



Can We Get the Global Network of Navies to Work?

Pacific Command Operational Science and Technology Symposium

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What We Will Talk About Today

▼Background

▼Perspective

▼The Challenge of Naval Coalition Networking

▼Achieving Coalition Networking

▼Summary, Conclusions and a Way Forward



“What we’ve got here is failure to communicate.”
The Captain to Luke
Cool Hand Luke, 1967

A Hypothesis

Throughout history, technological advances have made communicating faster and more effective.



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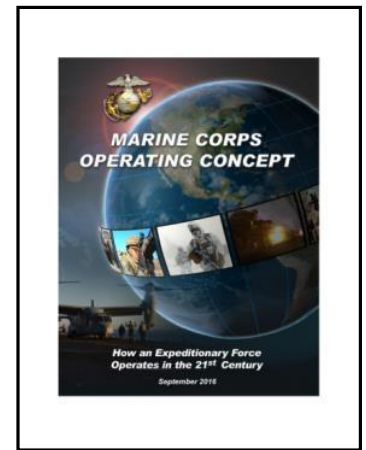
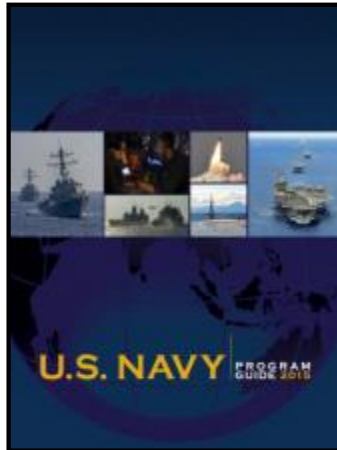
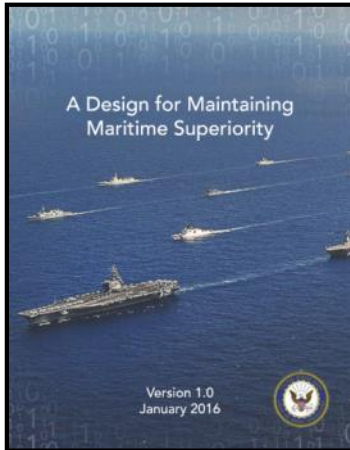
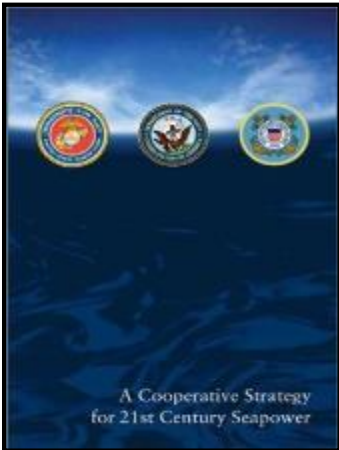
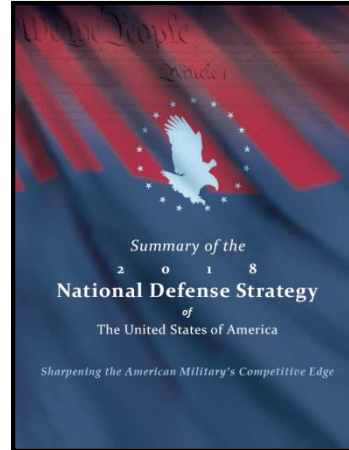
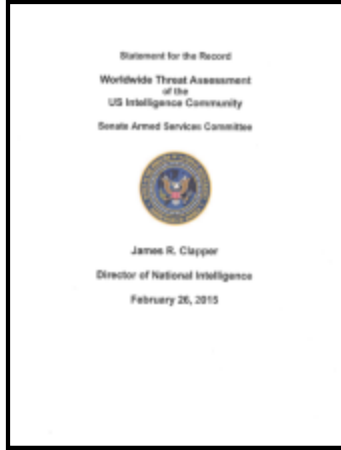
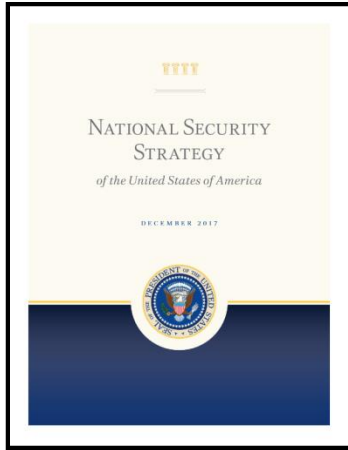
“In this age, I don’t care how tactically or operationally brilliant you are, if you cannot create harmony – even vicious harmony – on the battlefield based on trust across service lines, across coalition and national lines, and across civilian/military lines, you really need to go home, because your leadership in today’s age is obsolete.”

