

# Archipelagic Defense 2.0

ANDREW F. KREPINEVICH JR.  
SENIOR FELLOW, HUDSON INSTITUTE



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**Hudson Institute**  
1201 Pennsylvania Avenue, NW  
Fourth Floor  
Washington, DC 20004

+1.202.974.2400  
[info@hudson.org](mailto:info@hudson.org)  
[www.hudson.org](http://www.hudson.org)

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# ABOUT THE AUTHOR



## Andrew F. Krepinevich Jr.

Dr. Andrew F. Krepinevich Jr. is a senior fellow at Hudson Institute, an adjunct senior fellow at the Center for a New American Security, and president of Solarium LLC, a consulting firm. In 1995 he founded the Center for Strategic and Budgetary Assessments, which he led for 21 years. His service at CSBA was preceded by a 21-year career in the US Army.

Dr. Krepinevich has served in the Department of Defense's Office of Net Assessment, and on the personal staff of three secretaries of defense. He has also served as a member of the National Defense Panel, the Defense Science Board Task Force on Joint Experimentation, the Defense Policy Board, the Congressional National Defense Strategy Commission, the Army Special Operation Command's Advisory Board, the Army Science Board, and as chairman of the Chief of Naval Operations Executive Panel.

Dr. Krepinevich has taught on the faculties of West Point, Georgetown University, the Johns Hopkins School of Advanced International Studies, and George Mason University.

His most recent book, *The Origins of Victory: How Disruptive Military Innovation Determines the Fates of Great Powers*, was released in March 2023. He also authored *The Last Warrior: Andrew Marshall and the Shaping of Modern Defense Strategy*; *7 Deadly Scenarios: A Military Futurist Explores War in the 21st Century*; and *The Army and Vietnam*.

Among his recent works are "The Eroding Balance of Terror," and "The New Nuclear Age," both published in the journal *Foreign Affairs*, and "Modernizing the Nuclear Triad: Decline or Renewal?" published by Hudson Institute.

A graduate of West Point and the Naval War College, Dr. Krepinevich holds an MPA and PhD from Harvard University. He is a member of the Council on Foreign Relations.

In 2020, Dr. Krepinevich received West Point's Distinguished Graduate Award.

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# EXECUTIVE SUMMARY

This study presents an operational concept for the United States and its Coalition partners.<sup>1</sup> Its purpose is deterring overt Chinese aggression in the Western Pacific Theater of Operations (WPTO)—with an emphasis on the archipelago often referred to as the First Island Chain—and defeating aggression should deterrence fail. Hence the concept’s name: Archipelagic Defense. This work expands, updates, and refines the version originally set forth in 2017, thus the title Archipelagic Defense 2.0. While the study focuses principally on the United States, it does so within the context of a Coalition of states whose core also includes Australia and Japan. Moreover, the Archipelagic Defense concept calls for expanding the Coalition to other like-minded states in the Indo-Pacific region. Thus, this study will also have relevance for defense policymakers and military leaders in countries throughout the Indo-Pacific region.

Based on this study’s assessment, the objective stated above can best be supported by a military posture whose planning efforts:

- Improve the Coalition’s understanding of how the Chinese Communist Party (CCP) views the competition—including its revisionist objectives and strategy for achieving them.
- Reflect the dynamic and open-ended nature of the competition, enhancing Coalition strategic planning through persistent analyses (e.g., through net assessments of the military balance) that incorporate scenarios, war games, and joint/combined field exercises designed to identify existing and potential sources of alliance and Coalition strengths and weaknesses.
- Assess the mobilization balance—the extent to which mobilization activities confer a pronounced Chinese advantage (or weakness) at points along the mobilization process.
- Undertake an assessment of economic warfare operations, to include a Coalition blockade of China, as well as a People’s Liberation Army (PLA) counter-blockade of Coalition

states, to include efforts to sever the Coalition’s sea lines of communication.

- Create a strong strategic narrative to address the social dimension of strategy.

Depending upon their resources and level of technical competence, alliance and Coalition militaries implementing Archipelagic Defense should:

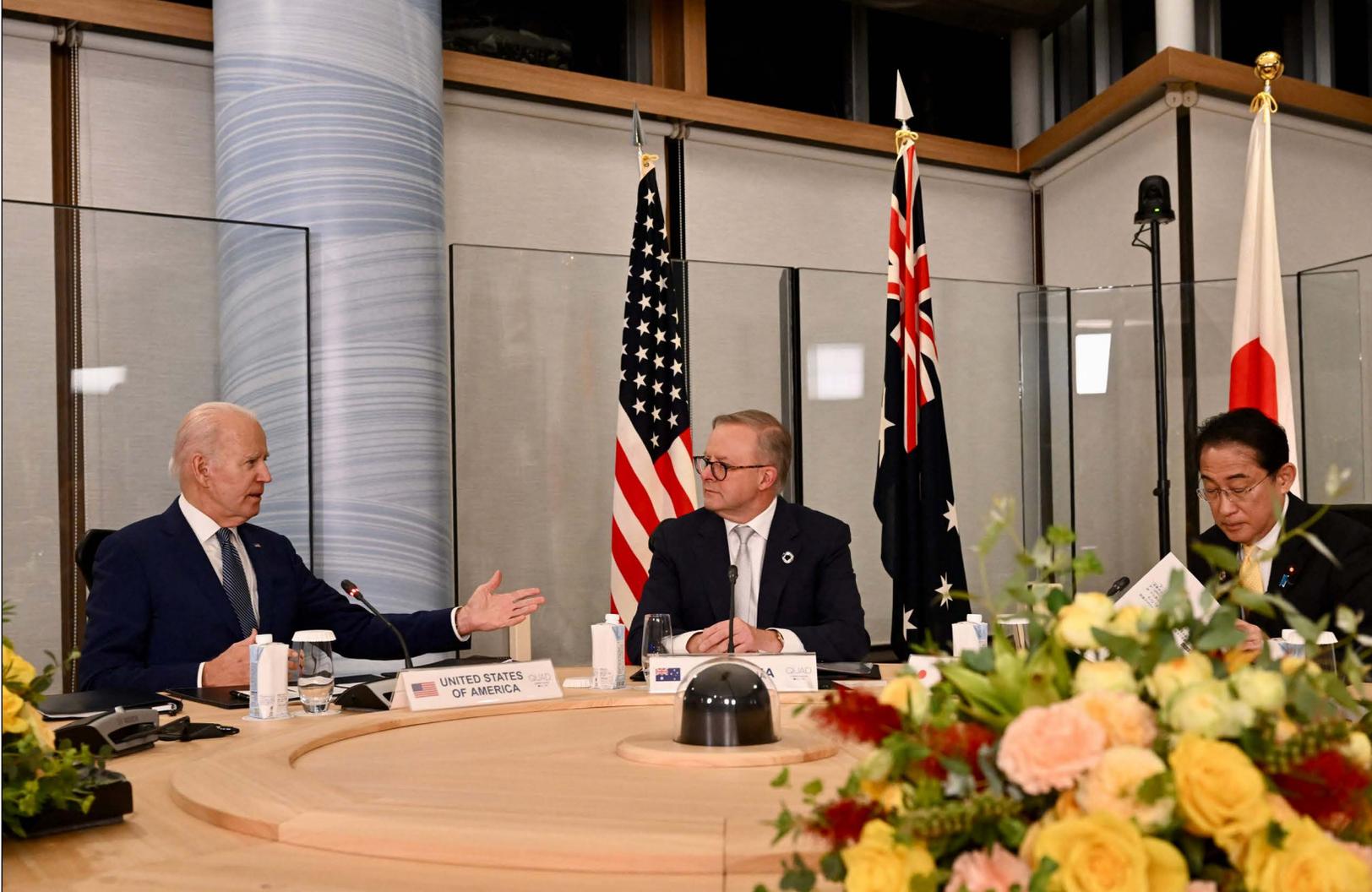
- Augment Coalition defenses by shifting, over time, the US military from a predominantly expeditionary posture to a forward-deployed (and eventually a forward-based) posture.
- Reduce reliance on (and the vulnerability of) large and vulnerable land bases and major surface warships through more highly distributed forward-operating forces; greater reliance on systems capable of conducting long-range scouting and strike operations in contested environments; and a mix of active and passive base defenses, to include “striking the archer,” hardening bases, and preferential air and missile defenses.
- Form a highly mobile operational reserve—with emphasis on air, cyber, long-range strike, and maritime forces—capable of concentrating military power rapidly to threatened sectors along the First and Second Island Chains.
- Emphasize capabilities directly related to air, sea, and information denial operations, which according to the PLA are domains it must dominate in order to undertake offensive campaigns.
- Improve the US battle network’s robustness through exploring (and, where appropriate, adopting) alternative satellite- and terrestrial-based architectures, and establishing a world-class competence in operating under mission-type orders and commander’s intent.
- Create or augment ground forces capable of conducting cross-domain missions, to include air and missile defense, coastal defense, and extended-range precision strikes.
- Field or augment advanced irregular warfare ground forces—especially in the Philippines and Taiwan—armed with

<sup>1</sup> As used in this study, the term “Coalition” refers to Australia, Japan, and the United States.

state-of-the-art communications and precision-guided rockets, artillery, mortars, and missiles (G-RAMM), and supported in wartime by Coalition advisors with access to remote extended-range fires.

- Deny China the ability to exploit its strategic depth by holding key strategic military and economic assets in its interior at risk.
- Foster greater alliance and Coalition partner cooperation and interoperability, to include frequent, rigorous, and realistic joint and combined training.

Archipelagic Defense is not a panacea for all forms of Chinese aggression, any more than NATO's conventional deterrent addressed the challenges once posed by Moscow's wars of national liberation and nuclear buildup. Nor are the initiatives presented in this study comprehensive. The dynamic character of the military competition in the Western Pacific in particular, and the Indo-Pacific in general, guarantee that Archipelagic Defense 2.0, like its predecessor, will need to be further modified over time.



## 1. INTRODUCTION

This study presents an operational concept for the United States and its Coalition partners. Its purpose is deterring overt Chinese aggression in the Western Pacific Theater of Operations (WPTO)—with an emphasis on the archipelago often referred to as the First Island Chain (see map 1)—and defeating aggression should deterrence fail.<sup>2</sup> Hence the concept is named Archipelagic Defense. This work expands, updates, and refines the version originally set forth in 2017,<sup>3</sup> thus the title *Archipelagic Defense 2.0*. While the study focuses principally on the United States, it does so within the context of a Coalition of states whose core also includes Australia and Japan. Moreover,

<sup>2</sup> As defined in this study, the Western Pacific Theater of Operations contains both the First and Second Island Chains as well as the Third Island Chain. The First Island Chain extends from the Kuril Islands in the north through the Japanese archipelago, Ryukyu Islands, and Taiwan, then down through the Philippines and Borneo to the Malay Peninsula and Singapore. The Second Island Chain extends from Japan's Bonin Islands through the Mariana Islands (including Guam) and Caroline Islands (including Palau) and down to New Guinea. The Third Island Chain runs from the Aleutian Islands through the Hawaiian Islands, American Samoa, and Fiji, terminating at New Zealand.

<sup>3</sup> Andrew F. Krepinevich Jr., *Archipelagic Defense: The Japan-U.S. Alliance and Preserving Peace and Stability in the Western Pacific* (Tokyo: Sasakawa Peace Foundation, 2017).

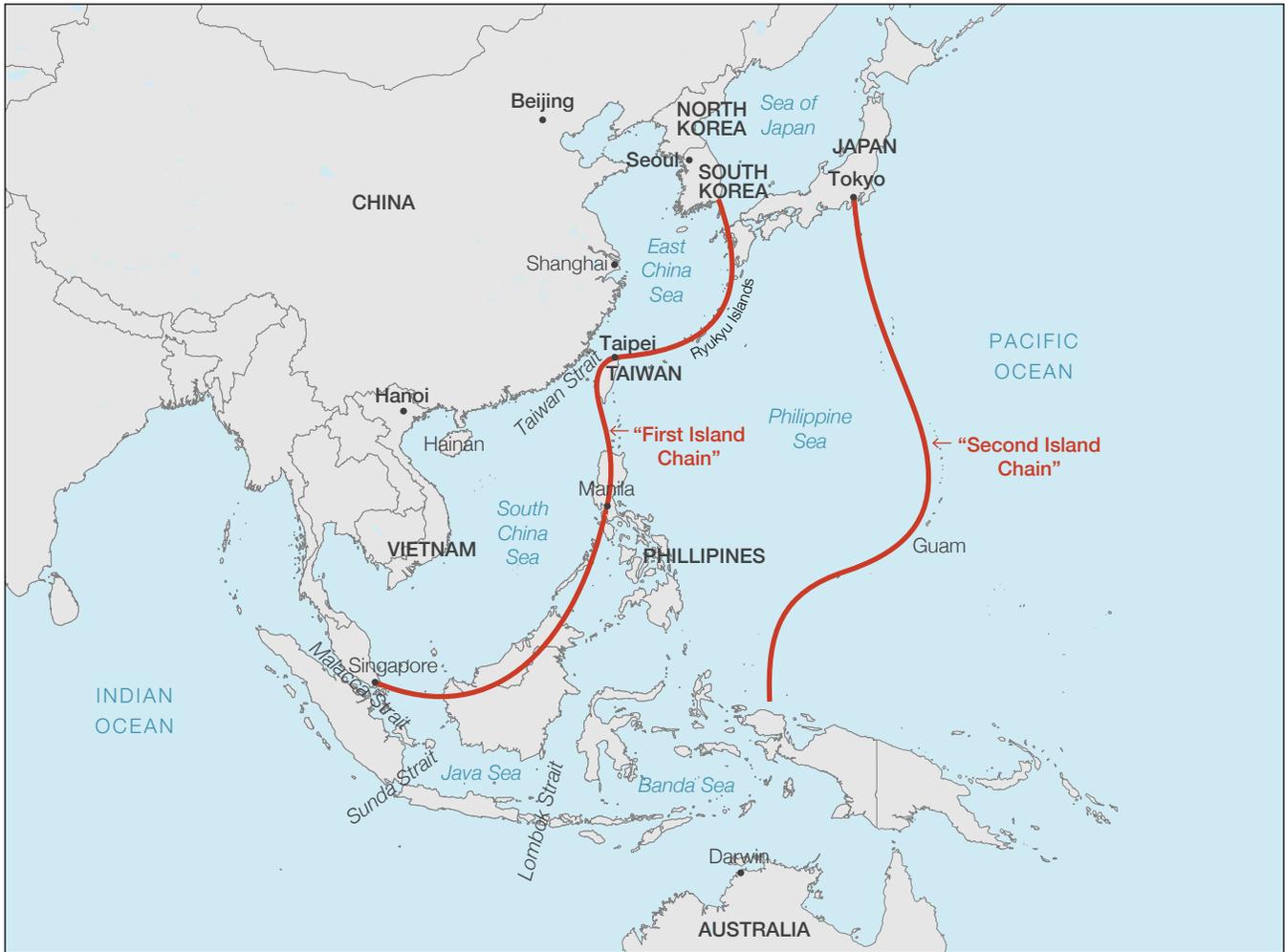
the Archipelagic Defense concept calls for expanding the Coalition to other like-minded states in the Indo-Pacific region. Thus, this study will also have relevance for defense policymakers and military leaders in countries throughout the Indo-Pacific region.

### A Revisionist China

China's military buildup is now well into its third decade. It supports Beijing's goal of replacing the international order in the Indo-Pacific region with one whose rules are set in Beijing even though the existing order has produced an era of extended peace and unprecedented prosperity, for China in particular. In addition to shifting the military balance in its

Photo: US President Joe Biden, Australian Prime Minister Anthony Albanese, and Japanese Prime Minister Fumio Kishida at a Quad meeting on the sidelines of the G7 leaders' summit in Hiroshima, Japan, on May 20, 2023. (Photo by Kenny Holston/AFP via Getty Images)

Map 1. The First and Second Island Chains



Source: Krepinevich, *Archipelagic Defense*, 11.

favor, the Chinese Communist Party (CCP), which has imposed a totalitarian system of government on the Chinese people, is seeking to augment its growing military power by providing its People’s Liberation Army (PLA) with “positional advantage.” To this end, Chinese actions, particularly in the South China Sea but also in the South Pacific and South Asian Theater of Operations (SATO),<sup>4</sup> recall the ancient game

4 The SATO, as I use it in this study, comprises the US Indo-Pacific Command’s area of

of *Wei-Ch’i* (known in Japan and the West as “Go”), in which the goal is to position one’s forces (in the form of stones) on a gameboard grid to win by creating positional advantage rather than by physically capturing enemy pieces as in the game of chess.<sup>5</sup> Through this combination of military force

responsibility to the west of Indonesia, including Bangladesh, Burma, Bhutan, India, Laos, Nepal, Pakistan, Thailand, and the Indian Ocean. In brief, the SATO and WPTO together roughly approximate the US Indo-Pacific Theater command area of responsibility.

5 For a discourse on how leaders can apply “*Wei-Ch’i*” strategy to warfare, see Scott A.

and positional advantage, China seeks to “Finlandize”<sup>6</sup> the Western Pacific out to the Second Island Chain. This strategy is also consistent with China’s strategic culture as reflected in the writings of the great Chinese military theorist Sun Tzu, who argued that the mark of a great general is not to win a hundred battles but to convince his rival to give up without a fight.<sup>7</sup>

Were the Chinese Communists to succeed, it would generate a fundamental shift in the Indo-Pacific balance of power and risk triggering a collapse of the existing international order, not only in the region but beyond. Consequently, in an effort to maintain their independence, many states in the Asia-Pacific region are looking to the United States, in particular, and to the other leading regional powers—such as Australia, India, and Japan—which comprise what is popularly known as the Quad—to counterbalance China’s growing military power.

China’s actions have generated a growing consensus in US policy circles regarding the need to maintain a favorable military balance of power in the Western Pacific. The Biden administration and the predecessor Trump administration have established China as the primary threat to US security, and the Western Pacific as the region of greatest concern. Thus, aside from deterring a general nuclear war, the US military’s principal challenge is to deter China, which possesses a large, technically advanced military, from initiating a general war in the Western Pacific Theater of Operations. Should deterrence fail, the challenge of the Coalition of like-minded states is to wage war to terminate the conflict on favorable terms. Toward this end, the United States maintains defense treaties or security com-

mitments with the three nations that comprise the First Island Chain’s core: Japan, the Philippines, and Taiwan, as well as South Korea, which lies on the chain’s northern flank.<sup>8</sup>

## Why Operational Concepts?

For over a century, highly successful military organizations have used operational concepts to provide the conceptual basis for planning at the theater, or campaign, level of war, including how joint and combined forces operate to achieve strategic goals. In this way, operational concepts inform the crafting of doctrine and war plans and establish force structure, force posture, and resource priorities. They also aid in determining an effective division of labor between the militaries of states acting together as a coalition. As the term suggests, operational concepts are designed to address “operational challenges”: compelling real-world problems that adversaries pose at the operational level of war.

Operational concepts also inform—and are informed by—detailed expert analysis as well as war games, simulations, experiments, and field exercises. Together they enable a military to validate and refine an operational concept to the point that it becomes doctrine—or is abandoned for failing to live up to its promise. Either way, properly executed activities reduce the uncertainty regarding how a military organization can maximize its effectiveness.

New and innovative operational concepts have been particularly valuable during periods of disruptive shifts in the character of warfare, such as we are experiencing at the present time with the maturation of the precision-warfare regime<sup>9</sup> and the emergence of a military revolution enabled in part by advances across a range of military-related technologies.<sup>10</sup>

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Boorman, *The Protracted Game: A Wei-Ch'i Interpretation of Maoist Revolutionary Strategy* (Oxford, UK: Oxford University Press, 1971). See also David Lai, *Learning from the Stones: A Go Approach to Mastering China's Strategic Concept*, Shi (Carlisle, PA: Strategic Studies Institute, US Army War College, 2004).

6 Finlandization is the process wherein a relatively small country follows the foreign policy of a more powerful country that enjoys a dominant military advantage over it. Political scientists coined the term to describe the relationship between Soviet Russia and Finland during the Cold War.

7 Sun Tzu said, “The supreme art of war is to subdue the enemy without fighting” and “For to win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill.”

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8 Analysts may view South Korea, although it is not part of the First Island Chain, as an “island” in that its only land border with Asia is with communist North Korea.

9 The US military introduced the Precision Warfare Revolution in the form of a nascent reconnaissance-strike complex in the First Gulf War. The precision-warfare regime has matured in the sense that there are other militaries, the PLA in particular, that have fielded their own version of a reconnaissance-strike complex. Thus, while the US military once held a rough monopoly in precision-warfare operations, this is no longer the case.

10 For a detailed discussion of this issue, see Andrew F. Krepinevich Jr., *The Origins of Victory: How Disruptive Military Innovation Determines the Fates of Great Powers* (New Haven, CT: Yale University Press, 2023).

As will be elaborated on presently, in addressing the threat that China poses in the Western Pacific, the US military and the militaries of its Coalition partners will have no resources to waste. In the absence of a clear operational concept describing how to posture and employ Coalition forces, establishing informed defense policy, basing, force structure, and program priorities becomes difficult if not impossible. Absent such an operational concept (or integrated set of concepts), leaders risk allocating resources in accordance with “program momentum”—those systems and capabilities that a military force currently fields, and those it has procured and developed based on priorities it established to address prior operational challenges, such as, in the US case, combating terrorist organizations, insurgent groups, and third-rate military powers.

Given the importance to military effectiveness of identifying, validating, and refining operational concepts, one would have expected the US military to have made substantial headway in developing them, as the operational challenges that China poses in the WPTO are very different in scale, form, and geography from those it confronted over the quarter-century following the Cold War. With an eye to providing background and context to the subsequent discussion, the following section traces the efforts of the US military, still widely considered the world’s preeminent fighting force, to develop new operational concepts to address what has become a rapidly shifting conflict environment.

### Operational Challenges and Concepts: The Cold War

The last period of intense great-power competition, the Cold War between the Soviet Russia-led Warsaw Pact and the North Atlantic Treaty Organization, saw the American military developing detailed operational concepts and assigning priority to defending NATO’s European frontiers from a Soviet attack. Generally similar to the situation in the Western Pacific Theater of Operations today, the operational challenge centered on *defeating a technologically sophisticated, numerically superior foe in a high-intensity conflict environment in close proximity to the enemy’s homeland while avoiding nuclear weapons use*. Over

the course of the 40-year standoff between the two superpowers and their allies, the US military developed a set of operational concepts to meet this challenge. They also modified, and even abandoned, these concepts as circumstances required.

By the mid-1980s, the US military had in place several integrated operational concepts that its leaders had designed to address the challenge the Soviet Union posed to NATO’s “Central Front”<sup>11</sup> and that in some cases it had formalized as doctrine. The Army and Air Force collaborated to develop the Army’s AirLand Battle<sup>12</sup> doctrine within the alliance’s Follow-On Forces Attack concept.<sup>13</sup> These concepts emphasized disrupting and defeating successive echelons (or “waves”) of much larger enemy forces advancing out of Eastern Europe and Soviet Russia. Generally speaking, the alliance’s mechanized formations were tasked with blocking the Soviet frontline forces’ advance while a combination of deep-strike forces—including combat aircraft, missiles, and rocket artillery—concentrated on breaking up the second and third waves of Soviet forces advancing through Eastern Europe toward NATO’s borders.

The US Navy developed the Maritime Strategy<sup>14</sup> that, in part, sought to secure the sea lines of communication (SLOCs) across the Atlantic Ocean. It called for the fleet’s attack sub-

11 NATO’s Central Front (or Region) generally refers to area around the inner German border dividing East and West Germany—the German Democratic Republic and the Federal Republic of Germany, respectively, as well as West Germany’s border with Austria and Czechoslovakia. It also includes Belgium, Denmark, Luxembourg, and the Netherlands.

12 In 1982, the AirLand Battle concept became Army doctrine. It was refined in 1986 and again in 1993. See Paul H. Herbert, *Deciding What Has to Be Done: General William DePuy and the 1975 Edition of 100-5, Operations*, Leavenworth Papers Number 16 (Fort Leavenworth, KS: Combat Studies Institute, US Army Command and General Staff College, 1988); Douglas W. Skinner, *AirLand Battle Doctrine*, Professional Paper 463 (Alexandria, VA: Center for Naval Analyses, 1988); John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973–1982* (Fort Monroe, VA: Historical Office, US Army Training and Doctrine Command, 1984); Wilson C. Blythe Jr., “AirLand Battle: The Development of a Doctrine” (master’s thesis, Eastern Michigan University, 2010, <https://apps.dtic.mil/sti/pdfs/AD1119406.pdf>); and Robert Farley, “AirLand Battle: The War Strategy Created to Kill the USSR That Destroyed Iraq Instead,” *National Interest*, September 11, 2020, <https://nationalinterest.org/blog/buzz/airland-battle-war-strategy-created-kill-ussr-destroyed-iraq-instead-168820>.

13 Bernard W. Rogers, “Follow-On Forces Attack (FOFA): Myths and Realities,” *NATO Review*, December 1984.

14 The Maritime Strategy remains highly classified. The unclassified version appears in “The Maritime Strategy: Global Maritime Elements for US National Strategy, 1985,” in *US Naval Strategy in the 1980s: Selected Documents*, Newport Paper 33, eds. John B. Hattendorf and Peter M. Swartz (Newport, RI: Naval War College Press, 2008): 137–202. For an excellent summary, see John B. Hattendorf, *The Evolution of the US Navy’s Maritime Strategy, 1977–1986*, Newport Paper 19 (Newport, RI: Naval War College Press, 2004): 83–91.

marines to advance beyond the Greenland-Iceland-United Kingdom (GIUK) maritime gaps to keep Soviet submarines at bay, while the fleet's Outer Air Battle concept informed how naval airpower would defeat Russian strike aircraft.<sup>15</sup> To preclude the Soviets from using Norway as an advance base for air operations, the US Marine Corps planned to deploy quickly to that country and, as its Maneuver Warfare doctrine specified,<sup>16</sup> establish lodgments and secure airfields along that country's "spine" to block Soviet efforts to seize bases while instead providing bases for NATO air forces to conduct anti-submarine warfare (ASW) operations.

Not only did these concepts (or, in some cases, doctrines) guide US and allied military thinking and planning, they greatly aided senior civilian leaders in the Pentagon and in Congress in establishing clear defense program and budget priorities. For example, four divisions of equipment—Prepositioned Materiel Configured to Unit Sets (POMCUS)—were placed in Western Europe to facilitate the rapid reinforcement of US ground forces in support of the AirLand Battle concept,<sup>17</sup> while equipment was also pre-positioned in Norway to aid the Marine Corps in executing its Maneuver Warfare doctrine. Equipment, such as the Army's Advanced Tactical Missile System (ATACMS) and Apache attack helicopter, were fielded to support AirLand Battle. Related programs like Assault Breaker aided in the development of several systems, including the Joint Surveillance Target Attack Radar System (JSTARS), the Global Hawk unmanned aerial vehicle, and the Brilliant Anti-air-

mor Tank (BAT) submunition, which used acoustic sensors on its wings to detect and target tanks.<sup>18</sup> All were considered key capabilities for conducting AirLand battle operations at a high level of effectiveness.

### New Concepts for a New Era

Given the US military's successful experience during the Cold War in developing operational concepts, why the need for an externally developed concept like Archipelagic Defense, let alone an updated version? First, the initial version, published in 2017, has been well received. Enough time has passed, and enough feedback has been provided, to justify an update.<sup>19</sup> Second, a refined version of Archipelagic Defense could assist the US military, which has been struggling to develop an operational concept for the WPTO. This latter point merits some elaboration.

### Joint Forces Command

The decade following the Cold War found the US military enjoying a dominant advantage over any existing or prospective military rival. Simply put, no major power posed any general war operational challenges against which American military planners needed to focus their efforts. Instead, US military leaders emphasized planning for major regional contingencies (MRCs), major theater wars (MTWs), and major combat operations (MCOs), all of which addressed challenges from minor non-nuclear powers like Iran, Iraq, and (at the time) North Korea. The emphasis during this period on capabilities-based (as opposed to threat-based) planning serves as evidence of this.<sup>20</sup>

15 See, for example, James A. Winnefeld, "Winning the Outer Air Battle," *Proceedings* 115/8/1,038 (August 1989), <https://www.usni.org/magazines/proceedings/1989/august/winning-outer-air-battle>; and Jerry Watson, "Resurrect the 'Outer-Air' Battle," *Proceedings* 146/9/1,411 (September 2020), <https://www.usni.org/magazines/proceedings/2020/september/resurrect-outer-air-battle>.

16 See Jacob Borresen, "Alliance Naval Strategies and Norway in the Final Years of the Cold War," *Naval War College Review* 64, no. 2 (Spring 2011): art. 7; and Marinus, "Marine Corps Maneuver Warfare: The Historical Context," *Marine Corps Gazette* (September 2020).

17 Douglas I. Bell, "Just Add Soldiers: Army Prepositioned Stocks and Agile Force Projection," (Carlisle, PA: US Army Heritage and Education Center, US Army War College, n.d.), 1–2, 8–9, 14. See also Staff Working Paper, "Equipping the Total Army and Pomcus Sets 5 and 6" (Congressional Budget Office, July 1984). The initial focus of POMCUS, established in the early 1960s, was on defending Western Europe from a Soviet invasion. The effort generally lacked sufficient funding until the late 1970s when the United States and its NATO allies collectively funded its expansion, constructing numerous additional sites and expanding the number of division sets of equipment. Discussions over adding two additional division sets occurred in the 1980s.

18 Defense Advanced Research Projects Agency, "Assault Breaker," n.d., <https://www.darpa.mil/about-us/timeline/assault-breaker>. Assault Breaker integrated long-range weapon systems with surveillance and early warning systems. See also Robert Tomes, "The Cold War Offset Strategy: Assault Breaker and the Beginning of the RSTA Revolution," *War on the Rocks*, November 20, 2014, <https://warontherocks.com/2014/11/the-cold-war-offset-strategy-assault-breaker-and-the-beginning-of-the-rsta-revolution>.

