change in the field. Now the commander must decide what to do (move away or attack), formulate an order, transmit the order, and make sure that the recipient understands the order. The recipient now has to execute the order. This may include moving to an appropriate position, obtaining targeting information, preparing an appropriate weapon, and then engaging the target. The effects of the action have to be evaluated. Did we hit the target, or did we miss? Scouting the effects of a weapon engagement takes time, and it is only some time thereafter that the effects can be determined. The effects are reported back to the commander, who can then decide whether the actions taken have shaped the field appropriately. It is evident that the time delays facing a commander are on a completely different scale from those of a car driver.

To handle the time delays and make it possible to react in time, the commander must create extra space between the boundary of the field and the edge of the minimum safety zone. How deep this buffer zone must be depends on how fast the commander can react and counter an emerging threat. If units are in position to cover a flank, the readiness on that flank is high, and the buffer zone may be shallow. On an unprotected flank, to which it would take time to move units in case of a threat, the buffer zone has to be deeper. Inertia can, however, also be used to the commander's advantage. It is possible to concentrate forces in one section of the field, push the enemy back, and make the field bulge out. The bulge creates time for the high-value units to sneak by, while escorting forces regroup and put pressure on another part of the field.

On a superficial level this might seem a simple task. It is, however, well established that time delays are one of the most difficult things for humans to cope with when facing a dynamic decision-making problem.²⁷ This gives reason to believe that time delays in the sea-control task will create problems for the commander. To cope with them the commander must plan ahead. As illustrated, it is sometimes necessary to initiate action hours before it is expected that the effects will be needed. This means that the commander must anticipate potential threats long before they materialize. Areas where the enemy may threaten the high-value units have to be identified beforehand, and offensive action has to be taken to clear that area. Deceptive missions must be conducted to draw the enemy away from critical regions so as to buy time. It is the inertia of naval warfare that forces the commander to shape the field actively. Simply reacting to changes works only if the commander has abundant resources compared to those of the enemy.

STUDYING THE PROBLEMS COMMANDERS FACE IN SEA CONTROL

An early argument of this article was that researchers need a description of the sea-control task to be able to investigate systematically commanders' performance

in solving it. What does this new approach actually contribute? First, it may guide thinking about sea control, as it explicitly states what variables are of interest and so offers a tool for structured investigation. The variables—the field of safe travel, the minimum safety zone, the field of sensors, and the field of weapons—can be varied systematically to determine the effects of these variations on the commander’s ability to solve the sea-control task. Second, because the variables can be measured from the outside, researchers can observe whether commanders have established sea control without asking them. By this, it is possible to determine whether a commander—who may not be able to see the field of safe travel properly—has failed to establish control. Commanders may believe they have control but do not—that is, their subjective fields cover all minimum safety zones, but the objective fields do not. By backtracking from this event the researcher can analyze and understand why this happened. If several commanders run into the same problem, that problem may be a candidate for training or support. Third, a shared description allows several researchers to approach a problem from the same perspective. This may lead to cumulative growth of knowledge.

As an example of what explicit models can bring to a discipline, consider decision-making research. Here, the behavior of decision makers has been compared to models of rational decision making, such as predicate logic, statistical models, and expected utility. The models all clearly identify the variables that should be considered and specify the values that produce optimal decisions. Of course, it can be debated to what extent such models (or the one suggested here) actually constitute the golden rule for human task behavior.²⁸ Nonetheless, a large body of research has been produced thanks to models that explicitly describe what researchers should focus on when investigating a given problem.

As an example of how the model proposed here could be used to investigate the sea-control task, we will consider a situation where participants solve versions of the task in simple war games—“microworlds.”²⁹ The opponents in the games can be humans or algorithms. Human opponents are good for realism, as they may use deception and surprise, while algorithms are good for research reasons, as they allow all participants to face exactly the same opponent.³⁰ That said, to identify which specific subtasks to address in the experiments we must study what the model puts forward as points of interest. The model suggested here specified that the skill of securing control at sea consists largely in organizing a requisite set of pairs of correctly bounded minimum safety zones and corresponding fields of safe travel shaped to counter actual and potential threats, and in organizing the field of sensors and field of weapons in such a way that for each field of safe travel, hostile contacts can be detected, classified, and neutralized before they enter the corresponding minimum safety zone. From this proposition a set of questions can be derived.

The first question regards the commander's ability to determine the boundaries of the field of safe travel and the minimum safety zone. We have to consider the features that shape the boundaries of the field and create a scenario where the commander must track changes in the field; poor performance here could lead to worse performance in the game overall, perhaps to loss of the ships that are to be protected. An initial scenario could be set on open water, across which the participant has to move a ship from one port to another. During the game enemy ships and aircraft are detected and then lost, and the participant must track how their potential movements influence the field. Failure to stay clear of areas where enemy units could be means a risk of being sunk. The same participant might be given units that could be used to scout these danger areas. This would complicate matters, as the participant now must keep track of both the potential movements of the enemy and how the progress of the scouting reduces the regions where the enemy can be found. To further complicate the task, islands can be added. Islands influence how enemy units can move, which leads to irregular expansion of the regions where they can go.

The second area to investigate would be the commander's ability to organize the field of sensors to determine the boundaries of the field of safe travel. Consider the same game scenario as above, a movement task, but in an archipelagic region and with a more complex sensor setup. The participant's surface radars can detect ships on open sea, but to detect them when they move slowly close to islands the player must move in close enough to see them. As the participant's units move around, the islands obstruct the radars' lines of sight, and as a result enemy units are tracked and lost intermittently. Further, an enemy may slowly move close to islands in order to slip out of radar coverage. Now, the participant must identify the enemy's potential points of attack and either scout those areas more closely or select a route around the threat, if that is possible. The player also can, like the enemy, move "tactically"—slip into cover when threatened, or move slowly close to land, and then "rush" over open patches of water.

Next would be the ability to use the field of sensors to detect and identify enemies. Here the task is complicated by the fact that not every contact is an enemy. The scenario could envision an area where neutrals are present, though in all other respects the same as above. The participant would get a chance to establish a "normal picture" of the area; then enemies would be introduced. Now the focus is the player's ability to determine the boundaries of the field of safe travel when there is uncertainty as to which contacts actually shape it. The neutral units slipping into and out of the different zones—detection and identification—of the field of sensors presumably complicates the task.

The above are just a few simple examples of how the model could be used to guide investigations of sea control. Still to be considered is of course the ability

to use the field of weapons to shape the field of safe travel. More complex investigations could focus on how the sensor and weapon fields are used together. For example, to get a radar-silent contact that moves among merchants to reveal its identity, the participant may illuminate it with a fire-control radar to see whether the threat of being targeted triggers defenses. Of interest is also the potential competition between different fields of safe travel. Because the participant's units "carry" the fields, the existence of two simultaneous threats against different fields creates problems if the same unit must handle both. How does the player handle dual threats with limited resources? Still, and despite their simplicity, these examples give some idea of how the model could be used to derive hypotheses that can be investigated in the laboratory. By pointing out the variables of interest and stating what is required of a commander to solve the task, the model may extend our understanding of how to establish sea control.

COGNITION, TRAINING, AND PRACTICE

Changing the perspective to the commander makes clear what a commander can actually achieve, practically. Earlier descriptions of sea control were silent on the amount of resources needed to establish it even to a very limited degree. Looking at the problem through the eyes of the commander makes obvious the magnitude of resources required to defend only one field.

It further makes clear what the commander is required to accomplish cognitively. Today there is considerable agreement on the characteristics that distinguish the two types of cognitive processes—intuition and reasoning.³¹ Intuition is difficult to control and is typically fast, automatic, effortless, associative, and governed by habit. Reasoning, on the other hand, is deliberately controlled but slower, serial, and effortful. From a cognitive perspective, the purpose of training is to turn reasoning tasks into intuitive tasks—an expert knows immediately what to do where a beginner may require an hour to figure out a course of action. Keeping track of all relevant fields is a complex matter, and the time even the most experienced commanders need to perform it implies that establishing sea control is largely a reasoning task. This means that commanders have to create some form of cognitive representation of the task, which in turn makes them potential victims of the limitations of human reasoning.³²

To support commanders with tactical decision aids, one can either assist their cognitive processes in dealing with the actual problem or transform it into a perceptual-motor task that does not require mental representations. Recent research suggests that the latter approach is promising.³³ However, transforming the task only moves the problem: now the question is not cognitive load but how good the representation is and how much the commander trusts it. Consequently, there is no "free lunch," whatever approach we choose. Nevertheless,

transforming the task into something that does not require mental representations relieves commanders of that much and gives them time to concentrate on other aspects of the job.

There is also another issue regarding tactical decision aids: it may be possible to determine what variables to include in the field representations, but there is always uncertainty regarding their values. These uncertainties can be handled only by introducing safety margins, as drivers might handle uncertainties about their reaction times. Still, it is probably worthwhile to devise training and support systems for the sea-control task, especially for situations in which the commander has less time to react, as may be the case in littoral waters.

There has been some effort to assess how field representations could be useful as tactical decision aids. Following the line of research mentioned above, this author has investigated whether visualizing the field of safe travel would help a commander in tactical situations where enemy units were first spotted and then lost.³⁴ The studies were designed as experiments and used two different tasks that the participants had to solve in a microworld. Two experiments used a search task in which the participant had to locate submarines that were trying to escape the player's destroyers in an area with islands. Two more involved a transportation task, where the participants had to guide a transport ship from one port to another while staying clear of several submarines that would try to sink it. The decision-aid visualization that was being evaluated displayed the area where the enemies could be and expanded that area as time passed. The results suggested that the visualization was effective in both tasks and that university students and naval officers alike gained from using it. These studies are by no means a complete demonstration of a support system for the sea control task, but they give some ideas of what a tactical decision aid could look like.

The field of safe travel, it has been suggested, is applicable to all kinds of locomotion.³⁵ Researchers have stated that the task facing an infant learning to walk is in principle the same as the one facing an open-field runner in football or the operator of an automobile—the basic concepts of terrain, destination, obstacle, collision, and path apply to all. A similar claim can be made when it comes to the task of establishing control over a region of space. The concepts of enemy, sensors, and weapons should be applicable, whether a convoy of trucks is to be protected against ambush or a squadron of attack aircraft is to be escorted to a target. The problem of establishing a requisite set of fields of safe travel and minimum safety zones would be the same in all those tasks. The analysis also applies to situations where the high-value units are stationary; whether they move or stand still does not influence the fields. Accordingly, it would be relevant for protecting a naval base, an archipelagic region, or a nuclear power plant.

Nevertheless, before saying anything conclusive about the generalizability of the model, it must be put to practical use. Only then can we determine its utility when it comes to extending our understanding of sea control in littoral waters.

NOTES

I want to thank Professor Berndt Brehmer for valuable comments on several versions of the manuscript. Also, Captain Magnus Waldenström, RSwN (Ret.), and Lieutenant Commander Carl Sandstedt, RSwN, have contributed much. I also want to thank Captain Robert C. Rubel, USN (Ret.), and Captain Wayne P. Hughes, USN (Ret.), for helping me shape the article for publishing. Finally, I want to thank two anonymous reviewers for suggestions as to how to improve the manuscript.

1. Robert C. Rubel, "Talking about Sea Control," *Naval War College Review* 63, no. 4 (Autumn 2010), pp. 38–47.
2. Ibid.; Wayne P. Hughes, Jr., *Fleet Tactics and Coastal Combat* (Annapolis, Md.: Naval Institute Press, 2000).
3. Sir Julian Corbett, *Some Principles of Maritime Strategy* (1911; repr. Annapolis, Md.: Naval Institute Press, 1988), pp. 122–24.
4. Ibid.
5. For descriptions of littoral navies, see, among others, J. Børresen, "The Seapower of the Coastal State," *Journal of Strategic Studies* 17, no. 1 (1994), pp. 148–75; Tim Sloth Joergensen, "U.S. Navy Operations in Littoral Waters: 2000 and Beyond," *Naval War College Review* 51, no. 2 (Spring 1998), pp. 20–29.
6. Hughes, *Fleet Tactics and Coastal Combat*; Milan Vego, *Naval Strategy and Operations in Narrow Seas*, 2nd ed. (Portland, Ore.: Frank Cass, 1999); John F. G. Wade, "Navy Tactics, Doctrine, and Training Requirements for Littoral Warfare" (thesis, U.S. Naval Postgraduate School, Monterey, Calif., June 1996); V. Addison and D. Dominy, "Got Sea Control?," U.S. Naval Institute *Proceedings* 136, no. 3 (2010).
7. See the discussion of the C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) system as an artifact in Berndt Brehmer, "Command and Control Research Is a 'Science of the Artificial'" (paper delivered to the fifteenth International Command and Control Research and Technology Symposium, Seattle, Wash., 2010).
8. An example that has generated a Nobel Prize winner is "heuristics and biases" decision-making research, where human judgment is compared to statistical models. See D. Kahneman, P. Slovic, and A. Tversky, *Judgment under Uncertainty: Heuristics and Biases* (New York: Cambridge Univ. Press, 1982); and T. Gilovich, D. Griffin, and D. Kahneman, eds., *Heuristics and Biases* (New York: Cambridge Univ. Press, 2002). For a more general overview, see, for example, Paul R. Kleindorfer, Howard C. Kunreuther, and Paul J. Schoemaker, *Decision Sciences: An Integrative Approach* (Cambridge, U.K.: Cambridge Univ. Press, 1993).
9. U.S. Navy Dept., *Naval Warfare*, Naval Doctrine Publication 1 (Washington, D.C.: 2010) [hereafter NDP-1], p. 28.
10. Ministry of Defence, *British Maritime Doctrine (BR1806)*, 3rd ed. (Norwich, U.K.: by command of the Defence Council, 2004), pp. 41–42.
11. North Atlantic Treaty Organization, *Allied Joint Maritime Operations*, AJP 3.1 (Brussels: NATO Standardization Agency, 2004), chap. 1, p. 8.
12. Addison and Dominy, "Got Sea Control?"
13. As it was necessary for Ptolemy to introduce epicycles in order to handle the irregular movement of planets in his geocentric description of the solar system.
14. Addison and Dominy, "Got Sea Control?"
15. There are several analyses that describe the kinds of missions a commander has to execute in order to achieve sea control. See, for example, Frank Uhlig, "How Navies Fight, and Why," *Naval War College Review*