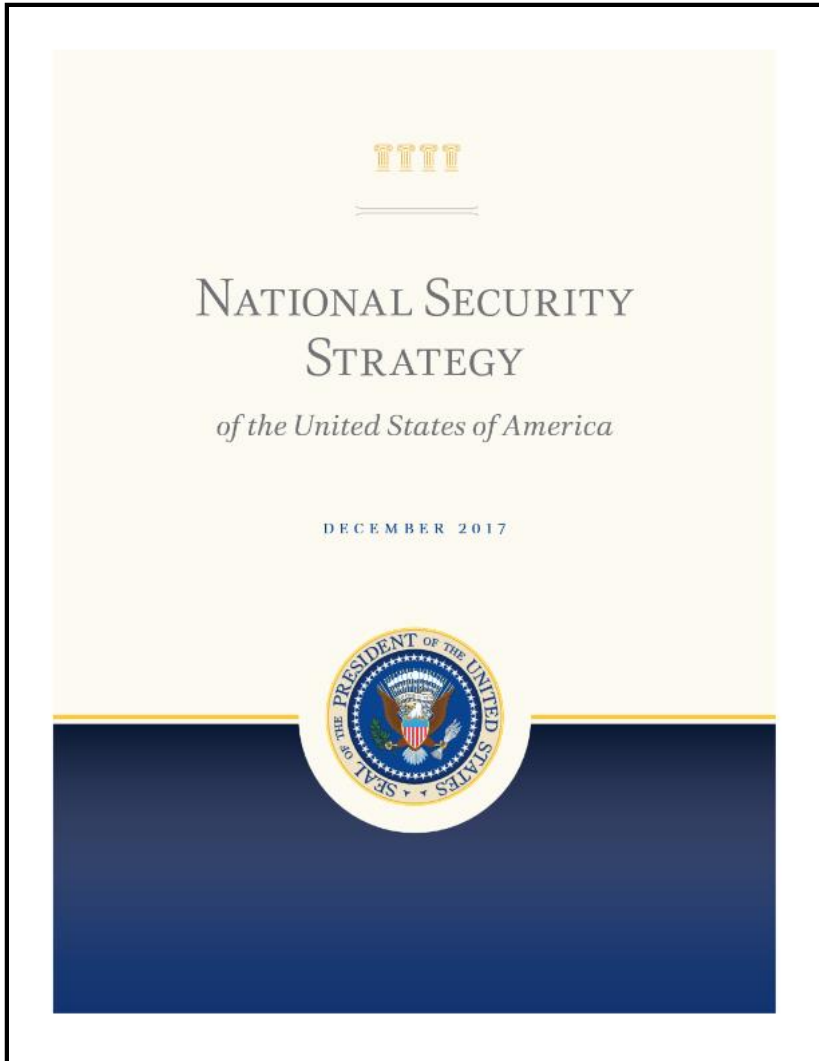
General James M. Mattis

Then-Commander, Joint Forces Command
Remarks at the Joint Warfighting Symposium
May 13, 2010