19 The concept attracted widespread attention in the US and Japanese militaries. In recent years, the US Army and Marine Corps have adopted some elements of the concept. The Japanese Self-Defense Forces, notably its land component, has perhaps moved the furthest in adopting Archipelagic Defense.

20 H. H. Gaffney, *Capabilities-Based Planning in the Coming Global Security Environment* (Alexandria, VA: Center for Strategic Studies, 2004). See also Colonel Michael W. Piétrucha, "Capability-Based Planning and the Death of Military Strategy," *USNI News*, August 3, 2015, <https://news.usni.org/2015/08/05/essay-capability-based-planning-and-the-death-of-military-strategy>.

Given the emergence of a precision-warfare regime, however, and the prospect that other militaries would eventually end the United States' near monopoly on this form of warfare, the Defense Department (DoD) accepted the need to adapt, or "transform," its warfighting concepts. A new organization, Joint Forces Command (JFCOM), was established in 1999 and given the task.<sup>21</sup> Indeed, JFCOM was the only major command to which the DoD assigned this responsibility. Following the 9/11 attacks, however, US military planning priorities shifted to addressing the challenges that radical Islamist terrorist organizations and insurgents posed, particularly in Afghanistan and Iraq. Here the US military found itself playing a game of catch-up following nearly three decades of benign neglect of this form of warfare.<sup>22</sup> Thus, JFCOM found itself tasked with preparing US forces for counterterrorism and counterinsurgency combat operations, moving "transformation" to the command's back burner.

During this time a revisionist China seized the opportunity to undertake a major, sustained military buildup with an eye toward shifting the military balance in the WPTO in its favor. Confronted with this rapidly emerging challenge, in 2009 a Washington public policy institute (or think tank), the Center for Strategic and Budgetary Assessments (CSBA), published two reports: *Why AirSea Battle?* and *AirSea Battle: A Point of Departure Operational Concept*.<sup>23</sup> The reports' principal objective was to stimulate thinking about how best to employ US and Coalition forces to preserve stability in the WPTO. The US military soon established an Air-Sea Battle Office with a similar goal in mind.

A year later, however, the Defense Department disestablished Joint Forces Command—the only major command it had charged with developing joint concepts of operation. Henceforth, it assigned this task to the Joint Chiefs of Staff's J-7 (Joint Force Development) element, to be accomplished through a deliberative, consensus-based process.<sup>24</sup> As with most analytic efforts based on achieving consensus among military institutions with different agendas, progress proved fitful at best.

### False Starts and Dead Ends

CSBA's Air-Sea Battle concept, like the Cold War-era operational concepts described above, focused on a specific operational problem—defending the Western Pacific Theater of Operations, particularly along the First Island Chain, against overt Chinese aggression. Its emphasis was selective, however, focusing on air and naval forces. The Defense Department's Air-Sea Battle effort, in contrast, was far more abstract, attempting to develop a one-size-fits-all concept that addressed the full spectrum of conflict across multiple geographic contingencies, up to but not including nuclear warfare. As the Pentagon's Air-Sea Battle Office stated:

**At the low end of the conflict spectrum, the [Air-Sea] Concept enables decision makers to engage with partners to assure access, maintain freedom of action, conduct a show of force, or conduct limited strikes. At the high end of the conflict spectrum, the Concept preserves the ability to defeat aggression and maintain escalation advantage despite the challenges posed by advanced weapons systems.<sup>25</sup>**

In 2015, four years after its formation, the Joint Chiefs of Staff (JCS) folded the Air-Sea Battle Office and the nascent concept into the Joint Concept for Access and Maneuver in the Global

21 As a member of the 1997 National Defense Panel, I was involved in the negotiations that led to Joint Forces Command being formed. From 2004–2011, I also served on its advisory board.

22 Following the US withdrawal from an active combat role in Indochina in 1973, and the fall of the Saigon regime in May 1975, the mood among Americans was "No More Vietnams." This desire to avoid counterinsurgency warfare operations had bipartisan support, ranging from Defense Secretary Caspar Weinberger's "Six Tests" a conflict should satisfy before the US committed forces to it to the requirement for "exit strategies" that marked the debate about interventions in the developing world during the Clinton administration. See Andrew F. Krepinevich Jr., *The Army and Vietnam* (Baltimore, MD: Johns Hopkins University Press, 1986), 258–75; and Andrew F. Krepinevich Jr., "How to Win in Iraq," *Foreign Affairs* 84, no. 5 (September–October 2005): 87–104.

23 Andrew F. Krepinevich Jr., *Why AirSea Battle?* (Washington, DC: CSBA, 2010); and Jan van Tol, Mark Gunzinger, Andrew F. Krepinevich Jr., and Jim Thomas, *AirSea Battle: A Point of Departure Operational Concept* (Washington, DC: CSBA, 2010). I served as the CSBA's president from 1995–2016.

24 A description of the process appears in William C. Mayville Jr., "Guidance for Developing and Implementing Joint Concepts," Chairman of the Joint Chiefs of Staff Instruction 3010.02E, August 17, 2016.

25 Air-Sea Battle Office, "Air-Sea Battle: Service Collaboration to Address Anti-access and Area Denial Challenges," May 2013, i.

Commons (JAM-GC, pronounced “Jam Gee-Cee”) effort. The Pentagon stated the change was necessary because “The missing part of the Air Sea Battle concept was the land portion, basically how the land forces could be used to allow U.S. forces to gain access to a contested area.”<sup>26</sup>

### The 2014 Summer Study and Archipelagic Defense

Once again, the JCS was playing catch-up. The previous year, the Pentagon’s Office of Net Assessment (ONA), responding to concerns in the Office of the Secretary of Defense (Policy) about the lack of progress the military was making with its Air-Sea Battle concept, established a Summer Study to explore the matter. An ONA Summer Study centers on a two-week effort that brings together a small group of experts to focus on an issue of strategic importance to the Defense Department’s leadership.<sup>27</sup> The 2014 group was tasked with developing a preliminary operational concept for the WPTO that included all the military services. The Summer Study yielded a rough concept of operations called Archipelagic Defense, informed by three Color Plan contingencies.<sup>28</sup>

Drawing on insights from the Summer Study and related work, in early 2015 I published an article on the subject in the journal *Foreign Affairs*.<sup>29</sup> The piece stimulated considerable interest from senior Japanese defense officials and military leaders. In 2017, Japan’s Sasakawa Peace Foundation published a greatly extended version of the *Foreign Affairs*

article.<sup>30</sup> The expanded study led to a series of briefings with senior US defense officials and military leaders.<sup>31</sup> Shortly thereafter, in March 2018, I briefed the updated version in Tokyo during the Group of Five Strategic Dialogue.<sup>32</sup>

### Mattis and Austin

Defense Secretary James Mattis’s 2018 National Defense Strategy recognized the lack of a US military operational concept to defend the Western Pacific, stating, “We must anticipate how competitors and adversaries will employ new operational concepts and technologies to attempt to defeat us, while developing operational concepts to sharpen our competitive advantages and enhance our lethality.” Mattis directed the military to develop operational concepts to address the challenges posed by China and Russia.<sup>33</sup> The Congressional Commission on the National Defense Strategy, which was highly critical of the Defense Department’s inability to develop such concepts, echoed his concerns. It found the following:

DOD and the White House have not yet articulated clear operational concepts for achieving U.S. security objectives in the face of ongoing competition and potential military confrontation with China and Russia. . . . In the course of our work, we found that DOD struggled to link objectives to operational concepts to capabilities to programs and resources. This deficit in analytical capability, expertise, and processes is intolerable in an organization responsible for such complex, expensive, and important tasks, and it must be remedied.<sup>34</sup>

26 Sam LaGrone, “Pentagon Drops Air Sea Battle Name. Concept Lives On,” *USNI News*, January 20, 2015, <https://news.usni.org/2015/01/20/pentagon-drops-air-sea-battle-name-concept-lives>.

27 Although Summer Studies last less than two weeks, a great deal of preparatory work prior is done prior to the event. Successful Summer Studies find the chairperson arriving with what amounts to a rough draft of the final out brief, which the study members then subject to rigorous scrutiny. Your author led the 2014 Summer Study.

28 The three plans were Plan Orange (Taiwan), Plan Green (Blockade/Counterblockade) and Plan Blue (Counteroffensive). Two years later, a Summer Study addressed how a protracted war with China might affect Archipelagic Defense. The findings appear, in part, in Andrew F. Krepinevich Jr., *Protracted Great-Power War: A Preliminary Assessment* (Washington, DC: Center for a New American Security, 2020).

29 Andrew F. Krepinevich Jr., “How to Deter China: The Case for Archipelagic Defense,” *Foreign Affairs* 94, no. 2 (March–April 2015): 78–86. Shortly thereafter, at the invitation of the Japanese government, I briefed the concept to the commander of Japan’s Western Army and his staff in Kyushu. I gave similar briefings to the national security secretariat’s deputy director, senior Ministry of Foreign Affairs and Ministry of Defense officials, and senior officers of the Japan Self-Defense Forces in Tokyo.

30 Krepinevich, *Archipelagic Defense*.

31 Among those briefed were Defense Secretary James Mattis; Deputy Assistant Defense Secretary Elbridge Colby; Dr. Andrew May; Admirals Philip Davidson, Harry Harris, William Moran, and John Richardson; Lieutenant General Daniel O’Donohue; Major Generals John Ferrari, Michael Flynn, and Peter Johnson; and Brigadier General Clinton Hinote.

32 The Group of Five included Australia, France, Great Britain, Japan, and the United States.

33 James Mattis, *Summary of the National Defense Strategy* (Washington, DC: US Department of Defense, 2018), 3, 7.

34 National Defense Strategy Commission, *Providing for the Common Defense* (Washington, DC: US Institute of Peace, 2018), x, 19. I served on the commission.

It is worth quoting at length the assessment at the time by a highly regarded expert of the ongoing process, Colonel (Retired) David Johnson, in which he compared recent efforts to develop operational concepts with similar efforts in the Cold War's latter stages:

A key strength of [the] 31 Initiatives [set by the Army and Air Force] and [the] AirLand Battle [concept] was that they were designed to solve one problem: the defense of Western Europe against the Warsaw Pact. This enabled the Army and the Air Force to focus their concept- and capability-development efforts on a known enemy, in a specific place, with understood weapons. By contrast, the various multi-domain concepts now under development are generic. They focus on domains rather than adversaries. . . . Absent [the disestablished] JFCOM, it is not surprising that there is no joint force concept, much less a common lexicon, for multi-domain concepts. Instead, there are multiple competing concepts: Multi-Domain Battle, Multi-Domain Operations, Multi-Domain Command and Control, and Multi-Domain Maneuver, and more are likely in the offing as the services vie to solve challenges posed by Russia and China in ways that are in keeping with their respective service institutional ethos.<sup>35</sup>

In 2019, the Defense Department instituted yet another effort to develop operational concepts. Defense Secretary Mark Esper directed the four services and the Joint Staff to create a

new “Joint Warfighting Concept for All-Domain Operations.” According to then Vice Chairman of the Joint Chiefs of Staff General John Hyten, this effort built on former JCS Chairman General Joseph Dunford’s ideas on “global force management” and “global fires”—weapons launched from *outside* a theater of war to generate effects within it. Dunford’s successor, General Mark Milley, added four new elements: global plans (planning for rapid crisis response); global operations short of fires (operations in the so-called gray zone between peace and open war); global messaging integration (the use of both words and actions to reassure allies and deter adversaries); and global integration of deterrence (the use of all means, not just nuclear, to deter adversaries from undertaking aggression). Some viewed All-Domain Operations as an evolution of Multi-Domain Battle and Multi-Domain Operations. Yet another concept, Joint All-Domain Command and Control (JADC2), has emerged as the Pentagon’s approach to linking sensors from all the military services into a single battle network, thereby enabling the effective implementation of All-Domain Operations.<sup>36</sup> Thus, it is not a concept of operations but an idea for structuring the military’s command and control assets.

In July 2020, General Milley requested that the services each take on a piece of the effort to develop the Joint Warfighting Concept (JWC). The Army took contested logistics; the Air Force, JADC2; the Navy, joint fires. No service volunteered to lead the effort on information advantage, so the Joint Chiefs assigned it to the Joint Staff.<sup>37</sup> Of note, each of these parts contains different key assumptions, making the task of combining them into the JWC particularly challenging. Further, the effort does not focus on a real-world military challenge. As one assessment concludes, the process “relies too heavily on a bottom-up approach that begins independently within each [military] department—a process that

<sup>35</sup> David E. Johnson, *Shared Problems: The Lessons of AirLand Battle and the 31 Initiatives for Multi-Domain Battle* (Santa Monica, CA: RAND, 2018), 5–6. In critiquing the Army’s Multi-Domain Operations concept, one of those involved in crafting the AirLand Battle doctrine, Brigadier General (Ret.) Huba Wass de Czege, noted the absence of a “well-developed theory of the problem” (e.g., “What adversary are we trying to deter or defeat, in what theater, and under what circumstances? What enemy advantages must we overcome? What enemy weaknesses can we exploit?”). He went on to note the absence of a “theory of victory” (e.g., “What do we intend for the operational concept to accomplish against the enemy that we have identified? In the case of AirLand Battle, the goal was to deter an attack on NATO by defeating Warsaw Pact armies, with emphasis on its frontline forces, whereas the Multi-Domain concept focuses on a “generic” threat.) Wass de Czege also lamented the “use of vague language [that] confounds the reader’s understanding of the concept.” He stated, “For example, the frequent use of ill-defined terms such as *standoff* and *domain* confuse the already thin logic of the concept.” Huba Wass de Czege, *Commentary on “The US Army in Multi-Domain Operations 2028”* (Carlisle, PA: US Army War College Strategic Studies Institute, 2020), xix–xx, 8, 10, 14, 25, 38–39.

<sup>36</sup> John R. Hoehn, *Joint All-Domain Command and Control (JADC2)* (Washington, DC: Congressional Research Service, 2022); and Colin Clark, “Gen. Hyten on the New American Way of War: All-Domain Operations,” *Breaking Defense*, February 18, 2020, <https://breakingdefense.com/2020/02/gen-hyten-on-the-new-american-way-of-war-all-domain-operations>.

<sup>37</sup> Theresa Hitchens, “JROC Struggles to Build ‘Information Advantage’ Requirement,” *Breaking Defense*, September 17, 2020, <https://breakingdefense.com/2020/09/jroc-struggles-to-build-information-advantage-requirement>.

pays insufficient attention to integrating efforts into a holistic warfighting concept at the joint level.”<sup>38</sup>

While this process was underway, Admiral Philip Davidson, then head of Indo-Pacific Command, proposed developing an Indo-Pacific Warfighting Concept that a “joint network of training ranges” could test and refine. In an implicit criticism of the ongoing Joint Staff efforts, the admiral declared that any “new warfighting concept must deliver a similar sense of assurance to our allies and partners today that AirLand Battle provided to NATO member states in Europe in the 70s and 80s.”<sup>39</sup> Davidson, however, retired not long after advancing these ideas, and they proved stillborn.

In March 2021, the Pentagon’s newly confirmed secretary of defense, Lloyd Austin III, signed off on a new version of the JWC that places greater emphasis on US operations in space and cyberspace within the context of a concept called “expanded maneuver.” As General Hyten described, the concept is designed to widen maneuver “in space and time.” Hyten elaborated by declaring, “In every area that an adversary can move, you have to figure out how to fill that space in time, before they can move.” This requires figuring out, “How do I aggregate my capabilities to provide significant effect, and then how do I disaggregate to survive any kind of threat?”<sup>40</sup>

That being said, General Hyten has described the JWC as an “aspirational” document whose planning horizon extends 30 years into the future. He stated, “It’s going to drive future capabilities and future doctrine. But right now it’s just the concept

and we’re still learning with it.”<sup>41</sup> If so, then it appears the US military may be starting again from square one, although hopefully while incorporating insights from earlier efforts.

## Archipelagic Defense 2.0

In summary, Secretary Mattis’s directive with respect to developing an operational concept has yet to be fulfilled after five years. Despite devoting years of effort and enormous resources to the task, the Defense Department has yet to present a clear concept for how the US military, functioning as part of a coalition, plans to deter and, if need be, defeat overt Chinese aggression in the WPTO. Absent such a concept, the US military lacks a comprehensive guide to establish priorities with respect to its force structure, force mix, posture, or defense program priorities. Yet, as will be elaborated on presently, there are some encouraging signs that things may be changing for the better.

*Archipelagic Defense’s* initial focus centered primarily on the Japan-US alliance. *Archipelagic Defense 2.0* devotes greater attention to supporting a particular US defense strategy. It also expands, albeit modestly, the discussion of the competition in the space, cyberspace, and seabed domains. There is a considerably greater focus on temporal factors, including prewar mobilization and the relationship between the Archipelagic Defense concept and the prospect of an extended war.

### Limitations of the Enterprise

Archipelagic Defense is not a one-size-fits-all warfighting concept that strategists can apply in all forms of general war, against all enemies, or in all theaters of operations. Rather, it focuses on a specific geographic area, on a particular rival, and on general or conventional war. It does encompass ambiguous or gray zone Chinese aggression. But it does not address nuclear deterrence in any detail, let alone nuclear war.

38 Thomas C. Greenwood and Patrick J. Savage, “Concept for Joint Warfighting,” IDA Research Notes (Spring 2021): 21–26, <https://www.ida.org/research-and-publications/publications/all/w/welch-award-2020-research-notes-spring-2021>.

39 Paul McLeary, “Indo-Pacom Presses All Domain Ops; Sends Plan to Hill Soon,” *Breaking Defense*, March 24, 2020; <https://breakingdefense.com/2020/03/indo-pacom-presses-all-domain-ops-sends-plan-to-hill-soon>. I discussed Archipelagic Defense with the admiral in July 2020 and again in November of that year.

40 Theresa Hitchens, “The Joint Warfighting Concept Failed, until It Focused on Space and Cyber,” *Breaking Defense*, July 26, 2021, <https://breakingdefense.com/2021/07/the-joint-warfighting-concept-failed-until-it-focused-on-space-and-cyber>. Expanded Maneuver’s key elements are joint fires, Joint All-Domain Command and Control (JADC2), contested logistics, and information advantage, similar to those of the JWC.

41 Jane Edwards, “Gen John Hyten Advances Joint Warfighting Concept with 4 Strategic Directives,” June 25, 2021, ExecutiveGov, <https://www.executivegov.com/2021/06/gen-john-hyten-advances-joint-warfighting-concept-with-4-strategic-directives>.

This study does not provide a detailed assessment of the existing military balance in the Western Pacific Theater of Operations. Thus, it makes no particular effort to present a “bean count” of the forces currently available to the prospective belligerents. Nor does it speculate on how the Coalition would fare in a contemporary war with China. Rather, the study accepts that senior policymakers and military leaders can do little to alter things as they exist today. Their greatest influence will rest in how the decisions they make today will influence their military’s force size, composition, basing posture, and equipment in the mid-term future, roughly a decade out. The Archipelagic Defense concept provides them with a “recipe” for combining these various factors into a coherent defense concept.

Nor should this updated concept be viewed as a finished product. As with the initial version, readers should see it as more of a point-of-departure concept that they should validate, refine, and adapt (or even discard) as the result of persistent intensive analysis, wargaming, field experiments, and exercises at the operational level of war. A detailed elaboration of these efforts lies far beyond the resources available for this study—but well within the purview of the US military and the militaries of its allies and prospective Coalition partners in the Indo-Pacific.

### Sustained, Hard Thinking

Albert Einstein once remarked, “If I had an hour to solve a problem and my life depended on the solution, I would spend the first 55 minutes determining the proper question to ask . . . for once I know the proper question, I could solve the problem in less than five minutes.”<sup>42</sup> In a similar vein, the Defense Department’s legendary strategist Andrew Marshall was fond of saying, “I would rather have decent answers to the right questions than brilliant answers to the wrong questions.” Like Einstein, Marshall would spend what some considered an excessive amount of time “thinking about the problem” with an eye toward identifying the proper

questions on which to focus limited resources.<sup>43</sup> As the reader will discover, I have devoted a substantial part of this study to “thinking about the problem.” And since the competition in the Indo-Pacific is open-ended and dynamic, “thinking about the problem” should be sustained over time and supported by the persistent involvement of senior policymakers and military leaders.

### Structure

This study is organized into eight chapters. Following this introduction, chapter 2 provides some background on how we arrived at our current situation. To this end, it reviews geopolitical trends over the past several decades and explains China’s emergence as a hostile great power seeking to overturn the existing international order to its benefit and at the expense of others.

Chapter 3 presents an assessment of key trends in the character of warfare, including some thoughts on the possible features of modern great-power war. It concludes with selected insights and observations drawn from these trends.

The discussion in chapter 4 addresses China’s approach to warfare at the operational level, including the PLA’s views on key trends in warfare and how it might best exploit them to China’s advantage. Chapter 5 is dedicated to military planning considerations, with an emphasis on the challenges associated with planning under conditions of high uncertainty, including geopolitical and military-technical uncertainty. It then moves on to present key assumptions informing the Archipelagic Defense concept and major asymmetries between the United States and China. Both chapters inform the development of strategy and, by extension, this concept.

Chapters 6 and 7 present “ArcDef 2.0,” focusing on key competitions that inform the concept’s priorities. The discussion in chapter 8 centers on how the US and like-minded states might implement the concept, while chapter 9 offers concluding thoughts and observations.

<sup>42</sup> Cited in Flavell Laboratory, *Quote of the Week*, Massachusetts Institute of Technology, April 26, 2017, <https://flavell.mit.edu/2017/04/26/hour-solve-problem-life-depended-solution-spend-first-55-minutes-determining-proper-question-ask-know-proper-question-coul>.

<sup>43</sup> Einstein would heartily approve of Marshall’s approach, as he was known for counseling others, “Don’t listen to the person that has the answers; listen to the person who asks the questions.”



## 2. BACKGROUND OF THE CURRENT SITUATION

### An Enduring Strategic Interest

For over a century, the United States has deemed it a vital interest<sup>44</sup> to prevent the emergence of a hegemonic power on the Eurasian landmass. During the twentieth century, the United States fought two wars against aspiring hegemonic powers in Europe and one power in Asia. The United States entered World War I to defeat the Central Powers under Imperial Germany's leadership. A quarter of a century later, America again found itself at war, this time against the Axis powers: Nazi Germany and Fascist Italy in Europe, and Imperial Japan in Asia. Reflecting on US involvement in the world wars, Nicholas Spykman concluded:

<sup>44</sup> As I use it in this study, a vital interest is defined as a change in the international environment so threatening to a state's national security and well-being that the state must resist it no matter what form the threat takes or how legitimate it may appear. Henry Kissinger, *Diplomacy* (New York: Simon & Schuster, 1994), 812.

The United States must recognize once again, and permanently, that the power constellation in Europe and Asia is of everlasting concern to her, both in time of war and in time of peace. . . .

Twice in one generation we have come to the aid of Great Britain in order that the small off-shore island might not have to face a single gigantic military state in control of the opposite coast of the mainland. If the balance of power in the Far East is to be preserved

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Photo: Troops take part in a military parade celebrating the seventieth founding anniversary of the People's Republic of China in Beijing on October 1, 2019. (Photo by Zhang Hongxiang/Xinhua via Getty)

in the future as well as in the present, the United States will have to adopt a similar protective policy toward Japan.<sup>45</sup>

No sooner had the Allies defeated the Axis powers than the United States faced the specter of Soviet Russia's bid to establish a dominant position in Europe. Confronting this challenge, George Kennan echoed Spykman, arguing that "any world balance of power means first and foremost a balance on the Eurasian landmass."<sup>46</sup> These views soon found their way into official policy. The Truman administration concluded that "Soviet domination of the potential power of Eurasia, whether achieved by armed aggression or by political and subversive means, would be strategically and politically unacceptable to the United States."<sup>47</sup> Henry Kissinger sustained this perspective over a half-century later when he observed:

The domination by a single power of either of Eurasia's two principle spheres—Europe or Asia—remains a good definition of strategic danger for America, Cold War or no Cold War. For such a grouping would have the capacity to outstrip America economically and, in the end, militarily. That danger would have to be resisted even were the dominant power apparently benevolent, for if the intentions ever changed, America would find itself with a grossly diminished capacity for effective resistance and a growing inability to shape events.<sup>48</sup>

45 Nicholas J. Spykman, *America's Strategy in World Politics: The United States and the Balance of Power* (New York: Harcourt, Brace and Co., 1942), 470. (Reprint, New Brunswick, NJ: Transaction Publishers, 2008).

46 Hal Brands, *What Good Is Grand Strategy?* (Ithaca, NY: Cornell University Press, 2014), 27.

47 US National Security Council, "US Objectives with Respect to the USSR to Counter Soviet Threats to US Security," NSC 20/4, November 23, 1948, <https://history.state.gov/historicaldocuments/frus1948v01p2/d60>. President Harry Truman's secretary of state, Dean Acheson, declared, "The loss of Western Europe or of important parts of Asia or the Middle East would result in a transfer of potential from West to East which . . . might have the gravest consequences in the long run." President Truman himself warned, "Soviet command of the manpower of the free nations of Europe and Asia would confront us with military forces which we could never hope to equal." Quoted in Aaron L. Friedberg, *In the Shadow of the Garrison State* (Princeton, NJ: Princeton University Press, 2000), 39.

48 Kissinger, *Diplomacy*, 813.

Thus, shortly after World War II, the United States joined Canada and European democracies to form NATO. For 40 years, this alliance stood as a bulwark against Soviet Russia, preserving Europe's peace and enabling an era of unprecedented prosperity. During this time, Washington also formed bilateral alliances with Australia, Japan, New Zealand, the Philippines, South Korea, and Thailand to discourage communist expansion in the Western Pacific.<sup>49</sup>

## The Sources of Chinese Behavior

Following Soviet Russia's collapse in 1991, the United States enjoyed several decades' respite from any major efforts to establish hegemony on the Eurasian landmass. Thus, the four decades of general peace and prosperity that began in the late 1940s extended throughout America's "unipolar moment." China has arguably been the principal beneficiary of this stability, as is apparent in its remarkable economic growth and expanding influence.

Unfortunately, the security situation in the Western Pacific has become increasingly unstable. Rather than accepting a position of prestige and influence in the existing international order, China seeks to overturn it with one of its own design. Today countries in the Indo-Pacific region confront an aggressive, revisionist China whose expanding territorial claims include Taiwan, much of the South China Sea, the Senkaku Islands, and parts of India.

## Rising Power, Rising Ambitions

China's rise to great-power status has been remarkably swift. As its power has grown, so too have the ambitions of the Chinese Communist Party (CCP), which has exercised dictatorial rule over the People's Republic of China (PRC) since 1949.

49 Office of the Historian, "Southeast Asia Treaty Organization (SEATO), 1954," US Department of State, <https://history.state.gov/milestones/1953-1960/seato>; and Office of the Historian, "The Australia, New Zealand and United States Security Treaty (ANZUS Treaty), 1951," US Department of State, <https://history.state.gov/milestones/1945-1952/anzus>. In a flourish of diplomatic activity some have referred to as "Pactomania," the United States made an alliance with Australia and New Zealand, the ANZUS pact, in 1951 and established SEATO, the Southeast Asia Treaty Organization, with Australia, France, Great Britain, New Zealand, Pakistan, the Philippines, and Thailand in September 1954. (SEATO disbanded in 1977.) In 1984, New Zealand declared itself a "nuclear-free zone" and refused to allow US nuclear submarines to make port calls. In 1986, the United States suspended its treaty obligations to New Zealand.

The regime's legitimacy rests on two principal pillars: economic growth and nationalism. The CCP lacks the legitimacy that free and open elections confer, and it has long since abandoned efforts to convince the Chinese people that communism offers a path to a "worker's paradise." Put simply, the CCP's legitimacy does not derive from either the vote or the vision. Given China's remarkable economic growth following its abandonment of the communist economic model, the regime can claim the gratitude of hundreds of millions of Chinese whom it has lifted out of poverty, and millions more who have joined a prosperous middle class. Still, many Chinese have yet to benefit from the regime's model of state-directed capitalism, or what some might call "capitalism with CCP characteristics." Moreover, as I will discuss presently, given recent developments, it is increasingly unlikely that China's economy will continue to grow at anything like the pace it has over the past three decades.

One pillar of legitimacy the CCP continues to develop tirelessly is nationalism. The regime has persistently indoctrinated the Chinese people with the fiction of its "leading" role in defeating Japan in World War II.<sup>50</sup> More fact than fiction is its claim to ending China's "century of humiliation" at the hands of Western powers. Recently, the regime has touted its success in restoring the country's position as a great nation on the path to becoming the world's leading power—President Xi Jinping's "China dream"<sup>51</sup>—while warning the Chinese people that the CCP is the shield that prevents hostile foreign forces from reversing China's return to greatness.

50 Zachary Keck, "The CCP Didn't Fight Imperial Japan; the KMT Did," *The Diplomat*, September 4, 2014, <https://thediplomat.com/2014/09/the-ccp-didnt-fight-imperial-japan-the-kmt-did>.

51 President Xi Jinping describes the China Dream as working to "spread the Chinese spirit, which combines the spirit of the nation with patriotism as the core, and the spirit of the time with reform and innovation as the core [emphasis added]." Suthichai Yoon, "The China Dream: What Does It Really Mean?" *The Nation*, August 1, 2013, <http://suthichaiyoon.blogspot.com/2013/08/the-china-dream-what-does-it-really-mean.html>. Xi also speaks of a "strong-army dream." See "Xi Jinping and the Chinese Dream," *The Economist*, May 4, 2013, <http://www.economist.com/news/leaders/21577070-vision-chinas-new-president-should-serve-his-people-not-nationalist-state-xi-jinping>. Others see it as an attempt by the CCP to increase further its hold over power. As one observer puts it, "The Communist Party already controls much of the reality in China; now it wants to control its people's dreams." Clarissa Sebag-Montefiore, "The Chinese Dream," *New York Times*, May 3, 2013, <http://latitude.blogs.nytimes.com/2013/05/03/whats-xi-jinpings-chinese-dream>. See also Justin McCurry, "China Lays Claim to Okinawa as Territory Dispute with Japan Escalates," *The Guardian*, May 15, 2013, <https://www.theguardian.com/world/2013/may/15/china-okinawa-dispute-japan-ryukyu>.