- 48, no. 1 (Winter 1995), pp. 34–49; Uhlig, “The Constants of Naval Warfare,” *Naval War College Review* 50, no. 2 (Spring 1997), pp. 92–105; and NDP-1. What missions have to be executed, however, do not constitute a description of what has to be accomplished in order to establish sea control. The missions that can be executed represent the *means available* to establish sea control—that is, the commander’s ways of bringing about the state of sea control.
16. J. Gibson and L. Crooks, “A Theoretical Field-Analysis of Automobile-Driving,” *American Journal of Psychology* 51, no. 3 (July 1938), pp. 453–71.
 17. *Ibid.*, p. 454.
 18. The concept of “valence” is from *ibid.*, p. 455.
 19. *Ibid.*, p. 456.
 20. *Ibid.*, p. 457.
 21. The “minimum safety zone” is just another term describing how far out from the field of safe travel an enemy contact starts to encroach on it. To use the field and anchor it to the high-value units is convenient, however, and makes it possible to use the same concept for all enemy weapons, antiship missiles as well as mines. Further, the observations of naval officers when they solve sea-control tasks have revealed that they use tools in the command-and-control systems on board their ships to visualize these zones—circular regions around high-value units or corridors where high-value units will move.
 22. Gibson and Crooks, “Theoretical Field-Analysis of Automobile-Driving,” p. 457.
 23. Intelligence reports from higher command are also included when constructing this operational view of the battlefield. This operational view of the battlefield is compiled by exchanging and merging sensor data, a partly manual and partly automatic process well known in all navies. The result is usually displayed as a map of the operations area overlaid with symbols representing the objects present in varying stages of classification—detected, classified, or identified.
 24. T. Taylor, “A Basis for Tactical Thought,” U.S. Naval Institute *Proceedings* (June 1982).
 25. Hughes, *Fleet Tactics and Coastal Combat*.
 26. *Ibid.*, p. 196.
 27. Berndt Brehmer, “Feedback Delays in Complex Dynamic Decision Tasks,” in *Complex Problem Solving: The European Perspective*, ed. Peter A. Frensch and Joachim Funke (Hilldale, N.J.: Lawrence Erlbaum, 1995), pp. 103–30; Brehmer, “Dynamic Decision Making in Command and Control,” in *The Human in Command: Exploring the Modern Military Experience*, ed. Carol McCann and Ross Pigeau (New York: Kluwer Academic / Plenum, 2000); J. Sterman, “Misconception of Feedback in Dynamic Decision Making,” *Organizational Behavior and Human Decision Processes* 43, no. 3 (1989), pp. 301–35; L. Sweeney and J. Sterman, “Bathtub Dynamics: Initial Results of a Systems Thinking Inventory,” *System Dynamics Review* 16, no. 4 (September 2000), pp. 249–86.
 28. See, for example, M. Cohen, “Three Paradigms for Viewing Decision Biases,” in *Decision Making in Action: Models and Methods*, ed. Gary A. Klein (Norwood, N.J.: Ablex, 1993), pp. 36–50; G. Gigerenzer and R. Selten, *Bounded Rationality: The Adaptive Toolbox* (Cambridge, Mass.: MIT Press, 2002).
 29. “Microworld” denotes a computer simulation that is specifically designed to study humans’ ability to control dynamic systems. The term is appropriate here too, as the war games used in the experiments probably contain several functions for tracking and visualizing the different fields. They will probably be less realistic than “normal” war games, to allow for a cleaner study of the participants’ behavior in relation to the microworld. For discussions on the use of microworlds, see Berndt Brehmer and D. Dörner, “Experiments with Computer-Simulated Microworlds: Escaping Both the Narrow Straits of the Laboratory and the Deep Blue Sea of the Field Study,” *Computers in Human Behavior* 9, nos. 2–3 (Summer/Autumn 1993), pp. 171–84; and Brehmer, “Microworlds and the Circular Relation between People and Their Environment,” *Theoretical Issues in Ergonomics Science* 6, no. 1 (January–February 2005), pp. 73–93.
 30. To be more precise: algorithms are good for analysis reasons, since they add no variance to the experiment, as a human opponent would. Consequently, algorithms increase the power of the experiment. The risk, however, is that over repeated games humans may learn how the algorithm works, which can pollute the

results. In those situations, human opponents are recommended.

31. D. Kahneman, "A Perspective on Judgment and Choice: Mapping Bounded Rationality," *American Psychologist* 58, no. 9 (September 2003), pp. 697–720.
32. For descriptions of humans' cognitive limitations, see, for example, D. Dörner, *The Logic of Failure: Recognizing and Avoiding Error in Complex Situations* (New York: Metropolitan Books, 1996); Kahneman, Slovic, and Tversky, *Judgment under Uncertainty*; and J. Reason, *Human Error* (New York: Cambridge Univ. Press, 1990).
33. J. Rasmussen, A. Pejtersen, and L. Goodstein, *Cognitive Systems Engineering* (New York: Wiley, 1994); K. Vicente, *Cognitive Work Analysis* (Mahwah, N.J.: Lawrence Erlbaum, 1999); K. Vicente and J. Rasmussen, "Ecological Interface Design: Theoretical Foundations," *IEEE Transactions on Systems, Man, and Cybernetics* 22, no. 4 (July/August 1992), pp. 589–606.
34. See C. Waldenström, "Visualizing a Time-Space Constraint Increases Performance in a Dynamic Search Task," *Journal of Cognitive Engineering and Decision Making* 4, no. 4 (Winter 2010), pp. 275–87; Waldenström, "Supporting Dynamic Decision Making in Naval Search and Evasion Tasks" (Stockholm Univ., November 2011); Waldenström, *Visualizing the Field of Safe Travel Increases Performance in a Naval Movement Task (CogSIMA)* (n.p.: IEEE Communications Society, 2011); and Waldenström, "Constraint Visualization Increases Performance for Navy Officers and Novices in a Naval Search Task" (paper delivered at the tenth Conference on Naturalistic Decision Making, Orlando, Fla., 2011).
35. Gibson and Crooks, "Theoretical Field-Analysis of Automobile-Driving," pp. 453–71.

COMMENTARY

FOR WANT OF A TIMELY CALL . . .

Captain John F. O'Connell, U.S. Navy (Retired)

This essay describes an incident of some thirty years ago that involved relations between the United States and Japan. It stemmed from a chance encounter at sea in international waters, between a U.S. warship and a Japanese commercial vessel. If there are lessons to be learned from this event, it is that small things matter; they are like grains of sand that gum up the machinery of smooth international relations. At the time, I was defense and naval attaché to the American embassy at Tokyo, where I became involved in the situation after the fact. To my knowledge, this is how the story unfolded.

On Thursday, 8 April 1981, the nuclear-powered ballistic missile submarine USS *George Washington* (SSBN 598) was cruising at periscope depth in bad weather south of Sasebo, Japan, en route to a port visit in South Korea when it collided with a small Japanese commercial cargo ship. The time was about noon. The collision rolled the submarine to port and damaged its sail. Fatal damage had been inflicted on the hull of the 2,850-ton *Nissho Maru*, although no one in *George*

Washington was aware of it. Thus the clock began to tick on a scenario that would seriously damage U.S.-Japanese political-military relations for nearly a year.

George Washington, carrying sixteen Polaris A-3 ballistic missiles, had interrupted a deterrent patrol in the mid-Pacific. Its midpatrol visit to South Korea offered the crew a bit of excitement in an otherwise demanding, but dull, routine. During the transit *George Washington* had been made available to U.S. P-3 anti-submarine warfare aircraft based at Atsugi, Japan, as a “target of opportunity.”¹ The P-3s knew the intended

Captain O'Connell, during his active-duty career, was the commander of USS Spinax (SS 489). He later served as defense and naval attaché, Tokyo, Japan, and became a member of the staff at the National Defense University. After his retirement Captain O'Connell was legislative assistant to Senator Robert Dole, a marketing manager in Tokyo for the Patriot Missile System, and an operations analyst for Kapos Associates. O'Connell is the author of the trilogy The Effectiveness of Airpower in the 20th Century (2006–2007) and the two-part Submarine Operational Effectiveness in the 20th Century (2010–11).

track of the sub and were tasked to detect and localize it, while *George Washington* attempted to remain undetected. The submerged *George Washington*'s officer of the deck (OOD) was well aware of the presence of P-3s. When noon approached on 8 April, he prepared to go shallow, rising to periscope depth, to get a navigational satellite system fix and to allow the radiomen to receive any message traffic that had been sent to the ship. He ordered the sonarmen to make a careful passive search for any audible contacts. When Sonar reported none, he eased up to periscope depth. After taking a careful look around and seeing nothing but waves and low overcast, the OOD ordered the appropriate mast raised for the navigational fix. The weather was poor, with choppy seas, low visibility, and intermittent rain. Knowing that the periscope and mast might provide an opportunity for a searching P-3 to detect them, the OOD limited the periscope height above the waves.

Ascending to periscope depth, *George Washington* went through an acoustic thermal layer that had hidden the engine and propeller noise of *Nissho Maru*. The cargo ship was on its way to a port in the People's Republic of China. Once the passive sonar was above the layer, Sonar detected an acoustic contact. He reported it to the OOD, giving its true bearing. Normally, the officer of the deck would immediately have swung his periscope to that bearing to identify the contact. He might then have used the radar in his periscope to get a range on the contact and taken action to avoid it, and then informed the commanding officer. But the OOD did not hear the vital report, although several other watch standers in the control room did. Communications discipline now broke down. The sonarman, not having received an acknowledgment from the OOD, was required to repeat his report until it was acknowledged. He did not. The OOD remained unaware of a surface contact in the vicinity of the submarine.

A few minutes later, at periscope depth, *George Washington*'s sail ran into the port side of *Nissho Maru* and ripped a hole in it. The violent impact was the first indication to anyone on board the submarine (except the delinquent sonar watch stander) that a ship was in the immediate area. *George Washington* rolled heavily to port. The sub's executive officer came running into the control room assuming that the boat had run aground and ordered the OOD to blow the main ballast. The OOD gave the order, and the blow started. *George Washington*'s sail and hull lifted above the waves; at this point the commanding officer (CO) arrived in the control room, took charge, and quickly ascertained from the OOD that they had collided with a ship. He immediately ordered that the main-ballast-tank blow be stopped. The CO took the periscope and read off the ship's stern the name, "*Nissha Maru*." For a quick observation by a man with a lot on his mind, it was remarkably accurate—off only by one vowel. The commanding officer then ordered Radio to check for any transmissions on international distress frequencies,

while he carefully searched for any visual signs of distress, such as rockets from the other ship. He observed no signals, and none were heard by Radio. *Nissho Maru* was seen steaming away, apparently unharmed. The commanding officer then ordered the main ballast tanks flooded to resubmerge.²

This proved to be a critical mistake, and it cost the CO his command.³ Navy Regulations require that the commanding officer of a ship involved in a collision at sea identify his ship and determine whether assistance is needed by the other ship. He did not. Instead, the CO of *George Washington* ordered his boat back deep and ran to another area, where they had gone earlier to periscope depth and where the weather was better. It was from there that he reported the collision to his operational commander and national command structure.

When *George Washington* had partially surfaced, crew members aboard *Nissho Maru* had clearly seen it, although they had had no means of identifying its nationality; it was merely a “black submarine” that had run them down.

As a ship gets farther away from a periscope it appears to get lower in the water, until it finally disappears below the periscope horizon. A sinking ship looks exactly the same, so although *Nissho Maru* had appeared to be moving slowly away, it had really been sinking, its engine room, where the electrical generator was located, quickly flooding. No radio distress calls could be made. If the commanding officer of *George Washington* had stayed at the scene as required, he would have realized that *Nissho Maru* was sinking and would have taken steps to rescue its crew. Perhaps none of its crew would have been lost. Instead, by staying submerged and moving away, he compounded the problem.⁴ Two principal crew members of the cargo ship, the master and first mate, drowned when it went down.⁵ Thirteen survivors were rescued early the next morning.

As the submarine moved away underwater, the crew of *Nissho Maru* abandoned ship in two life rafts. While they were struggling to understand what had happened to them, *George Washington* was proceeding, deeply submerged, to a point miles away, totally unaware that the cargo ship had sunk.