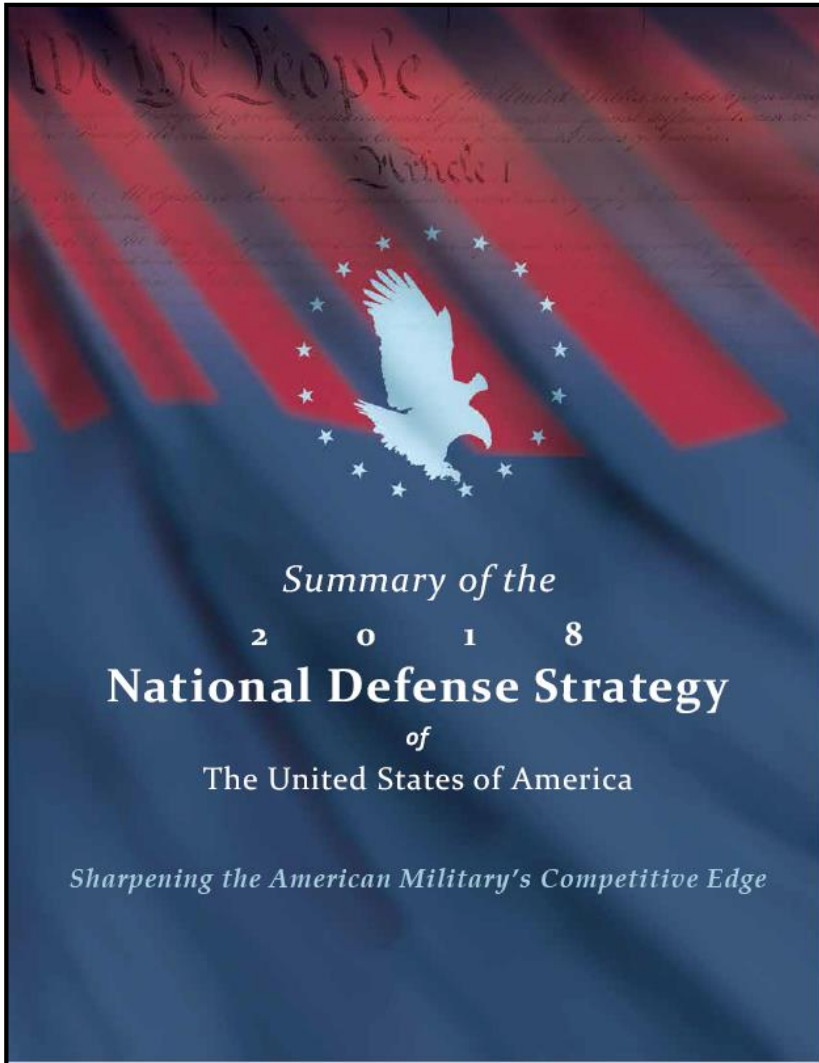


Everyone Wants Coalition Interoperability

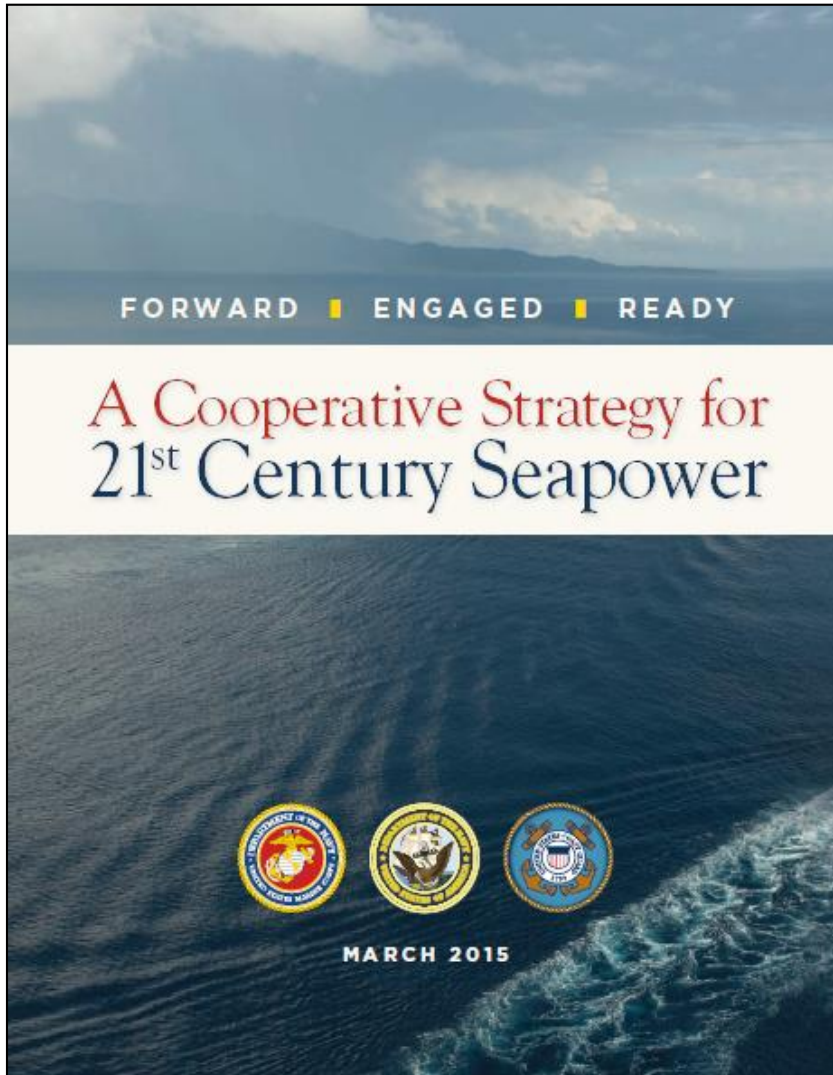




“Sustaining favorable balances of power will require a strong commitment and close cooperation with allies and partners because allies and partners magnify U.S. power and extend U.S. influence.”



“Mutually beneficial alliances and partnerships are crucial to our strategy, providing a durable, asymmetric strategic advantage that no competitor or rival can match.”



“America’s security and prosperity grow with that of our allies and partners. The Sea Services will **continue expanding the global network of navies** to address our common security interests.”

Networking the Global Network of Navies

- ▼ Globalization has brought nations closer together and increased world-wide prosperity
- ▼ Navies undergird the ability of nations to trade across the global commons
- ▼ Globalization has facilitated all forms of international terrorism
- ▼ No one navy can police the global commons – a Global Network of Navies is needed

Networking the Global Network of Navies

- ▼ Navies working together to police the global commons must be effectively networked
- ▼ This networking is crucial in order to develop a common operational picture and to self-synchronize
- ▼ Emerging C4ISR technologies are critical to networking navies
- ▼ The fact that navies have led networking at sea often obscures technological challenges

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“When John Fisher became First Sea Lord in 1904, his main pledge was to solve this intractable problem ... Fisher in effect invented picture-based warfare. He created a pair of war rooms in the Admiralty, one built around a world (trade) map, the other around a North Sea map.”