China's growing ambitions are far from a historical aberration; rather, they are the norm. As Aaron Friedberg notes:

As they begin to assert themselves, rising powers usually feel impelled to challenge territorial boundaries, international institutions, and hierarchies of prestige that were put in place when they were still relatively weak. Their leaders and people typically feel that they were left out unfairly when the pie was divided up, and may even believe that because of prior weakness, they were robbed of what ought to be theirs.<sup>52</sup>

Since leading countries established many of the existing international rules and norms without China's involvement or consent, the CCP rejects the current international system as incompatible with its vision for a new world order premised on a "community of common destiny." Given its rapidly expanding power, Beijing is determined to take action to create an international system more to its liking. This finds China moving to "take an active part in leading the reform of the global governance system" to one that reflects the CCP's authoritarian system and acknowledges its geopolitical and economic interests.<sup>53</sup> Consequently, Beijing sees US security alliances and partnerships in the Indo-Pacific as obstacles to achieving its goals.<sup>54</sup>

Since the onset of the Industrial Revolution in the late eighteenth century, all rising powers have exhibited similarly aggressive forms of behavior. China, argues John Mearsheimer, "like all previous potential hegemon[s], [will] be strongly inclined to become a real hegemon."<sup>55</sup> The Chinese Communists offer strong evidence

52 Aaron L. Friedberg, *A Contest for Supremacy: China, America and the Struggle for Mastery in Asia* (New York: W. W. Norton & Company, 2011), 40.

53 Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China: Annual Report to Congress* (Washington, DC: US DoD, 2021), 3. Hereafter this annual report will be cited as *China Military Developments* with the associated year and page number. <https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>.

54 *China Military Developments 2021*, 7.

55 John Mearsheimer, *The Tragedy of Great Power Politics* (New York: W. W. Norton & Company, 2001), 400. See also Samuel P. Huntington, "America's Changing Strategic Interests," *Survival* 33, no. 4 (January/February 1991): 12.

Map 2. Maritime Territorial Disputes Involving China



Source: *US-China Strategic Competition in South and East China Seas: Background and Issues for Congress* (Washington, DC: Congressional Research Service, updated June 5, 2023), 52, <https://crsreports.congress.gov/product/pdf/R/R42784/>.

of following this path. Somewhat similar to Hitler's concept of a "Greater Germany," the "Greater China" that the CCP envisions includes not only Taiwan but also most of the South China Sea Islands, some of which belong to Indonesia, Malaysia, the Philippines, Taiwan, and Vietnam (see map 2). China has also laid claim to Japan's Senkaku Islands and, according to some, the Ryukyu Islands, including Okinawa. China also claims as its own parts of Nepal and territory along its border with India.<sup>56</sup> There is evidence that in situations where an aspiring hegemon seeks to displace the standing hegemon, the result is often a general war with the existing dominant power.<sup>57</sup> Yet China's case is different, and arguably more worrisome, than the experiences of other rising powers over the past two centuries in that aggressive nationalism may prove to be *the only source of regime legitimacy* in the wake of diminishing economic growth.<sup>58</sup>

### America's Welcome

The United States has facilitated China's rise in two ways. First, following the Cold War, a succession of US administrations welcomed the emergence of a stronger, more prosperous China. American support for Beijing's entry into the World Trade Organization (WTO) encouraged investment in China's economy. The United States continued to oppose Taiwan's independence and took a neutral stance on territorial disputes between China and other states, including those in the South China Sea. In brief, the United States put out the welcome mat to China, inviting it to join the liberal international order that was enabling China's remarkable economic expansion.

56 For a list of China's territorial claims, see "All the Countries in Which China Claims Territory," *The Week*, February 11, 2022, <https://www.theweek.co.uk/news/world-news-china/955728/all-countries-china-territory-disputes>.

57 Graham Allison, *Destined for War* (New York: Houghton Mifflin Harcourt, 2017). The author cites, in particular, the Peloponnesian War between two coalitions led by Sparta and a rising Athens, and World War I, when Great Britain and its allies defeated a rising Germany and its Central Power allies. There are, of course, cases in which a rising power displaced the existing dominant power without war, as occurred in the early 20th century when the United States succeeded Great Britain. The Soviet Union's bid to supplant the United States as the world's dominant power also did not lead to war, perhaps due to the introduction of nuclear weapons, which ushered in a fundamental shift in the character of great-power rivalries.

58 A healthy dose of nationalism and sustained economic growth accompanied the rises of Germany, Japan, and the United States to great-power status, and in the case of Germany and the United States, the introduction of the vote. Japan's ruling elite in the early 20th century could also draw on the profound legitimacy that the emperor conferred on the government. Should China's economy falter, it would lack these pillars, save nationalism.

Throughout this time, however, Chinese leaders saw the Americans as executing a strategy of "peaceful evolution" and seeking to contain China. Not long after China's accession to the WTO, the CCP's leader, Jiang Zemin, told provincial party secretaries and government ministers that the United States sought to use China's WTO accession as part of its strategy to undermine the party.<sup>59</sup>

### America's Long Retreat

China's aggressive behavior also stems from the CCP's perceptions of a growing lack of US strategic competence and moral resolve. This is made all the more worrisome by the unprecedented shift in the United States' standing over the past quarter century, from the world's "hyperpower" in a unipolar world system to, in Beijing's eyes, a declining hegemon.

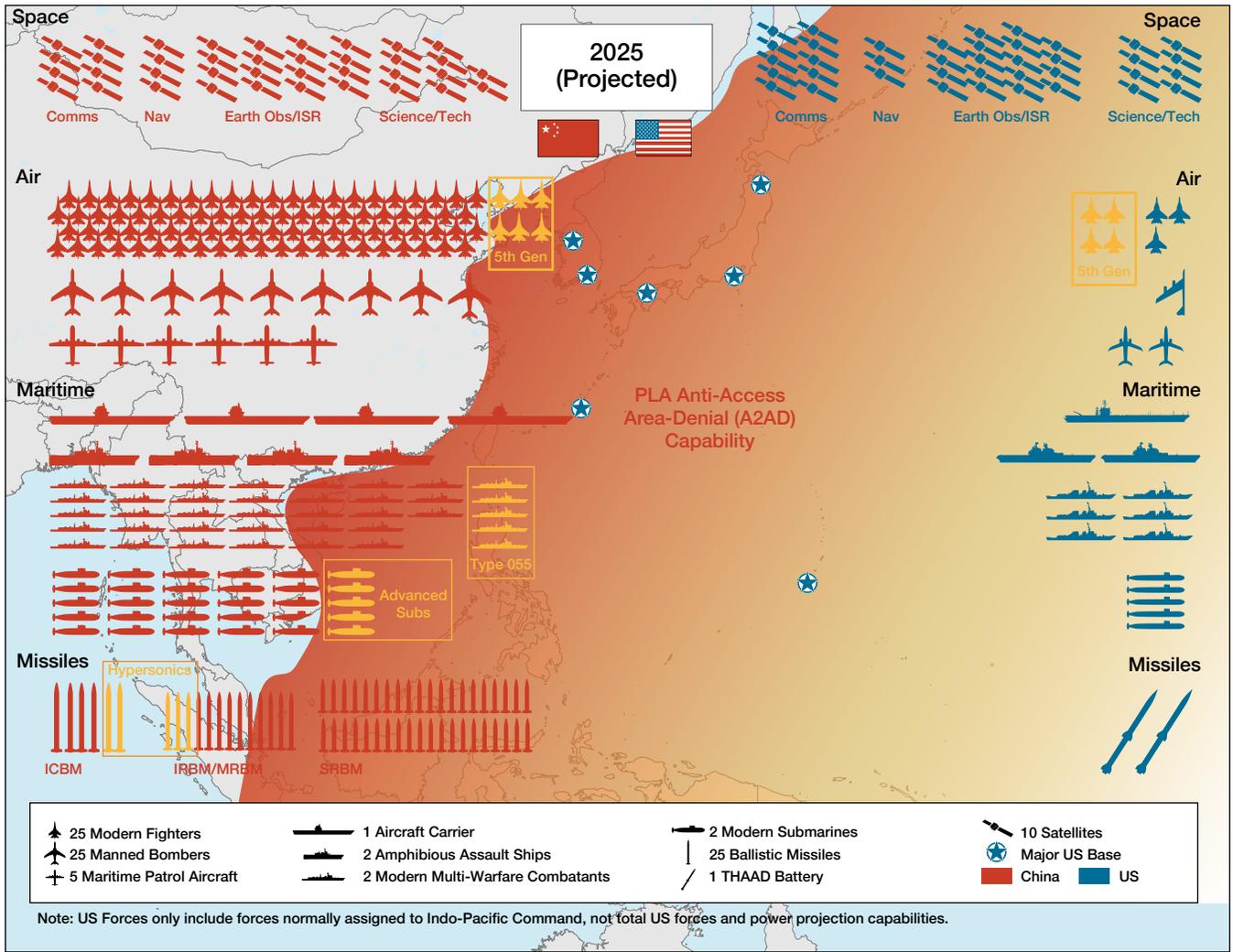
The decade or so following the Cold War's end witnessed a remarkable run of US military victories, albeit against minor adversaries. Its successes included the two Gulf Wars of 1991 and 2003, the 1999 Balkan War, and initial operations in Afghanistan following the 9/11 terrorist attacks on US soil. What has happened since is a long retreat of US political influence and military competence, along with a progressive—and accelerating—shift in the military balance in China's favor (see map 3).

Over a series of US administrations, the United States' persistent efforts to welcome China as a major "stakeholder" in the international system and to cultivate good relations with Russia reflected a willful ignorance to Beijing and Moscow's revisionist aims, which only grew in the absence of countervailing American action. With respect to Russia, early on President George W. Bush asserted that Russian President Vladimir Putin was "very straightforward and trustworthy."<sup>60</sup> Yet the Bush administration witnessed Russia's cyberattacks on Estonia in 2007 and a Russian invasion of Georgia the following year. President Barack Obama attributed the decline

59 Rush Doshi, *The Long Game* (New York: Oxford University Press, 2021), 310.

60 White House, "Press Conference by President Bush and Russian Federation President Putin," transcript, June 16, 2001, Brdo Pri Kranju, Slovenia, <https://georgewbush-whitehouse.archives.gov/news/releases/2001/06/20010618.html>.

Map 3. Western Pacific Theater of Operations Chinese and US Forces in 1999 and 2025



Source: Mike Minihan, "Great Power Competition and Technology Challenges," 2020 Virtual Annual Symposium, Center for the Study of Weapons of Mass Destruction, National Defense University, July 7, 2020, [https://us-iti.bbcollab.com/collab/ui/session/playback; slides available at https://uploads.fas.org/2020/09/PACOM2020\\_NDU-WMD-Brief2020\\_Minihan070720.pdf](https://us-iti.bbcollab.com/collab/ui/session/playback; slides available at https://uploads.fas.org/2020/09/PACOM2020_NDU-WMD-Brief2020_Minihan070720.pdf).

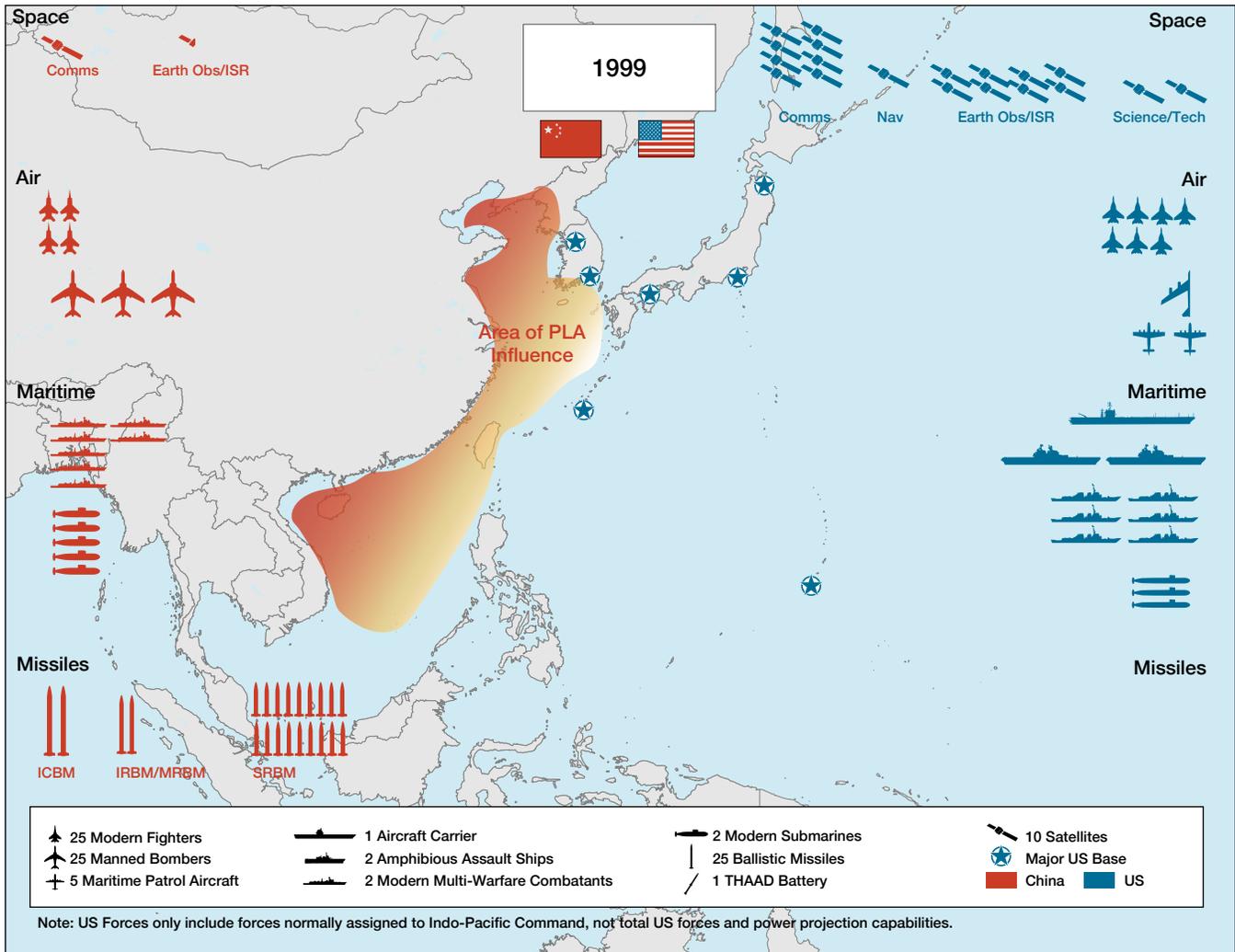
in US relations with Moscow primarily to the shortcomings of the predecessor Bush administration. Obama therefore sought to “re-set” the US relationship with Russia.<sup>61</sup> Russia accepted President

61 Caroline Wyatt, “Bush and Putin: Best of Friends,” *BBC News*, June 16, 2001, <http://news.bbc.co.uk/2/hi/1392791.stm>; Steven Mufson, “Bush Saw Putin’s ‘Soul.’ Obama Wants to Appeal to His Brain,” *Washington Post*, December 1, 2015, [https://www.washingtonpost.com/business/economy/bush-saw-putins-soul-obama-wants-to-appeal-to-his-brain/2015/12/01/264f0c7c-984b-11e5-8917-653b65c809eb\\_story.html](https://www.washingtonpost.com/business/economy/bush-saw-putins-soul-obama-wants-to-appeal-to-his-brain/2015/12/01/264f0c7c-984b-11e5-8917-653b65c809eb_story.html);

Obama’s offer, but on its terms, in the form of US willingness to exercise “greater flexibility”—that is to say, “limitations”—on deploying US ballistic missile defenses in Eastern Europe.<sup>62</sup>

and Geoff Cutmore and Antonia Matthews, “Russia-US Relations Reset ‘Impossible’: PM Medvedev,” *CNBC*, October 15, 2014, <http://www.cnn.com/2014/10/15/russia-us-relations-reset-impossible-pm-medvedev.html>.

62 Luke Harding and Ian Traynor, “Obama Abandons Missile Defense Shield in Europe,”



Having pocketed these gains, Russia increased its aggressive behavior. In 2014, Moscow followed its forcible annexation of Crimea with support for pro-Russian separatists in eastern Ukraine, providing logistical and intelligence support while

committing some regular Russian units and special forces (Spetsnaz) to the conflict. Further flexing its muscles, Moscow then deployed military forces to Syria, pursued efforts to intimidate NATO frontline states in Eastern Europe (and the Baltic States in particular),<sup>63</sup> expanded its harassment of US and

*The Guardian*, September 17, 2009, <https://www.theguardian.com/world/2009/sep/17/missile-defence-shield-barack-obama>.

63 Russia asserts the Baltic States were created illegally at the end of the Cold War. Samuel

allied air and naval forces operating in international waters, and violated the terms of the 1987 Intermediate-Range Nuclear Forces (INF) Treaty.<sup>64</sup> In the wake of US protests following these actions, in October 2014, Russian Prime Minister Dmitry Medvedev informed the Obama administration that any reset of US-Russia relations was “impossible.”<sup>65</sup> Beijing took note of Washington’s lassitude in responding to these provocations.

President Obama’s efforts at pursuing “engagement” with China yielded similar results, as the CCP proved unapologetic about pursuing its hegemonic ambitions. In 2010, for example, China’s then foreign minister, Yang Jiechi, dismissed concerns about Beijing’s coercive behavior toward its neighbors, declaring that “China is a big country, and other countries are small countries, and that is just a fact.”<sup>66</sup>

To encourage China to pursue a “peaceful rise” in its deeds as well as words, in 2011 the Obama administration announced its intentions to “pivot” the US military focus to the Asia-Pacific region, “rebalancing” US forces to increase their presence in that part of the world to roughly 60 percent of US air and naval forces. At that time Secretary of State Hillary Clinton declared, “People are also wondering about America’s intentions—our willingness to remain engaged and to lead. In Asia, they ask whether we are really there to stay . . . whether we can make—and keep—credible economic and strategic commitments, and whether we can back those commitments with action. The answer is: We can, and we will.”<sup>67</sup> Yet the date set for accomplishing the pivot was

2020—three years *after* the end of Obama’s term of office. Indeed, five years later, in the administration’s last year in office, it had accomplished little in terms of the pivot, and the CCP could note with satisfaction that the regional military balance continued to shift in China’s favor.

Reflecting America’s declining position, during his visit to the White House in September 2015, President Xi Jinping promised President Obama that China would not militarize the South China Sea Islands. China soon proceeded to do exactly that, with no countervailing US response (see map 4).<sup>68</sup> The CCP’s conclusion that the United States in particular and the great democracies in general were presenting it with a “period of historical opportunity” to expand the country’s strategic focus from Asia to the wider globe and its governance systems” reflects this inaction.<sup>69</sup> The following year at the CCP’s Nineteenth Party Congress, Xi Jinping openly declared China’s revisionist aims, predicting that by mid-century China would become a global leader in terms of composite national strength and international influence. This, along with a “world-class army,” would enable the CCP to promote “a new type of international relations,” he said, one whose rules would be increasingly set in Beijing.<sup>70</sup>

Today the CCP remains candid about its hegemonic ambitions and about what “a new type of international relations” would mean for states lacking the power to resist its wishes. As Singapore’s Lee Kuan Yew put it, “They [the Chinese] expect Singaporeans to be more respectful of China as it becomes more influential. They tell us that countries big or small are equal: we are not a hegemon. But when we do something they do not

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Bendett, “Russia: The Baltic States Were Created Illegally,” *Real Clear World* (blog), July 1, 2015, [http://www.realclearworld.com/blog/2015/07/russia\\_the\\_baltic\\_states\\_were\\_created\\_illegally\\_111289.html](http://www.realclearworld.com/blog/2015/07/russia_the_baltic_states_were_created_illegally_111289.html).

64 The Supreme Allied Commander, Europe (NATO’s senior commander), General Curtis “Mike” Scaparrotti, went so far as to declare publicly that Putin “is deliberately trying to break up NATO.” John Grady, “EUCOM Nominee Scaparrotti: Putin ‘Trying to Break Up NATO,’” *USNI News*, April 21, 2016, <https://news.usni.org/2016/04/21/eucom-nominee-scaparrotti-putin-trying-to-break-up-nato>.

65 Cutmore and Matthews, “Russia-US Relations Reset ‘Impossible’”; and Jeffrey Goldberg, “The Obama Doctrine,” *The Atlantic*, April 2016, available at <http://www.theatlantic.com/magazine/archive/2016/04/the-obama-doctrine/471525>.

66 Han Fook Kwang et al., *Lee Kuan Yew: Hard Truths to Keep Singapore Going* (Singapore: Straits Times, 2011), 331.

67 Hillary Clinton, “America’s Pacific Century,” *Foreign Policy*, October 11, 2011,

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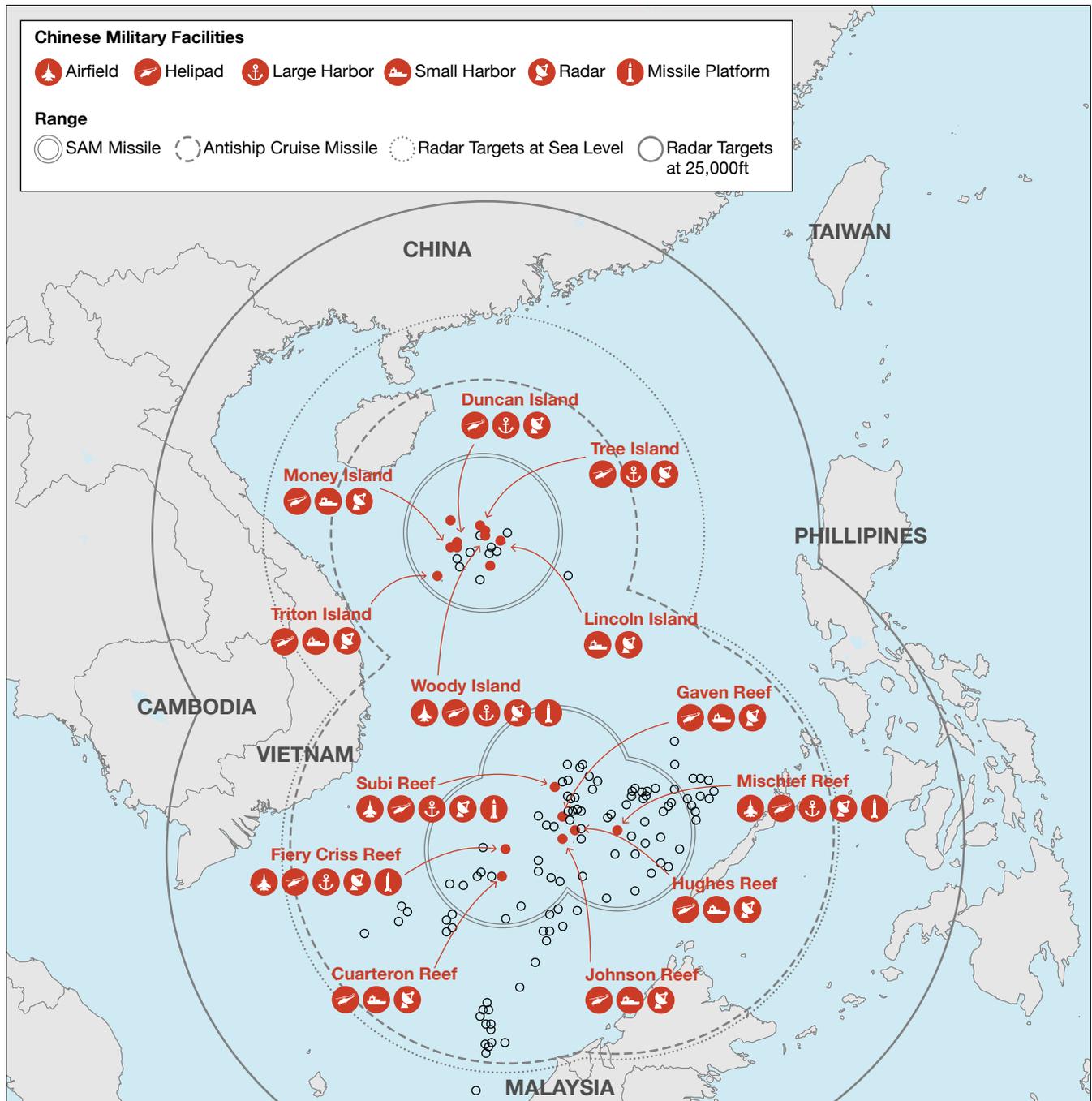
<https://2009-2017.state.gov/secretary/20092013clinton/rm/2011/10/175215.htm>.

68 Ankit Panda, “It’s Official: Xi Jinping Breaks His Non-militarization Pledge in the Spratlys,” *The Diplomat*, December 16, 2016, <https://thediplomat.com/2016/12/its-official-xi-jinping-breaks-his-non-militarization-pledge-in-the-spratlys>.

69 Doshi, *The Long Game*, 262. President Obama’s credibility, and that of the United States with respect to China, also suffered when the president informed the Syrian regime in 2012 that the use of chemical weapons against civilians would cross a “red line,” triggering US military action. In August 2013 the Syrian government killed some 1,400 men, women, and children with sarin nerve gas. Yet Obama failed to act on his threat. Patrice Taddonio, “The President Blinkered: Why Obama Changed Course on the ‘Red Line’ in Syria,” *PBS Frontline*, May 25, 2015, <https://www.pbs.org/wgbh/frontline/article/the-president-blinkered-why-obama-changed-course-on-the-red-line-in-syria>.

70 Doshi, *The Long Game*, 31.

Map 4. Reported Military Facilities at South China Sea Sites Occupied by China



Source: Karen Leigh, Peter Martin, and Adrian Leung, "Troubled Waters: Where the US and China Could Clash in the South China Sea," *Bloomberg*, December 17, 2020, <https://www.bloomberg.com/graphics/2020-south-china-sea-miscalculation/>.

like, they say you have made 1.3 billion people unhappy. . . . So please know your place.”<sup>71</sup>

In addition to its perceptions of a United States in decline, and reflecting Mao Zedong’s declaration that “power grows out of the barrel of a gun,” Beijing’s growing military might has increased its belligerence and its willingness to disregard formal agreements. In 2016, when an independent arbitral tribunal established under the UN Convention on the Law of the Sea (to which China is a signatory) denied Beijing’s claims of ownership of nearly the entire South China Sea, China dismissed the ruling as “nothing but a scrap of paper.”<sup>72</sup> A year later, two decades after Britain turned Hong Kong over to China in accordance with the Sino-British Joint Declaration defining Hong Kong’s future for 50 years, Beijing unilaterally declared that it was just a historical document of no significance. In 2020, Beijing enacted the Hong Kong National Security Law,<sup>73</sup> which created secret security agencies, denied Hong Kong citizens fair trial rights, increased restraints on freedom of speech, and weakened judicial oversight. Soon thereafter, the city slipped behind the CCP’s authoritarian curtain.<sup>74</sup>

By far the United States’ greatest unforced error, however, was the Biden administration’s disastrous withdrawal from Afghanistan in the summer of 2021. After spending an estimated \$2 trillion, and at the loss of over 2,000 American lives, the administration abandoned the country in chaos without consulting its allies. The administration made the decision to pull out although no American soldier had been killed in action over the previous 14 months and although the US presence had declined from some 100,000 troops a decade earlier to a few thousand, with a

commensurate reduction in cost. In deserting Afghanistan, the United States abandoned a major air base situated in China’s “backyard” while ceding control of the country to Pakistan’s allies, the Taliban, to the dismay of India, which Washington has long sought to cultivate as an ally in its efforts to address the growing threat Beijing poses.<sup>75</sup>

Perhaps it is not surprising that, only six months following America’s debacle in Afghanistan, Russia invaded Ukraine.

The United States, however, may at last be moved to action. With the wolf now at NATO’s doorstep, and thanks to Ukraine’s surprisingly effective defense against the initial Russian onslaught, the United States and its NATO allies have provided billions of dollars in military equipment to Ukraine to defeat Russian aggression. Yet the United States has not taken action matching recent statements by President Biden that it would be willing to use force to defend Taiwan if China attacks.<sup>76</sup> Indeed, the transfer to Ukraine of huge quantities of American munitions will take years to restore to their current levels, which even before the transfer were widely seen as inadequate to wage a general war with China.<sup>77</sup>

More broadly speaking, the Biden administration has not ensured that the defense budgets it proposes keep pace with

71 Han Fook Kwang et al., Lee Kuan Yew: *Hard Truths to Keep Singapore Going* (Singapore: Straits Times, 2011), 331.

72 Camila Domonoske, “Chinese Official on Tribunal Ruling: ‘It’s Nothing but a Scrap of Paper,’” NPR, July 13, 2016, <https://www.npr.org/sections/thetwo-way/2016/07/13/485814417/chinese-official-on-tribunal-ruling-its-nothing-but-a-scrap-of-paper>.

73 The law’s official title is the Law of the People’s Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region.

74 Viswa Nathan, “Manila’s Tricky US-China Balancing Act,” *Asia Sentinel*, November 27, 2022, <https://www.asiasentinel.com/p/manila-tricky-usa-china-balancing-act>; and “China: New Hong Kong Law a Roadmap for Repression,” Human Rights Watch, July 29, 2020, <https://www.hrw.org/news/2020/07/29/china-new-hong-kong-law-roadmap-repression>.