When at 1300 the submarine began reporting the collision, its message stated that the other ship appeared undamaged and had continued its voyage.⁶ The addressees included the following commands and organizations: Commander, Task Force (CTF) 74 (Commander, Submarine Group 7) at Yokosuka, Japan—the immediate operational commander of USS *George Washington*; Commander, Seventh Fleet (CTF 74's next-immediate superior); Commander, U.S. Naval Forces Japan (COMNAVFORJAPAN), at Yokosuka; Commander, U.S. Forces Japan, at Yokota Air Base (the senior U.S. area commander in Japan); Commander, Submarine Force, U.S. Pacific Fleet (COMSUBPAC), at Pearl Harbor; Commander in Chief, U.S. Pacific Fleet (CINCPACFLT), at Pearl Harbor; Commander in Chief,

Pacific, at Honolulu; the American embassy in Tokyo; and, in Washington, D.C., the Joint Chiefs of Staff, the Office of the Secretary of Defense, the Chief of Naval Operations, the State Department, and the White House.

What should have happened next was a quick call from the American embassy in Tokyo to the Japanese Foreign Ministry, reporting the collision. It was not made. That call would have relayed the known information about the reported collision, including its location, and requested that the Foreign Ministry seek information from the Japanese Maritime Safety Agency, now known as the Japan Coast Guard, about the status of *Nissho Maru*. It might have been paralleled by a request to the Japan Maritime Self-Defense Force liaison officer attached to COMNAVFORJAPAN staff to pass the word to the Maritime Safety Agency. That call never happened either. Why? If either call had been made, the sinking of *Nissho Maru* would probably have been revealed Thursday afternoon or evening, when the ship failed to respond to a radio query from the Maritime Safety Agency. An aircraft search would have ensued, in all probability involving U.S. Navy aircraft. Either Japanese or American aircraft might have detected the two life rafts in the general location of the collision.

Early the following morning, Friday, 9 April, at about 0400, two Japanese destroyers steaming northward toward Sasebo encountered the life rafts of the surviving crew of *Nissho Maru*. The rescued survivors reported that *Nissho Maru* had been sunk in a collision with an unidentified “black submarine.” That information was radioed immediately to the Japanese Fleet Headquarters at Taura. Fleet Headquarters contacted its liaison officer at COMNAVFORJAPAN staff and had him relay a query as follows: “An unidentified black submarine collided with and sank Japanese merchant ship *Nissho Maru* at location X about time Y. We know it was not a Japanese submarine. It could have been Chinese or Soviet or American. Was it American?” This was the first information available to anyone in the United States that *Nissho Maru* had sunk as a result of the collision. The transmission also carried the unwelcome news that two men, the master and first mate of *Nissho Maru*, were missing. This was about seven o’clock on Friday morning.

Why did it take the United States so long to notify the Japanese? The collision took place about 1200 on Thursday, and the submarine reported it around 1300. The survivors were rescued about 0400 Friday, nearly fifteen hours after U.S. authorities received word that a collision had occurred. Why was no immediate attempt made to notify the Japanese authorities? To the best of my knowledge, that question has never been answered. Undoubtedly the reasons were complicated, and they probably involve the following factors:

- A collision had occurred between a Japanese-registry merchant ship and a U.S. SSBN carrying ballistic missiles with nuclear warheads.

- The SSBN had reported that the other ship appeared unharmed and to be moving away.
- Matters involving nuclear-powered submarines operating in and around Japan were considered sensitive by Japan and the United States.
- Nuclear weapons were an especially sensitive subject to the Japanese, who had been the target of the only two nuclear weapons used in wartime.
- The key American players were in three locations (Tokyo, Honolulu, and Washington, D.C.), in three different time zones, and their work hours did not coincide.
- The nationality and identity of the submarine was unknown to the *Nissho Maru* crew, since *George Washington* had no identity markings on its sail. Perhaps it was not so obvious to an untrained observer that it was a nuclear submarine.
- The Americans had to consider carefully how it would inform the Japanese that the *Nissho Maru* had been struck by a U.S. nuclear submarine.

The sensitivity of these matters is proven by the fact that from shortly after 1300 on Thursday (when the first report was sent) to 0700 Friday (when word was first received from the Maritime Self-Defense Force that *Nissho Maru* had sunk), more than twenty top-secret and sensitive-compartmented-intelligence messages and secure telephone calls were exchanged among American authorities.⁷ None of the messages to which I later had access addressed the reasons for the delay in notifying the Japanese. Perhaps the secure telephone calls included that information.

The following table laying out the time factors may help the reader better understand why distance, time, and working hours complicated U.S. decision making.⁸ The times are all approximate but are roughly correct.

I was at my desk in the Tokyo embassy about 0730 Friday morning, preparing for a busy day. Around 0800 a call came in from the Assistant Chief of Staff for Operations at COMNAVFORJAPAN. He said that although it wasn't urgent, he needed to talk about a classified matter on a secure phone. I replied that I couldn't get back to him before 0900 (there were only two secure phones in the embassy, and one was in the ambassador's office). When I rang him back, he told me that a U.S. nuclear submarine had collided with and sunk a Japanese cargo ship the previous day and that two of the cargo ship crew were missing. I told him I would notify the ambassador immediately. He replied that for the present the matter was in "Navy channels only" and that I should not inform the ambassador. I told him that the moment that submarine hit and sank a Japanese-registered

Key Events	Japan Time (GMT-9)	Washington Time (GMT+5)	Honolulu Time (GMT+10)
SSBN– <i>Nissho Maru</i> collision	1200 Thursday, 8 April	2200 Wednesday, 7 April	1700 Wednesday, 7 April
SSBN reports by radio (first notification to U.S. side about the collision)	1300 Thursday, 8 April	2300 Wednesday, 7 April	1800 Wednesday, 7 April
Workday starts in Washington	2200 Thursday, 8 April	0800 Thursday, 8 April	0300 Thursday, 8 April
Workday starts in Honolulu	0300 Friday, 9 April	1300 Thursday, 8 April	0800 Thursday, 8 April
JMSDF destroyers rescue <i>Nissho Maru</i> survivors	0400 Friday, 9 April	1400 Thursday, 8 April	0900 Thursday, 8 April
JMSDF queries CNFJ, U.S. first learns of sinking and crew loss	0700 Friday, 9 April	1700 Thursday, 8 April	1200 Thursday, 8 April

merchant ship, the matter had gone outside Navy channels and that I was on my way to see the ambassador.

Several minutes later, telling the ambassador, Michael J. Mansfield, and the deputy chief of mission about the collision, I realized by their reaction that my “news” was not quite as startling as I had believed. Digging into things later, I got access to certain messages from which I learned that a very few key personnel in the embassy and elsewhere had known about the collision since the previous afternoon.

On Saturday, I accompanied Ambassador Mansfield to the Foreign Ministry. The ambassador offered his apologies on behalf of President Ronald Reagan, and I offered my own apologies on behalf of the Secretary of the Navy and the Chief of Naval Operations. The meeting was heavily covered by the Japanese media, and my children back in the United States were startled to see their father on television and in the newspapers.

In the succeeding weeks some of the Japanese press coverage would be lurid, focusing on erroneous reports from some of the survivors that the “black submarine” had circled their rafts before departing. The failure of the United States to notify Japanese authorities promptly of the collision would remain a sticking point in U.S.-Japanese political-military relations for nearly a year. In 1980, the Japan Maritime Self-Defense Force had participated in the multinational RIMPAC exercise held in Hawaiian waters, a major step forward for the Japan Self-Defense Forces. Because of public anger over the *Nissho Maru* incident, military cooperation was to slow appreciably during 1981.

On the Monday following the incident, the ambassador’s press officer asked me to be at the ambassador’s residence that afternoon at 1700, because the

ambassador was meeting with the press. I exploded and told him what a bad idea I thought that was, but he told me it was a long-standing arrangement to meet with the U.S. press only, to discuss matters of interest “on background.” I showed up as directed and sat in.

The first question was, “Who is responsible for the collision between USS *George Washington* and *Nissho Maru*?” Ambassador Mansfield looked sagely toward me and said, “Jack, will you take that one?” At that moment my entire naval career of almost twenty-nine years passed before my eyes. I took a deep breath and explained that though I was not an authorized spokesman for the Navy Department in this matter and there were at least two investigations under way, I would give my personal opinion, on the basis of my working knowledge of international maritime law. I explained that a submerged submarine was obligated to stay clear of surface shipping, which had no way to determine the submarine’s presence. It was accordingly presumed that a collision between a surface ship and a submarine was the fault of the submarine. Therefore, I expected that the U.S. government would take responsibility and pay damages for the loss of the ship and cargo, and for any personnel injuries or deaths.⁹

I held my breath for a few days, but the American press handled the matter fairly, and there was no backlash. I also became involved in setting up a meeting between the *Nissho Maru* survivors and a U.S. Navy captain sent out by COMSUBPAC to conduct a *Judge Advocate General Manual* investigation. The captain was the assistant chief of staff at COMSUBPAC for ballistic missile submarine operations, and a professional acquaintance of mine.

When we met, nearly all the *Nissho Maru* survivors were markedly hostile. They were extremely unhappy with the U.S. Navy and with anyone wearing its uniform. Only one older man, the engineer, did not seem angry. I presumed it was because of his experience at sea and the knowledge that unpleasant things happen without malice or forethought.

Later I attended a memorial service on the island of Shikoku for the master of *Nissho Maru*. His wife was the same age as mine, and his children were roughly the same ages as my children. The local American consul’s representative and I entered their home, bowed deeply, and offered our apologies for the loss of her husband and their father. We waited outside during the service while a loud Japanese Communist Party sound truck hurled invectives against the Americans. A good friend and fellow submariner, Captain Eugene Lindsey, in command of U.S. naval facilities at Sasebo, performed the same function at services for the first mate in Kyushu. Neither of us enjoyed a moment of it.

One afternoon after the services, Ed Featherstone, who headed the political-military branch of the embassy political section, visited my office. He seemed bothered by some matter. It turned out that Prime Minister Zenko Suzuki was

scheduled to go to Washington to meet with President Reagan in the near future. Japanese political realities would require that he receive an “interim report” of the ongoing U.S. Navy investigation into the collision. Ed wanted to know when the embassy could expect to see one. I told him that Navy *JAG Manual* investigations did not ordinarily produce interim reports; the investigating officer would finish his investigation in due time and send it to the convening authority (COMSUBPAC), who in turn would forward it to CINCPACFLT for endorsement, after which it would go to the Chief of Naval Operations—a lengthy process that had no particular time limit.

Ed found my reply unsatisfactory. We then proceeded to the deputy chief of mission’s office, where I repeated the likely progress of the Navy investigation. That meeting sent me back to my office to draft a message to various Washington headquarters asking for an “interim report” and outlining the political need. Subsequently, a carefully targeted “Personal For” back-channel message went from the ambassador to the Secretary of State, the Secretary of Defense, and the national security adviser to the president outlining the requirement for an “interim report.” Prime Minister Suzuki and President Reagan met on 5 May 1981, and an “interim report” was duly handed over.¹⁰ Later, on 15 August 1981, Ambassador Mansfield delivered the final report of the collision investigation to the Japanese government.¹¹

My tour of duty as defense and naval attaché ended later in the year, and I returned home for a final year of active duty on the staff of the president of the National Defense University. This tour afforded me the opportunity to go over events in my mind and wonder about all the what-ifs.

What if the embassy had made that telephone call to the Foreign Ministry on the afternoon of the collision? Would that have precluded the cloud of suspicion that arose about the delay in notification? What were the concerns that prevented that call from being made in a timely fashion?

Timely notification was clearly a delicate political matter. The considerations noted earlier and the submarine’s erroneous report that *Nissho Maru* had steamed away undamaged presumably led the key figures in the U.S. government to dawdle longer than they should have in authorizing the embassy in Tokyo to notify the Japanese Foreign Ministry. Yet it was reasonable to have expected *Nissho Maru* to report the collision by radio, presumably to Japan’s Maritime Safety Agency, as well as to its owner. A query might then have been expected. Logically, it was expedient to make notification as soon as possible.

In Benjamin Franklin’s *Poor Richard’s Almanac*, the “want of a nail” cost a horseshoe, a mount, a rider, and eventually a battle—all for want of care about a horseshoe nail. It is a reminder of the importance of little things. In this case,

the want of a timely communication cost the U.S. government a long period of unnecessary suspicion and distrust on the part of its principal ally in the Far East during the Cold War.

NOTES

1. It was common practice to assign transiting submarines as targets of opportunity. The policy allowed antisubmarine warfare forces, surface and air, to practice their craft, and it helped the submarine gain evasion experience.
2. I obtained this information from a review of the message traffic and from discussions with the COMSUBPAC investigating officer in the days following the collision.
3. The *Honolulu Star-Bulletin* of 27 February 2001 reported that the commanding officer of *George Washington* had been relieved of his command, effectively ending his Navy career. His officer of the deck received a punitive letter of reprimand, thus severely damaging any opportunity for promotion.
4. Under international maritime law, a submarine is required to maintain its distance from surface ships, which have no means of determining the submarine's presence. When a collision occurs between a surface ship and a submerged submarine, the submarine is automatically assumed to be at fault.
5. *New York Times*, 22 April 1981. Their bodies were reported recovered on 21 April.
6. Military time is used from here on—1 PM is 1300, and so on.
7. I was able to dig into the matter after the fact, while serving as U.S. defense and naval attaché in Tokyo. I could not locate any "general service" message traffic on the incident.
8. This is not to suggest that decision making is absent during non-staff working hours. There are duty officers at all locations. But sensitive matters take more time, and not all key figures are at their desks with adequate communications available.
9. The *Honolulu Star-Bulletin* of 27 February 2001 reported that in the *Nissho Maru* case the master's family was paid \$374,000, as was the family of the first mate. The thirteen survivors were paid an average of \$27,000 each. A two-million-dollar claim was filed by the owner of the freighter. The story goes on to state (erroneously) that USS *George Washington* did not report the collision with *Nissho Maru* until the following day. The *Christian Science Monitor* of 6 May 1981 reported that the Navy had accepted liability for the 9 April sinking of *Nissho Maru* on 21 April. The *Japan Times* (online) of 15 February 2001 reported that the U.S. government had paid 255 million yen in compensation to the owners of *Nissho Maru*.
10. *Observer Reporter*, 15 May 1981.
11. The *Honolulu Star-Bulletin*, 27 February 2001.