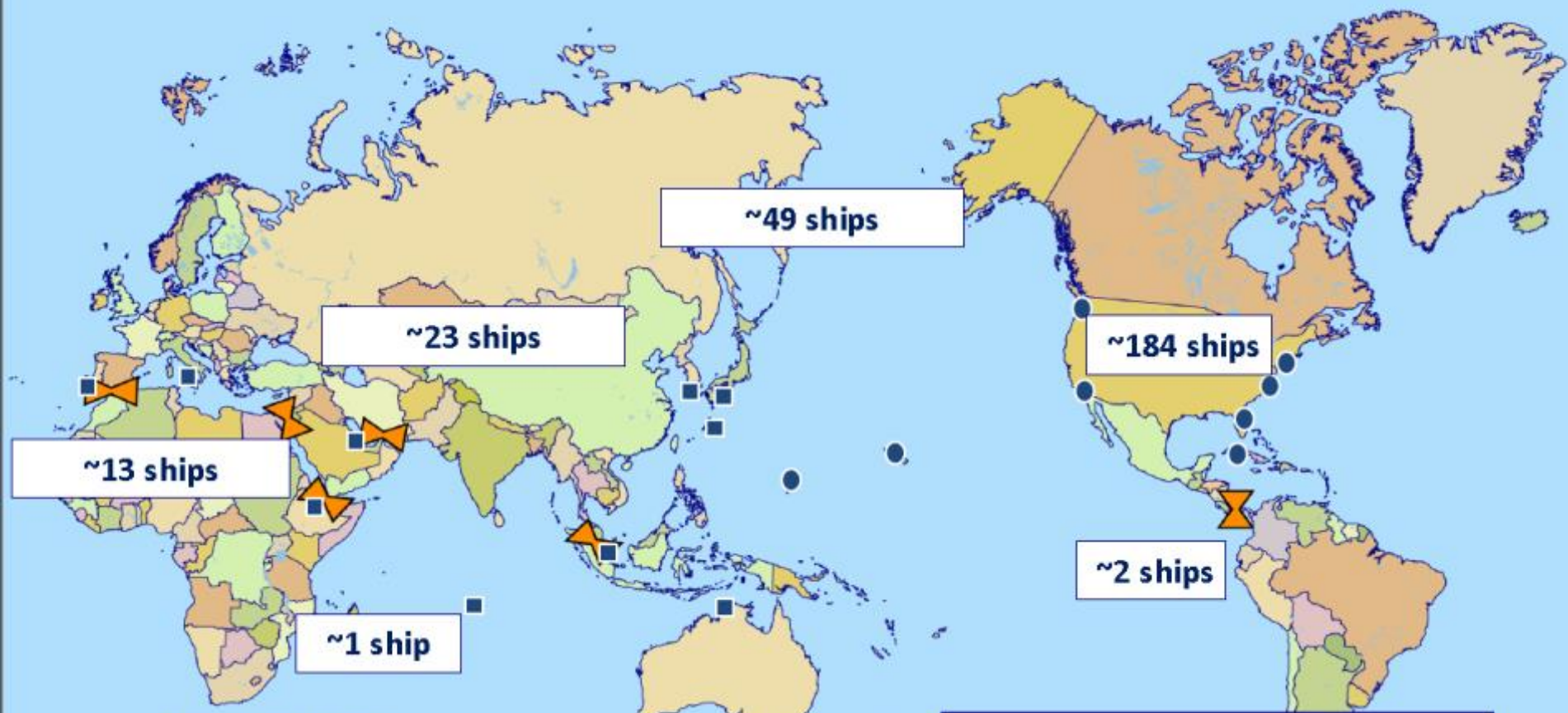
Dr. Norman Friedman

“Netting and Navies: Achieving a Balance”
Sea Power: Challenges Old and New



Perspective

- ▼ Maritime coalitions have existed for at least two and a half millennia and navies have communicated at sea for at least that long
- ▼ Over time, the need to *communicate* at sea has morphed to the need to *network* at sea – and this networking has a rich, century-long history
- ▼ Understanding this history is important in our efforts to successfully network coalitions at sea in the future
- ▼ The globalization of commerce has made the need for a Global Network of Navies (GNN) an *urgent* requirement to sustain worldwide prosperity
- ▼ Networking navies is a *necessary condition* for a GNN but technological advances among navies have often been uneven – impeding effective networking



Transit Times (in days)

East Coast - Suez Canal	15	<ul style="list-style-type: none"> ● Bases ■ Places ▶ Crossroads
East Coast - Strait of Hormuz	24	
East Coast - Strait of Malacca	31	
West Coast - Yokosuka	14	
West Coast - Strait of Hormuz	32	
West Coast - Strait of Malacca	23	

Total : 272 Ships
Deployed: 88 Ships
41,000 personnel

Ships deployed (Avg Last 90 Days)



OPERATE FORWARD:
 Strategic Maritime Crossroads

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“In today’s world, nothing significant can get done outside of a coalition context, but we have been *humbled* by the challenges of devising effective coalition communications.”