75 “The Fiasco in Afghanistan Is a Grave Blow to America’s Standing,” *The Economist*, August 21, 2021, <https://www.economist.com/leaders/2021/08/21/the-fiasco-in-afghanistan-is-a-grave-blow-to-americas-standing>; George Packer, “Biden’s Betrayal of Afghans Will Live in Infamy,” *The Atlantic*, August 15, 2021, <https://www.theatlantic.com/ideas/archive/2021/08/bidens-betrayal-of-afghans-will-live-in-infamy/619764>; and “China is Happy to See America Humbled in Afghanistan,” *The Economist*, August 21, 2021, <https://www.economist.com/china/2021/08/21/china-is-happy-to-see-america-humbled-in-afghanistan>.

76 Elbridge A. Colby and Andrew F. Krepinovich Jr., “Biden’s All-Hat Defense,” *National Review*, April 28, 2022, <https://www.nationalreview.com/magazine/2022/05/16/bidens-all-hat-national-defense>. Again, while Taiwan is not an ally of the United States, the latter is committed to its defense through the Taiwan Relations Act of 1979. The act states that the United States would “consider any effort to determine the future of Taiwan by other than peaceful means, including by boycotts or embargoes, a threat to the peace and security of the Western Pacific area and of grave concern to the United States.” HR 2479, 96th Cong. (March 24, 1979), <https://www.congress.gov/bills/96th-congress/house-bill/2479>. Sam Meredith, “Biden Says US Willing to Use Force to Defend Taiwan—Prompting Backlash from China,” CNBC, May 23, 2022, <https://www.cnbc.com/2022/05/23/biden-says-us-willing-to-use-force-to-defend-taiwan.html>.

77 Seth Jones, *Empty Bins in a Wartime Environment: The Challenge to the US Defense Industrial Base*, (Washington, DC, and Lanham, MD: Center for Strategic and International Studies and Rowman & Littlefield, 2023), 10-15, [https://csis-website-prod.s3.amazonaws.com/s3fs-public/2023-01/230119\\_Jones\\_Empty\\_Bins.pdf?VersionId=mW3OOnwul8V2nR2EHKBYxpiOzMiS88](https://csis-website-prod.s3.amazonaws.com/s3fs-public/2023-01/230119_Jones_Empty_Bins.pdf?VersionId=mW3OOnwul8V2nR2EHKBYxpiOzMiS88).

inflation, let alone augmented them in the face of China's ongoing military buildup. To put the US effort in perspective, its defense budget in 2008, when terrorist and insurgent threats dominated its operations, consumed 4.5 percent of America's gross domestic product (GDP). The current budget figure is 3.5 percent, a decline of over one-fifth.<sup>78</sup> This suggests that when it comes to the WPTO in particular and defense in general, the US position remains long on talk and short on concrete action.

### An Emboldened China

These trends—the ongoing buildup of Chinese power and the United States' "long retreat"—find the CCP increasingly aggressive in its actions. China's recent white paper on Taiwan reflects these changes, declaring that "China's complete reunification is a process that cannot be halted. . . . The wheel of history rolls on towards national reunification, and it will not be stopped by any individual or any force."<sup>79</sup>

Beijing appears unimpressed by the democracies' show of resolve in Ukraine. Indeed, from a military perspective, the balance in the WPTO has shifted further in its favor as the United States continues shipping large quantities of munitions to Ukraine from its war reserve stocks. China demonstrated its growing sense

of military advantage in the Far East in August 2022 when it conducted by far its largest exercises in the air and waters surrounding Taiwan.<sup>80</sup> While in 1996 the US Navy sailed the Taiwan Strait secure in the knowledge that China's PLA could do little to oppose it, today it conducts freedom of navigation operations (FONOPs) beyond the First Island Chain in the South China Sea with growing trepidation.

### An Endangered—and Dangerous—China?

While key trends are moving in China's favor, there is no guarantee this will continue. As noted above, the CCP relies on two principal sources for its legitimacy: nationalism and economic growth. By most accounts, Chinese nationalism is strong. There are, however, growing clouds on the horizon with respect to the CCP's ability to sustain the country's high rate of economic growth. In March 2022, the CCP set China's annual economic growth target at 5.5 percent: the lowest in decades, ostensibly due to the party's "zero-Covid" lockdown policy that has significantly disrupted economic activity. Shanghai, for example, saw its economic output shrink over 13 percent in 2022's second quarter.<sup>81</sup> Overall, China's GDP growth for 2022 slipped to 3 percent, its second-lowest rate in nearly 50 years.<sup>82</sup>

China also faces significant structural problems. The country's working-age population peaked in 2014, leaving it with a growing age-dependency ratio. In 2020 China had 12 million births. This is not only a record low for the CCP regime but also

78 Defense Media Activity, "Defense Spending as a Percent of Gross Domestic Product," US DoD, accessed March, 2023, <https://www.defense.gov/Multimedia/Photos/igphoto/20202099941>; and World Bank Data, "Military Expenditure Percent of GDP – United States," accessed March, 2023, <https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS?locations=US>.

79 The 2022 white paper differs in major ways from the previous version published in 2000. These changes reflect China's hardening position against Taiwan and, indirectly, a growing confidence that key trends—including the military balance—are moving in its favor. Most tellingly, the English version of the 2022 paper does not mention the word *negotiate* when describing how the two sides can proceed to unification. It notes that there will be "consultations and discussions as equals." The Chinese language version uses the term *negotiate* but not as "negotiations as equals." The new white paper omits key features of the previous version, such as statements that Taiwan will

- have "its own administrative and legislative powers";
- maintain "an independent judiciary and the right of adjudication on the island";
- exert control over "its own party, political, military, economic, and financial affairs"; and
- "keep its military forces and the mainland will not dispatch troops or administrative personnel to the island."

The white paper does guarantee that Taiwan can maintain its own social and economic system under the "One Country, Two Systems" formula. Given the fate of such "guarantees" with respect to Hong Kong, the US and its allies must view this assurance with deep suspicion. "Full Text: The Taiwan Question and China's Reunification in the New Era," Xinhua, August 10, 2022, <https://english.news.cn/20220810/d9d3b8702154b34bbf1d451b99bf64a/c.html>; and Bonny Lin, Brian Hart, Matthew P. Finaiole, Samantha Lu, Hannah Price, and Nicholas Kaufman, "Tracking the Fourth Taiwan Strait Crisis," China Power Project, Center for Strategic and International Studies, August 16, 2022, <https://chinapower.csis.org/tracking-the-fourth-taiwan-strait-crisis>.

80 Although much was made of the PLA exercises being in response to US Speaker of the House Nancy Pelosi's visit to Taiwan, there is evidence that they were the result of considerable pre-planning. Dean Cheng, "PLA Exercises after Pelosi Taiwan Visit Were Largely Pre-Planned," *Breaking Defense*, August 17, 2022, <https://breakingdefense.com/2022/08/pla-exercises-after-pelosi-taiwan-visit-were-largely-pre-planned>.

81 Loren Brandt, John Litwack, Elitza Mileva, Luhang Wang, Yifan Zhang, and Luan Zhao, "China's Productivity Slowdown and Future Growth Potential" (Policy Research Working Paper 9298, Macroeconomics, Trade and Investment Global Practice, World Bank Group, 2020), 2, <https://openknowledge.worldbank.org/bitstream/handle/10986/33993/Chinas-Productivity-Slowdown-and-Future-Growth-Potential.pdf>; Lauri Myllyvirta, *Quantifying the Economic Costs of Air Pollution from Fossil Fuels* (Centre for Research on Energy and Clean Air, 2020), <https://energyandcleanair.org/wp/wp-content/uploads/2020/02/Cost-of-fossil-fuels-briefing>; Ke Long, "Can China Avoid the 'Middle Income Trap?'" Nippon, June 16, 2022, <https://www.nippon.com/en/in-depth/d00811/>; and Siladitya Ray, "China's Economic Growth Sees Major Slump Following Months Of Stringent Covid Lockdowns," *Forbes*, July 15, 2022, <https://www.forbes.com/sites/siladityaray/2022/07/15/chinas-economic-growth-sees-major-slump-following-months-of-stringent-covid-lockdowns>.

82 Trading Economics, "China GDP Annual Growth Rate," accessed Month 00, 2023, <https://tradingeconomics.com/china/gdp-growth-annual>.

substantially less than the Chinese government had projected. China's current fertility rate of 1.3 children per woman of child-bearing age is far lower than the 2.1 rate it needs to sustain the population at its current level. It is also below the 1.5 rate associated with the "low fertility trap."<sup>83</sup> Put simply, a smaller working-age population will have to provide for a growing elderly population.

Perhaps not surprisingly, productivity growth is declining. Between 2015 and 2018, China's economic growth rate fell below 7 percent for the first time since 1991, due largely to a decline in total factor productivity (TFP). Its TFP fell from 2.8 percent in the decade before the 2008 global financial crisis to 0.7 percent in 2009–18. In addition to the factors described above, the CCP's despoliation of China's environment is linked to the decline, especially with respect to air and water pollution.

Following the global supply chain disruptions that the recent pandemic caused, foreign corporations may continue relocating their supply chains outside China. The CCP's growing hostility toward advanced democratic states, its recent efforts to exert more direct control over the country's economy, and rising labor costs are giving impetus to this trend. Meanwhile, China may confront a "middle-income trap."<sup>84</sup>

83 Wolfgang Lutz, Vegard Skirbekk, and Maria Rita Testa, "The Low-Fertility Trap Hypothesis: Forces that May Lead to Further Postponement and Fewer Births in Europe," *Vjenna Yearbook of Population Research* 4 (2006): 167–92, <https://www.jstor.org/stable/pdf/23025482>; and Ouyang Hui, "Solving the Fertility Conundrum," CKGSB, April 18, 2022, <https://english.ckgb.edu.cn/knowledges/solving-the-fertility-conundrum>. The low fertility trap comprises three components. The first draws on the momentum of below-replacement population growth. Fewer women in succeeding generations requires a total fertility replacement (TFR) rate that exceeds 2.1 in order to reestablish the original population level. But absent some change in current demographic dynamics, fewer potential mothers in the future indicate fewer births, not more. The second component is sociological. As births decline, popular assumptions regarding ideal family size decline. One child has been the norm in Chinese families for several generations. Why change? The third component is economic: the growing focus on materialism in society is at odds with the costs of child-rearing and with concerns about declining income among the rising generations. These three factors are expected to create a downward spiral in births in the future.

84 Colin Shek, "Aiming for the Top: Can China Escape the Middle Income Trap?" CKGSB, May 23, 2019, <https://english.ckgb.edu.cn/knowledges/china-middle-income-trap>; and Indermit S. Gill and Homi Kharas, "The Middle-Income Trap Turns Ten," *Policy Research Working Paper 7403*, (Development Policy Department, World Bank Group, August 2015), <https://documents1.worldbank.org/curated/en/291521468179640202/pdf/WPS7403.pdf>. A country that falls victim to the middle-income trap is defined as one that loses its competitive edge in the export of manufactured goods due to rising wages while failing to keep pace with more developed economies in developing high-value-added products and services. Such countries are hampered by, among other things, limited industrial diversification, poor labor market conditions and aging populations. From 1960 to 2010, only 15 out of 101 middle-income economies escaped the middle-income trap,

If the CCP can no longer point to high rates of economic growth and the corresponding promise of a better material future for the Chinese people as a source of its legitimacy to rule over them, the only pillar remaining to the Chinese Communists is nationalism. This makes accomplishing the CCP's pledge to complete the country's rejuvenation as a world power—including the achievement of its territorial ambitions—all the more important. Moreover, if China finds itself in a middle-income trap, its relative power may begin to decline, perhaps precipitously, relative to those of the Indo-Pacific's great democracies. If so, while the CCP would prefer to Finlandize the countries along the First Island Chain, Taiwan in particular, the incentive to act militarily may increase dramatically. Failure of the United States, Australia, Japan, and their prospective Coalition partners to maintain a favorable military balance, including by maximizing their military effectiveness through well-crafted concepts of operation, will considerably enhance the CCP's willingness to choose the path of war.

## Why China?

China is not the only great power seeking to overthrow the existing international order. Russia has also been hard at work to achieve a similar end. In a joint statement signed in February 2022, President Xi and President Putin declared that their countries' friendship "has no limits. There are no 'forbidden areas' of cooperation." The two also explicitly criticized the United States, and implicitly the existing international order it underpins, a half dozen times.<sup>85</sup>

The return of China and Russia as aggressive revisionist powers, combined with projected declining resources accorded to US defenses, finds the threat to vital American interests along the Eurasian periphery increasing. The days when the United

including Hong Kong, Japan, Singapore, South Korea, and Taiwan. While China may take encouragement from the success of these East Asian "tigers," they all have two characteristics China lacks: they are democracies and have adopted economic models closer to that of the United States than that of China.

85 Chao Dang, Ann M. Simmons, Evan Gershkovich, and William Mauldin, "Putin, Xi Aim Russia-China Partnership against US," *Wall Street Journal*, February 4, 2022, <https://www.wsj.com/articles/russias-vladimir-putin-meets-with-chinese-leader-xi-jinping-in-beijing-11643966743>.

States enjoyed a vast surplus of military power are past. The US needs to make tough decisions with respect to establishing defense priorities. Just as in World War II, when the United States adopted a “Germany First” strategy, today Washington has to choose between “China First” and “Russia First.”<sup>86</sup> There are compelling reasons US policymakers and military planners should accord top priority to China when crafting strategy. Four metrics inform these reasons: relative military potential, strategic depth, risk to key frontline allies, and ally capabilities. The following sections provide an assessment of these metrics.

### Military Potential

Russia lacks China’s economic or military potential. Further, given the revelations from operations in the Russo-Ukrainian War, Moscow is unlikely to develop anything comparable to China’s military capabilities over the next decade or so. Given the severe limitations of Russia’s armed forces, which the war has exposed, it appears that the European NATO powers, even with modest US support, will be more than a match for Russia’s military for the foreseeable future.<sup>87</sup>

Moreover, although Russia currently has a more formidable nuclear arsenal, China is engaged in a major expansion of its nuclear forces, which appear to be on a path to match, or even exceed, those of Russia and the United States under the terms of the New START agreement over the next decade or two.<sup>88</sup>

In terms of GDP, technical sophistication, and manpower, America’s NATO allies have assets far exceeding those of Russia (see table 1). In the Indo-Pacific, the opposite is true. America’s allies and partners in the Indo-Pacific region are substantially inferior

86 Given Iran and North Korea’s exceedingly modest economies, military capabilities, technological sophistication, and populations relative to those of China and Russia, neither poses a security threat in a class with the two great revisionist powers. Consequently, the focus here is on the military competition with China and Russia.

87 The move by Finland and Sweden to join the alliance could shift the military balance even further in NATO’s favor.

88 Andrew F. Krepinevich Jr., “The New Nuclear Age: How China’s Growing Nuclear Arsenal Threatens Deterrence,” *Foreign Affairs*, April 19, 2022, <https://www.foreignaffairs.com/articles/china/2022-04-19/new-nuclear-age>; Andrew F. Krepinevich Jr., *Modernizing the Nuclear Triad: Decline or Renewal?* (Washington, DC: Hudson Institute, 2021), 29–38; and Office of the Secretary of Defense, *Military and Security Developments Involving the People’s Republic of China* (Washington, DC: US DoD, 2022), 94.

Table 1. GDP and Population of Major US NATO Allies and Russia

COUNTRY	GDP	POPULATION
France	\$2.9T	67M
Germany	\$4.2T	83M
Italy	\$2.1T	59M
United Kingdom	\$3.2T	67M
<b>Total</b>	<b>\$12.4T</b>	<b>277M</b>
<b>Russia</b>	<b>\$1.8T</b>	<b>143M</b>

Source: Author.

Note: The rankings are based on currency exchange rates. Gross domestic product does not provide a direct correlation to military potential. That said, viewed from the perspective of the two-plus centuries since the onset of the Industrial Revolution, there is a significant relationship not only between a country’s GDP and its military potential but also between its GDP and its military capability. Relative to the United States at the time, China’s GDP in 2014 was roughly 50 percent greater than the Soviet Union’s relative GDP to the United States in 1980.

Table 2. GDP and Population of US Frontline Allies and Partners in the WPTO and China

COUNTRY	GDP	POPULATION
Japan	\$4.9T	125M
Philippines	\$0.4T	111M
Republic of Korea	\$1.8T	51M
Taiwan	\$0.8T	23M
<b>First Island Chain</b>	<b>\$7.9T</b>	<b>312M</b>
Australia	\$1.5T	25M
India	\$3.2T	1,393M
<b>FI &amp; Non-US Quad</b>	<b>\$12.6T</b>	<b>1,731M</b>
<b>China</b>	<b>\$18.1T</b>	<b>1,419M</b>

Sources: Data from “Population, Total,” World Bank, accessed April 1, 2023, <https://data.worldbank.org/indicator/SP.POP.TOTL>; “GDP (Current US\$),” World Bank, accessed April 1, 2023, <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>; and “Explore All Countries—Taiwan,” Central Intelligence Agency, last updated May 15, 2023, <https://www.cia.gov/the-world-factbook/countries/taiwan>. The United States’ GDP is \$22,996,000 (thousands of USD), and its population is 331,894 (thousands).

to China in economic and military potential (see table 2). Simply put, America’s allies and partners in the European theater of operations are fully capable of creating and sustaining a favorable military balance against Russia with minimal direct US support—should they choose to do so. However, America’s allies in the Pacific would likely need substantial US support, both to deter Chinese aggression and to defeat it if deterrence were to fail.

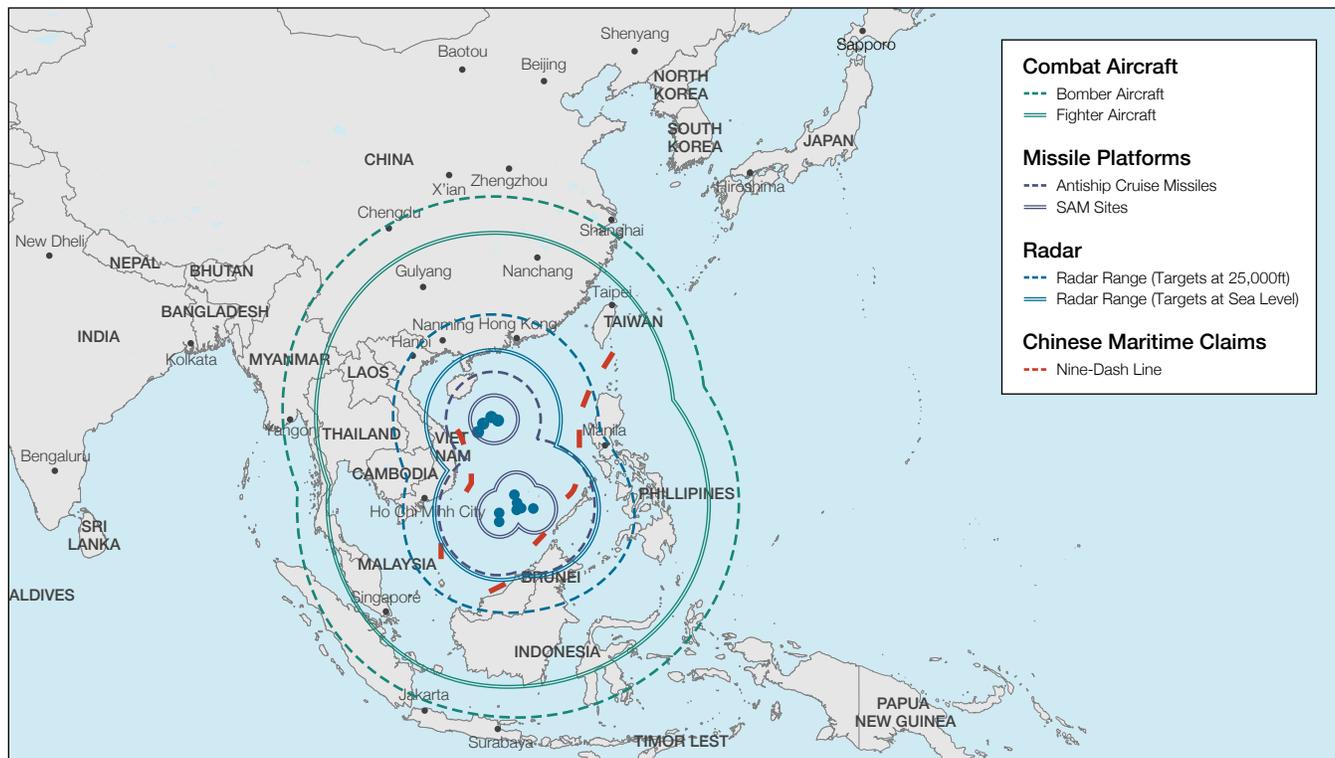
### Strategic Depth

Strategic depth is an important factor in defense planning. Militaries that enjoy strategic depth have the option to adopt a “defense in depth”—trading space for time to achieve a more advantageous position, such as by mobilizing forces or inducing

a powerful state to enter the war as an ally. The War of 1812 against Napoleonic France and the “Great Patriotic War” against Nazi Germany are but two of many examples of how a country, in this case Russia, employed strategic depth to its advantage.

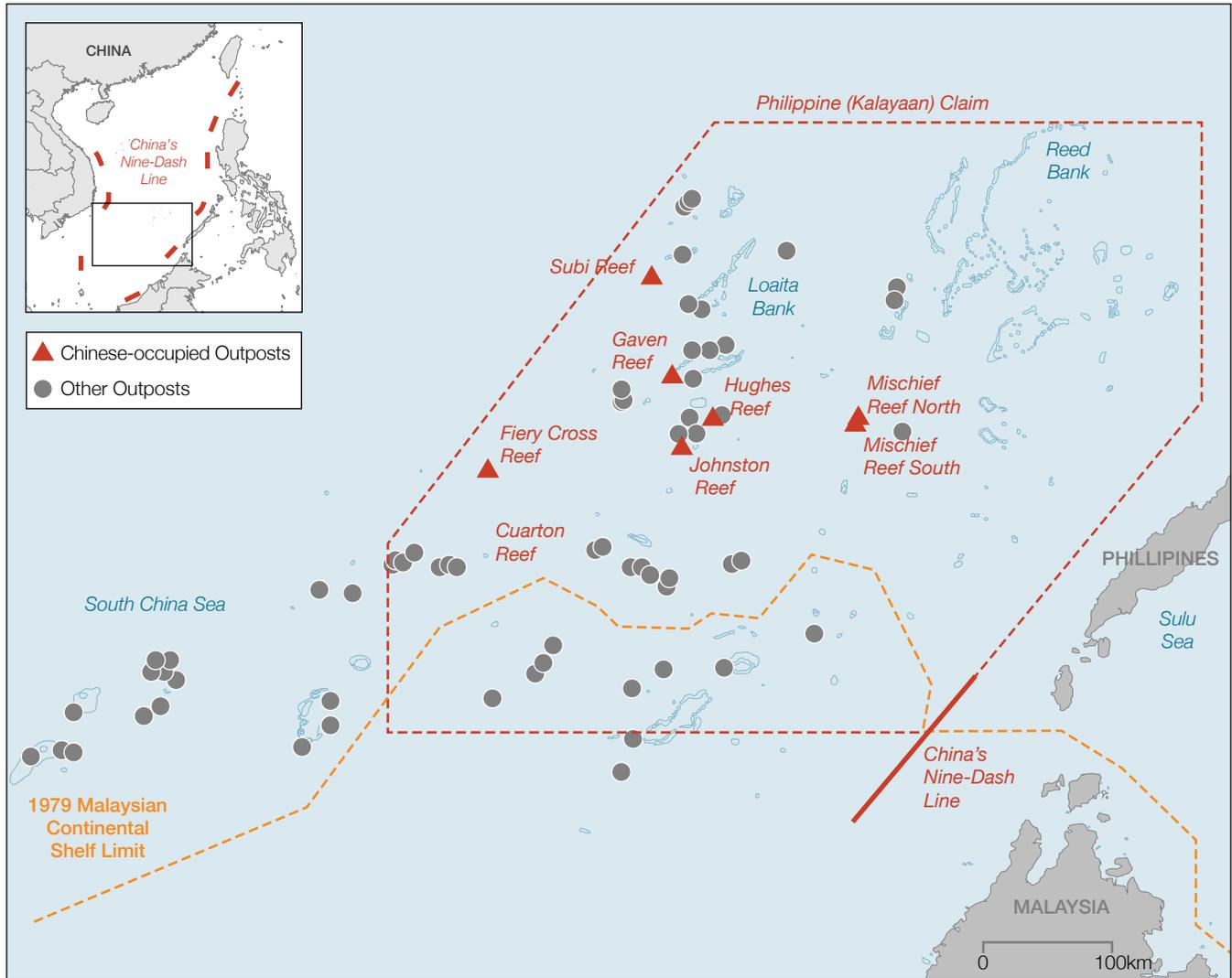
Militaries lacking strategic depth can find themselves at a severe competitive disadvantage. In the two world wars, for example, the location of France’s industrial heartland in the northeast, near Germany, compelled it to defend forward, and it did so at great cost. In World War II, France’s lack of strategic depth was a significant cause of its rapid defeat. Similarly, during the Cold War, West Germany lacked strategic depth and as a result was committed to meeting any Warsaw Pact attack at the intra-German border.

Map 5. Chinese Aircraft, Missile, and Radar Ranges



Source: “Chinese Power Projection Capabilities in the South China Sea,” Asia Maritime Transparency Initiative and the Center for Strategic and International Studies, accessed April 1, 2023, <https://amti.csis.org/chinese-power-projection/>.

Map 6. PLA South China Sea Outposts



Source: *Military and Security Developments Involving the People's Republic of China 2020: Annual Report to Congress* (Washington, DC: Office of the Secretary of Defense, August 21, 2020), 101, <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>.

In terms of what it seeks to defend, a prospective counter-China coalition lacks strategic depth. Washington's allies along the First Island Chain, as well as Taiwan, lie in close proximity to China (see map 5). Moreover, China's militarization of natural and artificial South China Sea Islands finds the Philippines losing much

of its strategic depth (see map 6). As I will elaborate on presently, this situation compels the United States and its Coalition partners to assume a forward defense posture in the WPTO. Adopting any other posture, such as the mobilization posture the United States employed before the two world wars, would signal

the political abandonment of key allies and of a long-standing security partner in Taiwan. Finally, were the Coalition to implement a defense posture that accepts the loss of the First Island Chain, in whole or in part, on the presumption that it could retake the area later—similar to its success in recovering Western Europe and the Western Pacific in World War II, South Korea in the Korean War, and Kuwait in the First Gulf War—it would be unacceptable politically and highly risky militarily. Given China’s rapidly advancing anti-access/area-denial (A2/AD)<sup>89</sup> capabilities and the paucity of US bases along the Second Island Chain, it is difficult to see how the Coalition could launch a successful counteroffensive to retake territory along the First Island Chain at anything approaching an acceptable cost, if it could do so at all.

On the other hand, the United States enjoys great strategic depth in Europe, providing a greater chance of recovering from initial setbacks. America’s great-power NATO allies—Britain, France, and Germany—lie hundreds of miles from the Russian border. Thus, the US and other allied militaries can position reinforcements in the alliance’s large Western European “rear area” in relative safety.

### Frontline Powers

Japan, with the world’s third-largest economy and an advanced technical-industrial base, is the only great power located on the “front line” opposite Russia or China. Moreover, no NATO frontline state approaches the economic might, technological sophistication, or military potential of South Korea or Taiwan, which are also situated on the WPTO’s front line with China. Should any of these two states fall under China’s direct or indirect control, it would effect a substantial shift in the regional power balance. If China subjugated or, more likely, Finlandized Japan, the military balance in the Western Pacific would shift decisively in China’s favor. Given the cascading effect this shift would almost certainly have on other powers in the region, the loss of any of these states would likely be catastrophic for the US position.

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<sup>89</sup> For the purposes of this study, anti-access (A2) capabilities are defined as those associated with denying access to major fixed-point locations, especially large forward bases, whereas area-denial (AD) capabilities are those that threaten mobile targets over an area of operations, principally maritime and air forces, including those beyond the littorals.

To be sure, the United States would prefer to avoid losing any allied territory, either in Asia or in Europe. But no state has ever been blessed with unlimited resources, so allocating risk is inevitable. Given the underwhelming performance and depletion of Russian military forces in its war against Ukraine, the risk to frontline state allies and security partners in the WPTO is far greater than that associated with NATO’s East European members.

### Self-Help

In which theater of operations could America’s allies and Coalition partners stand a better chance of defending themselves in the US military’s absence? Which set of US allies and security partners—those in Europe or those in the Western Pacific—is capable of mounting a successful independent defense? If we use GDP and population as rough surrogates for military potential, it is clear that the United States’ European NATO allies are far more capable of defending themselves from Russia than its allies and partners in the WPTO are against Chinese aggression.

Examining these (admittedly rough) measures of military potential, we find the United States’ principal European allies’ combined GDP exceeds that of Russia by over a factor of seven. Remarkably, *each* of the four principal European NATO economic powers—Britain, France, Germany, and Italy—has a GDP greater than Russia’s, and Germany’s is well over twice as large. Adding the economic heft of other NATO allies such as the Low Countries, frontline states, and ascending members Finland and Sweden boosts the balance even further in their favor. In terms of population, the major European NATO powers alone have nearly double Russia’s number.

The situation along the First Island Chain in the WPTO is quite the opposite. China’s GDP is well over twice the combined GDP of US allies and prospective Coalition partners along the First Island Chain. Even if we include the GDPs of Australia and India—two Quad members—China’s economy exceeds the combined total by nearly 50 percent.