RESEARCH & DEBATE

PARSHALL'S "WHOPPERS" EXAMINED FACT-CHECKING THE VARIOUS CLAIMS AND CONCLUSIONS OF JONATHAN PARSHALL

Martin Bennett

This was written in response to an article by Jon Parshall that appeared in the Spring 2010 *Naval War College Review*.¹ When I first came across Parshall's article I was interested and even intrigued, but the more I read, the more apparent it became that his work was not sound.

One element, I believe, that may have colored what otherwise might have been an objective analysis was Parshall's clearly stated goal to "bury Fuchida." Generally, a biased, set conclusion is not a good starting point for a historical analysis.

Good research begins with questions and ends with conclusions, when facts permit. Parshall attempts to make the facts fit his conclusions, and when he cannot, he uses conjecture and assumptions to try to bridge the gap. Throughout his article, Parshall employs a wide variety of euphemisms accusing Fuchida of "lies." One would expect a less snarky, cynical analysis from a historian.

On my first reading I knew that Parshall had made some mistakes, but I never

realized just how many until I actually started checking. There is no doubt that Jon Parshall is a smart and knowledgeable historian who has done some great work. Yet instead of overturning the record on Fuchida, he has instead turned a light onto his own methods and thereby called into question the trustworthiness of the entire body of research underpinning his coauthored book, *Shattered Sword*.

Since most of the arguments come down to the credibility of four individuals, here is a look at who they are.

After serving eight years as vice president of a non-profit company and cofounding a manufacturing company (which won the 2003 award for Small Business Administration Entrepreneur of the Year), Martin Bennett now devotes his time to historical research and scriptwriting. His second script is for a feature film about the lives of Mitsuo Fuchida, Jacob "Jake" DeShazer, and the Covell family, entitled Wounded Tiger: The True Story of the Pilot Who Led the Attack on Pearl Harbor. While developing the film project, Bennett converted the script into a historical novel, to be published under the same title in 2013.

Jon Parshall's biographical note for his article in the *Review* describes him as the "coauthor of *Shattered Sword: The Untold Story of the Battle of Midway* and the owner of a website on the Imperial Japanese Navy, www.combinedfleet.com. Mr. Parshall has been published in such periodicals as the U.S. Naval Institute *Proceedings*, *World War II*, and this journal, and he has made frequent television and guest lecture appearances on the topic of the Imperial Navy in World War II. He is also an adjunct lecturer for the Naval War College. Mr. Parshall is currently in the software industry."

Gordon W. Prange received his PhD in history in 1937 from the University of Iowa and began his teaching career the same year as a professor of history at the University of Maryland. In 1942 he was granted a leave of absence to embark on a wartime career as an officer in the U.S. Navy. Sent to Japan in 1945 as a member of the American Occupation Forces, Prange completed his naval service soon thereafter, continuing in Japan as a civilian from 1946 to 1951, as the chief of General Douglas MacArthur's hundred-person historical staff. Shortly after the war, he began a series of interviews with Mitsuo Fuchida that extended for hundreds of hours over a period of years. He was the author of six books, some prepared for publication after his death in 1980 by Katherine V. Dillon and Donald Goldstein. Among the most prominent is *At Dawn We Slept: The Untold Story of Pearl Harbor*, the culmination of thirty-seven years of research. He was arguably the most knowledgeable person on Pearl Harbor.

Donald Goldstein is professor emeritus at the Graduate School of Public and International Affairs, University of Pittsburgh. In addition to his contributions to Prange's *At Dawn We Slept*, *Miracle at Midway*, and *God's Samurai*, he also collaborated with historian J. Michael Wenger on several books, including *The Way It Was: Pearl Harbor—the Original Photographs* (1995); *Rain of Ruin: A Photographic History of Hiroshima and Nagasaki* (1995); and *The Pearl Harbor Papers: Inside the Japanese Plans* (1993). He is today the most prominent living historian on Pearl Harbor and Mitsuo Fuchida.

Mitsuo Fuchida was the senior flight commander of the First Air Fleet, First Carrier Division. He led the attack on Pearl Harbor, ending the war as a captain. After the war, Fuchida and Masatake Okumiya coauthored *Midway: The Battle That Doomed Japan, the Japanese Navy's Story*.² Regarding the overall credibility of their book, the historian Thomas B. Buell explains in the introduction to its 1992 edition:

[*Midway*] is a story written by two Japanese naval officers who were in a position to know about the details of that battle, but much of what they have to say is personal opinion, which may not necessarily have been shared by colleagues. Although the book does not have a bibliography, the editors' preface states that they researched

and authenticated the data to the extent possible using both Japanese and American records. As one of the editors was Roger Pineau, the premier American expert on the Japanese navy in the war, there is good reason to believe that the data as to events is accurate. I am not aware of any challenges to its assertions since this book was first published in 1955.³

Fuchida also wrote his memoirs, which were published posthumously in Japanese, later in English under the title *For That One Day: The Memoirs of Mitsuo Fuchida, Commander of the Attack on Pearl Harbor*.⁴

So let's break it down.



Naval History & Heritage Command (NHHHC) Photo no. NH 50930

PARSHALL'S FIRST SET OF ASSERTIONS IS THREEFOLD

Parshall states that Fuchida would never have mentally earmarked fuel tank farms for destruction, that Fuchida never entered into a heated argument on the bridge of *Akagi* demanding a third-wave attack, and that a "mere air group commander" like Fuchida would never have been privy to such information regarding the details of a possible land invasion. Let's look at each of Parshall's charges.

Fuchida Never Made a Mental Earmark to Target the Tank Farms

Parshall believes he knows what was in Fuchida's mind as he circled Pearl Harbor and looked down at massive fuel storage tanks. He finds it unbelievable that Fuchida thought they would make opportune targets. Parshall believes that Fuchida added this statement only in 1963 to make himself appear more clever.

What would be truly remarkable is if the Imperial Japanese Navy's top pilot had not had such thoughts. Of course, Fuchida knew the list of target priorities, carefully outlined during the meetings in Yokosuka and on board *Akagi*, but he had also spent the morning circling Pearl Harbor with binoculars in one hand, a map in the other, and a notepad strapped to his leg, assessing the scene. The Japanese had been spurred to war in part by the precious commodity of oil, and they knew its strategic value to the Americans. Parshall's argument is that no independent confirmation exists of Fuchida's mental notes. This is an absurd claim.

Parshall also believes that no one thought of bombing the tank farms until the Americans later pointed them out, and he refers to an interrogation in 1945 by the Americans who asked Fuchida why there had not been a follow-up attack on Pearl Harbor. Fuchida answered but made no comment about possible targets in the event of such an attack (which was not germane to the question). This is Parshall's smoking gun.

There are two problems with this argument. First, postwar military inquiries are not free-flowing conversations but more like legal depositions—question and answer. Also, Fuchida did in fact mention the tank farms to Gordon Prange on 4 March 1948.⁵ Was Fuchida making himself out to be some kind of genius (supposedly in retrospect) by saying he thought about bombing the fuel tanks? Not at all—a Japanese captain on another fleet carrier had exactly the same idea:

On board the carrier *Soryu*, Adm. Tamon Yamaguchi reported that his ship and the carrier *Hiryu* and their aircraft were ready to launch the third wave attack. Capt. Jisaku Okada of the carrier *Kaga*, the second carrier accompanying the *Akagi*, recommended that the fuel tanks and dock facilities be included in the list of targets, even if the attack sorties were flown the next day. The remaining two carriers—*Shokaku* and *Zuikaku*—reported that they were ready to return for another attack on Pearl Harbor.⁶

Also, from interviews with Fuchida found in *God's Samurai* and in his *Memoirs*, it is clear that he vigorously disagreed with the recommendation of Kusaka (rear admiral and chief of staff of the First Air Fleet during the attacks, whom Fuchida did not care for as an officer) to retreat after the successful attack on Pearl Harbor. He refers to Kusaka's philosophy as "lions retreat once they have accomplished their attack." Yet at the same time he quotes Kusaka as saying, "We have now accomplished the purpose of our operation by attacking Pearl Harbor and annihilating the U.S. Pacific Fleet. Any further attempt to attack oil tanks or repair facilities at the naval shipyard is nothing but the hindsight of fools."⁷ If Fuchida was supposedly trying to make himself appear clever, in retrospect, would it be logical for him to want Kusaka to appear equally clever?

There Was No Heated Argument on the Bridge of Akagi Following the Successful Two Waves against Pearl Harbor



Twentieth Century Fox publicity photo

Parshall is arguing with himself here. First he alleges that Fuchida "pressed vigorously for a follow-up attack," saying that the scene of an argument on the bridge was mirrored in the movie *Tora! Tora! Tora!* (a Hollywood film really should not be used as evidence of historical accuracy), and then shows how it never happened. This section would be better named "Parshall's Tale of the Missing Argument," as neither Fuchida, Commander Minoru Genda, nor anyone else testified that Fuchida had "pressed vigorously" or argued for a follow-up attack. However, for this Parshall relies primarily on Haruo Tohmatsu, who repeatedly states that Fuchida "demanded" a third wave.

Interestingly, Tohmatsu referred to the incident in his book *A Gathering Darkness* by citing another of his books, *Pearl Harbor*, which does not contain notes—a strange method for a serious nonfiction writer.⁸ Therefore, Parshall depends on a secondary, undocumented source for his historical data.

Two points—one, there was no argument, and two, no proposal was put forth. I agree that no argument took place, but Fuchida never said it did. Regarding the second point, the best that Genda could possibly have said was that he did not hear the proposal, which would easily have been missed by Genda if he simply was not there at the time.

Neither Fuchida nor Genda argued for the proposal, and, ironically, Genda affirmed that in Parshall's own article, so again, we find Parshall mistaken. In his book *Midway*, Fuchida said that he "strongly recommended" to Nagumo a further attack on Oahu.⁹ He did, along with many others, want a further strike; as did Lieutenant Jinichi Goto, commander of the Japanese torpedo bombers, who said, "Most of the young flying officers were eager to attack Pearl Harbor again because they wished to inflict as much damage as possible."¹⁰ Parshall seems to want it both ways: on one hand, he admits that Fuchida adamantly wanted another strike, while on the other he proposes that Fuchida never mentioned a word of this to any of his leaders.

Prior to this, Fuchida had been debriefed by Nagumo and Kusaka in Genda's presence on the bridge, where they carefully assessed the total situation.¹¹ Having imagined losing up to half their ships and half their aircraft, all were contemplating some way to exploit the overwhelmingly favorable circumstances, but in the end Nagumo went with Kusaka's advice to cash in their chips and head home. There is no indication throughout this section of any heated argument, fist pounding, or histrionics. Anyone with even a cursory knowledge of Japanese culture and protocol within the Imperial Japanese Navy would immediately know that it would never occur to a subordinate officer to demand anything of a superior officer.

A careful reading of Tohmatsu and Willmott's *Pearl Harbor* shows that they were primarily upset about Nagumo and Kusaka's being ostracized or scapegoated, made to look like cowards, for turning back after the Pearl Harbor attack and missing what appeared to be an opportune time to finish off the Americans.¹² They make a good case—and I tend to agree with them—that Nagumo made the best choice possible. Still, neither he nor Kusaka ever lived it down. The fictional scene from *Tora! Tora! Tora!* certainly does not help.

A Mere Air Group Commander like Fuchida Would Never Be Privy to Such Information

This is Parshall's last attempt to try to "bury" Fuchida. He states regarding a plan to invade Oahu: "Finally, of course, even if there had been such plans on the grand strategic level, a mere air group commander like Fuchida almost certainly would not have been privy to their details on 7 December. Yet Fuchida's 'privileged' statements to this retired American captain played nicely to the whole American psychology relating to this battle."

Gordon Prange wrote the following in *At Dawn We Slept*, regarding the highest-ranking Japanese officers in this attack and their conversations on the way to Pearl Harbor:

Immediately after lunch Nagumo held another meeting in *Akagi's* ward-room. His own staff attended, as did Yamaguchi and Hara, with their staffs, and all the flying officers, headed by Fuchida. Nagumo opened this meeting by reading the instructions which Genda and Fuchida had prepared for him en route to Hitokappu Bay. When the young flying officers discovered that they would attack Pearl Harbor, "their joy was beyond description."