Dr. David Alberts

Director of Research

Assistant Secretary of Defense for
Networks Information Integration

U.S. Department of Defense

7th International Command and Control

Research and Technology Symposium

September 2002



Technological Advances and Networking

- ▼ Coalition partners working with the U.S. Navy often want to know the “price of *admission*”
- ▼ From the U.S. perspective it is more about the “price of *omission*” if we cannot work together
- ▼ It is not ship hulls or aircraft airframes that enable this – but C4ISR technologies
- ▼ If each coalition partner develops these technologies independently, chaos can ensue

Technological Advances and Networking

- ▼ The “need for speed” often drives each navy to push technology forward independently
- ▼ Coordinated technological development in parallel offers one promising solution to this
- ▼ This must then translate to parallel acquisition of systems that are mutually compatible
- ▼ This sounds great in theory, but where does this work happen and how can we foster more of it?

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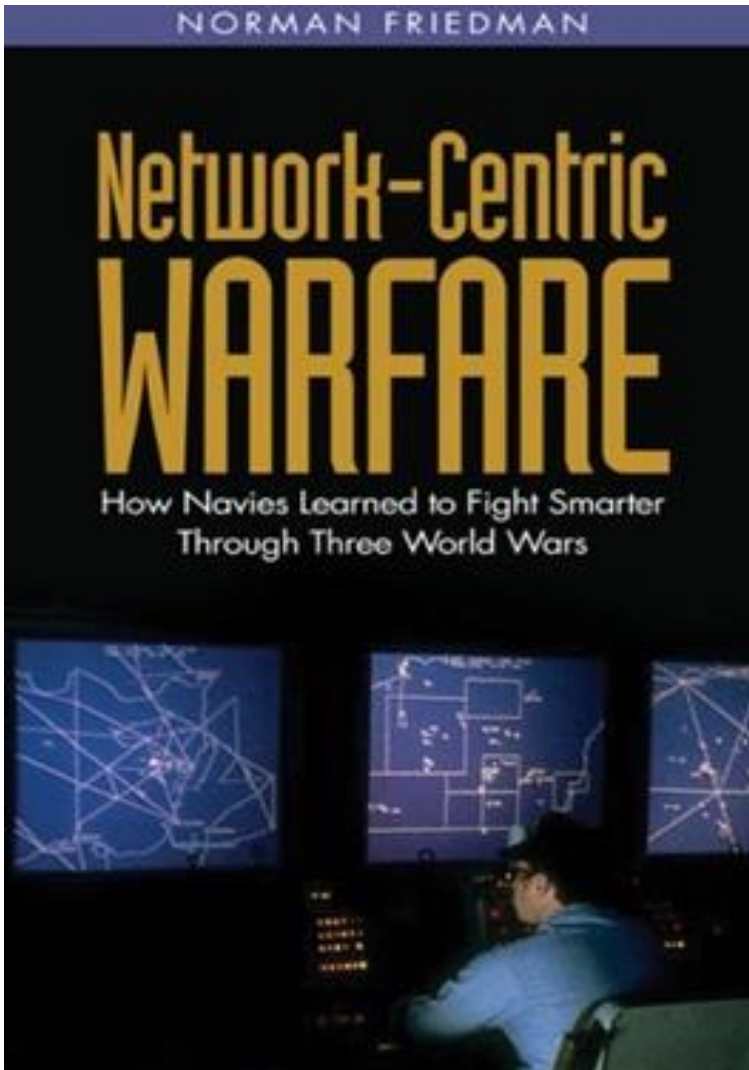
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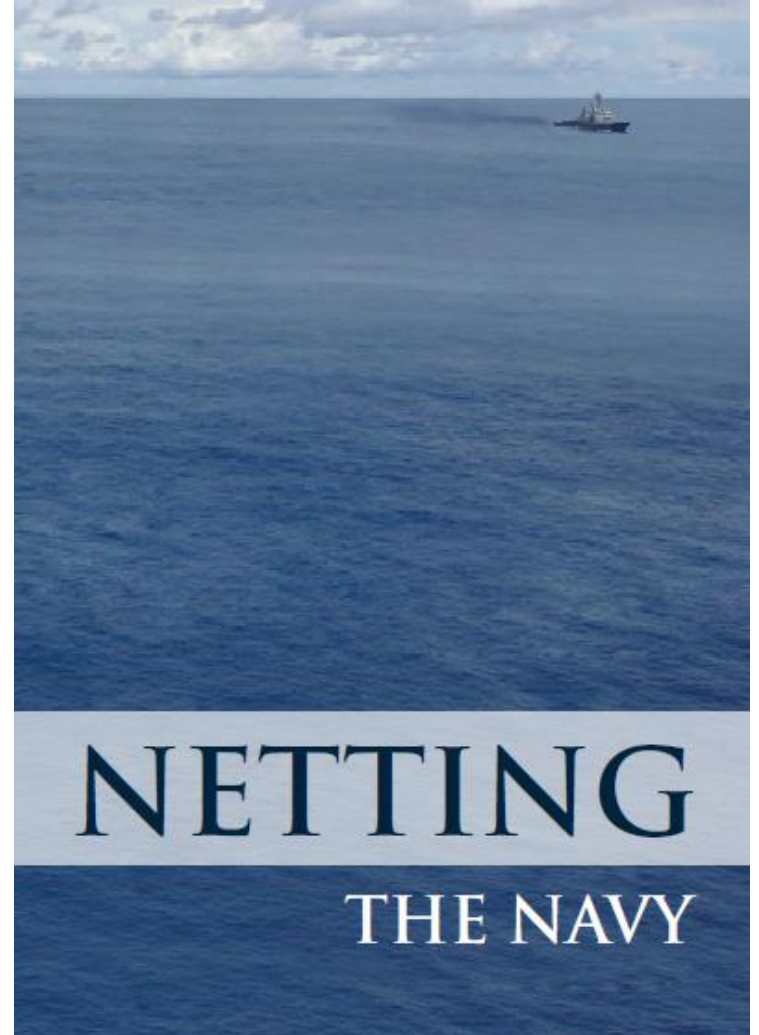
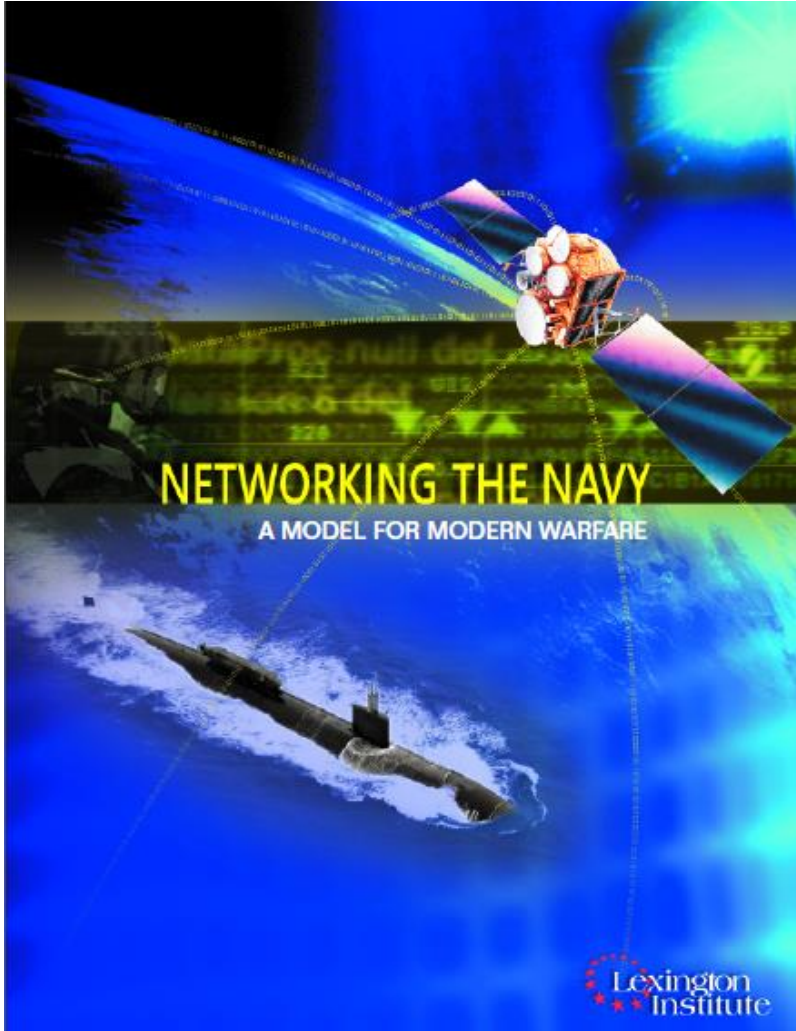
“What we build and what we subsequently sell to foreign navies used to be low priority for the Naval Sea Systems Command. Today, with the Thousand Ship Navy and the Global Maritime Partnership, this is now a huge part of what we do.”