The manpower balance also tilts in China's favor. China's population is more than four times that of the combined First Island Chain nations and South Korea. If one adds the population of the non-US Quad members, the advantage moves slightly in favor of these Indo-Pacific democracies. Still, they enjoy nothing like the advantage their European counterparts have over Russia.

In brief, when one considers China's advantage in military potential relative to Russia, the WPTO's lack of strategic depth, and the military potential and economic might of First Island Chain frontline states as compared to NATO's—it is clear the European democracies possess a far greater relative ability to mount a successful defense against their revisionist great-power rival than do those in the WPTO.

### The Bottom Line: China and the WPTO

Given the assessment of the metrics provided above, the WPTO should be accorded top priority in US defense planning. Put simply, it is far past time for the United States to execute a major military realignment of the Indo-Pacific theater in general, and the Western Pacific Theater of Operations in particular. The imperative for Washington to encourage its allies and prospective security partners to join it in counterbalancing China's growing military power magnifies the need. Any failure of the United States to shore up its position in the WPTO risks finding key “fence-sitter” states like Indonesia and Vietnam, and even friendly regimes, “bandwagoning” with Beijing.<sup>90</sup>

### Responding to the Challenge

The United States and its allies and security partners need to decide how best to cooperate in preserving peace and stability in the Western Pacific region. A number of potential defense strategies and military posture options exist. Any calls to initiate a preventive war against China are neither desirable nor consistent with American values or those of its securi-

ty partners. Indeed, they defeat the objective of preserving peace. On the other hand, a strategy based on appeasing or accommodating China by accepting its demands for control over the Senkaku Islands, the South China Sea Islands, and Taiwan would increase regional instability by accepting China's expansionist agenda and encouraging Beijing to act as the region's hegemon rather than as a member of the community of nations.

The leading democracies in the Indo-Pacific region, particularly the Quad powers—Australia, India, Japan, and the United States—are expanding their cooperation, albeit fitfully, to counterbalance growing Chinese power. However, neither the United States nor its Quad associates have addressed the question, *What defense strategy and supporting operational concept(s) can best defend the countries comprising the First Island Chain from Chinese coercion or aggression?*

Such a conflict could proceed along five general paths. It could quickly escalate into large-scale strategic attacks on the belligerents' homelands, resulting in nuclear Armageddon. Or a similar outcome could occur, only over a longer period of time, in which “limited” nuclear use eventually triggers uncontrolled escalation. If the Coalition can avoid nuclear use, a third general path could emerge, with China quickly accomplishing its objectives in a Western Pacific blitzkrieg similar to Japan's success in early 1942 in the Pacific War. Fourth, the Coalition could stop Chinese forces cold, as was the case with the failed Russian effort to overrun Ukraine in 2022. Whether or not Beijing's aggression succeeds, either China or the Coalition could decide to persist, opening up a fifth path that would find the belligerents waging a protracted but limited war over perhaps many months, or even years, before negotiating peace. The challenges that the fourth and fifth paths pose represent the focus of the Archipelagic Defense concept. That being said, the “Armageddon Factor”—the need to avoid escalating to a general nuclear exchange—must be incorporated into any Archipelagic Defense operational concept.

<sup>90</sup> For an excellent treatment of the need to form a US-led coalition in the WPTO, and the challenges associated with such an endeavor, see Elbridge A. Colby, *The Strategy of Denial* (New Haven, CT: Yale University Press, 2021).



### 3. THE CHARACTER OF THE COMPETITION

Those involved in the process of developing operational concepts can benefit from understanding the key characteristics of modern warfare. To employ a medical analogy, just as a good diagnosis is essential to establishing a successful treatment for a human malady, a good diagnosis of the warfare environment and the ways prospective enemies plan to *exploit* it (a matter I will address in the next chapter) are essential to understanding the means and methods that a military force needs to *operate successfully in it*. This chapter's purpose is to provide such an understanding, if only in a general sense. It does so by examining trends in war's character over the past 175 years, the time over which successive technological revolutions have effected major changes in war's character, and also the frequency with which these changes occur.

#### Trends in Warfare: Domains and Capabilities

What do the trends in warfare suggest with respect to those capabilities, organized in what form, and brought to bear in what

ways, that can maximize the effectiveness of operations at the campaign level of war? In addressing this question, it is useful to explore trends in warfare since the mid-nineteenth century, when war began expanding beyond the land and sea surface domains (see table 3).

Prior to the mid-nineteenth century, the available technology limited the great military powers to waging war almost exclusively on land and sea. War in these two domains was almost entirely self-contained: armies could do little to affect the struggle for control of the seas, while bat-

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Left Photo: A patch for US Space Forces Indo-Pacific at Yokota Air Base in Tokyo, Japan, on December 20, 2022. (United States Forces Japan)

Right Photo: A cyber warfare operations officer watches members of the 175th Cyberspace Operations Group in the Hunter's Den at Warfield Air National Guard Base, Middle River, Maryland, on June 3, 2017. (US Air Force photo by J.M. Eddins Jr.)

Table 3. Warfare's Expanding Domains

ANTIQUITY-INDUSTRIAL REVOLUTION	MID-1800S	EARLY 1900S	MID-1900S	EARLY 2000S
Land	Land	Land	Land	Land
Sea	Sea	Sea	Sea	Sea
	Electromagnetic	Electromagnetic	Electromagnetic	Electromagnetic
		Air	Air	Air
		Undersea	Undersea	Undersea
			Space	Space
			Seabed	Seabed
				Cyber

Source: Author.

Note: Green text indicates the period in which warfare began a significant expansion into this domain. Green shade denotes the general time frame in which the domain became a major factor in the military competition.

the fleets had a negligible direct effect on military operations on land.<sup>91</sup>

Beginning in the 1840s, however, warfare began its spread into six additional domains: the electromagnetic, undersea, air, space, seabed, and cyber. This period of domain expansion coincided with remarkable growth in the speed and range of weapons systems, enabling countries to wage war effectively *across* domains as well as within them. Hence the emergence of “cross-domain” operations.

### In the Beginning

The mid-nineteenth century saw the introduction of steam engines in ships, locomotives, and rail networks, greatly enhancing the speed of operations in the land and sea domains. The invention of the telegraph and the development of infrastruc-

ture to support its use also occurred around this time, radically boosting the speed at which military leaders could transmit information and thereby greatly augmenting the ability of land forces to coordinate their movements at the operational and strategic levels of war. The introduction of a global telegraph network linked by undersea cables had a similar effect on the maritime competition, at least for ships at locations linked to the network, such as major naval bases.

In the late nineteenth and early twentieth centuries, warfare spread into the air and undersea domains while experiencing a transformation in the electromagnetic domain thanks to the introduction of wireless (radio) communications that freed militaries from being tethered to telegraph lines. The twentieth century’s first decade found submarines and torpedoes rapidly transforming from novelties to feared instruments of war, heralding the introduction of undersea military operations. This period also witnessed the advent of manned flight as militaries took their first tentative leaps into the air domain.

91 That being said, fleets could indirectly influence the military competition on land by blockading and bombarding key coastal towns and facilities. Correspondingly, land-based forces could make it difficult for fleets to transit narrow chokepoints once armies fielded cannons capable of enforcing the “three-mile limit.”

## The World Wars

Military operations in the electromagnetic and air domains during World War I focused primarily on enhancing “scouting,” or intelligence, surveillance, and reconnaissance (ISR) activities, including cryptography,<sup>92</sup> as well as command, control, and communications (C3).<sup>93</sup> The undersea domain exerted great influence on the military competition as Germany employed submarines armed with torpedoes to create a new form of strategic blockade against the British Isles.

“Cross-domain operations”—the ability of forces located in one domain to exert significant influence on the military competition in other domains—became a central feature of military operations with the Mechanization, Aviation, and Radar Revolution<sup>94</sup> that occurred during the interwar period. This era saw dramatic growth in aircraft range, speed, and payload, markedly boosting land- and sea-based air forces’ ability to influence operations and strike targets in each other’s domains while contesting for control of the air domain itself. Advances in long-range radio and radar during this period made possible integrated air defense systems (IADSs), which became major factors in the struggle to gain an advantage in the air domain.

World War II also confirmed the undersea domain’s importance. In the Battle of the Atlantic, the Allies’ air and sea surface forces, with critical support from code-breaking efforts in the electromagnetic domain, prevailed over Germany’s submarine commerce raiding forces. The outcome proved critical in securing the delivery of supplies Britain needed to sustain itself, and for US efforts to build up the combat power to mount a successful amphibious assault on the Continent. In the Pacific theater, however, the opposite occurred. The US Navy’s submarine commerce raiding campaign against Japan proved far more

effective than the campaign the Kriegsmarine waged in Atlantic waters, as the Japanese were unable to combine capabilities across the air, sea, and electromagnetic domains sufficiently to replicate the Allies’ success half a world away.<sup>95</sup>

The emergence of the air and undersea domains as important factors in the military balance had a profound effect on forces operating on the sea surface. Fleets began focusing increasingly on influencing operations in the air and undersea domains and far less, relatively speaking, on the sea surface domain that had dominated maritime warfare for millennia. Indeed, the struggle for control of the air and undersea domains in the Atlantic and Western Pacific often governed US maritime operations during the Second World War. In a similar vein, land-based air forces focused primarily on controlling the air domain in order to support operations in the land domain. Although airpower failed to confirm the visions of ardent proponents like Giulio Douhet and William (“Billy”) Mitchell, the side that controlled the air typically prevailed in competition for control of the ground and maritime domains as well.

Owing to the global scale of their operations in World War II and the rapidly growing range and speed at which they could conduct these operations relative to those of the Great War, advanced militaries accorded relatively greater emphasis on coordinating the scouting and strike actions of their increasingly mobile and dispersed forces. The challenges associated with locating enemy forces (and with countering the enemy’s scouting efforts) also found militaries dedicating greater resources to competing in the electromagnetic domain than in previous wars. For example, information communicated via encoded radio transmissions was essential to coordinating the multitude of systems comprising integrated air defense operations, blitzkrieg-style mechanized air-land operations, and maritime air-sea and ASW actions, among others. The growing importance of secure access to the electromagnetic domain incentivized

92 As used in this assessment, “scouting” is information-gathering by any and all means—reconnaissance, surveillance, cryptanalysis, or any other type—which is completed when delivered to the commander. Wayne P. Hughes Jr., “Naval Tactics and Their Influence on Strategy,” *Naval War College Review* 39, no. 1 (January–February 1986): 2–17, <https://www.jstor.org/stable/44636482>.

93 With the advent of the information age, computers were added, yielding the acronym C4.

94 For a discussion of how this revolution affected the character of warfare, see Krepinevich, *Origins of Victory*, 254–341.

95 For assessments of submarine and ASW operations during the Second World War, see Joel Ira Holwitt, *Execute against Japan* (College Station, TX: Texas A&M University Press, 2009); and Stephen Budiansky, *Blackett’s War* (New York: Vintage Books, 2013).

belligerents to employ electronic countermeasures (ECM), such as jamming and chaff, to block or degrade radar systems.<sup>96</sup> The use of ECM led militaries to develop electronic counter-countermeasures—ECCM—to defeat ECM and maintain access to the electromagnetic domain. Militaries also waged “cryptographic war,” intercepting encrypted enemy messages and trying to decode them. Where successful, code-breaking, such as with Ultra and Magic,<sup>97</sup> proved a major source of competitive advantage for the Allies in their war with the Axis powers. For example, the Americans’ breaking of the Japanese military codes was a major reason behind the US Navy’s decisive victory in the Battle of Midway. Britain’s “Bletchley Park” operation that broke the German Enigma and Lorenz codes yielding the “Ultra” intelligence contributed greatly to the Allies’ victory in the Battle of the Atlantic.

### The Cold War

In addition to operating under a nuclear shadow, the 40-year Cold War that pitted the United States and its allies against Soviet Russia and its satellite states found the military competition expanding into two new domains: space and the seabed. For much of this period, forces used both domains primarily for scouting. Not long after the Russians launched the first man-made satellite, Sputnik, in October 1957, the United States boosted its first reconnaissance satellite, Discoverer (also known as Corona) into orbit. The American satellite’s purpose was to provide intelligence on Russian military activities. Later both superpowers launched satellites designed to transmit early warning of a nuclear missile attack. Toward the end of the Cold War, the United States began deploying Global Positioning System (GPS) satellites, which offered positioning, navigation, and timing (PNT) information, greatly enhancing its military’s effectiveness. Although the seabed was growing rapidly in economic importance, for military purposes it proved useful primarily for

96 Gerhard L. Weinberg, *A World at Arms* (Cambridge, UK: Cambridge University Press, 1994), 567–68. Radar proved to be one of the war’s most important technological developments, playing a crucial role in the Battle of Britain.

97 Ultra was the British code name for the signals intelligence obtained by breaking Germany’s encrypted communications. The US pursued its intelligence effort to break the Japanese wartime codes under the codename Magic.

emplacing sensors for detecting the movement of enemy undersea forces. Toward the Cold War’s end, rapid advances in information technology (IT) set the stage for a military revolution.

### The Unipolar Era

The First Gulf War coincided with the beginning of the IT-driven Precision Warfare Revolution. It saw the US military integrating capabilities in the warfighting domains at an unprecedented level, enabling it to conduct operations within increasingly compressed engagement cycles and at substantially greater ranges. Russian military theorists anticipated the heart of this new way of war and named this system-of-systems a “reconnaissance-strike complex” (RSC or “recce-strike” complex).

For the purposes of this study, an RSC is defined as comprising three elements: a scouting (reconnaissance) force, a strike force emphasizing extended-range precision-guided weapons, and a battle network. We may generally view the scouting force as encompassing a military’s intelligence, surveillance, and reconnaissance (ISR) assets. These are linked to its battle network, which comprises the command, control, communications, and computer (C4) elements, whose principal purpose is coordinating and directing the RSC’s widely dispersed ISR and strike components that can extend across all warfare domains.<sup>98</sup> By way of analogy, RSCs coordinate the actions of highly dispersed forces acting over great distances and operating at a rapid pace, with the battle network (“nervous system”) linking a military’s scouting (“senses”) and strike (“muscle”) elements to generate levels of combat power far greater than the sum of its parts.

While the Russians introduced the idea of RSCs as early as the 1970s, it was not until the First Gulf War that anyone realized their vision.<sup>99</sup> During that war, the US military’s nascent

98 Of course, countries can fuse these assets. For example, properly equipped, a strike aircraft can also perform scouting and battle network functions.

99 Dr. Milan Vego, *Recce-Strike Complexes in Soviet Theory and Practice* (Ft. Leavenworth, KS: Soviet Army Studies Office, 1990), <https://apps.dtic.mil/sti/pdfs/ADA231900.pdf>; and Lester W. Grau and Charles K. Bartles, “The Russian Reconnaissance Fire Complex Comes of Age,” University of Oxford Changing Character of War Centre, May 30, 2018, <https://www.cw.ox.ac.uk/blog/2018/5/30/the-russian-reconnaissance-fire-complex-comes-of-age>. Soviet military theorists envisioned recce-strike complexes (RSCs) as

recce-strike complex operated at ranges significantly greater than the 300 kilometers that Russian theorists had envisioned. Since then, enhancements in scouting, battle networks, ranged fires, and precision accuracy have further expanded the American RSC's operational reach and effectiveness, albeit against minor adversaries like Saddam Hussein's Iraq and the radical Islamist group al Qaeda, and in what the US military calls "permissive environments."<sup>100</sup>

The reconnaissance-strike complex can provide an enormous advantage against any rival lacking a comparable capability. For example, if a military's RSC can defeat its rival in the scouting competition, it enjoys a superior awareness of its enemy's force dispositions. It can exploit this advantage by avoiding "closing with the enemy" in favor of attacking beyond the enemy's effective scouting range. By way of analogy, imagine two boxers: one is blindfolded (and therefore has lost most of his ability to "scout"), while his rival suffers from no such impediment. The fortunate pugilist would logically avoid fighting in the clinches.<sup>101</sup> Given an advantage in the scouting competition and a functioning battle network, a military's extended-range strike assets can be employed to great advantage.

Thanks in large measure to satellite systems like GPS, the space domain, which leaders once viewed primarily as keeping track of enemy force developments and providing early warning of a nuclear attack, is now integral to military effectiveness at the operational and even tactical levels of warfare.<sup>102</sup> For ex-

ample, the GPS constellation enabled the US military to field a new generation of highly effective precision-guided weapons, such as the Joint Direct Attack Munition (JDAM), and to maneuver forces far more effectively over a wider range of terrain and weather conditions than ever before.

The growing importance of space to US power-projection operations in particular, and to power-projection operations in general, finds this domain the locus of an increasingly intense competition. As we shall see presently, China is seeking to leverage its satellites and anti-satellite (ASAT) systems to offset the long-standing US advantage in this domain by denying American forces access to space while using this domain to boost its own forces' effectiveness.

### The Mature Precision-Warfare Regime

Given the relatively meager resources available to the Chinese military in the decade or so following the Cold War, the PLA's early efforts to counter the US military's nascent RSC were modest and defensive in their orientation. Over the past decade or so, the PRC has progressed greatly to form an A2/AD reconnaissance-strike complex. This A2/AD complex is central to the PLA's efforts to field "counter-intervention" forces to deter and defeat any Coalition attempts to defeat overt acts of Chinese aggression along the First Island Chain. As befits their own objectives and resources, as well as differences in geography, strategic culture, and doctrine, among other things, these A2/AD complexes have unique Chinese characteristics.<sup>103</sup>

Today the military rivalry in the WPTO centers primarily on American and Chinese competing recce-strike complexes. Of course, A2/AD complexes, properly supplemented, can

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capable of destroying targets at a depth of 50 kilometers (roughly 30 miles) behind enemy lines. These RSCs anticipated computer-supported reconnaissance assets being linked to tube and rocket artillery forces commanded at the division level. At the army or army group ("front") level, the Russians believed scouting and strike assets (including cruise and ballistic missiles) would be capable of operating up to 300 kilometers (around 185 miles) behind enemy lines. They acknowledged that mobile and frequently concealed targets required tightly linked reconnaissance and strike assets to compress the engagement sequence but believed they could achieve this through highly integrated and automated battle networks.

100 As I use it in this study, the term *permissive environment* generally refers to operating against an enemy that is not seriously contesting friendly forces for access to, or control of, key warfighting domains.

101 I use this example to make a basic point. Obviously, the competition between two advanced military powers' RSCs would be far more complex than in the case of our two boxers.

102 The Chinese system version of GPS, Beidou, became fully operational in 2020. The Russians completed their system, GLONASS, in 1995, but coverage became spotty until

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2011, when they restored full service. The European Union also has a system, Galileo. Ben Westcott, "China's GPS Rival Beidou Is Now Fully Operational after Final Satellite Launched," CNN, June 24, 2020, <https://www.cnn.com/2020/06/24/tech/china-beidou-satellite-gps-intl-hnk>; and "Glonass System Satellites," Aerospace Technology, <https://www.aerospace-technology.com/projects/glonassatellites>.

103 For an overview of Chinese A2/AD forces, see Michael Carl Haas, "China: Exit Counter-Intervention, Enter Peripheral Defense," *The Diplomat*, March 4, 2015, <https://thediplomat.com/2015/03/china-exit-counter-intervention-enter-peripheral-defense>; and Sam J. Tangredi, "Anti-access Strategies in the Pacific: The United States and China," *Parameters* 49, no. 1 (Spring/Summer 2019): art. 3, <https://doi.org/10.55540/0031-1723.2859>.

support offensive operations, especially against minor powers lacking comparable capabilities. Thus, China's PLA has developed its RSCs not only to counter US intervention in what the CCP views as its sphere of influence, but also to spearhead offensive campaigns against lesser military powers in support of its revisionist aims.

In brief, the "maturing" of the precision-strike regime—in which multiple military powers have fielded advanced RSCs on a scale sufficient to wage war at the operational level—strongly suggests that a contemporary general war between China and the Coalition will very likely center on competing RSCs. These "dueling RSCs" will seek to gain an advantage by integrating forces operating *within* and *across* domains, waging "cross-domain warfare" at unprecedented levels of speed and complexity.

## Tomorrow's War: Dueling Recce-Strike Complexes

Apart from the myriad factors shaping the military balance of power, the rise of cross-domain operations through RSCs has made identifying those domains and competitions that exert the greatest influence on the military balance—and, consequently, on crafting operational concepts like Archipelagic Defense—an increasingly challenging undertaking.

Consider, for example, a Chinese attack on Taiwan. Its success will likely depend, *in part*, on precluding Coalition intervention by securing control of the sea surface and undersea domains around that island nation. For the PLA, establishing sea control would likely involve not only People's Liberation Army Navy (PLAN) warships and submarines operating in the sea surface and undersea domains, but also PLA forces positioned and operating in the other six domains as well. This is because, for advanced military powers, command of the sea is long past being determined almost exclusively by forces operating in the maritime domains, and increasingly enabled by a complex combination of forces operating in and

across all warfighting domains as elements of a reconnaissance-strike complex.<sup>104</sup>

The PLA's space, cyber, and electronic warfare forces will play a major role in these efforts. Those operating in the electromagnetic domain would jam Coalition communications. Cyber payloads would be found corrupting the data moving through the Coalition's battle network and logistics system. Any PLA high-power laser anti-satellite systems located deep inside China could try to "blind" US and allied military satellites while Chinese space systems coordinate PLA operations in and across all domains, including scouting the seas around Taiwan and guiding PLA precision munitions to their targets.

China's land-based OTH radars could furnish tracking and targeting information to PLA Air Force (PLAAF) strike aircraft (including unmanned systems) attacking Coalition surface fleets and naval and air bases in the WPTO, as well as to PLA forces assigned to intercept Coalition air and missile attacks. Chinese sensors positioned in multiple domains, including the seabed, would provide PLA commanders with data on the location of the Coalition's surface warships and perhaps its submarines as well, aiding PLAN submarines and unmanned underwater vehicles (UUVs) in their efforts to ambush Coalition naval task forces, and to hunt its submarines and undersea drones.

In our example, what domains matter most? At its most basic level, the key *competitions* in the mature stage of the Precision Warfare Revolution are those related to reconnaissance (or scouting), strike, and the act of coordinating the two (the battle network). Since capabilities resident in a given domain can influence the outcome of a struggle for access or control in other domains, an advanced military force can combine its capabilities, or organize tasks, in myriad ways to accomplish a particular mission. Thus, it can call on forces in many or even all domains to support its task-organized RSCs and pre-

<sup>104</sup> Similarly, as we shall see presently, the PLA would find itself contending with Coalition forces operating from and across various domains to deny the PLA sea control it seeks.

vail in these scouting/counter-scouting, network/counter-network, and strike/counterstrike competitions.

In one sense, these competitions are not new. For millennia, military commanders have sought to locate their enemy's position, exercise control over their own forces, and strike the enemy effectively, all while denying their adversaries the same ability. *What is new are the enormous distances and number of domains over which these competitions are waged, the speed at which they take place, the level of integration (or "fusion") that is possible among these functions, and the accuracy of fires.*<sup>105</sup> At the risk of stating the obvious, this renders developing an operational concept like Archipelagic Defense an exceedingly challenging enterprise.

With respect to scouting, as can be seen in the above illustration of Chinese military actions to secure command of the seas, strategists can position sensors in all the physical domains. They can also obtain scouting information through cyber espionage and cryptography, and through more traditional means, such as human intelligence, or spies. They can employ capabilities in all domains to counter rival scouting efforts as part of a strategy to win the scouting/counter-scouting competition.

For modern militaries, the RSC's battle network component relies heavily on leveraging the space, electromagnetic, and cyber domains along with artificial intelligence (AI) and advanced computational power to process, interpret, and move data provided by scouting forces quickly. They can support their C4ISR network with data-transiting fiber-optic cables placed along the seabed. Airborne systems can provide access to the battle network to maneuvering forces on land, in the maritime domains, and in the air. Land-based fiber-optic grids and cell towers are capable of moving large amounts of data quickly to those military forces with access to them. Forces can adapt (and are

<sup>105</sup> For example, an armed drone may be programmed to scout for and engage certain kinds of targets. With advances in artificial intelligence, it may be possible for the drone to assess the damage its attack inflicted and, if need be, to reengage the target. Thus the scouting, command, and strike functions would be fused into one "reconnaissance-strike system."

Table 4. Reconnaissance-Strike Complex: Fundamental Competitions

ELEMENT	COMPETITION
Reconnaissance	Scouting/Counter-scouting
Strike	Strike/Counterstrike
Battle Network	Network/Counter-network

Source: Author.

adapting) a wide range of military platforms—be they fighter aircraft, guided-missile cruisers, or armored fighting vehicles—to operate as part of the battle network. Thus, in addition to performing scouting and strike functions, they can also participate in operations aimed at destroying the enemy's battle network within the context of a network/counter-network competition.

As with scouting and network activities, the strike/counterstrike competition is as old as war itself. Accounts of ancient battles describe forces firing "salvoes" of arrows against enemies who were launching similar bursts. The Gunpowder Age introduced artillery duels of increasing range between armies on land, and broadsides between battle lines at sea. Warfare's move into the air domain witnessed aircraft and missiles launching strikes in "pulses"—another term for salvoes—over still greater distances. But as has been the case for millennia, the effectiveness of fires remains very much a function of good scouting and effective command and control. Fire effectiveness has also been limited by its accuracy, and by the performance of active and passive defenses. Again, along with advances in weapons speed, range, and accuracy, what has changed in recent times is the tight integration of military capabilities—their reconnaissance, strike, and C4 elements—in a way that enables a military organization's strike element to operate over a far greater area and at a far greater speed, and far more effectively, than has ever before been possible.<sup>106</sup>

<sup>106</sup> Andrew F. Krepinevich Jr., *The Military-Technical Revolution: A Preliminary Assessment*

In summary, to the extent reconnaissance-strike complexes are at the core of the clash between great powers in a general war, the central competitions determining military advantage will be those associated with the effective operation (or lack thereof) of friendly and rival RSCs and their fundamental elements: scouting (ISR), battle networks (C4), and precision fires. As I will elaborate on presently, China's military seeks to establish an advantage and, if possible, dominate the competition in each of the RSC's constituent components by controlling specific domains.

## Selected Insights and Observations

To sum up, crafting operational concepts has never been more challenging. Over the past 175 years, the number of warfighting domains has quadrupled. This expansion has occurred hand-in-hand with the introduction of new and more formidable military capabilities. That being said, our brief survey of the trends during this period reveals insights that may prove useful in refining and enhancing the Archipelagic Defense concept. I summarize these insights below.

### Expanding Domains and Military Revolutions

The spread of warfare into new domains that began in the mid-nineteenth century is strongly correlated with the increased frequency of military revolutions (see table 4). As its name suggests, the mid-nineteenth-century Railroad, Rifle, and Telegraph Revolution coincided with war's movement into the electromagnetic domain. At the same time, it greatly enhanced (via the steam engine) the speed and range over which military forces could conduct certain operations, as well as the range of effective fires (through the introduction of rifling). The military competition's migration into the undersea domain and the development of wireless communications were driving forces behind the revolution in naval warfare at the turn of the twentieth century, also known as the Fisher Revolution, after the eponymous British admiral most responsible for its introduction.<sup>107</sup> The maturation

of airpower in the 1930s, combined with the mechanization of land forces and the development of radar and extended-range radio (the Mechanization, Aviation, and Radar Revolution) were key ingredients in transforming the military competition's character, as revealed during the Second World War. This era also coincided with the introduction of nuclear weapons that, due to their unique capacity to inflict prompt catastrophic destruction, occupy an exclusive chapter in the history of warfare. More recently, the Precision Warfare Revolution owes much to the exploitation of space, along with the rapid advances in information-related technologies, in enhancing military effectiveness.

To date, however, conflict in the precision warfare era has been limited to between major and minor military powers. A general war between China and the Coalition would witness a duel between advanced RSCs. The duel would become even more formidable with the expansion of war into the cyber domain and advances across a range of technologies, including artificial intelligence, additive manufacturing (3D printing), directed energy (DE) systems, novel forms of propulsion (such as those employed in hypersonic missiles), advanced robotics, and synthetic biology. In brief, it will be a war like no other, featuring an unusually high number of surprises.

### A Two-Decade Lag

Our historical survey suggests that it takes several decades between the time a new warfare domain's potential is identified and when it exerts a major effect on the military competition. In 1844, Samuel Morse sent the first message by telegraph. Several decades elapsed, however, before the necessary infrastructure was in place for the telegraph to yield a major boost in military effectiveness. It took until 1861 for the United States to have transcontinental telegraph service, and until 1866 to establish a transatlantic cable line with Europe.<sup>108</sup> Another three decades passed before Guglielmo Marconi demonstrated the principles of wireless communication in 1894 and five more years until he

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(unpublished paper, Office of Net Assessment, Department of Defense, July 1992; published by the Center for Strategic and Budgetary Assessments in 2002), 11–12, 17–18.

<sup>107</sup> For a history and analysis of this transformation of war at sea, see Nicholas A. Lambert, *Sir John Fisher's Naval Revolution* (Columbia: University of South Carolina Press, 1999).

<sup>108</sup> "Morse Code & the Telegraph," History.com, November 9, 2009, <https://www.history.com/topics/inventions/telegraph>.

transmitted a long-distance wireless telegraph message across the English Channel.<sup>109</sup> Yet countries did not fully exploit wireless communications until the interwar period. Similarly, the expansion of warfare to the undersea domain saw nearly 20 years pass between when the French began experimenting with submarines and when the world's leading navies started viewing them as “game-changers” in the maritime competition.<sup>110</sup> It took even longer between the introduction of heavier-than-air flight by the Wright Brothers in 1903 and the emergence of land- and sea-based air forces as major factors in warfare.<sup>111</sup>

### Three New Domains

The first offshore oil wells, precursors of today's advanced undersea economy, appeared shortly after World War II. Not long thereafter, advanced militaries began emplacing sensors and sensor grids on the seabed to aid in scouting enemy maritime forces. A little more than 30 years after Sputnik's launch into orbit, the First Gulf War found the US military employing satellite systems to enable its nascent RSC. Finally, the internet morphed over several decades. It began as a method of linking local academic and military networks (such as the Advanced Research Projects Agency Network, or ARPANET) to public services (as with MCI Mail and CompuServe in 1989). Popular web browsers, like Mosaic and Netscape, appeared in the early 1990s. In 1993, the internet carried a mere 1 percent of the world's two-way telecommunications, expanding to over half (51 percent) in 2000 and over 95 percent by 2007.<sup>112</sup> Today advanced militaries are employing the internet to support a range of functions, from organizing logistics and staff planning to storing sensitive information and coordinating recce-strike operations.