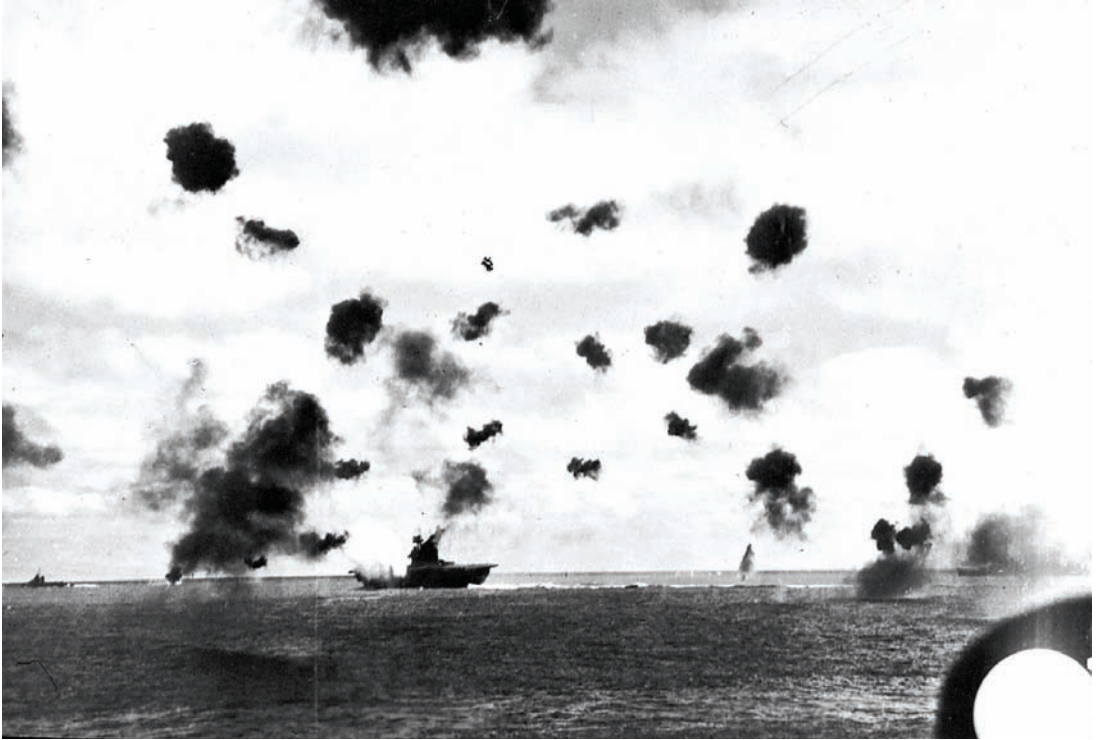
Then the airmen took over. Genda spoke for almost an hour. For the benefit of those who had not attended the first session, he repeated what he had said that morning. Then he analyzed the five major attack plans which he and Fuchida had prepared. They had worked out the plans with their flight commanders in Kyushu during September and October, so they were not pulling any major surprise. But they took full advantage of this last chance to rehearse, to coordinate group thinking, and to improve upon the design.¹³

Fuchida would have definitely known about a follow-up invasion, because he and Genda would have been instructed what not to strike. First, Fuchida had been personally appointed by Rear Admiral Nagumo as the senior flight commander, First Air Fleet, First Carrier Division. He had trained and commanded the Kidô Butai's combined air forces for the six aircraft carriers, roughly four hundred aircraft and eight hundred fliers—hardly a "mere" commander. Second, Fuchida and Genda were best friends from the Eta Jima Naval Academy and continued so throughout the war. They worked closely together in the months leading up to the attack on Pearl Harbor. Fuchida easily knew more details about this attack than did Nagumo and Yamamoto combined, and he proved it in his many interviews. Had there been any serious plans to invade Oahu, Fuchida would certainly have been among the first to know. Parshall's speculation has no foundation here.

PARSHALL'S SECOND ARGUMENT: A FIVE-MINUTE DISPARITY IN THE FOG OF WAR

Parshall's second indictment against Fuchida concerns his claim that at Midway the Japanese were five minutes away from launching a counterattack. He states that "Fuchida's entire rendition of the climax of the most important naval battle in American history was a lie. The Japanese were nowhere near ready to counter-attack at this time."

Let us begin with a fact I expect everyone will agree on, especially the best-informed experts—that there is a tremendous amount of conflicting information, records, and testimonies on all sides about the events leading up to and including the turning point of the battle of Midway. Every book on Midway that



U.S. Navy Photoprint no. W-MI-7-11957

I have studied (including Parshall's book) says the same thing—it was an incredibly chaotic day, when looking at your watch or making log entries was the last order of business for men on both sides. Nagumo's communications log in his battle report was compiled from the records of escort vessels, not from the actual *Akagi* log, which, understandably, was lost when the carrier went down.¹⁴

Here is a taste from Dallas Isom's *Midway Inquest*: "*Senshi Sōsho* fudges this . . .," and "the entries in Nagumo's battle report showing that the rearming operation was ordered at 0715 and countermanded at 0745 were fabrications to put Nagumo in a better light."¹⁵ Isom notes that the *Senshi Sōsho* is fragmentary, often inconsistent, and inaccurate. Shortly after its release, the *Senshi Sōsho* came under fire for being an "overall explanation" of events with missing or vague details, for being too military friendly, for being written by staff members who had not been involved in the operations, and for many other shortcomings.¹⁶ That is just the Japanese side. Parshall's book is loaded with American reports of contradictions of every kind, from records to accounts of pilots (page 231 of his book is full of them), but he rejects accounts that do not agree with his conclusions and accepts those that do. Also, keep in mind that the Japanese lost four carriers in the battle and many logbooks. Much of their information had to be re-created after the events.

Parshall says, “During the course of the morning’s operations the Japanese carriers came under attack no fewer than five times by nine separate groups of American aircraft. Not surprisingly, Japanese flight decks were quite busy with combat air patrol (CAP) requirements. These activities, as well as the interspersed American attacks, made it nearly impossible for the reserve strike force to be readied on the Japanese flight decks.”

Did he say “nearly impossible”? So, then, it *was* possible. He goes on to say that according to air group records, planes were landing on *Akagi* just fifteen minutes before the attack, which would require that the after deck be totally clear. Were these records accurate? No one knows. Parshall then states, “The official Japanese war history on the battle, *Senshi Sōsho*, explicitly states that at the time of the American attack there were no attack aircraft on the Japanese flight decks, only combat air patrol fighters.” Isom clearly states that the *Senshi Sōsho* “fudged” entries, and even Japanese historians admit that these compiled records are not reliable. Primary sources are best—that is, eyewitnesses (preferably ones who were not shooting or being shot at), not postbattle writers who were not there, as is often the case in the *Senshi Sōsho*.

Parshall also says in his book that the idea that there were only a few fighters on the deck of *Akagi* “stands in apparent conflict with certain eyewitness accounts made by American pilots, which often painted lurid portraits of bombs exploding among packed enemy squadrons, and Japanese planes being catapulted around the flight decks or enveloped in sheets of flame.”¹⁷ These “eyewitness accounts” match exactly with Fuchida’s statements.

Yet there is another eyewitness source I have never seen referenced, that of Minoru Genda. Parshall quotes Genda in his article and obviously considers him a credible source. So do I. His testimony in 1948 was that *Akagi* was fifteen minutes away from launching its attack.¹⁸ Was he telling “whoppers” too? Fuchida’s book had yet to be published, so he had no idea what Fuchida was going to write, and certainly Genda had no idea that someone was going to compare his obscure answers to Fuchida’s book seventy years later.

So let me make clear what is being compared. On one side we have the calculations of a historian who has never seen a Japanese carrier, let alone been on one—calculations seventy years after the fact based on records that are frequently contradictory, often made by unknown third parties, incomplete, and sometimes clearly altered. On the other hand, we have two eyewitnesses, career officers who lived on Japanese carriers for years, knew *Akagi* from stem to stern, trained and instructed its crews, witnessed the daily routines of mechanics attaching and detaching torpedoes, had personally taken off and landed aircraft on carriers hundreds of times, and thoroughly understood the operations for preparing an attack on a firsthand basis—and who were actually there!

Parshall says it was “nearly impossible” for them to have been prepared for a counterattack. Fuchida’s estimate of five minutes and Genda’s of fifteen are the most reliable sources of information on the timing of their counterattack. Historians like Parshall have made estimates based on information as to how long it might normally take engineers to switch from land bombs to torpedoes, raise aircraft to the flight deck, etc., and factoring in how attacks by Americans might have slowed down the operation. This is fine and makes good sense, but at the end of the day it has nothing to do with what took place. Fuchida and Genda were actually there and knew what took place, like dozens of other witnesses. Fuchida and Genda’s testimonies are consistent, and when Fuchida’s record was published no one in Japan approached him or his publishers to contest the record. Now, seventy years later, Parshall calls him a liar, on the basis of unreliable and clearly contradictory information. Parshall has no case.

PARSHALL’S THIRD ARGUMENT: FUCHIDA WAS NEVER ON USS MISSOURI DURING THE SURRENDER CEREMONIES



NHHC Photo no. SC 213700

In *God’s Samurai*, Fuchida recounts the events leading up to and including the surrender ceremonies on the deck of USS *Missouri* on 2 September 1945, how he was called on to help ferry Japanese personnel that day and remained on board during the ceremonies. Parshall considers this an “egregious” claim and does his best to discredit Fuchida with disparaging remarks and insults, but with no backup evidence whatsoever.

Here are the exact references. The first is from *God’s Samurai*:

These preliminaries led up to the climax on the morning of 2 September, the formal surrender aboard the *Missouri*. Fuchida prepared transportation for the Japanese delegation, but the launches he secured proved unnecessary. An American destroyer carried the official party to the battleship. Several liaison officers, army and navy, went out in a “big, beautiful launch” assigned to the Yokosuka commander. Fuchida was among them. These men ranked too far down the echelon to rate a position on the surrender deck, but he could see the ceremony clearly from an upper deck.¹⁹

A second reference comes from the translated *For That One Day*: “In my role as Staff of General Navy Headquarters, I was assigned miscellaneous tasks to help the Japanese side’s preparations. Since I was not an official attaché, I was watching the signing ceremony from the upper deck along with the crews of the USS *Missouri*.”²⁰

Fuchida on Board Missouri

When I first heard Parshall's charges, they seemed a little far-fetched. Fuchida had nothing to gain by mysteriously placing himself there, and he did not make himself look good while he was there. The more I examined the facts, the more the idea of Fuchida on board *Missouri* had the ring of authenticity.

Here is a breakdown of Parshall's last set of questions and charges.

Why Would Fuchida Have Been on Board Missouri? What Possible Business Did He Have There? There were many liaisons and delegates from many nations on board that day besides Fuchida. It would be foolish to think that all the Japanese dignitaries made their own arrangements for transportation. Fuchida's simple statements are completely reasonable. If anything, they were a bit humiliating for him, as he was relegated to the role of taxi driver.

Parshall assumes that Fuchida said he was there to make himself look more important than he was, when in fact Fuchida's account of the story does quite the opposite. He had despised MacArthur and considered him arrogant, but after watching the ceremony he changed his opinion and admitted that MacArthur was actually quite gracious to the Japanese, far more gracious than the Japanese would have been to the Americans. This does not elevate Fuchida; it humbles him.

Why Would an American Sailor Give Up His Place at This Historic Event to an Unknown Japanese Officer? The war was over in every sense; in addition to an end of physical hostilities, there was also an end to social hostilities. In *Genda's Blade: Japan's Squadron of Aces; 343 Kokutai*, Henry Sakaida and Koji Takaki show how after the war American pilots wanted a closer look at the modified *Shiden-Kai*, while the Japanese wanted to see how American high-octane fuel would give them the boost they had always dreamed of. After a Japanese pilot put his fighter through its paces, dozens of American airmen surrounded the plane and pilot taking photos and seeking autographs.²¹ Parshall knows full well when the emperor gave his surrender speech, by and large the Japanese became shockingly submissive and compliant to the American occupation, despite the extreme bitterness of that pill. They had submitted to their emperor in war, and they did likewise in peace. It therefore is not surprising that this camaraderie existed on board USS *Missouri*.

Why Would Fuchida Be Allowed to Wander into the Command Spaces of the Flagship of the U.S. Fleet? There was certainly concern among top Navy brass that extreme nationalists might try to sabotage the ceremony, especially with a kamikaze plane, and they took many precautions. All air bases in the greater Tokyo and Yokohama area were evacuated, the planes disarmed and disabled. The man entrusted with this high-security detail was Mitsuo Fuchida, Group

Commander, Aviation Staff of the General Navy Headquarters, Aviation Staff of the Southern Naval Headquarters.

Fuchida also helped head off a coup, personally brought in Japanese officers holding out against surrender, and authored a widely distributed pamphlet, entitled *We Believe This!*, to encourage those in the Japanese military to submit to the emperor in peace, as they had in war, and fully comply and cooperate with all the terms of surrender to the United States and allied powers.

If any Japanese officer was to be trusted for security reasons on *Missouri* that day, it would have been Mitsuo Fuchida. There is no indication that he wandered all over the ship, as Parshall implies. He certainly knew better. As for the unknown photographers who were a part of the press corps, yes, they were closely watched, as the record shows.

Why Were There No Photographs of Him, When We Have Photos of the Surrender Delegation? This sounds like a reasonable question at first, but on consideration, it is a weak argument. Fuchida was not a part of the surrender delegation, nor did he ever claim to be. Also, this was the most humiliating day in the history of the Japanese people. No self-respecting Japanese officer would be leaning into any photos that day. This is something Fuchida would more likely avoid.

Photographers took pictures of all the key people, and as Parshall correctly points out, Fuchida simply was not one of them. Even the commanding officer of USS *Missouri*, Stuart S. Murray, stated that apart from a few formal shots in which he was in the background, “I’m not generally visible anywhere.”²² If that is how the commander of USS *Missouri* was photographed that day, why would Fuchida be treated differently?