Vice Admiral Paul Sullivan
Then Commander, Naval Sea Systems Command
NLUS Sea-Air-Space Symposium
Washington, D.C.
March 20, 2008





“When the late Admiral Arthur Cebrowski coined the phrase network-centric warfare more than a decade ago, he thought he had invented a totally new way of war...Admiral Cebrowski took particular umbrage at suggestions that his child was actually “NTDS on steroids.”..NTDS exemplified naval command and control practices invented more than a century ago.”



“The basic notion of networking is not new. Networks have existed ever since the first human communities emerged in mankind’s dim prehistory...

...What is different today is the speed, precision, capacity and reach of the most advanced networks. That is truly unprecedented – so much so that they are transforming civilization.”

Dr. Loren Thompson

Networking the Navy:

A Model for Modern Warfare

Achieving Coalition Networking: Tell it to the Labs

- ▼ Effective nation-to-nation defense laboratory cooperation has been going on for over a half-century under the auspices of:
 - The Technical Cooperation Program (TTCP)
 - AUZCANNKUKUS Cooperation
 - Information Exchange Agreements
 - Memoranda of Understanding
- ▼ This lab-to-lab cooperation leads to a wide-range of supportive agreements to share effort and resources in development of mutually compatible systems
- ▼ SSC Pacific is especially focused on cooperative development of C4ISR systems

“It isn’t platforms, it isn’t payloads, it’s the network that will be most important.”