109 “Guglielmo Marconi,” History.com, December 2, 2009, <https://www.history.com/topics/inventions/guglielmo-marconi>. Nikola Tesla, a Serbian American, developed a wireless telegraph in 1893.

110 See Edwyn Gray, *The Devil's Device* (Annapolis, MD: Naval Institute Press, 1991), 152–98; and Bernard Brodie, *Sea Power in the Machine Age* (Princeton, NJ: Princeton University Press, 1943), 261–327.

111 Brodie, *Sea Power*, 387–430; Thomas C. Hone, Norman Friedman, and Mark D. Mandeles, *American and British Aircraft Carrier Development* (Annapolis, MD: Naval Institute Press, 1999), 83–105; and Thomas Wildenberg, *Billy Mitchell's War with the Navy* (Annapolis, MD: Naval Institute Press, 2013), 178–85.

112 Martin Hilbert and Priscila Lopez, “The World's Technological Capacity to Store, Communicate, and Compute Information,” *Science* 332, no. 6025 (February 2011): 62.

Based on the trends above, it seems safe to say that the capabilities in the new space and cyberspace warfare domains can claim much of the credit for the substantial boost in military effectiveness that began with the appearance of the RSC in the First Gulf War. This suggests that we should not discount these domains' influence on the outcome of a potential Sino–Coalition general war. Moreover, owing to these domains' location in the global commons, they—along with the sea surface, seabed, and undersea domains—appear destined to be heavily contested in a great-power war. This is due in no small measure to the Armageddon Factor, as operations in the global commons appear less likely to trigger escalation to general nuclear war than large-scale attacks on China or Coalition-member homelands. This would also seem to be the case in an extended conflict during which the belligerents are emphasizing exhaustion strategies and pursuing warfare in the “economic” domains.

### Space

Given the value of space as a “force multiplier” and the potential vulnerability of space-based systems to ASAT forces, a no-man's-land could emerge in space fairly early in a Sino–Coalition war. If space is “emptied,” what capabilities can substitute for its loss? Coalition forces in a defensive posture—seeking simply to defend what is theirs—would appear to have an advantage over Chinese forces attempting to project power in waging a war of aggression. As I will elaborate on presently, the Coalition could probably rely on buried fiber-optic communications and hardened command and control nodes to offset the loss of assets in the space domain far better than the PLA could.

This raises two interesting questions with respect to Archipelagic Defense: First, given this potential advantage, should the Coalition seek to empty space and create a no-man's-land in that domain? Second, taking a broader perspective, could the Coalition place its forces at a disadvantage if they lacked access to space-based capabilities should the war extend beyond the initial PLA offensive? The concerns with respect to the latter are several. First, if the PLA offensive succeeds, Coalition forces

will face the challenge of undertaking counteroffensive operations to recover lost territory. Second, even early in a conflict, the Coalition will need to coordinate the movement of forces and supplies from distant points, such as from Australia and the United States, to the First Island Chain. This suggests the Coalition might need access to space more than China.

That being said, it seems imprudent to assume that, if the Coalition finds itself having to mount a counteroffensive, the Chinese will refrain from emptying space to gain an advantage simply because the Coalition exercised restraint during the PLA's initial offensive.<sup>113</sup> Thus, the Coalition must prepare to operate under conditions in which access to space systems is highly limited.

### Cyberspace

The early stages of a general great-power war could reveal cyber payloads' effectiveness in influencing the competition in other warfighting domains. The Russo-Ukrainian War has not shown cyber operations, by themselves, to be decisive. That being said, it is not clear whether either side has employed the full force of its cyber arsenal. Nor do we know the extent of outside national or private entity involvement in the cyber war. A war involving China with Australia, Japan, and the United States (the Coalition's core members) would, at a minimum, involve major cyber powers playing for very high stakes. If so, cyber weapons' full potential may finally be revealed.

Moreover, the war could find self-organizing cyber militia forces entering the fray with the potential to exert a significant influence on the military balance. Ironically, the more effective these attacks are, the greater the risk of escalating the war toward Armageddon in ways that the belligerent power(s) these groups are attempting to aid do not intend. Thus, we cannot discount the risk of a catalytic war.<sup>114</sup>

<sup>113</sup> It may also be that the PLA's initial offensive will fail, but that the CCP will decide to "reload" its forces for a second offensive in a protracted war.

<sup>114</sup> Donald H. Kobe, "A Theory of Catalytic War," *Journal of Conflict Resolution* 6, no. 2 (June 1962): 125. Sometimes referred to as the "Nth Country Problem," catalytic war is a situa-

### The Seabed

Both China and the United States have large economic holdings on the seabed, as do US allies and security partners in the WPTO. In a war, particularly one that becomes protracted (one lasting beyond nine months), belligerents will have strong incentives to attack their enemy's seabed economic infrastructure in a twenty-first-century version of maritime commerce raiding. In an extended conflict with both sides pursuing strategies of exhaustion and attrition (rather than annihilation), warfare on the seabed could emerge as a key factor in eroding a belligerent's will to continue the conflict. Success in seabed commerce raiding will be a function of many factors, such as the belligerents' stockpile of key resources that the seabed economic infrastructure<sup>115</sup> provides; their populations' willingness to endure privation (or, as the Chinese say, "eat bitterness"); the ability to effect quick repairs to damaged infrastructure; and the ability to avoid crossing a red line that risks driving the enemy to escalate to Armageddon rather than negotiation.

### Eight Domains

In summary, great military powers now wage warfare in eight domains, three of which have made their appearance only since World War II. Since a general war has yet to occur in these new domains, there is a relatively high degree of uncertainty as to its characteristics or how it will play out. Given the substantial military and economic value resident in the space, cyberspace, and seabed domains, it seems highly likely that, in the event of war, they will be the focus of intense military action. Moreover, they appear less prone than direct attacks on the belligerents' homelands to escalate the war into far more destructive realms, which will likely heighten the incentive to compete in these domains even further.

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tion in which Country A attacks Country B with the intention of having the attack attributed to a third country, Country C. The true attacker's (Country A's) objective is to have Country B retaliate against Country C, triggering a war between the two.

<sup>115</sup> Of note, the vast majority of all government, military, economic, and personal information moves on seabed fiber-optic cables. Thus, a key source of competitive advantage might be how quickly and effectively belligerent states could mitigate damage to their infrastructure. I am indebted to my colleague Karl Hasslinger for this insight.

## New Forms of Competition

If history is any guide, the new domains into which military operations have expanded since the last general war, combined with the emergence of new military capabilities in recent years (and the promise of more), will witness important new kinds of military operations emerging while some existing types of operations are significantly altered or rendered of marginal significance. It may consign still others to history's dustbin. For example, World War I saw the spread of war to the undersea domain, enabling Germany to create strategic submarine economic blockade operations that led, correspondingly, to British development of capabilities and concepts for waging anti-submarine warfare. This new form of maritime warfare exerted a major influence on the military balance of power. Similarly, World War II witnessed the introduction of large-scale mechanized air-land operations (blitzkrieg), while strategic aerial bombardment and integrated air defenses emerged as major factors in determining the war's outcome. The US military greatly enhanced its performance in the First Gulf War by introducing a nascent reconnaissance-strike complex using space-based systems to boost the effectiveness of its scouting and battle network forces.

Given this trend, it makes sense to examine the contours of the mature Precision Warfare Revolution and the emerging military revolution to identify what military operations—existing, emerging, and currently being altered in form—will exert the greatest influence on a Sino–Coalition war in the WPTO. For instance, one can readily foresee new operations emerging that were not resident in the last great-power general war, such as those designed to achieve space control or denial,<sup>116</sup> seabed control or denial, cyber strike operations and integrated cyber defenses, cyber “blockades,” and cyber “convoys.”

116 The PLA has an even more extensive list of space operations, including space information warfare, space blockade warfare, space orbit attack warfare, space defense warfare, and space-to-land attacks. Roger Cliff, John Fei, Jeff Hagen, Elizabeth Hague, Eric Heginbotham, and John Stillion, *Shaking the Heavens and Splitting the Earth: Chinese Air Force Employment Concepts in the 21st Century* (Santa Monica, CA: RAND, 2011), 60–61. See also Todd Harrison, Kaitlyn Johnson, and Thomas G. Roberts, “Space Threat 2018: China Assessment,” in *Space Threat Assessment 2018* (Washington, DC: Center for Strategic and International Studies Aerospace Security Project, 2018), <https://aerospace.csis.org/space-threat-2018-china>; and Edmund J. Burke, Kristen Guinness, Cortez A. Cooper III, and Mark Cozad, *People's Liberation Army Operational Concepts* (Santa Monica, CA: RAND, 2020), 8.

We are likely to witness the emergence of new forms of commerce raiding in each of the three new domains. Countries are already waging economic warfare in cyberspace, although with nothing like the intensity that could occur in a general war. Both China and the United States have enormous wealth resident in the space and seabed domains, as do several other advanced economic powers. It is easy to imagine these resources, which also help sustain military forces, coming under attack just as cargo ships on the high seas in wartime have for centuries.

At the same time, some domains and military operations will probably diminish in importance, relatively speaking. For example, the Royal Navy abandoned its century-long emphasis on close surface blockade operations once warfare expanded into the undersea domain. With the rise of carrier strike operations in World War II, competence in direct-fire surface battle fleet engagements became less central in determining the maritime balance of power.

While some kinds of military operations may become less relevant, or even obsolete, *this is not true for domains*. History shows that while new domains play a significant and enduring role in the military competition, they do not obsolesce competition in the existing domains. Put simply, all domains remain very much “in play,” although the relative weight given to competing in and across domains does change. For example, war's expansion to the undersea, air, space, and electromagnetic domains has raised serious questions regarding the survivability of high-signature surface warships, especially in littoral waters.<sup>117</sup> These concerns notwithstanding, operations in the sea surface domain remain a significant factor in the defense planners' calculations and in the force structures of the world's major navies.

117 The maturation of submarine and torpedo technology rendered surface ship close blockade operations obsolete. The development of air forces (and missiles) made concentrating surface ships within range of land-based airpower a risky enterprise, as seen at Crete in 1941, Okinawa in 1945, and the Falklands in 1982. Andrew F. Krepinevich Jr., *Maritime Competition in a Mature Precision-Strike Regime* (Washington, DC: CSBA, 2014), 28–47, 53–55.

## Eight-Dimensional Chess

### Elephants and Whales

The great-power rivalry between the Coalition's core members (Australia, Japan, and the United States) and China is the latest in a long history between sea and land powers, between the "whale" and the "elephant." By definition, major asymmetries in the two sides' force types characterize such rivalries.<sup>118</sup> As I noted above, until the period of domain expansion that began in the mid-nineteenth century, there was little land forces could do to exert direct influence on the maritime balance of power, and vice versa.

We find an example of this limitation in the rivalry between Britain and France in the eighteenth and nineteenth centuries, with Britain playing the whale opposite France's elephant. During this period, Britain applied its sea power against its enemies primarily through blockading ports, bombarding coastal cities and fortifications, exploiting its advantage in mobility to conduct raids against poorly defended targets, and transporting relatively small expeditionary land forces. Put simply, the Royal Navy's influence on continental warfare was limited and indirect. To directly contest a continental power bent on establishing hegemony in Europe, Britain required continental allies capable of putting large armies into the field, defending their own borders, and, if possible, posing a threat to the aspiring hegemon's homeland. The British applied this strategy in Europe time and again, aligning with continental powers to contain France (and, in the twentieth century, the Continent's new aspiring hegemon, Germany).<sup>119</sup> The classical example of Britain's strategy occurred during the Napoleonic Wars, when it repeatedly formed coalitions (a total of seven in all), including with Austria, Prussia, and Russia, to defeat Napoleonic France, arguably the most formidable threat to Europe's balance of power in modern times.<sup>120</sup>

118 William R. Thompson, "Principal Rivalries," *The Journal of Conflict Resolution* 39, no. 2 (June 1995): 209–210.

119 See Paul M. Kennedy, *The Rise and Fall of British Naval Mastery* (New York: Humanity Books, 1976), 9; Paul M. Kennedy, *Strategy and Diplomacy, 1870–1945* (London: George Allen & Unwin, 1992), 57; Geoffrey Kemp and John Maurer, "The Logistics of Pax Britannica: Lessons for America," in *Projection of Power: Perspectives, Perceptions and Problems*, eds. Uri Ra'anana, Robert L. Pfaltzgraff Jr., and Geoffrey Kemp (Hamden, CT: Archon Books, 1982), 35; and Gordon Martel, "The Meaning of Power: Rethinking the Decline and Fall of Great Britain," *The International History Review* 13, no. 4 (November 1991): 662–94.

120 For a discussion of British strategy during the Napoleonic Wars, see Kissinger, *Diplomacy*, 74–77.

Following World War II, the United States emerged as the world's dominant naval power. Like Britain, it saw preventing the emergence of a hegemonic power in Europe as a vital interest. Like Britain, America strove to frustrate a continental land power, Soviet Russia, from establishing hegemony, in large part by relying on a coalition of European states—NATO—to provide the bulk of the land forces it needed to deter and, if necessary, defeat an attack by the Soviet-led Warsaw Pact on Western Europe.

In brief, maritime powers have generally been unable to defeat continental powers on their own. Maritime powers like Britain and the United States generally maintained small armies relative to aspiring continental hegemonies, such as France, Soviet Russia, and China. Maritime powers also suffer the added expense of transporting and sustaining their armies overseas.<sup>121</sup>

Correspondingly, dominant continental powers may look to offset their maritime rivals' attempts to recruit allies with large armies by returning the favor, either by banding together with lesser maritime powers or building up their own fleets. For example, during its long rivalry with Britain between the eighteenth and late nineteenth centuries, France episodically attempted to challenge Britain at sea, at times asymmetrically.<sup>122</sup> Prior to World War I, Wilhelmine Germany undertook a major buildup of its fleet while seeking an alignment with Italy, another aspiring maritime power, and Austria-Hungary, a minor sea power. In the Second World War, Germany aligned itself with maritime powers Italy and Japan.

For a continental power, the prospect of building up its maritime arm is greater when it enjoys relatively secure land borders, thereby enabling it to free up resources to devote to competing in the maritime domain. The United States, a continental power with friendly (and far weaker) states to the north (Canada) and south

121 John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: W.W. Norton, 2001), 44.

122 See, for example, Theodore Ropp, *The Development of a Modern Navy: French Naval Policy, 1871–1904*, ed. Stephen S. Roberts (Annapolis, MD: Naval Institute Press, 1987).

(Mexico), can maintain a relatively small army and construct a first-class fleet. We might say the same of a country like Italy, a continental power protected by a relatively short, mountainous border.

Today China may enjoy a similar opportunity, for similar reasons. During the Cold War's latter stages, the Sino-Soviet rift saw the USSR position roughly 45 divisions and over 1,200 combat aircraft along its border with China.<sup>123</sup> Today, however, China's land borders, with the exception of that with India, rest opposite a friendly great power (Russia) or minor powers. Moreover, Russia's military power has greatly diminished since its superpower days, while China's mountainous border with India is among the world's least hospitable for conducting a land offensive. These favorable conditions, along with China's expansionist aims and desire to control access to overseas resources, have seen its interest in sea power grow accordingly.

Relatively speaking, India is in a somewhat less favorable position than China when it comes to diverting resources to generate greater sea power. This is due primarily to the threat its neighbor Pakistan poses. From a Coalition perspective, however, this is not necessarily distressing, as both the United States and Japan are sea powers. Were India to remain primarily an elephant, it could significantly enhance the WPTO military balance and, by extension, Archipelagic Defense. This is because to the extent China views India as a threat—irrespective of whether New Delhi is in a formal alliance relationship with the Coalition—India can play an important role in preventing the CCP from concentrating the vast majority of the PLA's land and air forces in the WPTO. Thus, sustaining and strengthening India's partnership in the Quad, however loose it might be, stands as an enduring Coalition priority.

### **Eagles, Sharks, and Scorpions**

Of course, the days when human conflicts occurred almost entirely in two domains—that of the elephant and the whale—are

long past. To get a better appreciation of what the increase in warfare domains has wrought, we need to consider a greatly expanded menagerie, one populated by “eagles,” “sharks” and “scorpions”—those of the air/space, undersea/seabed and cyber/electromagnetic domains, respectively.

Moreover, progress in the range, speed, and scouting ability of military systems has facilitated the introduction of cross-domain operations. At the risk of extending the metaphor too far, the elephant can now wade into the deepest seas; the eagle hunts on the land and sea surface, and even beneath the waves; and so on. In brief, after millennia of working with elephants and whales, defense planners must now combine this odd collection of new and old beasts, each with its own unique attributes, each capable of operating in the other's domain, in ways that maximize their effectiveness.

### **A Complex Combination**

Given the above discussion, one is struck by how war's expansion into new domains has increased its complexity—and the intellectual challenge for those seeking to identify the best way to combine military capabilities within and across them to address a particular challenge at the operational level of war. War's expansion into six new domains over the past 170-odd years has yielded a fantastic increase in the range of options available to militaries in their quest for competitive advantage. Commanders may view this as a blessing. Add to it an ever-increasing variety of new “pieces” on this eight-dimensional military “chessboard.” In a rough sense, over the past two centuries, militaries have transformed from “hedgehogs” that do one great thing—as armies fighting armies and fleets engaging fleets—into “foxes” that are capable of performing a range of missions in and across domains within the overall construct of task-organized reconnaissance-strike complexes.

Yet for those attempting to arrive at an accurate determination of the proper mix, positioning, and employment of these capabilities, it may seem more like a curse. Hence the need to aim

<sup>123</sup> Colin S. Gray, “Strategy in the Nuclear Age,” in *The Making of Strategy: Rulers, States, and War*, eds. Williamson Murray, MacGregor Knox, and Alvin Bernstein (New York: Cambridge University Press, 1994), 599; and Raymond Garthoff, *Détente and Confrontation: American-Soviet Relations from Nixon to Reagan*, rev. ed. (Washington, DC: Brookings, 1994), 236.

*persistent intellectual and organizational effort at validating and refining operational concepts like Archipelagic Defense. Indeed, even when countries adopt a concept as doctrine, the military competition continues, along with concept development.*

### Speed, Range, and Accuracy

With the possible exception of the maritime warfare domains of the undersea and seabed, operations conducted in the relatively new warfare domains—electromagnetic (especially with the advent of wireless communications), cyber, space, and air—stand out in terms of their range and speed of action relative to those operating in the legacy land and sea surface domains. These characteristics, among others such as precision-guided munitions, have enabled militaries to field RSCs. As we shall see presently, the PLA has taken note of this trend and is exploiting it.

### The Recce-Strike Complex: Too Clever by Half?

China and the United States have yet to test the RSCs they are assembling in a general war. To be sure, US RSCs have performed impressively in campaigns against the forces of third-rate military powers like Iraq, Libya, and Serbia, and against nonstate irregular forces. Yet attempts at playing “eight-dimensional chess” with a high level of effectiveness against a comparably equipped rival may simply prove too daunting for the most brilliant military commander, even with the aid of advances in artificial intelligence. There may simply be too many moving parts comprising an advanced RSC to enable it to function as intended. As Carl von Clausewitz might say, the more parts to the war machine, the greater the number of friction points. This calls to mind Arthur C. Clarke’s essay “Superiority,” in which “the *inferior* science” of an advanced military power’s enemies leads to its defeat.<sup>124</sup> Could it be that the most effective RSCs are not the most sophisticated but those whose ruggedness and resilience enable them to survive the stress of modern warfare?

### One Size Does Not Fit All

For today’s military planners, the Second World War’s truly global scope provides a strong caution against attempting to develop a generic, “one-size-fits-all” operational concept. Especially from an American perspective, given projected resource limitations for defense, those tasked with developing operational concepts may be tempted to devise one that purports to address significantly different operational challenges. Such an approach is ill-advised. The United States’ experience during the Second World War offers a lesson as to why this is so.

That war found America mobilizing its people and economy to wage a global conflict, conducting campaigns in two very different major geographic theaters, the European and Pacific, and against two very different kinds of militaries operating along dissimilar lines. Given its geographic position in the heart of Europe, Germany’s army and, to a lesser degree, its air force dominated its armed forces. By contrast, reflecting Japan’s position as an island nation off the coast of the world’s largest continent, as well as its goal of creating a Greater East Asia Co-prosperity Sphere of continental and maritime nations, a high degree of inter-service rivalry between the army and navy characterized its military. Consequently, the operational challenges these two Axis powers presented to the US military and its allies were quite different one from the other, and in turn the operational concepts the US military developed to address them varied significantly.

The relatively new domains of that era—air, undersea, and electromagnetic—played key roles in both theaters. In Europe, however, the competition for control of the sea surface domain received far less emphasis than in the Pacific. In contrast to the Imperial Japanese Navy, which sought to dominate the seas within its expanded Pacific empire, the Kriegsmarine focused on sea denial, and its U-boats’ success was ultimately tied far more to sinking the Allies’ cargo ships than to sinking American and British carriers and battleships.

<sup>124</sup> Arthur C. Clarke, “Superiority,” *The Magazine of Fantasy & Science Fiction*, (August 1951): 3–11. Emphasis mine.

A similar asymmetry existed in the land domain. In the Pacific theater, ground operations—*relatively speaking*—played a modest role when compared to the war in Europe. In fact, in the Pacific, much of the US “island-hopping” campaign’s focus was on securing bases to advance American airpower along with the fleet’s sea lines of communication.

With respect to the air domain, owing in no small measure to the vastly different geographies of the two theaters, the ability to base American aircraft in Great Britain enabled the strategic bombing of Germany by the US Eighth Air Force<sup>125</sup> to begin in July 1942. In the Pacific, American bomber aircraft lacked the bases and the range to strike Japan in sizable numbers until late 1944. Moreover, even then the US Army Air Force (the precursor to the US Air Force) could attack Japan thanks only to the introduction of the state-of-the-art B-29 Superfortress bomber, with its 3,250-mile range, nearly double that of the B-17 Flying Fortress bomber used primarily in Europe.<sup>126</sup> In brief, the US used strategic bombing far less in the Pacific theater than in Europe. By the time the US launched the B-29s from Tinian, the balance of the war had shifted decisively in favor of the United States; such was not the case in Europe in the summer of 1942.<sup>127</sup>

It is also worth noting that the target set that constituted the objective of the bomber campaign was significantly different between Germany and Japan. For example, the destruction of Japan’s merchant shipping was a key priority in the Pacific air campaign but a negligible factor in the air operations against Germany. Owing to the disappointing results they achieved with high-altitude “precision” bombing against German industrial targets, by the time US bombers flew over Japan, they were placing far greater emphasis on area targets in both theaters, such as attacks on cities.

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125 The US initially established the Eighth Air Force as VIII Bomber Command.

126 Prior to this time, it was almost exclusively carrier-based aircraft conducting air raids on Japan. B-29 raids against Japan by aircraft based in China began in June 1944. Even then, the bombers could reach only a small slice of Japan. Logistics problems greatly limited the raids’ effectiveness, and the US withdrew the B-29s from China in January 1945.

127 For a general discussion of strategic bombing in the Pacific during World War II, see Ian W. Toll, *Twilight of the Gods: War in the Western Pacific, 1944–1945* (New York: W. W. Norton, 2020), 315–16, 336–50, and 519–57. See also Malcolm Gladwell, *The Bomber Mafia* (New York: Little Brown, 2021), 123–86.

The US experience in World War II shows what expert defense planners intuitively understand: in developing an operational concept, one must incorporate a range of factors, among them competing objectives, differences in strategic culture and doctrine, the geographic setting of the competition, and the military capabilities available to wage war. Simply put, the effectiveness of a particular operational concept is *highly circumstantial*, a strong argument against the one-size-fits-all approach that appears to be the preference of America’s military.

Today the United States’ competitive position is far less advantageous than during World War II. In that war, the US GDP and population far exceeded those of Germany or Japan, even combined. America also boasted, in the British Empire and Soviet Russia, two allies with military capabilities of the first rank. Neither advantage exists today with respect to China. Hence the need to make tough choices about where to accord priority in terms of resources and operational concept design. As I argued earlier in this study, China is clearly “Job 1” for the US military. Thus, America’s defense planners need to accord clear priority to developing an operational concept and its associated military posture with China in mind.

### The Armageddon Factor

A general war between the United States and China would be not only the first great-power war in over 70 years but also the first ever in which both powers possess nuclear weapons. Less than a decade after scientists introduced the atomic bomb in 1945, President Dwight D. Eisenhower concluded that a nuclear war, even against a non-nuclear China, would be unwinnable in the traditional sense.<sup>128</sup> Today all the great powers, save for Germany and Japan, have nuclear arsenals.<sup>129</sup>

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128 In June 1954, when the question of a preventive nuclear strike against China arose, Eisenhower said to the US Joint Chiefs of Staff, “There is no victory except through our imaginations.” John Newhouse, *War and Peace in the Nuclear Age* (New York: Vintage Books, 1988), 106.

129 Germany and Japan lie under the US “nuclear umbrella” of extended deterrence. This means Washington has committed to deterring aggression against these (as well as other) allies and, if necessary, employing nuclear weapons in their defense should deterrence fail. US Air Force, “Extended Deterrence,” Air Force Doctrine Publication 3-72 (Nuclear Operations), Curtis E. LeMay Center, December 18, 2020, [https://www.doctrine.af.mil/Portals/61/documents/AFDP\\_3-72/3-72-D12-NUKE-OPS-Extended-Deterrence.pdf](https://www.doctrine.af.mil/Portals/61/documents/AFDP_3-72/3-72-D12-NUKE-OPS-Extended-Deterrence.pdf).

To avoid escalating into an all-out nuclear exchange—“Armageddon”—a Sino-American war has to remain limited. Thus, the kind of loss France suffered in 1871 and 1940, Germany in 1918 and 1945, and Japan in 1945, in which the defeated power succumbed after losing its *ability* to offer effective resistance, is highly unlikely to recur in a Sino–Coalition war. Rather, any victory, like the war itself, will be limited, achieved by reducing the enemy’s *will* to continue the fight. The willingness to cease fighting will depend, in part, on terms of a negotiated rather than a dictated peace, since a great power with hundreds of strategic nuclear weapons will always have a choice of death before dishonor, of committing mutual suicide with its rival.<sup>130</sup> Archipelagic Defense and the strategy that informs it is designed with this in mind. This means that, like the operational concepts the United States developed during the Cold War, Archipelagic Defense needs to enable the Coalition to mount a successful defense without provoking China into general nuclear use.

## Summary

The character of war has changed greatly since the last general war. Profound advances in technology, particularly those related to the IT revolution, have led to the introduction of new and far more effective military capabilities. The world has witnessed the emergence of nuclear arsenals, atomic-powered submarines, constellations of artificial satellites, sophisticated sensors of varying kinds, and a wide range of ballistic and cruise missiles,

among other advanced tools of war. The late twentieth century saw the emergence of the Precision Warfare Revolution and recce-strike complexes. The domains in which countries wage war have expanded by 60 percent. The growth of military competition in the space, cyberspace, and seabed domains, combined with advances in weapons speed, range, and accuracy, now finds advanced militaries capable of waging warfare across eight domains, employing forces arranged in combinations that would have seemed fantastic to the military leaders who directed the last great-power war.

Thus, military planners whose task is to devise operational concepts to meet the key challenges confronting their country have an unprecedented array of capabilities at their disposal. Their challenge, given limited resources, is to combine these capabilities in military forces trained to employ them in ways that will maximize their effectiveness—and to sustain this effort in a constantly changing competitive environment.

The task is a formidable one. Put simply, planners need to operate under conditions of relatively high uncertainty. Given the number of variables involved, the likelihood that any operational concept they develop will be exactly the one needed is effectively nil. Thus, in a Sino–Coalition war, it is not a matter of which side’s operational concept will be right, but of whose will be “less wrong.” If such a war were to become extended, another issue would emerge: Having had their way of war tested in the crucible of combat, and its flaws revealed, which belligerent could adapt its approach more quickly than its rival to minimize these flaws, and do so on a scale sufficient to prevail?

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<sup>130</sup> As of 2020, the United States had roughly 3,750 nuclear weapons. The DoD estimates that China currently has some 400 but is on a path to have more than 1,000 by the end of this decade. Andrew F. Krepinevich Jr., *Modernizing the Nuclear Triad: Decline or Renewal?* (Washington, DC: Hudson Institute, 2021), 32–34; Krepinevich, “The New Nuclear Age”; and US Department of State, “Fact Sheet: Transparency in the US Nuclear Weapons Stockpile,” October 5, 2021, [https://www.state.gov/wp-content/uploads/2021/10/Fact-Sheet\\_Unclass\\_2021\\_final-v2-002.pdf](https://www.state.gov/wp-content/uploads/2021/10/Fact-Sheet_Unclass_2021_final-v2-002.pdf).