On the affirmative side, there are some pretty clear photos of those on the decks of the ship that day, like the one reproduced here, which can be found on the World War II database.²³

Here also is a high-resolution photograph that allows the reader to zoom into the third level, to the upper left of the Japanese flags, where there is an Asian man without a hat with a short mustache.

Inset is a photo of Fuchida taken during the war.²⁴ It looks very similar to the man in the close-up of the larger image.

Although I am not an expert on the U.S. Navy of World War II, I do not believe that “Hitler-style” mustaches were popular then, but we know that Fuchida kept his mustache after the war—he was photographed giving testimony at the war crimes trials.²⁵ So, just as Fuchida described, here on board USS *Missouri*, right before the surrender ceremonies, on an upper deck, we find a round-headed, Asian-looking man with a Hitler-style mustache among the American sailors. Is this Fuchida? It certainly could be.



National Archives Inter-agency Working Group File no. AC856786

NHHC Photo no. SC 210644

Michael Weidenbach Verified Fuchida's Absence from Missouri

Parshall correctly credits me with obtaining information from Michael Weidenbach, curator and archivist of the collections department for the Battleship Missouri Memorial, Pearl Harbor. Parshall states it this way when he quotes Weidenbach:

If Fuchida had been aboard the *Missouri* in any capacity whatsoever, "his presence would have been noted, and his placement would have been noted in the official records . . . and would have been strictly monitored and recorded."

[This] is yet another reminder (if any were needed) that proving a negative is oftentimes a lot harder than proving a positive. However, it is the historian's job to produce positive evidence to support the claims that are made by the participants in

our narratives. In this case, the onus was on Fuchida to support his rather incredible claims. His story, while superficially plausible, failed when subjected to the weight of the other positive evidence we have on this highly documented ceremony.

Weidenbach “verified Fuchida’s absence”? That is actually quite difficult to do. Yes, he verified that Fuchida was not a part of the official boarding party, but then Fuchida never said he was, and he also stated that there is no record of him being on board that day—so case closed, right? No. I contacted Michael Weidenbach again and asked for a full roster of personnel on board USS *Missouri* that day, and this is what he said:

There is no single roster of all the individuals that were aboard that day. There are records scattered around in various records depositories that we are still seeking out and gradually gathering. There are rosters of the dignitaries and key officers that were invited to participate or witness the ceremony, but there appears to be no record made of their accompanying staff members or others who may also have arrived aboard.

We’ve tracked down a listing of war correspondents, but it may or may not be complete or entirely accurate. We have a copy of the *Missouri* crew roster from the National Archives, but it is dated July, 1945; so it is very likely not accurate for September. In short, we have records and we are continuing to search and gather, but we don’t yet have a complete or clear record of all those who were aboard that day.²⁶

No single roster? No official records of accompanying staff? No complete or clear records? Then there certainly is no way to verify that Fuchida was not on board. In this entire section, Parshall provides nothing to show that Fuchida was not on board USS *Missouri* that day.

Some Final Notes on the Missouri Surrender Ceremony

Over time, as I have thought about this event, more and more things have always pointed in the same direction, bearing out the idea that Fuchida’s consistent testimony was true from the beginning. Here is more information that supports him.

I noticed this section in *God’s Samurai* regarding the signing ceremony: “Umezu, who had fought surrender to the last ditch, signed for both the Japanese armed forces. As he did so one of the Chinese delegates hissed loudly and triumphantly. ‘The U.S. delegates didn’t like this impolite gesture, from the expression on their faces,’ Fuchida recalled.”²⁷

No one would have cared about such a minor footnote of the ceremony or noted it—no one, that is, but a Japanese national. Fuchida did. Gordon Prange and Donald Goldstein, experts on the Pacific War and military protocol, had no issue with Fuchida’s description of his being at the ceremonies. Prange was a naval officer who had worked with MacArthur and would have understood U.S. Navy protocol at the time extremely well.

The following information only reached me recently, from the journals of Glen Wagner: On 7 December 1949, General Douglas MacArthur met with Glenn Wagner, foreign secretary for the Pocket Testament League, who asked about the general's thoughts on bringing one million copies of the New Testament into Japan. MacArthur said, "Make it 10 million." Fuchida was one of the many Japanese who received a copy of the over eleven million scriptures eventually distributed by the Pocket Testament League. On 14 April 1950, Fuchida met with Glenn Wagner and several others and recounted many of his experiences during the war. That evening, Wagner noted in his personal journal that Fuchida said, "First to step on Battleship *Missouri*—Lit cigarette and was grabbed by a US Marine."²⁸

This was among a long list of other details Fuchida communicated, none of which are disputed.

Parshall also states that "there were literally thousands of potential American witnesses to this particular story, who might have come forward to debunk it." Maybe no one did because no one could.

If one connects all the dots, they point to one thing—that Fuchida was indeed on USS *Missouri*, just as he has always maintained, and there is no evidence of any kind to contradict it.

Why Would Fuchida Make This Up? What Would Be His Motive?

Perhaps this is where the roots of Parshall's judgment of Fuchida come to light. After making a host of sweeping judgments based on speculation and conjecture, he paints Fuchida as a cocky, religious phony. Here is how Parshall begins his final section:

A glimpse into the inner character of the man is revealed in the movie *Tora! Tora! Tora!* for which both Prange and Fuchida were technical advisers. During one scene, near the beginning of the movie, Fuchida lands his plane on the carrier *Akagi*. Dismounting, he is immediately surrounded by other aviators. Fuchida tells them they'd better treat him well, because he is their new air group commander. Surprised by this news, one of the pilots asks how he rated another promotion. Fuchida responds, to the general hilarity of all assembled, "Well, exceptional people get exceptional treatment!" I believe this illustrates something central about the man.

Is Parshall going back to Hollywood *again*? In fact, Fuchida was not a consultant for the film; Genda and Prange were, but even as consultants they did not have any control over the script. This scene is totally fictional. Fuchida never said such a thing. Was Fuchida a cocky pilot? I think the record shows that he was. Most attack pilots on the front line of battle are. They have to have an element of confidence far above that of the rank and file to take the risks they do and make it back alive. However, that is not the person Fuchida was after the war.

Parshall goes on to state—erroneously—that Fuchida was ordained and that he loved the accolades and attention it brought him. Where are the facts to

support any of this? He was never ordained, so Parshall's ideas surrounding that notion are false. I traveled to meet a man who after the war had worked beside Fuchida for many months, and he described Fuchida as a humble, gentle man who never bragged about his part in the war but rather profusely apologized at every opportunity—the exact opposite of Parshall's picture.²⁹ Over my years of research on Fuchida I have come into contact with many who knew him, worked with him, or met with him, and all say the same thing. I have never known or heard of anyone who painted the kind of picture of Fuchida that Parshall does.

Parshall has told me directly that he never actually read Fuchida's full story, either in his biography or his published memoirs, and that he has had no interest in them. Had he done so, he may have had a clearer and more accurate picture of who Fuchida really was. Half of Fuchida's story found in *God's Samurai* is about his postwar years and who he became—a man once filled with hatred toward Americans, with an inflated pride in his country and in himself, who in the end was humble and loved his former enemies. Some people can and do change. Fuchida did.

NOTES

- Jonathan Parshall, "Reflecting on Fuchida, or 'A Tale of Three Whoppers,'" *Naval War College Review* 63, no. 2 (Spring 2010), pp. 127–38. All quotes of Jon Parshall are from this article unless otherwise stated.
- Mitsuo Fuchida and Masatake Okumiya, *Midway: The Battle That Doomed Japan, the Japanese Navy's Story* (Annapolis, Md.: Naval Institute Press, 1992).
- Ibid.*, p. ix.
- Mitsuo Fuchida, *For That One Day: The Memoirs of Mitsuo Fuchida, Commander of the Attack on Pearl Harbor*, trans. Douglas Shinsato and Tadanori Urabe (Kamuela, Hawaii: eXperience, 2011).
- Gordon Prange, with Donald M. Goldstein and Katherine V. Dillon, *God's Samurai: Lead Pilot at Pearl Harbor* (Dulles, Va.: Potomac Books, 2003), p. 38, footnoted as "Interviews with Fuchida, 4 March 1948 and 11 December 1963."
- Steve Horn, *The Second Attack on Pearl Harbor: Operation K and Other Japanese Attempts to Bomb America in World War II* (Annapolis, Md.: Naval Institute Press, 2005), p. 16.
- Fuchida, *For That One Day*, chap. 21.
- Tohmatsu Haruo and H. P. Willmott, *A Gathering Darkness: The Coming of War to the Far East and the Pacific, 1921–1942* (Rowman & Littlefield, 2004), p. 98; H. P. Willmott, Tohmatsu Haruo, and W. Spencer Johnson, *Pearl Harbor* (Havertown, Pa.: Casemate, 2001), pp. 142–57.
- Fuchida and Okumiya, *Midway*, p. 57.
- Gordon W. Prange, Donald M. Goldstein, and Katherine V. Dillon, *At Dawn We Slept: The Untold Story of Pearl Harbor* (New York: Penguin, 1992), p. 545.
- Ibid.*, pp. 542–45.
- Willmott, Haruo, and Johnson, *Pearl Harbor*, pp. 142–57.
- Prange, Goldstein, and Dillon, *At Dawn We Slept*, p. 377.
- Dallas W. Isom, *Midway Inquest: Why the Japanese Lost the Battle of Midway* (Bloomington: Indiana Univ. Press, 2007), p. 133.
- Ibid.*, p. 10.
- Akira Fujiwara, "The Nature of Military History" [in Japanese], *Study of History* (December 1977), pp. 74–75, 81.

17. Jonathan Parshall and Anthony Tully, *Shattered Sword: The Untold Story of the Battle of Midway* (Dulles, Va.: Potomac Books, 2005), p. 231.
18. Cdr. Minoru Genda, U.S. military interview, 1948, UA 90/F-78, Univ. of Pittsburgh archives.
19. Prange, *God's Samurai*, p. 174.
20. Fuchida, *For That One Day*, chap. 41.
21. Henry Sakaida and Koji Takaki, *Genda's Blade: Japan's Squadron of Aces; 343 Kokutai* (Hersham, Surrey, U.K.: Classic, 2003), p. 181.
22. "Admiral Stuart S. Murray Oral History," *Battleship Missouri Memorial*, 21 August 2007, Internet Archive Wayback Machine, web.archive.org/web/20070821191456/http://www.usmissouri.org/coll_MurryHistory.htm.
23. *World War II Multimedia Database*, worldwar2database.com.
24. *Wikipedia*, s.v. "Mitsuo Fuchida," en.wikipedia.org/wiki/Mitsuo_Fuchida.
25. Fuchida, *For That One Day*, photo 19.
26. Michael Weidenbach, personal e-mail to the author, January 2012.
27. Prange, *God's Samurai*, pp. 175–76.
28. Glenn Wagner, personal journals, 1950, courtesy of Sam Wagner.
29. John Jessberg, personal interview with the author, Kirkwood, Pa., 24 July 2009.

BOOK REVIEWS

THE EVOLUTION OF THE DEMOCRATIC PARTY'S FOREIGN POLICY SINCE THE VIETNAM WAR

Mann, James. *The Obamians: The Struggle inside the White House to Redefine American Power*. New York: Viking, 2012. 416pp. \$26.95

James Mann walks the reader through the key foreign-policy challenges faced by the Barack Obama administration and outlines the evolution that has taken place in the president's approach to these issues.

He traces the post-Vietnam history of the Democratic Party's foreign policy and describes the three different generations that come together in the present administration: the Vietnam War generation, the post-Vietnam War generation, and the Obamians, who are identified by Mann as mostly campaign staffers, plus National Security Council officials Ben Rhodes and Denis McDonough. The third group's foreign-policy experience is limited to the Congress, and its political reference points are September 11th, the 2003 invasion of Iraq, and the 2008–2009 financial crisis. The Vietnam War is ancient history to them.

Mann believes this third group most closely reflects President Obama's own worldview. He notes that foreign-policy "veterans were to discover that

Obama relied to an unusual extent on his own informal network, the Obamians he had come to trust in the presidential campaign." In fact, while Defense Secretary Bob Gates, National Security Adviser General Jim Jones, Deputy Secretary of State Jim Steinberg, and others have moved on, the core of officials that Mann describes as Obamians are largely still in place.

Mann describes "two distinctive aspects of Obama's foreign policy." The first is that Obama is not "squeamish about employing American military power," as the surge in Afghanistan, the war in Libya, and his campaign expression "to track down, capture, or kill" all show. The second is the concern on the part of both the president and the Obamians that America's financial resources no longer allow the United States to exercise its traditional postwar hegemony. Instead, they believe that on entering office they were faced with a "continuing effort to recast the United States' role in the world in a way that fit America's more limited resources." Mann notes the

biggest change for the William Clinton administration alumni was grasping this new reality of declining resources.

The author also chronicles some important missteps made by the Obama administration, arguing that the president's fixation on not repeating what the Obamians viewed as mistakes of the George W. Bush administration led them to downplay democracy early in their tenure. This led, in part, to being overly reticent during Iran's Green Revolution. Mann also describes how their initial approach to China was based on lessons learned during the Clinton administration. Unfortunately, they did not recognize that China had become much more confident during the eight years of the Bush administration, thereby making their approach ineffective.

Mann spends a significant amount of the book dealing with Afghanistan and describing President Obama's increasing disillusionment with the war.