Dr. Daniel Gouré

“It’s not the Platform,
It’s Not the Payloads, It’s the Network”
Lexington Institute
January 15, 2014

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“We will win – or lose – the next series of wars in our nation’s laboratories.”

Admiral James Stavridis
Then SOUTHCOM Commander
“Deconstructing War”
U.S. Naval Institute Proceedings
December 2005



Summary and Conclusions

- ▼ Over time, especially in the past several decades, the need to *communicate* at sea has morphed into the need to *network* at sea
- ▼ Today no navy stands alone & networking navies effectively is a necessary condition for a global maritime partnership
- ▼ Technological advances among navies have been uneven – impeding effective networking between navies
- ▼ We have “beta-tested” several methodologies for networking navies more effectively

A Way Forward

- ▼ The rich history of naval cooperation to secure the global commons offers good examples of how our navies can cooperate today while raising the bar for how these navies work together in the future
- ▼ Today, globalization and a wide range of challenges mean that no navy stands alone and all navies must work together even more closely in peace and in war
- ▼ Networking navies effectively via C4ISR technologies *concurrently developed* is a *necessary* condition for mutual security and prosperity via an effective global maritime partnership
- ▼ The AUSCANNZUKUS example of naval cooperation under the auspices of The Technical Cooperation Program offers one example of how to begin to tackle C4ISR interoperability challenges at the lab level