## 4. CHINA'S WAY OF WAR

Over a decade ago, Defense Secretary Robert Gates presciently observed the emergence of PLA “counter-intervention” capabilities. They are designed, as the name suggests, to preclude the United States from coming to the aid of its allies and security partners along the First Island Chain in the event of Chinese aggression or attempts at coercion. Gates warned that:

Chinese investments in cyber and anti-satellite warfare, anti-air and antiship weaponry, and ballistic missiles could threaten America’s primary way to project power and help allies in the Pacific—in particular, our forward air bases and carrier strike groups. This would degrade the effectiveness of short-range fighters and put more of a premium on being able to strike from over the horizon—whatever form that capability might take.<sup>131</sup>

<sup>131</sup> Robert M. Gates, “Remarks to the Air Force Association,” National Harbor, MD, Sep-

The Chinese Communist Party’s efforts to overturn the rules-based international order, as well as its expanding territorial claims, center on the Western Pacific Theater of Operations. As the 2013 version of *The Science of Military Strategy* stated:

The threat from the east is more severe than that from the west, the threat from the sea is more severe than that from the ground; the threat from space and cyber network is gradually becoming true. . . . The most probable war threat is a limited military conflict from the sea. The war we need to prepare for, particularly given the background of nuclear de-

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tember 16, 2009, C-SPAN video, 44:11, <https://www.c-span.org/video/?288956-1/secretary-gates-remarks-air-force-association>.

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Photo: China’s sole aircraft carrier, the *Liaoning*, arrives in Hong Kong waters on July 7, 2017, (Photo by Anthony Wallace/AFP via Getty Images)

terrence, is a large-scale, and highly intensive local war from the sea.<sup>132</sup>

That same year, the CCP leadership, through its “military strategic guidelines,” directed the PLA to prepare to fight and win “informationized local wars” with an emphasis on the “maritime military struggle.”<sup>133</sup> As the guidelines identify the type of war for which the PLA must prepare, many analysts interpret it as an indication that Beijing believes a major conflict would most likely occur against a US-led coalition in the WPTO.

Correspondingly, the focal point of Chinese defense planning centers on precluding effective US military intervention in any conflict along the First Island Chain. China’s extended military buildup is aimed primarily at creating the kind of counter-intervention force described by Secretary Gates. The objective is to convince both Washington and its allies and security partners (especially those along the First Island Chain) that the Coalition no longer enjoys a favorable military balance in the WPTO.<sup>134</sup> In *China’s National Defense in a New Era*, a defense white paper published in 2019, the CCP said the international environment is undergoing “profound changes unseen in a century” and “the configuration of strategic power is becoming more balanced.”<sup>135</sup> That is to say, the military balance is shifting in China’s favor.

The PLA’s growing military power stems from a “Long March” extending over three decades. It is reflected in the CCP’s directive to its military to shift away from its traditional defensive orientation and land-centered “people’s war” and toward a more offensive posture focused on controlling the nearby seas, the

airspace above them, and the “intangible” (cyber and electromagnetic) domains. Indeed, the PLA’s concept of power-projection operations along the First Island Chain, the Joint Island Landing Campaign, calls for interlocking operations to dominate the electromagnetic, air, and naval domains to support the projection and sustainment of combat forces whose mission is to seize and control territory.<sup>136</sup>

The evolution of PLA writings suggests an expanding area of operations by forces waging wars under informationized conditions.<sup>137</sup> Such wars find militaries relying on systems and capabilities that, when linked, comprise a reconnaissance-strike complex. Moreover, the emergence of informationized local wars anticipates a new era in which artificial intelligence, advanced sensors, and enhanced networked capabilities effect yet another disruptive shift in the character of military operations.

The PLA is adapting its force structure and mix accordingly. In 2015, it enacted sweeping reforms to its command and organizational structures. As its revised strategy noted, “The world revolution in military affairs (RMA) is proceeding to a new stage. Long-range, precise, smart, stealthy and unmanned weapons and equipment are becoming increasingly sophisticated. Outer space and cyber space have become new commanding heights in strategic competition among all parties. The form of war is accelerating its evolution to informationization.”<sup>138</sup>

Chinese military theorists emphasize that winning future wars will require a high degree of joint integration of its combat forces

132 Shou Xiaosong, ed., *The Science of Military Strategy*, 3rd ed. (Beijing: Academy of Military Science Press, 2013), 100, as quoted in Mingda Qiu, “China’s Science of Military Strategy: Cross-Domain Concepts in the 2013 Edition,” Cross-Domain Deterrence Working Paper, University of California at San Diego, September 2015, 5–6.

133 *China Military Developments*, 2016, 43.

134 *China Military Developments*, 2017, 53; M. T. Fravel and C. P. Twomey, “Projecting Strategy: The Myth of Chinese Counter-Intervention,” *Washington Quarterly* 37, no. 4 (Winter 2015): 181. See also Caitlin Campbell and Ian Rinehart, *China’s Military: The People’s Liberation Army*, Report R46808 (Washington, DC: Congressional Research Service, 2021), 25–26.

135 State Information Office of the People’s Republic of China, *China’s National Defense in the New Era* (Beijing: Foreign Languages Press, 2019), 3.

136 *China Military Developments*, 2022, 126–27. Thus: “The traditional mentality that land outweighs sea must be abandoned, and great importance has to be attached to managing the seas and oceans and protecting maritime rights and interests. It is necessary for China to develop a modern maritime military force structure commensurate with its national security and development interests, safeguard its national sovereignty and maritime rights and interests, protect the security of strategic SLOCs [sea lines of communication] and overseas interests, and participate in international maritime cooperation, so as to provide strategic support for building itself into a maritime power.” State Council Information Office of the People’s Republic of China, “China’s Military Strategy,” *Xinhua*, May 27, 2015, <http://eng.mod.gov.cn/Database/WhitePapers/index.htm>.

137 Dean Cheng, “How China’s Thinking about the Next War,” *Breaking Defense*, May 19, 2021, <https://breakingdefense.com/2021/05/how-chinas-thinking-about-the-next-war>.

138 State Council Information Office of the PRC, *China’s Military Strategy*.

and supporting elements, operating in and across all domains.<sup>139</sup> The PLA issued a *gangyao* (roughly similar to US military field manuals) in November 2020 titled “The Chinese People’s Liberation Army Joint Operations Gangyao (Proposed),” which declares, “No battle will not be joint; without jointness, there can be no victory.”<sup>140</sup>

The Archipelagic Defense concept is designed to defeat the Chinese way of war and, in so doing, deter aggression at the first instance. Deterring China from going to war in the WPTO requires an understanding of how the PLA views the military competition, including what it believes is necessary to wage a successful offensive campaign. To that end, we turn to the subject of “systems destruction warfare.”

## Systems Destruction Warfare

The PLA has come to view modern warfare as a competition between opposing “operational systems,” supplanting the paradigm of war between opposing mechanized military forces.<sup>141</sup> As I noted above, this is similar to Russian descriptions of reconnaissance-strike complexes and American views of “multi-domain warfare.” China’s operational system comprises five subsystems: the *information-confrontation*, *reconnaissance-intelligence* (scouting or ISR), *command, integrated support* (or battle network), and *firepower-strike* (strike) systems. The PLA sees the military competition centering on deconstructing the enemy’s reconnaissance-strike complexes—what it calls “systems destruction warfare.”<sup>142</sup> A consistent PLA theme is the importance of achieving surprise through deception and speed of action. Consequently, the PLA prioritizes gaining an advantage in the air, cyber, electromagnetic, and space domains—the “speed domains.” As the 2013 *Science of Military Strategy* asserts, “The informatization of war means has provided an unprecedented possibility to pick up the operational pace and

shorten the war[’s] progress. High speed and fast pace in the time dimension can effectively compress the enemy’s defense space.”<sup>143</sup>

In a war dominated by RSCs engaging in cross-domain operations, countries will integrate their capabilities in the cyber, electromagnetic, and space domains with capabilities resident in other domains to accomplish a wide range of missions, including those involving various strike forces, especially those operating in the air domain (such as aircraft and missiles). Forces in these domains will form the spearhead of operations to establish information superiority, thereby facilitating RSC operations. That being said, it is worth noting that while the PLA emphasizes capabilities located in the space, air, and “intangible” (cyber and electromagnetic) domains, it does not discount the value of capabilities in other domains to support systems destruction warfare by engaging in cross-domain operations within the RSC framework.

## Information Superiority

The PLA focal concept called “Winning Informationized Local Wars” stresses the importance of achieving information dominance, or superiority. China intends to achieve it through cross-domain operations—with particular emphasis on the cyberspace, space, and electromagnetic domains—to destroy the enemy’s ability to acquire, transmit, and process information while simultaneously protecting the PLA’s ability to do the same.<sup>144</sup> In 2021, the PLA introduced a new “core operational concept”: Multi-Domain Precision Warfare. It calls for exploiting the PLA’s scouting and battle (C4ISR) network to rapidly identify

139 *China Military Developments*, 2021, 38.

140 Cheng, “How China’s Thinking.”

141 *China Military Developments*, 2022, 39.

142 Burke et al., *PLA Operational Concepts*, 11.

143 Burke et al., *PLA Operational Concepts*, 6, 7, 11. See also Lonnie Henley, “PLA Operational Concepts and Centers of Gravity in a Taiwan Conflict,” testimony before the US-China Economic and Security Review Commission Hearing on Cross-Strait Deterrence, February 18, 2021, [https://www.uscc.gov/sites/default/files/2021-02/Lonnie\\_Henley\\_Testimony.pdf](https://www.uscc.gov/sites/default/files/2021-02/Lonnie_Henley_Testimony.pdf). Regarding the “three superiorities,” Henley notes: “The Chinese are similarly focused on joint, integrated operations across multiple domains of war (land, sea, air, space, the electromagnetic spectrum, and information). PLA doctrinal thinking has been exploring this subject for almost two decades. About ten years ago, it actively began to incorporate MDO [Multi-Domain Operations] into exercises and doctrine. Tactically, the PLA has supported such efforts by strongly advancing naval force deployments and the development of new air force assets. Strategically, they have sought to employ “soft” attacks with electromagnetic energy systems, following these soft strikes with “hard” attacks. For example, cyberattacks or the use of electromagnetic pulse (EMP) weapons might precede precision-strike kinetic weapons.”

144 Burke et al., *PLA Operational Concepts*, 7, 13.

key vulnerabilities in the US military's operational system, then combine joint forces across domains to launch precision strikes against those vulnerabilities to "paralyze the enemy's operational system-of-systems" and "sabotage the enemy's war command system-of-systems" early in a conflict.<sup>145</sup>

With respect to electromagnetic warfare, the PLA intends to employ various forms of electronic attack, including antiradiation and electromagnetic weapons, jamming, deception, and kinetic strikes, while defending against similar attacks by the enemy.<sup>146</sup> Given the importance the PLA attaches to the competition in the electromagnetic and cyber domains, it comes as no surprise that it accords priority to seizing control of the space domain.<sup>147</sup> Indeed, the 2013 *Science of Military Strategy* anticipates that future wars will begin in space and cyberspace, arguing that "seizing command of space and network dominance will become crucial for obtaining comprehensive superiority on the battlefield and conquering an enemy."<sup>148</sup> Hence, the PLA prioritizes capabilities that enable it to exploit the space domain<sup>149</sup> to wage "space information warfare, space blockade warfare, space orbit attack warfare, space-defense warfare, and space-to-land attacks."<sup>150</sup>

The formation of the PLA Strategic Support Force (PLASSF) at the end of 2015 reflects the growing priority China has given to these domains. It has charged the PLASSF with achieving dominance in the space, electromagnetic, and cyber domains, including integrating the forces in these domains to conduct cross-domain operations. Toward this end the PLASSF com-

mands satellite information attack and defense forces; electronic and internet assault forces; campaign information operations forces (which include conventional electronic warfare forces); antiradiation assault forces; and battlefield cyber warfare forces.<sup>151</sup> In brief, we may view the PLASSF as China's information warfare force.

### Air Superiority and Precision Strike

Similar to the US military, the PLA views computer-centered battle networks as the nerve centers of modern military forces and military activity, linking, coordinating, and informing the RSC's scouting or reconnaissance elements with the strike forces that enable informationized warfare.

To this end, the PLA envisions its RSC's strike element as contributing to operations its leaders have designed to achieve information superiority, especially those strike forces operating in the air domain. Reflecting the symbiotic relationship between the RSC's main components, establishing an advantage in the strike/counterstrike competition to gain an advantage in the scouting/counter-scouting competition involves supporting strike forces with capabilities resident in other domains, such as in space (for PNT), as well as in cyberspace and the electromagnetic domain (to degrade enemy scouting and battle network forces).

Counterstrike operations rely on these forces, as well as on integrated air and missile defense systems (IAMDS), to defeat any enemy "broken back" attacks from its depleted strike forces.<sup>152</sup> China views these strike and counterstrike arms of its RSC, including its conventional armed ballistic missiles, as central to the PLA's ability to wage a successful offensive campaign in the Western Pacific.<sup>153</sup>

145 *China Military Developments*, 2022, 86.

146 Burke et al., *PLA Operational Concepts*, 7; and Cliff et al., *Shaking the Heavens*, 61–64.

147 *China Military Power: Modernizing a Force to Fight and Win* (Washington, DC: Defense Intelligence Agency, 2019), 43, <https://www.dia.mil/Military-Power-Publications>; and Cliff et al., *Shaking the Heavens*, 60–61.

148 US-China Economic and Security Review Commission, *2020 Report to Congress* (Washington, DC: US Government Publishing Office, 2020), 393; and *China Military Developments*, 2022, 87.

149 PLA strategists view the cyber domain as particularly critical to power projection. China's dominance of global telecommunications infrastructure could bolster that capability. US-China Economic and Security Commission, *2020 Report*, 394.

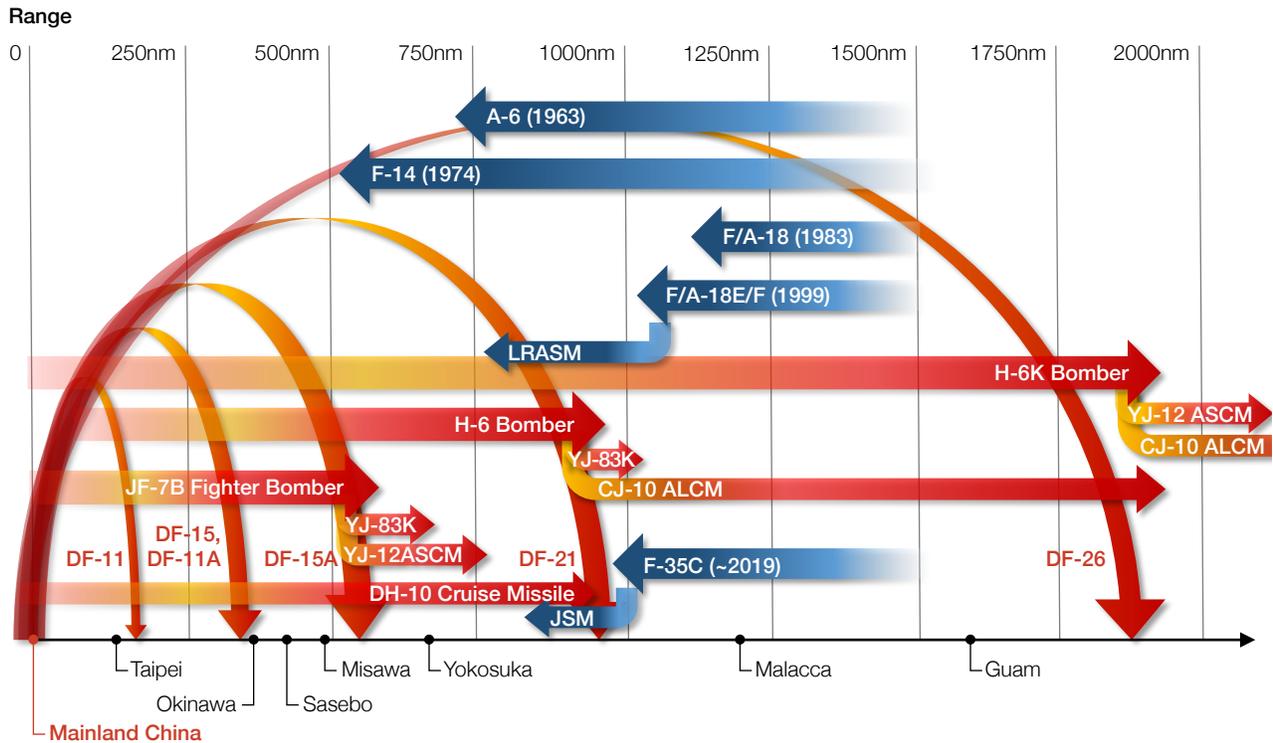
150 Cliff et al., *Shaking the Heavens*, 60–61; Harrison, Johnson, and Roberts, "Space Threat 2018"; and Burke et al., *PLA Operational Concepts*, 8.

151 Kevin L. Pollpeter, Michael S. Chase, and Eric Heginbotham, *Strategic Support Force and Its Implications for Chinese Military Space Operations* (Santa Monica, CA: RAND, 2017), 2, 32, 35; and Burke et al., *PLA Operational Concepts*, 13. See also Robert O. Work and Greg Grant, *Beating Americans at Their Own Game* (Washington, DC: Center for a New American Security, 2019), 8.

152 Burke et al., *PLA Operational Concepts*, 7, 10; Cliff et al., *Shaking the Heavens*, 61–62; and Scott W. Harold, *Defeat, Not Merely Compete* (Santa Monica, CA: RAND, 2018), 35.

153 Michael S. Chase, "PLA Rocket Force Modernization and China's Military Reforms," tes-

Figure 1. Relative US and PLA Missile and Aircraft Ranges



Source: Author.

Along with information superiority, achieving air superiority will, the PLA believes, enable its land and sea forces to accomplish their missions. In all instances, the PLA seeks superiority only in those domains where it is necessary, and *only as long as it is necessary* to achieve its objectives.<sup>154</sup>

### The Importance of Being First

Chinese military writings express concern that the “strong enemy” (a euphemism for the United States) “will rely on its comprehensive expeditionary superiority from the oceanic direction to threaten our homeland at greater distances, al-

lowing it to strike us while it is out of reach and to deter us in peacetime while quickly wrecking our combat system in wartime.”<sup>155</sup> Furthermore, as China’s economic base is mostly located along its coastal regions, it is highly vulnerable to strikes from Coalition forces—if the Coalition were to strike first. As the 2013 *Science of Military Strategy* states, “These [coastal] areas directly face the powerful enemy’s superior sea, air, space, and cyber combat systems. In wartime, they very likely will become the strike areas of first choice by the powerful enemy.”<sup>156</sup>

timony to the US-China Economic and Security Review Commission Hearing on China’s Military Reforms and Modernization: Implications for the United States, RAND, February 15, 2018, <https://www.rand.org/pubs/testimonies/CT489.html>, 6.

154 Cliff et al., *Shaking the Heavens*, vii–viii.

155 Shou, *Science of Military Strategy*, 100. Cited in Toshi Yoshihara, “Chinese Views of Future Warfare in the Indo-Pacific: First Strike and U.S. Forward Bases in Japan,” in *The Road to Pearl Harbor: Great Power War in Asia and the Pacific*, eds. John H. Maurer and Erik Goldstein (Annapolis, MD: US Naval Institute Press, 2022).

156 Shou, cited in Yoshihara, “Chinese Views of Future Warfare,” 209–10.

To preclude this from occurring, in a war with the Coalition the PLA would prefer to attack preemptively, focusing its strikes against those Coalition forces seeking access to the air, space, cyber, and electromagnetic domains that the PLA believes it must control to realize its aggressive aims. Attacks on the Coalition's "senses" (scouting) and "central nervous system" (battle network) assets will combine with those on its "muscle" (strike) systems. With regard to its efforts to cripple Coalition strike forces, the PLA's priority targets would likely include air and naval bases, missile bases, aircraft carriers, warships equipped with land-attack cruise missiles, and IAMDS. This is consistent with views expressed in a seminal Chinese work, *Guided Missile Combat and High Technology Wars*, which argues that missile strikes "must be used on enemy troop concentrations, important bases or facilities or other C2 nerve centers in a sudden attack by concentrated fires."<sup>157</sup> To this end, the PLA would emphasize operations in the air domain in the form of strike operations, including exploiting its advantage in prompt, ranged fires and using conventionally armed ballistic missile forces to achieve surprise (for a comparison of US and PLA missiles and aircraft, see figure 1). China would deploy air and missile defenses to defeat any Coalition strike elements surviving the PLA's offensive strikes.<sup>158</sup>

### Intelligentized (Algorithmic) Warfare

In 2019 the PLA began discussing "intelligentized warfare," which is rooted in its assessment that war is transitioning from "systems confrontation" to "algorithm confrontation." Intelligentized warfare highlights "Cognitive Domain Operations" and the use of AI to achieve "mind dominance."<sup>159</sup>

China has designed its Military-Civil Fusion (MCF) Development Strategy to support this effort. It covers all elements of China's RSC, as it seeks to exploit AI to field autonomous command and control systems to enhance and accelerate data analysis and fu-

157 Liu Mingtao et al., eds. *Ballistic Missile Battles in High-Technology Warfare* (Beijing: National Defense University Press, 1993), 15. Cited in Larry M. Wortzel, "What the Chinese People's Liberation Army Can Do to Thwart the Army's Multi-Domain Task Force," *Land Warfare Paper 126*, Institute of Land Warfare, Association of the US Army, July 2019, 6.

158 Cliff et al., *Shaking the Heavens*, 56–60.

159 *China Military Developments*, 2022, 161.

sion. The objective is to achieve an advantage in the ISR and C4 competition, thereby boosting the strike element's effectiveness. With respect to strike operations, the PLA is developing autonomous unmanned systems in the air, land, sea surface, and undersea domains to fuse its RSC's scouting and strike functions.<sup>160</sup> In 2015, the CCP began implementing MCF as a national strategy, seeking to leverage dual-use technologies to enhance PLA efforts in developing new, innovative operational concepts to exploit the growing speed at which countries wage war.<sup>161</sup>

### The Armageddon Factor

The Chinese appear to accept the Armageddon Factor—the need for belligerents to avoid crossing red lines that would trigger escalation to widespread nuclear weapons use—as an important planning consideration in a war between nuclear powers. If so, the need to remain below the threshold of a general nuclear exchange would obtain throughout a war between China and the Coalition, irrespective of its length. The problem confronting those tasked with developing strategy and the operational concepts that support it is the lack of clarity over Chinese and Coalition red lines. For example, would a Chinese nuclear-based electromagnetic pulse (EMP) attack cross a Coalition red line? The use of a nuclear depth charge to sink a US submarine? Such issues vexed Cold War-era planners. They were never clearly resolved.

### Local—Not Total—Wars

PLA writings reflect the Armageddon Factor, highlighting the difference between history's great-power "total wars" and the "local wars" of the present. The 2013 *Science of Military Strategy* notes that during the age of total wars, the focus was on defeating an enemy's ability to fight, primarily by destroying its economy and occupying its territory. Contemporary wars, however, must be limited, with the belligerents exercising restraint in the use of military force.<sup>162</sup> The clear inference is that the major

160 *China Military Developments*, 2022, 161.

161 *China Military Developments*, 2022, 161; and Burke et al., *PLA Operational Concepts*, 21–22.

162 Burke et al., *PLA Operational Concepts*, 13.

nuclear powers' atomic arsenals will make it nearly impossible for China or the Coalition to eliminate the other's military potential without running a high risk of triggering its own destruction.

Given that both China and the United States—the Coalition's only nuclear power—appear to recognize the need to avoid escalating to Armageddon, any operational concept such as Archipelagic Defense needs to take this explicitly into account. Assuming (as this study does) that China and the US homelands are accorded quasi-sanctuary status, it will be important to identify, as best as possible, those military operations that are in play and those that are off limits. As alluded to above, accomplishing this task with a high level of confidence will prove difficult, if not impossible.

A related issue for consideration concerns whether an ally of either China or the United States—or a third party—could, on its own, cross either (or both) nuclear powers' red lines. Coalition management is often rife with headaches owing to differences in member objectives and priorities. The Coalition's ability to keep a war limited may rest on the willingness of its members to refrain from crossing red lines. In an era of cyber warfare, it may also depend on the behavior of neutral powers and perhaps non-state entities as well.

### Avoiding Red Lines

How might China and the Coalition avoid crossing each other's red lines while also pursuing effective military operations? Some clues as to the answer to this question may appear in those domains in which the belligerents focus their efforts, the targets they seek to neutralize or destroy, and the means they employ to do so.

### Domains

The domains that China and the Coalition contest most could exert significant influence on the prospect of keeping the war from experiencing runaway escalation. The principal belligerents might accord their homelands (including their airspace) quasi-sanctuary status, as these domains have long been associated with

a state's sovereignty. Domains viewed as generally "open for business" would likely include those associated with the global commons— the space, cyberspace, maritime (sea surface, undersea, and seabed), and electromagnetic domains. The same might be true for operations in the air and land domains, especially those located in and above non-nuclear armed belligerents.

### Targets

Another differentiating factor influencing the likelihood of initiating an escalation to Armageddon may be the types of targets attacked. The sea surface, seabed, space, and cyber domains contain lucrative military and economic targets. Early on, military targets might well have priority for both sides as the PLA attempts to win a quick victory and avoid the uncertainties of a protracted war, while the Coalition seeks to mount a successful defense. If so, they would accord economic targets in those domains lower priority. This could also make it easier for both sides to accept a negotiated peace to preclude targeting of their economic infrastructure. Put simply, the belligerents might initially hold each other's economic assets hostage to deter the enemy from extending, or escalating, the conflict.

### Means

The means of attack could be a third differentiator. Attacks that are easily "reversible" may be less escalatory than those that inflict permanent damage. For example, a laser ASAT that "dazzles" an enemy satellite's sensors rather than destroying them, or high-power jammers capable of blocking satellite signals that can be quickly shut off, thereby restoring the spacecraft's functions, could be less escalatory than a missile strike that destroys a satellite ground station in the territory of one of the major belligerent powers. (On the other hand, if the ground station is located in that power's homeland, it might not!)

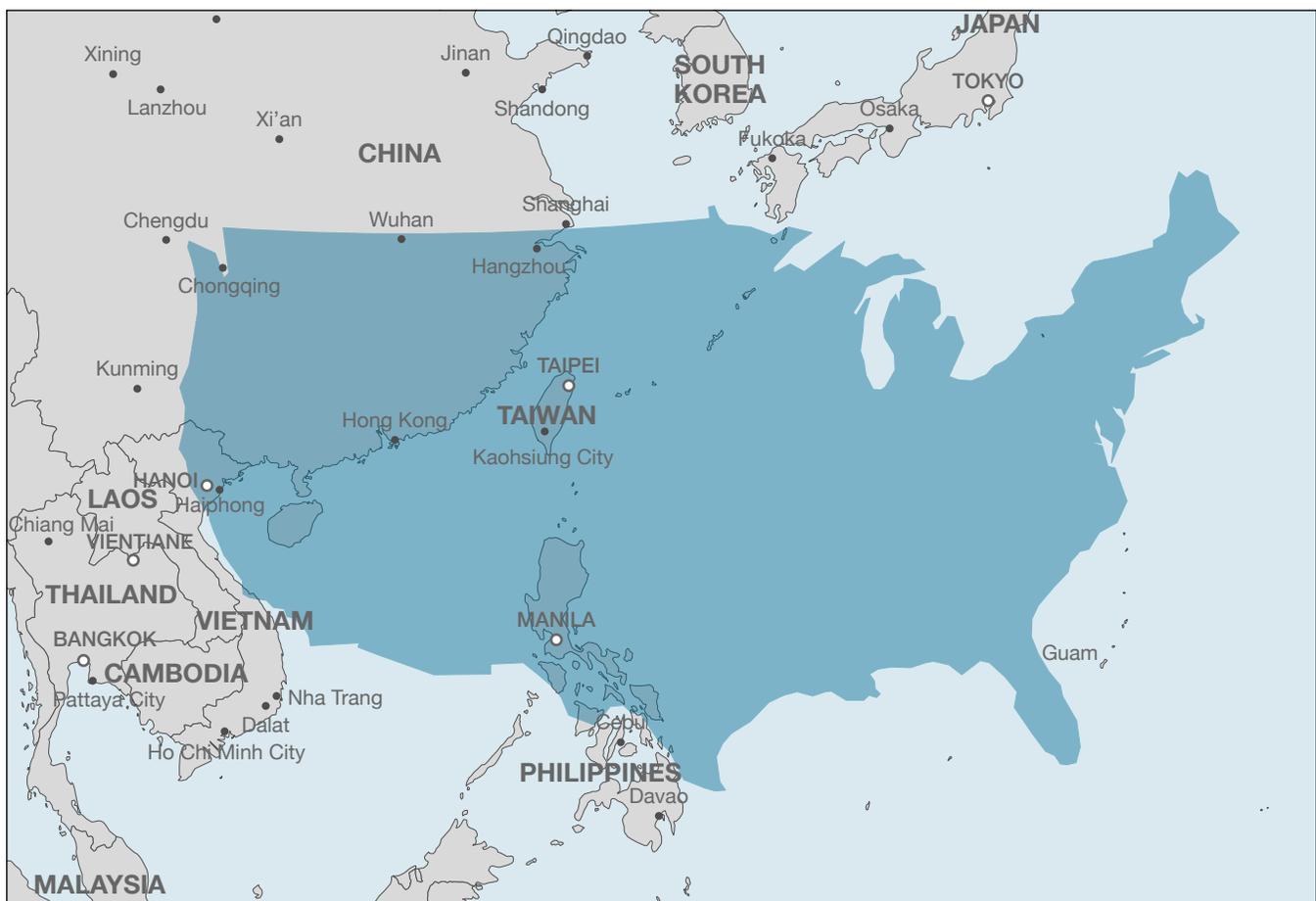
The means of attack may also prove important in waging economic warfare in an extended conflict. For example, an attack involving malware that the attacker can readily reverse (such as a ransomware attack) might prove more effective at undermin-

ing an enemy's will to continue the war than kinetic strikes on critical infrastructure. Seabed operations that involve shutting down offshore oil and gas pumping stations rather than physically destroying them offer another case in point. Similarly, seizing and interring transport ships carrying enemy cargo on the high seas could be more efficacious in negotiating a favorable end to the war—with the ships and their cargo released—than sending them to the bottom. Logically speaking, the greater the benefits associated with agreeing to peace terms, the greater the incentive to accept them rather than escalate the violence.