Afghanistan, for candidate Obama, was the good war that had to be won. During the first policy review this remained the main theme, and the president, at least implicitly, endorsed a counterinsurgency strategy. However, when General Stanley McChrystal's appointment as top commander in Afghanistan set in motion another review later that same year, President Obama was "forced to confront the implications of the counterinsurgency strategy: How many troops would be required, and how long would it take?"

President Obama comes into his own, according to Mann, with the 2011 war in Libya. Mann states that while Obama acknowledged the United States has

little strategic interest in Libya, he also recognized that our "only . . . strategic interests on this issue lay in maintaining strong relationships with close allies." Nonetheless, President Obama did not approve the initial plan for a humanitarian intervention, because his advisers admitted it was unlikely to work, but rather pressed for options that would accomplish the mission. The president then personally worked out the division of labor among allied forces, in order to limit U.S. involvement.

Mann, looking back at his book *Rise of the Vulcans: The History of Bush's War Cabinet* (2004), concludes he was right when he described the 2003 invasion of Iraq as "the outer limits of the expansion of American power and ideals." Mann concludes that the Obama administration has been centrist, marking a new era in America's relations with the world, "one in which primacy is not assured."

The Obamians follows in the path of such books as Bob Woodward's *Obama's Wars*, in that it uses background interviews to provide a picture of the Obama administration's foreign-policy decision making. While Woodward focuses on the Afghan-surge decision making, Mann looks at the evolution of the Democratic Party's foreign policy since Vietnam and then places the Obama administration within that context. By doing so, James Mann has produced a book of value to both specialists and the general reader, contributing to a better understanding of the Obama administration's foreign-policy decision making.

AMBASSADOR JOHN A. CLOUD, RET.
Naval War College



Cimbala, Stephen J., ed. *The George W. Bush Defense Program: Policy, Strategy & War*. Dulles, Va.: Potomac Books, 2010. 243pp. \$60

There is no lack of analysis and opinions when it comes to the presidency of George W. Bush, particularly now, during an election year. However, the concise and competent analysis found in this work provides an objective review of that pivotal period in history, one that helps the modern reader draw valuable insights applicable to America's defense acquisition process and to the foreign policy and global strategy of the United States going forward.

Stephen Cimbala, distinguished professor of political science at Penn State Brandywine, has assembled a series of eleven essays by leading academics and analysts of the military-industrial complex, who provide assessments of President Bush's defense policy and strategy. This scholarly but thoroughly readable collection examines preparations for, and the execution of, war and regime change in Iraq, success and stalemate in Afghanistan, and the sobering effects of "transformation" on the Department of Defense. Additional insights into struggles within NATO and its relationship with the United States, the U.S. relationship with Russia, the critical issues of nuclear proliferation and terrorism, and the implications of foreign military sales complete this collection.

The editor sequenced the essays to provide first the context of the times, the political pressures, and the personalities of key members of the administration. These contextual essays are prefaced by an erudite commentary on

defense planning, including the brilliant takeaway that the oxymoron "foreseeable future" deprecates the ability of planners to make reliable resource-allocation decisions. This chapter alone makes the book worthy of a place on the unofficial list of "books to read before reporting to a Pentagon tour." The essays follow with a critical (if sometimes unnecessarily pejorative) look at Secretary of Defense Donald Rumsfeld's behavior and his management of the department, along with the successes and failures of "transformation." Afghanistan and Iraq are closely examined in several essays, in which are documented examples of Secretary Rumsfeld's overreaching policies, his broken faith with uniformed leaders, and the systematic abuse of intelligence data used to fabricate the case for invading Iraq.

Subsequent chapters address future-oriented defense strategy and policy topics that were germane during the Bush presidency and continue to have implications now. One essay examines the primary questions facing the NATO alliance, including out-of-area missions and the ongoing debate regarding burden sharing among member states as they transition the institution from a posture of collective defense to one of collective security. This is followed by three essays that address arms-transfer policies and foreign military sales, weapons of mass destruction security, and U.S.-Russian nuclear arms control and missile defense.

This book will appeal to military and political scholars, but it also will be immensely appealing to the novice seeking insight into the national defense decision-making process. The lessons provided in this study are

directly applicable to current and future decision makers in the Pentagon, on Capitol Hill, and in the White House.

COMMANDER TATE WESTBROOK, USN
Assistant Director to the Deputy Assistant Secretary of the Navy—Financial Management and Budget (DASN-FMB)



Reveron, Derek S., ed. *Cyberspace and National Security: Threats, Opportunities, and Power in a Virtual World*. Georgetown Univ. Press, 2012. 246pp. \$29.95

This new collection of cyberspace policy essays includes the works of fourteen scholars and thinkers who present a panoply of views into how cyberspace can be contemplated as policy, doctrine, and strategy. The essays are not U.S.-centric but include focused views of Russian and Chinese thought on the domain, as ably presented by Nikolas Gvosdev and Nigel Inkster, respectively. Additionally, James Joyner provides an excellent synopsis of American and European Union thinking on cybersecurity and how these differing approaches affect not only national-level policy but also the debates within NATO. These perspectives lend texture to the questions of how cyberpower may be considered and how cyberpolicy may be crafted to be both credible and effective.

A section focuses on the legal aspects of cyberspace operations and the potential pitfalls of policy development. It pays particular attention to the concept of deterrence—an area that baffles policy thinkers and technical mavens equally. Of particular use is David Fidler's chapter, which provides useful terminology and definitions that help the

layperson participate in legal-focused discussions on the cyberspace domain.

Derek Reveron's editing deserves specific and laudatory mention. Rather than merely a collection of articles arranged by topic, he has produced a broad web of writings that shows the interaction of varied scholarly efforts, makes few restatements of the same facts, and brings the volume as a whole to bear on a variety of subtopics.

Steven Bucci's "Joining Cybercrime and Cyberterrorism: A Likely Scenario" lays out a useful rubric for understanding the operational environment of cyberspace and employs time-tested "most dangerous/most likely" threat-evaluation analysis. This chapter would be of particular benefit to planners and leaders looking to develop "tabletop" or other training events that would focus leaders on specific threats and the action, reaction, and counteraction options available to them.

Chris Demchak writes about "cybered conflict," which I thought to be a most remarkable approach of how cyberspace should be contemplated in national security, either as a domain or as discrete operations. In it she raises the point that all conflict from now on will have some degree of cyberspace flavor. However, very little will actually be dominated by or within this domain. The key is how best to integrate cyberspace into a coherent strategy, recognizing cyberspace's varied role. Her use of the term "cybered" is not random. It is a useful modifier and connotes "all sorts of systems of people, things, processes, and perceptions that are computer-related but not necessarily purely computerized." More than any

one particular chapter, this contribution opens the policy aperture and offers a useful, broad term with which coherent policy may be developed.

BRETT J. PATRON
Yorktown, Va.



Haywood, Robert, and Roberta Spivak. *Maritime Piracy*. New York: Routledge, 2012. 184pp. \$125

The resurgence of maritime piracy has generated a renewed interest in the subject across a number of different disciplines, including law, history, and security studies. Robert Haywood and Roberta Spivak's work draws from each of these fields to provide a succinct overview of the issues surrounding both contemporary piracy and counterpiracy operations. The authors, both affiliated with the Oceans beyond Piracy project, focus on how pirates are able to operate in the twenty-first century in the face of all the advances in military technology. Their answer highlights ineffective governance at the local and global levels, as well as outdated institutions and laws meant to deal with piracy. These failings have created gaps in the international system that have allowed piracy to flourish over the past several decades. The authors provide a number of policy recommendations to help quell the threat. One recurring theme is the need for a global reform of the merchant-vessel registry system. Historically, flag states have borne a large share of the responsibility for suppressing piracy. Since the end of World War II, however, open-registry states, also known as "flags of convenience," have undermined this line of defense against piracy.

While this book benefits in many ways from an interdisciplinary approach, some of its historical analysis is simplistic or inaccurate. For example, the second Opium War was not fought principally because Great Britain felt that Chinese officials had violated its flag-state rights during the famous *Arrow* incident, as the authors imply. They also attribute the rise in piracy around Hong Kong in the mid-nineteenth century solely to the fact that the Royal Navy refused to intervene against pirates unless British interests were directly involved. This is a gross oversimplification of the issue. Such slips are perhaps unavoidable in a relatively short text that ranges from Bronze Age maritime history to best-management practices on board contemporary merchant vessels, but the authors may have been overly selective in their historical account to add credibility to their policy recommendations.

That being said, this work is a valuable addition to the growing literature on contemporary maritime piracy. By covering a wide array of different topics, it serves as an excellent starting point for researchers interested in specific aspects of the subject. Furthermore, many of the policy recommendations will be of value to those interested in maritime security in general. Although some readers may disagree with the authors' belief that international organizations like the United Nations can play leading roles in suppressing piracy, these policy recommendations merit consideration because of their originality and ingenuity.

EDWARD LUCAS
American University
Washington, D.C.



Rosen, Stephen Peter. *War and Human Nature*. Princeton, N.J.: Princeton Univ. Press, 2005. 224pp. \$23.95

Stephen Peter Rosen is Michael Kaneb Professor of National Security and Military Affairs at Harvard University. In this ambitious volume he attempts to counter the view that economic-rationality models of human behavior adequately explain human decision making. He defines economic rationality as the assumption that people “have a stable, ordered, and consistent set of preferences and that they have a stable way of making choices about how to use scarce resources in a manner that gives them the most utility for a given expenditure of resources.” Rosen attempts to demonstrate the inadequacy of economic rationality to explain or predict human behavior by drawing on a wide range of empirical research.

The book is organized into four major chapters. The first explores brain structure from an evolutionary perspective and in some depth. The central finding here is that for very good evolutionary reasons much of human decision making is performed by the nonconscious portion of the brain. This clearly is a survival mechanism in an environment where danger and challenge must be rapidly assessed and action must be taken much more quickly than a linear and consciously analytical process would allow. The implication of this research for the overall project is a need to contemplate more deeply the limits of conscious and cognitive aspects of decision making—we must think more on the role of economic rationality in human choice.

The second chapter explores the genetic and personality variations among individuals, stressing the degree to which such variables cause individuals to make different choices in the same situation and fact set. The third looks at the various ways different societies organize themselves and explores the degree to which varying forms of social organization cause different types of individuals with different styles of decision making to emerge as leaders. The last major section explores the mechanisms of determining political behavior of states. Rosen argues that in some forms of social organization, the decision-making styles and personality traits of individuals may be dampened by mechanisms of social control, whereas in others they may be amplified.

Along the way, the book looks at the effects of emotion, memory, dominance, testosterone, distress, depression, and varying time horizons, and the decision-making styles of tyrants (as contrasted with leaders in other forms of government). It is, in short, an attempt to synthesize a wide range of information from the biological and psychological disciplines to cause us to think more critically about the role of rationality in political decision making. Because of the work’s broad and synthetic approach, the reader may sometimes be less than thoroughly convinced of the implications of such diverse studies for political decision making. The author acknowledges as much in stressing the book’s tentative and exploratory nature. As a preliminary effort to temper excessively rationalistic narratives, however, Rosen has provided a valuable contribution and corrective to much political theory.

MARTIN L. COOK
Stockdale Professor of Professional Military Ethics
Naval War College



Catsambis, Alexis, Ben Ford, and Donny L. Hamilton, eds. *The Oxford Handbook of Maritime Archaeology*. New York: Oxford Univ. Press, 2011. 1,203pp. \$150

The Oxford Handbook of Maritime Archaeology is a survey of the current state of the field as seen by fifty-seven scholars from across the globe. The volume is organized into seven parts: an introduction by the eminent American scholar George F. Bass, one of the pioneers of the field; a section on process, with fifteen topical chapters; on ships and shipwrecks, with sixteen chapters; on maritime culture and life ashore, with seven chapters; on matters “beyond the site,” with eight chapters dealing with an eclectic group of topics ranging from maritime history to underwater tourism, international law, heritage site management, and museum issues; a single concluding chapter dealing with future directions; and finally, a section that includes both a glossary of ship terms and an appendix on scientific analyses and dating techniques. Each of the separate chapters includes an extensive and useful selected bibliography, and there is a general index of the entire volume.

Overall, this volume constitutes a major complementary work to James L. Delgado’s *Encyclopedia of Underwater and Maritime Archaeology* (British Museum, 1997, and Yale University Press, 1998), and as such it represents a benchmark by which to measure the growing sophistication of the field over the fourteen years that separate Delgado’s work from this one. As George Bass points out in his introduction, maritime archaeology has

become a worldwide methodological approach, one that has grown from single-site research in the past fifty years. Its future now rests on the synthesis of geographically and chronologically diverse data. At the same time, the volume demonstrates that not all its practitioners have yet transformed the breadth of their understanding in order to achieve this vision fully.

This work suggests a number of important and encouraging signs of maturation within maritime archaeology. First, there is a growing appreciation that the field extends outward from underwater shipwrecks and is linked to a number of areas. These areas range from the concept of maritime cultural landscape, as explained by Christer Westerdahl, to the remains of ships that have survived ashore, as Delgado describes, to archaeological work being done on coastal sites to understand the littoral interaction between life afloat and ashore, to studies of ancient harbors in the Mediterranean, and the archaeology being done in shipyard sites. Second, and even more importantly, there are clear signs of important broad synthesis in topics where underwater archaeology is able to provide information missing from other sources. This welcome trend is evident in the chapters by Mark Polzer on early shipbuilding in the eastern Mediterranean, by Deborah Carlson on the seafarers and shipwrecks of ancient Greece and Rome, by Eric Rieth on Mediterranean ship design in the Middle Ages, by Susan Rose on medieval ships and seafaring, by Fred Hocker on postmedieval ships and seafaring in the West, and by Randall Sasaki on East Asia shipbuilding traditions during the era of Chinese maritime expansion. Curiously, few authors mention at any length the

maritime archaeological contributions to social history that constitute such a feature of terrestrial archaeology.