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PROCEEDINGS

The Independent Forum on National Defense

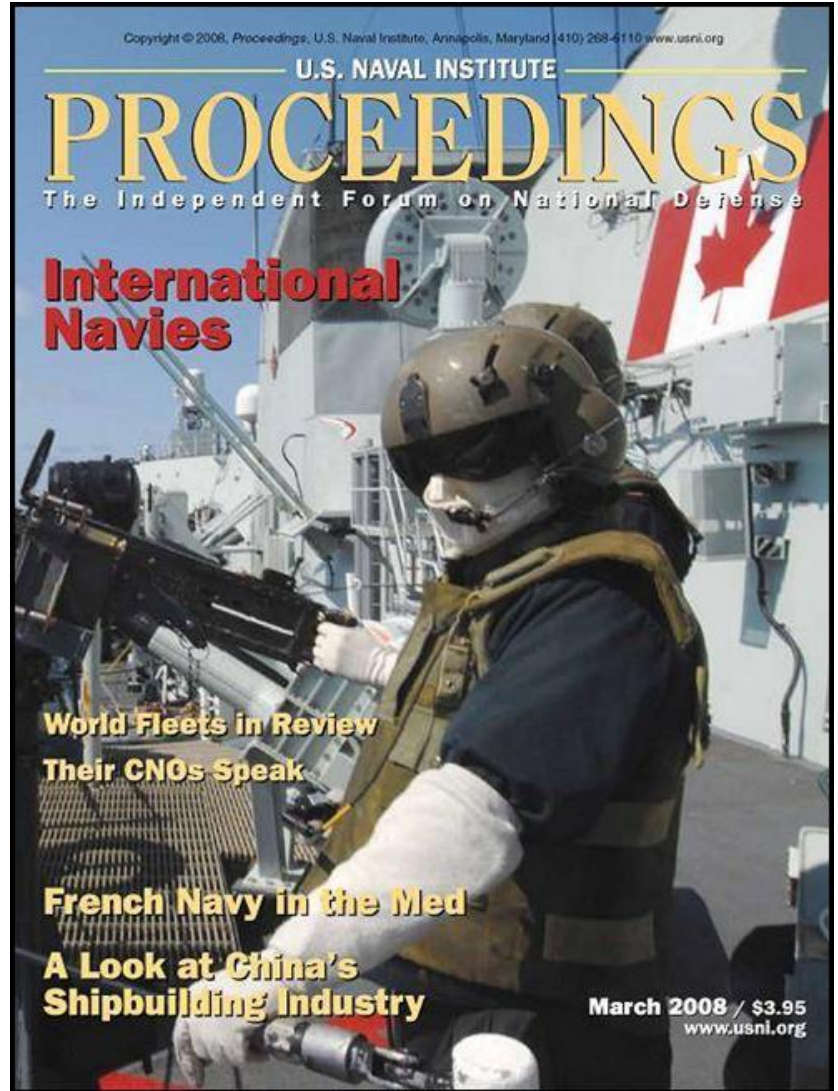
International Navies

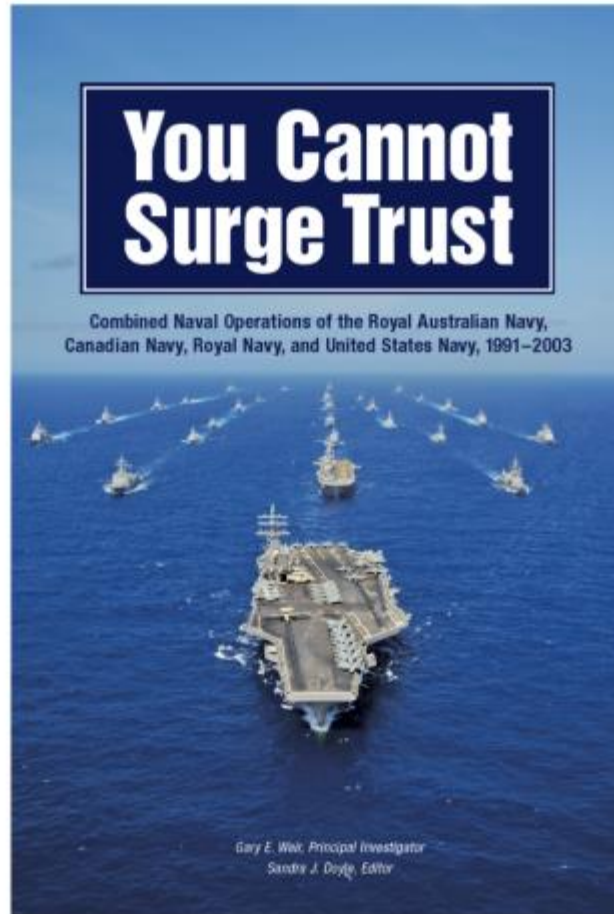
World Fleets in Review
Their CNOs Speak

French Navy in the Med

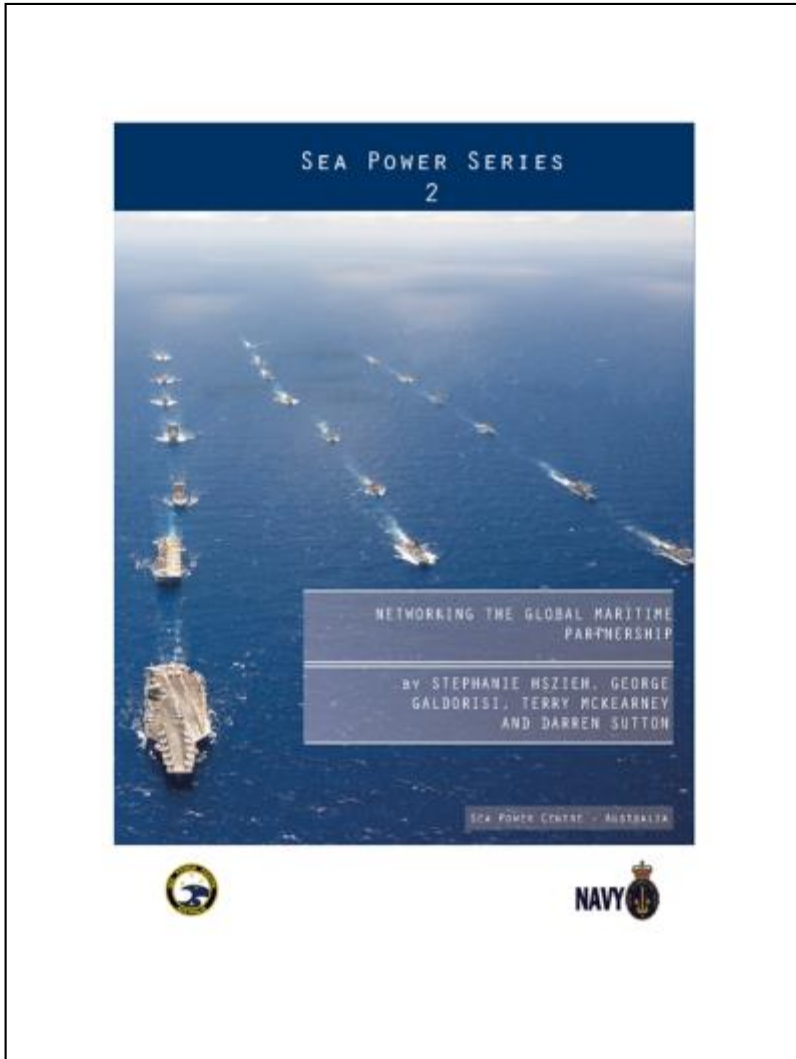
A Look at China's
Shipbuilding Industry

March 2008 / \$3.95
www.usni.org





- ▼ Builds on the initial TSN/GMP concept first surfaced in 2005
- ▼ Highlights the importance of navies operating together routinely
- ▼ Discusses combined naval operations of four navies over a two-decade period
- ▼ Speaks to the relevance of naval and maritime history in defense policy development



- ▼ Builds upon the arguments made in *You Can't Surge Trust*
- ▼ Offers historical examples of naval communications and networking at sea
- ▼ Presents the technological challenges impeding coalition networking today
- ▼ Offers a range of solutions to make today's network of navies more effective

“Allies and partners are crucial to the U.S. Navy’s efforts to help ensure peace and stability on the global commons. **We need to bridge the interoperability gaps that currently exist between our navies.**”

The Honorable James Geurts
ASN RD&A
Keynote Address
West Symposium
February 8, 2018



We Look Forward to Continuing the Dialogue

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Questions?