As this handbook suggests, underwater archaeology is best known for its contributions to understanding ship construction in periods and places for which other sources are either scarce or nonexistent, but at the same time, additional areas are opening up for the field as it expands. The long section with fifteen chapters on the processes of maritime archaeology shows that the field is becoming increasingly complex and changing rapidly as new technological capabilities are brought to bear. This work repeatedly displays the immature aspects of the field, with several authors suggesting that they prefer a closed and private field of inquiry and others noting the relative lack of analytical publication, the numerous investigations that have produced little in the way of written results. Nevertheless, this work provides room for optimism that more and more maritime archaeologists are moving beyond the earlier narrow foci on process, procedure, and intrinsic objects toward wider interpretations. Francisco C. Domingues, in his contribution, touches on this point when he emphasizes the relationships of maritime archaeology to the broader study of maritime history, the study of mankind's interaction with the seas, oceans, and waterways of the world. Indeed, maritime archaeology is one of the many complementary disciplinary approaches by which we can better understand that basic theme in global history. It is a distinct methodological discipline, but its meaning must extend beyond its process and procedures, just as the work of an archival researcher or library

reader extends beyond methodologies and processes. Maritime archaeology is a means to find greater understanding and meaning in traces and remains that can be found in an underwater equivalent of libraries and archives, but to do so its results need to be merged with those from other complementary methodologies and processes. As is clear from this volume, practitioners of maritime archaeology have a way to go, but the reader is left with hope that there is movement toward that end.

JOHN B. HATTENDORF
Naval War College



Gerwarth, Robert. *Hitler's Hangman: The Life of Heydrich*. New Haven, Conn.: Yale Univ. Press, 2011. 393pp. \$35

Reinhard Heydrich, Reich Protector of Bohemia and Moravia, favorite of Heinrich Himmler, and architect of the Nazis' notorious "final solution," stares out of a seventy-year-old photograph looking more movie star than monster. Yet monster he was, in a party of monsters. Any biography of this once-rising star of the Third Reich must ask and attempt to answer the question, How does a person become a monster?

Robert Gerwarth does as well as any scholar in answering this question. He meticulously charts the course of Heydrich's life. Heydrich's childhood was relatively normal. His family held the values of the middle class, perhaps a bit more so than most, since his father ran a music conservatory. Heydrich accepted, along with most of his generation, the military myth of betrayal as an explanation for Germany's defeat in

the First World War. The Depression brought his family the specter of want and uncertainty, as it did to hundreds of thousands of families. He developed a passion for sports, and throughout this period there was never any sign that Heydrich was destined for anything out of the ordinary, but when he joined the German navy as a cadet, as Gerwarth chronicles, Heydrich began to display a fierce ambition and an ability to identify opportunities for advancement and position himself to take advantage of them. Heydrich was clearly on a path for success when he was obliged to appear before a naval court of honor, as a result of a prior love affair that had surfaced after he announced an engagement—a minor scandal made worse by Heydrich's arrogance before the court.

Heydrich was stripped of the uniform that in many ways had defined him, and his potential for historic impact seemed slight. However, leaving the navy he found himself at a unique and eventually rewarding nexus of personal, state, and global changes. Heydrich's fiancée and her family were passionate Nazis, and for Heydrich the party offered a new path to power, position, and a positive self-image. For the rest of his life Heydrich would commit himself to becoming a paragon of National Socialism. He would succeed far better than most.

Getting in at what amounted to the ground floor of the creation of the Schutzstaffel (SS), Heydrich rapidly rose in the organization, becoming a confidant and trusted agent of Heinrich Himmler. Gerwarth argues convincingly that Heydrich was not an ideologue when he joined the movement, but he increasingly acted as an apparently true believer. Among

Heydrich's more interesting, and chilling, attributes was a belief that the times called on true Germans to be hard, even ruthless, in reestablishing their place as the rightful rulers of Europe.

Heydrich was also hardworking, athletic, personally brave, and fairly good-looking. Upon several occasions he disobeyed orders and flew combat missions with the Luftwaffe. He was quick to accept and master new challenges, particularly ones that would enable him to rise within the party structure or gain power. Increasingly, these involved the removal of Jews and other "undesirables" from the Reich. As the regime moved inexorably toward mass murder and genocide as policy, so too did Heydrich. He was responsible for the *Einsatzgruppen*, special task forces that followed the advancing front rounding up intellectuals, professionals, politically suspect individuals, and—always, always—Jews. Impressed with pseudoscience and apparently obsessed with sanguinary percentages, Heydrich divided and subcategorized the inhabitants of Europe on the basis of the Aryan "purity" of their blood. Early ideas, such as transporting European Jews to Madagascar, quickly faded, to be replaced with murder on an industrial scale. By 1941 Heydrich had crafted the so-called final solution. For him the elimination of populations was also the road to increased personal power, advancement, and fame. It was also a personally fulfilling task, for he had come to hate these unarmed and all but helpless enemies of the state.

To the German people Heydrich presented an image of the perfect National Socialist, secure in his roles as loyal servant of the people, good family man,

and warrior standing between loved ones and the war's devastation. At dinner parties he was urbane, charming, and attentive to women. It was not surprising that he had affairs.

A workaholic, he became a master of political infighting, and Gerwarth chronicles how Heydrich continually and successfully employed this skill, which gained him many enemies and opponents, such as Admiral Wilhelm Canaris, the head of German military intelligence. He knew how to hold a grudge and how to take advantage of opportunities for advancement. Still, Gerwarth debunks the modern myth of competition and jealousy between Himmler and his protégé. Gerwarth quite early in the book also disproves allegations that Heydrich's ethnic heritage included Jewish forebears.

Some readers may find Gerwarth a shade too empathetic with his subject, but it is important to note that it is all too easy to paint Heydrich as a monster born or to suggest that somehow the catalyst of National Socialism was required to create him. The author reminds us that the reality is far more terrifying—that the conditions that transformed Heydrich into an architect of evil can all too easily be re-created.

If there is a shortcoming to *Hitler's Hangman*, it is the lack of an in-depth examination of Heydrich's leadership, which leaves a curious gap in our understanding of the man. Still, taken in its entirety, this book has earned a rightful place on the shelves of serious biographies. The lessons it offers are ones that should not be forgotten.

RICHARD NORTON
Naval War College

IN MY VIEW

LEARNING FROM MISTAKES

Sir:

I read with interest the thoughtful article by Capt. Mark Light on “The Navy’s Moral Compass” (*Naval War College Review*, Summer 2012). Indeed it is a mystery to me why so many commanding officers, knowing what is at stake, hazard their careers by indulging in unprofessional behaviour.

It seems that one can be relieved for failure on two main tracks. One is the professional, where one loses the confidence of seniors through bad seamanship (groundings, collisions, etc.), bad leadership (writ large), or just general incompetence. As the tolerance for imperfection of any sort seems to be close to zero these days, people can lose their commands on a dime. We had a CO in the Royal Canadian Navy in the late 1950s who mistakenly let a couple of shells loose over Everett, Washington. He later rose to flag rank! I doubt this would happen today in either the RCN or the U.S. Navy. But professional mistakes can happen for a number of reasons, including simple bad luck.

The other track, of course, is personal. Here the tolerance for misbehaviour regarding alcohol abuse, sexual harassment, etc., is also nil. In fact, as Captain Light alludes, the USN sets the standard of behaviour for COs (and all its officers?) at a much higher level than society in general. This is not necessarily wrong but it might be slightly unrealistic. For example, I would differentiate between the CO who conducts an affair with one of his subordinates and another whose marriage has broken down who begins a relationship ashore that has nothing to do with his professional competence as a CO. If I understand the article correctly, both would be relieved pronto for conduct unbecoming.

What I don’t understand, and Captain Light can’t answer the question either, is why so many COs risk their commands by indulging in inappropriate behaviour. The USN officer corps is huge, so it must be an honour to be selected for command. I would have thought that the gene pool from which to choose COs is equally large. Is there a failure in the selection process? Don’t officers understand

not only the values and ethics of their profession, but also what society now expects of them? Or is human nature frail enough that a few will always do the wrong thing given the chance? One would hope that any character deficiencies would have been corrected by the time officers reach command. Captain Light notes that this is clearly not always the case.

A word of caution, though: if any profession demands a zero tolerance for mistakes of any sort in its people, it creates an environment of fear, caution, and an unwillingness to take reasonable risks for fear of failure (and therefore command or career termination). I understand the principle, but what we want in warfighters is officers who seize the initiative in battle and perform. So by all means let's continue to educate on inappropriate behaviour whilst also allowing a long enough leash so that officers can learn from their mistakes and become the leaders we need.

DAVID B. COLLINS

Lieutenant Commander (Ret.)

Royal Canadian Navy

REFLECTIONS ON READING

Professor John E. Jackson is the Naval War College's manager for the Chief of Naval Operations' Professional Reading Program. This article was adapted from the October 2012 Navy Administrative (NAVADMIN) message that announced the new program.

Nearly two centuries ago, Samuel Southard, the Secretary of the Navy, ordered that every ship in the fledgling U.S. Navy be provided with a professional library of thirty-seven books on topics including mathematics, history, and philosophy. It was recognized in the earliest days of our Navy that a robust reading program could greatly improve the quality of the force. This is no less true today. In October 2012, in conjunction with the Navy's 237th birthday, the Navy launched the new Chief of Naval Operations' Professional Reading Program (CNO-PRP). This program represents the evolution of the Navy Professional Reading Program, which has been in the fleet since 2006. The popular program has been significantly revised to serve today's sailors better and to reflect the changing world and growing challenges faced by modern mariners. The purpose of the new CNO-PRP mirrors that of the earlier program—to facilitate the professional development of all sailors throughout the fleet.

The CNO's Professional Reading Program is a great deal more than a suggested reading list. The books have been carefully selected and will be widely distributed around the fleet to serve as tools to help extend the personal and professional growth of all sailors beyond their day-to-day duties. One key to maintaining the strength of the Navy is continually increasing the knowledge base of the men and women in uniform.

To this end, Navy Reading

- Develops a greater appreciation of the views of others and helps all hands better understand the changing world
- Enhances professionalism and improves critical thinking
- Fosters a deep appreciation for naval and military heritage

- Increases knowledge of joint warfare and strengthens the ability of sailors at all levels to make sound judgments
- Stimulates discussion about the maritime profession and the ever-evolving role of sea power.

The structure of the program has been revised to make the books more accessible to sailors at all levels. Specific changes include movement away from rank-based recommendations to a simplified division of books into two main categories. Eighteen books, categorized as “Essential Reading,” will be distributed during the last quarter of calendar year 2012 in hard-copy format to most ships, squadrons, and stations. Commands with existing reading-program libraries will integrate the new titles into their collections. Most of the additional twenty-four books, categorized as “Recommended Reading,” are available as electronic books (e-books), and many can be downloaded at no cost through the Navy General Library Program site on the Navy Knowledge Online (NKO) portal. The program now focuses on the three tenets outlined in the CNO’s Sailing Directions: (concentrate on) Warfighting First, (prepare to) Operate Forward, and (improve your skills to) Be Ready. The forty-two books in the CNO-PRP have been selected for their relevance to these tenets, and the lessons learned from reading them will help all sailors meet future challenges.

The CNO-PRP has been streamlined to make our Navy’s Reading Program more interactive, affordable, and wherever possible, electronically accessible. To that end, first, CNO-PRP book sets will be distributed directly to commands throughout the Navy in the final months of calendar year 2102. Internal control procedures are expected to be put into place that will strike the appropriate balance between maintaining accountability for the books and making them available on a loan basis to as many sailors as possible. Second, a number of the forty-two CNO-PRP titles will be available for free loan in e-book or digital audio format from the Navy Library e-content link within the NKO portal, at www.nko.navy.mil. Efforts are under way to procure additional titles as publishers make them available in compatible formats. This NKO site also provides authorized users with access to thousands of other free books, magazines, and periodicals. Security restrictions preclude downloading CNO-PRP books and other general reading books via Navy-owned computers, so downloading them to personally owned devices will be required. Finally, for sailors who prefer to purchase their own copies of these books, the Navy Exchange Service Command will stock these books for sale, most at substantial discounts, in its retail stores and through the uniform-sales section of its online sales system, at www.mynavyexchange.com.

Reading, discussing, and understanding the ideas found in the CNO-PRP will not only improve critical thinking skills but help everyone in the Navy to become better sailors, better citizens, and most importantly, better leaders. The CNO expects every sailor to strive to read at least two titles from the CNO-PRP each year. This list is not intended to limit professional reading in any way but merely to provide easy access to a few of the many titles that will benefit the naval service. The American patriot Thomas Jefferson once said, “I cannot live without books.” He clearly understood the benefits gained by studying the words of the great minds of the past and present. The motto of the CNO-PRP is “Read to Be Ready,” and all hands are encouraged to use reading as another way to prepare for service with honor, courage, and commitment.

JOHN E. JACKSON