### Practice Versus Theory

As the reader will readily discern from the above presentation, developing a clear understanding of what constitutes Chinese and Coalition red lines will prove difficult in theory, and likely impossible in practice, as wars create their own shifting dynamics. Under what circumstances would seabed operations inside a nation's 12-mile territorial limit cross a red line? What about attacking space assets used to detect the launch of nuclear-tipped missiles? Attacking a fleet ballistic missile submarine at sea? In the fog of war, events could easily spin out of control,

Map 7. Relative Size of Continental United States across the Western Pacific



Source: Recreation of map from The True Size Of ... (website), accessed August 30, 2023, <https://www.thetruesize.com>.

enabled by such factors as misperception, miscalculation, cultural differences, and reliance on AI.

## Protracted War

Given some of the preliminary lessons emerging from the Russo-Ukrainian War, neither the United States nor its prospective Coalition allies in the WPTO are prepared for an extended conflict with China, defined here as one lasting beyond nine months.<sup>163</sup> Indeed, given existing munitions stocks, the current de facto US defense posture implicitly assumes that any war involving its military will either be brief or be waged against a minor adversary. In this instance, rather than accounting for the uncertainty of a general war's length, American defense policymakers appear to have assumed it away. In so doing, they discount the wisdom of President Eisenhower, one of America's most celebrated military leaders, who warned, "There is only one thing I can tell you about war, and almost one only, and it is this: no war ever shows the characteristics that were expected; it is always different."<sup>164</sup>

Indeed, because of their sheer size and the distance between them (for a representation of how large the area of operations is, see map 7), as well as the Armageddon Factor, any war between China and the Coalition risks becoming a protracted war, as a successful initial employment of Archipelagic Defense would not necessarily bring the CCP to the negotiating table. As Lonnie Henley notes, "The Communist Party (CCP) leadership could not afford to accept defeat. The passions aroused by the war itself and by the propaganda effort in support of the war would not allow the Party to stop short of a political outcome they could credibly sell as a victory." Without the appearance of victory, "they would have no choice but to continue the conflict by whatever means remained."<sup>165</sup>

<sup>163</sup> Antulio J. Echevarria, "It's Time to Recognize Sustainment as a Strategic Imperative," *War on the Rocks*, February 15, 2023, <https://warontherocks.com/2023/02/its-time-to-recognize-sustainment-as-a-strategic-imperative>. See also Andrew F. Krepinevich Jr., *Protracted Great Power War* (Washington, DC: Center for a New American Security, 2020), 43–46.

<sup>164</sup> Newhouse, *War and Peace in the Nuclear Age*, 184.

<sup>165</sup> Lonnie Henley, "Testimony, Hearing on Cross-Strait Deterrence."

In brief, if the Coalition successfully defended against Chinese aggression, Beijing could refuse to seek peace and persist in the hope that, over time, it would eventually prevail. Similarly, even if China achieved its war objectives quickly, the United States and its Coalition partners could decide to fight on.

Archipelagic Defense, however, does not provide a concept for waging a protracted war. The principal reason for this is that the range of factors shaping the character of modern general war between great powers makes predicting the dynamics of a war nine months on little more than informed speculation as to the specific circumstances in which the belligerents would find themselves. For example, six months along, did the Coalition defend successfully, or not? Does the Coalition need to assume the operational offensive, or can it remain primarily on the defensive? If Coalition forces must wage an offensive campaign, is Archipelagic Defense (even in a modified form) still a valid concept for this purpose? If so, does the Coalition still have the means to execute operations as the concept prescribes? What are the belligerents' abilities to escalate vertically (within the bounds of avoiding Armageddon) or horizontally? What domains are in play? Out of bounds? Emptied?<sup>166</sup>

To these questions we might add still others: What characteristics of the mature precision warfare regime revealed themselves? Which capabilities performed "as advertised"? Better than expected? Below expectations? What forces and equipment have been depleted? Which of those matter most in terms of supporting future operations? What forces and associated capabilities are the Coalition and China capable of producing most rapidly, and how long will it take to produce them?

At the geopolitical level, planners will need to consider such factors as the following: What key powers have aligned themselves

<sup>166</sup> For example, operations by belligerents to establish assured access to space while denying it to their adversary could find ASAT forces neutralizing both sides' space assets, creating a no-man's-land of sorts in outer space. Attempting to operate surface combatants along the First Island Chain could prove sufficiently risky to create a maritime no-man's-land in that area of operations as well.

with China or the Coalition? Which key states remain on the sidelines? What belligerents have surrendered or proven to be lagging contributors? Clearly, many key uncertainties could exert a significant effect on Coalition and Chinese planning to conduct operations at the campaign level of war only a few months or so after the initiation of hostilities.

Thus, Archipelagic Defense limits its focus to enabling the Coalition to defeat China's initial attempts to win a war in the WPTO quickly, thereby compelling the CCP to negotiate peace on terms favorable to the Coalition, or to confront it with the problem of prevailing in a protracted conflict, with all the risks and uncertainties that entails.

## Summary

Recent decades have seen the CCP engaging in a major and sustained military buildup designed to create a counter-intervention capability built around an anti-access/area-denial receive-strike complex with growing offensive potential. The PLA stresses exploiting two of warfare's relatively new domains—space and cyberspace—along with the electromagnetic do-

main as part of its emphasis on the so-called speed and intangible domains. This is consistent with broad trends in warfare that find major improvements in weapons speed, range, and accuracy, as well as the traditional Chinese emphasis on surprise.

The PLA seems to share both Russian and American military thinking regarding modern military operations occurring within the context of RSCs. Moreover, it also appears to share similar thoughts with respect to the growing likelihood of disruptive shifts in war's character occurring in the not-too-distant future,<sup>167</sup> with AI playing a major role in the shift to "Algorithmic Warfare."

The CCP, along with successive US administrations, demonstrates similar thoughts with respect to the Armageddon Factor, and the need to keep great-power wars below the threshold of general nuclear war. Details regarding the CCP's red lines that would risk triggering an escalation to a broad nuclear exchange are harder to discern. The same might be said with respect to the United States and other prospective nuclear Coalition powers, India in particular.

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<sup>167</sup> For a discussion of how war's character might change in the near future, see Krepinevich, *Origins of Victory*, 85–140.



## 5. THINKING ABOUT THE PROBLEM

This study argues that the greatest military challenge for the Coalition, and the United States is deterring Chinese aggression against long-standing US allies and security partners along the First Island Chain. While deterring aggression is preferable, the Coalition has to maintain sufficient military force to defeat aggression if deterrence fails. In general terms, the operational challenge the Archipelagic Defense concept seeks to address is *defeating a technologically sophisticated, numerically superior foe in a high-intensity conflict environment waged in the WPTO in close proximity to the enemy's homeland while avoiding escalation to general nuclear weapons use.*

Crafting an operational concept to address this problem presents a difficult test for Coalition defense policymakers in general

and for military planners in particular. The last active rivalry between the United States and a great power ended in 1989, with the fall of the Berlin Wall heralding a series of events leading to the collapse of the Soviet Union barely two years later. Since that time the United States' conventional wars—the two Gulf Wars and the 1999 Balkan War—were brief and waged against minor powers. America waged wars against irregular forces and terrorist organizations, notably those in Afghanistan and Iraq, that were protracted but occurred primarily at the tactical level. Put simply, for the past 32 years, the US military has waged short wars against weak states or protracted wars against non-

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Photo: A B-52 Stratofortress parks at Andersen Air Force Base, Guam, on April 1, 2023. (US Air Force photo by Airman 1st Class William Pugh)

state entities. Correspondingly, most senior American defense officials and military leaders have spent the majority of this time developing strategies and planning operations against terrorist organizations and insurgent movements. Now they need to shift gears to address the threats that a rival great power poses: China possesses human and material resources that are orders of magnitude greater than those of the Iraqis and al Qaeda of decades past.

### Plan Like It's 1948

The operational challenge that the PLA poses in the WPTO pits the US military and its Coalition partners against the most formidable military power it has encountered since the Cold War, and, relatively speaking, arguably since the early days of the republic. Senior political and military leaders looking for guidance on how to address the challenge that the CCP's People's Liberation Army poses would do well to examine how their predecessors in the late 1940s addressed the emergence of the US military's last great-power rival, Soviet Russia.

Those present at the creation of Cold War strategy accepted that the competition was open-ended. While the possibility existed that the rivalry could terminate at any moment, the likelihood was that the United States and its allies faced a "long twilight struggle" with no clear end in sight. The current situation with respect to China is similar; hence the need to take the long view.

Similarly, there was little the US could have done to change quickly the mix and structure of US or allied forces, their capabilities, or their basing posture. The same is true today for the US military and the militaries of its Coalition partners. As former US Defense Secretary Donald Rumsfeld famously observed, "You go to war with the army you have, not the army you might want or wish to have at a later time."<sup>168</sup>

<sup>168</sup> Donald Rumsfeld, "Troops Question Secretary of Defense Donald Rumsfeld about Armor," Ray Suarez interview of Rumsfeld, Thomas Wilson, Christopher Dodd, Chris Wells, Steven Whitcomb, Paul Reickhoff, and Michael DeLong, *PBS NewsHour*, December 9, 2004, <https://www.pbs.org/newshour/show/troops-question-secretary-of-defense-donald-rumsfeld-about-armor>.

In an open-ended competition, however, policymakers and defense planners have a far greater opportunity to shift the military balance in their favor by changing, over time, the size, structure, posture, and capabilities of their forces. This is what occurred in the late 1940s. At the time, military leaders generally believed the small US occupation force in Europe was wholly outmatched by the Red Army. The US "trump card" was its handful of atomic bombs, numbering a baker's dozen when President Harry Truman announced his eponymous doctrine in early 1947, committing the United States to meet the threat that Soviet Russia posed to Western Europe. The US quickly matched Truman's declaration with political, economic, and military action. Two years later, the US and its allies formed an alliance of free states, NATO, to defend Western Europe in the event of Soviet aggression, even though the newly formed Federal Republic of Germany (West Germany) was not an ally, and would not be until 1955. In 1948, the United States instituted the Marshall Plan to aid Western European countries in recovering from the economic devastation the war had caused. Two years later, US troops began returning to Europe in large numbers to support the new alliance's conventional forces, while Washington continued expanding its nuclear arsenal.

NATO continued adapting its strategy, warfighting concepts, and forces as circumstances changed. By 1965, the alliance had built up its conventional force deterrent, which it hoped would offset the loss of America's nuclear advantage, as Moscow was rapidly expanding its atomic arsenal. By then, West Germany's army, along with its American counterpart, formed the alliance's principal ground defense force. In brief, the Western democracies' success in deterring Soviet aggression found the alliance balancing near- and long-term readiness while realizing it could realize major changes in its defense posture only over time—beyond the near future.

Put another way, defense planners are likely to have the greatest opportunity to improve the military balance in the time it takes to develop and introduce new weapons, operation-

al concepts (and doctrines), and basing postures—typically around a decade or so. Indeed, the Chinese clearly view their contest with the Coalition as a long-term proposition, setting objectives as far out as 2049. Coalition political and military leaders need to do the same to sustain a favorable military balance over time.

Similarities also exist with respect to the US basing posture at the Cold War's onset. Then, as now, the United States enjoyed access to a number of bases in Asia and Europe as a consequence of operations it had conducted during World War II and its immediate aftermath. That being said, it needed additional bases in countries as far afield as Norway, Spain, and Turkey to enhance NATO's defenses. Today American forces in the WPTO operate from major bases in Japan and South Korea as well as in Guam. The US will need to expand this basing structure, in part, to counter Beijing's ongoing efforts to gain "positional advantage" by increasing its overseas base structure. As I will elaborate on presently, Australia, India, the Philippines, and Vietnam are potential key sources of Coalition positional advantage. Consequently, they exert a strong influence on Archipelagic Defense.

Taking the long view provides a greater degree of freedom in crafting the Archipelagic Defense operational concept. In this case, the capabilities that are "on hand" or available in the near future do not limit Coalition militaries in their thinking about how best to organize, position, and equip themselves to address the military threat China poses in the WPTO.<sup>169</sup> Rather, they can first consider how best to meet the challenge given those basing, force structure, and military systems and capabilities that allies

can reasonably make available over the planning horizon, which in this case extends to 2040.

As with NATO's response to the open-ended character of the Soviet threat, and the relatively high degree of uncertainty confronting current Coalition planning efforts, military planners will have to modify and adapt Archipelagic Defense to changing circumstances along the way. Nevertheless, this study presents a plausible initial approach to securing Coalition strategic objectives in the principal theater of great-power rivalry. If nothing else, it offers an improvement over the strategic drift that has characterized US defense planning since the Cold War's end.<sup>170</sup>

## Planning under Conditions of High Uncertainty

It is axiomatic that strategic planning occurs under conditions of uncertainty. For reasons I alluded to earlier in this study, the uncertainty associated with planning for a general Sino–Coalition war is especially high.

There are two general ways of addressing uncertainty: assuming it away or taking it explicitly into account. This study takes the latter approach, which involves identifying and stating key planning assumptions and, where possible, hedging against the chance that these assumptions may fail to prove out. This section explores more general sources of uncertainty that exert a major bearing on the WPTO military balance. This is followed by a statement of key geopolitical, military-technical, and temporal planning assumptions.

### Geopolitical Uncertainty

For the first time since World War II, the United States confronts two great-power rivals in two different geographic regions. Moreover, unlike the rigid Cold War bipolar international system, today's increasingly multipolar system offers far greater oppor-

<sup>169</sup> A Cold War–era example is instructive. In the late 1970s, the US Army began developing an operational concept to meet the challenge of defending Central Europe against an attack by the Soviet-led Warsaw Pact alliance. The concept, AirLand Battle, identified certain types of systems as essential to executing what became the Army's doctrine. Known as the "Big Five," these systems did not reach the field in large numbers for nearly a decade—when the Cold War was still in force. The Big Five were the M1A1 Abrams main battle tank, the Bradley Fighting Vehicle, the Patriot air defense system, the AH-64 Apache attack helicopter, and the UH-60 Black Hawk utility helicopter. These systems were under consideration before the emergence of the AirLand Battle concept, but US military leaders saw them as a "perfect fit for how the Army wanted to fight on the central front in the 1980s." Robert Farley, "What If the US Army's 'Big Five' Weapons Had Failed?" *National Interest*, July 24, 2020, <https://nationalinterest.org/blog/reboot/what-if-us-armys-big-five-weapons-programs-had-failed-165555>.

<sup>170</sup> Andrew F. Krepinevich Jr., and Barry D. Watts, *Regaining Strategic Competence* (Washington, DC: CSBA, 2009), 5-13; and Andrew F. Krepinevich Jr., and Barry D. Watts, "Lost at the NSC," *National Interest* (January–February 2009): 63–72.

tunities for great-power realignment, with its corresponding implications for the military balance.

Today several great powers appear to be in play in the Indo-Pacific competition between China and the United States, with Japan as an American ally and Russia closely linked to China. India, a great power that has long tilted toward Russia, is an increasingly active member, along with the Coalition's core members—Australia, Japan, and the United States—of the so-called Quad, a loose grouping of powers that has become more aligned due to their common concerns regarding China's increasingly assertive behavior. Hence the Quad members' growing willingness to cooperate militarily, albeit in India's case, gingerly.<sup>171</sup> For Coalition planners, uncertainties abound. How does one calculate with confidence the military balance of power under circumstances in which great-power alignments are in flux? Or arrive at a division of labor between the Quad's militaries that plays to each member's advantages? Or hedge against the possibility that these associations—especially that with India—may prove ephemeral?

Each of these powers brings advantages and weaknesses to the military competition, which may change over time—an important consideration when engaged in an open-ended rivalry. Apropos of this assessment, understanding how the Coalition intends to defend the WPTO should deterrence fail enhances the members' ability to determine the military value of prospective security Coalition partners, particularly in terms of the capabilities they can bring to bear and their value as sources of positional advantage.

From an American planner's perspective, Coalition partner militaries that have (or can generate) highly valued capabilities can augment an existing US strength or provide a capability that the US military lacks. Recall, for example, the experience of Britain during the Napoleonic Wars. Weak in the land domain, Britain

sought allies whose strength was in land warfare. Later, during the two world wars, Britain cultivated the United States as an ally, in part because the Royal Navy, while stronger than its German rival, required assistance to meet the many demands placed on it in multiple theaters of war and across multiple missions. The US Navy met that need—and then some.

If, for example, war in the cyber domain is going to be as important in the next general war as the air domain proved to be in World War II, then countries whose military potential appears meager when employing traditional sources of combat potential—but are highly capable in the cyber domain—may have great hidden value, either to augment Coalition cyber capabilities or to fill gaps in certain areas of the Coalition's cyber operations. Thus, although Great Britain and the Netherlands lie thousands of miles from the Western Pacific Theater of Operations, their reputation as major cyber powers could enable them to make a significant contribution to Coalition efforts to maintain a favorable military balance in the WPTO, even if they never deploy a single battalion, warship, or combat aircraft squadron to that theater of war.<sup>172</sup>

In brief, once Coalition defense planners determine which domains and competitions should have priority in executing Archipelagic Defense, they should assess the Coalition's membership "portfolio." They should do so with an eye toward attracting (and retaining) members that can best augment the Coalition's ability to execute Archipelagic Defense or can enhance its ability to achieve and maintain positional advantage. Given that the Coalition finds itself in an open-ended rivalry with China, they should undertake this effort with a sense of a prospective Coalition member's *durability*—the likelihood that its interests and those of the Coalition's core members will remain highly congruent over time. The defense planners should also assess

171 Sheila A. Smith, "The Quad in the Indo-Pacific: What to Know," Council on Foreign Relations, May 27, 2021, <https://www.cfr.org/in-brief/quad-indo-pacific-what-know>.

172 A recent study of the world's cyber powers ranks Great Britain third and the Netherlands fifth. The United States and China rank first and second, respectively. Julia Voo, Ifran Hemani, Simon Jones, Winnona DeSombre, Daniel Cassady, and Anina Schwarzenbach, *National Cyber Power Index 2020* (Cambridge, MA: Harvard Kennedy School Belfer Center for Science and International Affairs, September 2020), 8, [https://www.belfercenter.org/sites/default/files/2020-09/NCPI\\_2020.pdf](https://www.belfercenter.org/sites/default/files/2020-09/NCPI_2020.pdf).

members in terms of their *reliability*—the likelihood that, if war comes, they will “answer the bell.”

### Military-Technical Uncertainty

A lack of clarity with respect to the character of warfare, which is in a period of great flux, also complicates efforts to accurately gauge military potential. The current military-technical competitive environment’s contours are translucent at best, and frustratingly opaque in several key areas. Today military planners have to account for the ongoing maturation of the Precision Warfare Revolution and the prospect that a new military revolution may soon be upon us, if it is not already here. This finds military organizations having to set priorities knowing that a disruptive shift in war’s character may radically alter what matters most in calculating the military balance of power.<sup>173</sup>

Periods of disruptive geopolitical and military-technical change often find military organizations compelled to place big bets on capabilities, force structures, and warfighting concepts. For our purposes, the term *big bet* means investing enough of the military’s resources in a particular operational concept to risk suffering a severe and perhaps fatal setback in a general war with another great power. Taking such gambles does not require vigorous action. Indeed, given the relatively large range of possibilities and prospective contingencies, even a military’s choice to stay the course with respect to its current defense posture, program, and operational concepts may constitute a big bet. That being said, historically speaking, and given the trends outlined above, staying the course is likely to prove a very bad bet.

The absence of data with respect to the effectiveness of military capabilities and doctrines further exacerbates the conditions of uncertainty under which militaries develop their operational con-

cepts today. Recall that the principal military powers that form the basis for this assessment have not engaged in a great-power war in over three-quarters of a century.<sup>174</sup> In that interval, the advances in military capabilities have been dramatic. During the Cold War alone, the introduction of new weapons systems shaped and re-shaped thinking regarding the sources of military advantage. Yet real-world data based on the performance of relatively new capabilities that military forces derive from the crucible of war between major powers is meager. Rather, it is culled from conflicts between great and minor powers, or between minor powers. Data thus derived may induce as many false conclusions as useful insights regarding how best to organize, train, equip, and deploy forces to wage great-power war in the most effective manner.

What we have experienced primarily over the past three decades since the Precision Warfare Revolution’s onset are conflicts that the US military wages primarily in permissive environments against minor powers like Iraq, Libya, and Serbia that were stuck, at best, in the mature stage of the Mechanization, Aviation, and Radar Revolution that emerged in World War II, and against irregular forces, most notably Islamic terrorist organizations and state proxy groups, like Iran’s Hezbollah. The only real meat added to this “Yankee Stew” has come from the Russo-Ukrainian War, along with the persistent background noise emanating from cyber activities, which to date have focused principally on economic warfare, espionage, and crime. To be sure, we can distill useful insights from these conflicts. That being said, the US military’s lessons learned from fighting Saddam Hussein’s Iraq and the Russian experience in waging war on Ukraine hardly present a clear picture of a prospective Sino–Coalition war in the Western Pacific.

This leaves Coalition planners pondering what they can divine regarding the true effectiveness of the complex combination of new capabilities that they have fielded over the last 70-plus years, and especially over the last 30, as well as the concepts

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<sup>173</sup> For an assessment of how warfare might experience a disruptive shift in character, and its implications, see Krepinevich, *Origins of Victory*, 3–159. While this study focuses on general (“conventional”) war between great powers, and between China and the United States in particular, an RSC architecture’s relative value may vary greatly depending on the kind of conflict in which it engages. A clear example appears in the US military’s experience over the past several decades, in which it excelled at winning conventional wars against minor powers but proved far less proficient at defeating insurgent and terrorist organizations.

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<sup>174</sup> For both China and the United States, both the Korean and Vietnam wars were limited wars.

and doctrines guiding their employment. Add to this the 60 percent growth in the number of warfighting domains since World War II, and the challenge becomes even more daunting.

To provide a frame of reference, consider the situation that existed at the onset of the Russo-Japanese War in 1904. At that time, the world's major navies anxiously awaited the first major fleet engagements between major maritime powers since before the naval revolutions of the mid- and late nineteenth century. That era witnessed the shift from the Age of Wood and Sail to that of Iron and Steam, along with the introduction of mines, torpedoes, long-range gunnery, advanced armor plate, turbine engines, and wireless communication. Remarkably, despite lasting over a year and witnessing several major battles, the war stimulated more debate than clear lessons with respect to emerging military capabilities' efficacy.<sup>175</sup>

Today's situation is far more complex. Given that the military competition between the Coalition and China shows no signs of ending soon, planners should also account for emerging military capabilities. Between now and the 2030s, hypersonic missiles promise greatly compressed engagement times and reduced attack warning, complicating the task of missile defenses. Cyber weapons may be able to fracture battle networks and corrupt information from scouting forces. Directed energy weapons could finally provide an effective—and relatively cheap—way of defeating some forms of air and missile attack. The rapid progress scientists are making in synthetic biology may greatly enhance human health while also enabling the creation of novel toxins. Advances in artificial intelligence could facilitate the widespread use of autonomous systems that fuse scouting, decision, and strike functions, thereby disaggregating recce-strike systems and setting the stage to conduct complex operations independent of human control.

Or perhaps not.

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<sup>175</sup> See Philip Towle, "The Evaluation of the Experience of the Russo-Japanese War," in *Technical Challenge and British Naval Policy: 1860–1939*, ed. Bryan Ranft (London: Hodder and Stroughton, 1977), 65–79.

## Other Forms of Uncertainty

Alas, uncertainty comes in other forms. Coalition planners will want to consider what we might call "social uncertainty." What kinds of military operations will a state's society sanction? Prior to World War I, most of the great powers considered unrestricted submarine warfare and the use of lethal gas out of bounds, yet both were employed during that conflict. Early in World War II, the United States condemned Germany's strategic bombing of civilian targets. Yet during that war, US air forces bombed civilian targets in Germany and Japan while the US Navy waged the most successful campaign of unrestricted submarine warfare in history in the Pacific. What kind of bombing campaign should planners adopt with respect to a war with China? What form of commerce raiding at sea? For some Coalition planners, a key issue might be whether the Coalition's people will sanction these operations at the war's onset, and whether they will do so in the event of an extended conflict.

Then there is temporal risk, which appears in several forms. For example, what year should the Coalition be at maximum readiness for war? What kind of attack warning will the Coalition have—weeks, days, or hours? What balance should planners accord to providing forces to blunt the PLA's initial attack against the ability to mobilize to prevail in an extended war? Planners also need to consider what we might call "fiscal risk." What level of defense resources should they assume will be available over the Coalition's planning horizon?

Put simply, the challenge military planners face is daunting. Fortunately for Coalition planners, their Chinese counterparts confront similar uncertainties.

## Summary

Given the unknowns involved in planning for war between China and the Coalition, some policymakers and military leaders may be tempted to conclude that identifying an effective strategy, associated operational concepts, and defense investment pri-

orities is a quixotic pursuit. Yet planners have *always* formulated strategy, and the operational concepts to support it, under conditions of uncertainty. Strategy inherently requires some speculation—guesses about how things will develop over time and how key uncertainties will play out. The same is true with regard to warfighting concepts like Archipelagic Defense, which, like strategy, planners have to persistently review and adapt—or abandon—as necessary to reflect changing circumstances. The key is not to abandon strategy in favor of muddling through or to assume away uncertainty. Rather, *the goal is to reduce uncertainty where possible and find ways to account for key uncertainties that remain.*

Fortunately, based on observable trends and informed conjecture about the future, it is possible to place signposts to reduce the uncertainty with which those who develop strategy and operational concepts must contend.<sup>176</sup> Indeed, some key factors shaping the military competition *are* known. Coalition policymakers and military planners know, for example, the principal geographic region China is contesting. They understand the PLA's vision of contemporary warfare and its way of war, including aspects such as the domains it accords priority to controlling (or at least maintaining access to) in order to wage a successful offensive campaign in the WPTO. They have a good general idea of the size and structure of China's economy and demographic profile, as well as the Coalition's. This knowledge, along with the insights they derive from examining key trends in the competition during the age of domain expansion, can serve to reduce, if only at the margins, the uncertainty under which they construct Archipelagic Defense. They can further diminish uncertainties regarding Archipelagic Defense's prospective effectiveness through activities such as expert analysis, war games, field exercises, and experiments. Finally, it is

<sup>176</sup> A large body of research backed by numerous examples demonstrates that informed speculation regarding future events is possible and highly desirable. See, for example, Andrew F. Krepinevich Jr., *Defense Investment Strategies in an Uncertain World* (Washington, DC: Center for Strategic and Budgetary Assessments, 2008); Krepinevich, *Seven Deadly Scenarios: A Military Futurist Explores the Changing Face of War in the 21st Century* (New York: Bantam Books, 2009); Philip E. Tetlock and Dan Gardner, *Superforecasting* (New York: Crown Publishers, 2015); Peter Swartz, *The Art of the Long View* (New York: Doubleday, 1991); and Kees vander Heijden, *Scenarios: The Art of Strategic Conversation* (Hoboken, NJ: John Wiley and Sons, 2005).

important to keep in mind that the standard for assessing a military's concept for waging war at its operational level is not perfection. Rather, it is having a superior operational concept to that of the enemy.

## Key Assumptions

Given Coalition planners' inability to eliminate uncertainty from their efforts, some assumptions need to be made with respect to how the most important elements shaping the military balance within the context of an open-ended competition with China will play out. By explicitly stating this study's key assumptions, it is possible for Coalition militaries to stress-test Archipelagic Defense by examining how the character of the military competition might change if these assumptions fail to prove out. Thus, to the extent that an assumption works in favor of the United States and its Coalition partners, planners should identify mitigating actions that they might put in place should an assumption prove incorrect. Similarly, where an assumption works against the Coalition, planners should identify ways to exploit an unexpected opportunity should the assumption prove false.<sup>177</sup>

It is necessary to limit the key assumptions to a relatively small number. Not every factor can be key. Thus, identifying those aspects of the military balance exerting the greatest influence should be a process of careful deliberation drawing on substantial research and rigorous intellectual effort. Given this requirement, and the limitations of this study, US military strategists should consider the following assumptions a point of departure for further research and refinement.<sup>178</sup>

<sup>177</sup> The military balance in Central Europe along the intra-German border between NATO and the Warsaw Pact during the Cold War provides a useful historical example. Analysts believe two factors had a major effect on the military balance: the amount of warning time NATO would have prior to a Warsaw Pact attack and alliance cohesion. Thus, leaders assessed the viability of NATO's defense, assuming various levels of attack warning, some more favorable and some less so. They also assessed the military balance, employing different assumptions as to whether "fault lines" would emerge between the Soviets and their Eastern European satellites and whether the NATO allies would respond to an attack in lockstep. For a discussion of the general parameters within which the US and its allies addressed the NATO–Warsaw Pact military balance during the Cold War, see Andrew Krepinevich and Barry Watts, *The Last Warrior* (New York: Basic Books, 2015), 179–89.

<sup>178</sup> The assumptions I employ in this assessment are the product of my work over the past 34 years with net assessment planning methodology, including emphasis over the past 25 years on the US military rivalry with China.

## Strategy Assumptions

The Archipelagic Defense concept succeeds if it convinces the Chinese Communist leaders that they cannot win a “short, sharp” war<sup>179</sup> against any Coalition member. Thus, Archipelagic Defense prioritizes creating the ability to withstand an initial PLA assault, providing the Coalition with the opportunity, if needed, to prevail in an extended war. Put another way, Archipelagic Defense is not designed to impose a military defeat on China along the lines of those that Imperial Germany suffered in World War I and the Axis powers in World War II. The risk of triggering an escalation to an all-out nuclear exchange between the United States and China precludes setting such an ambitious objective. Thus, while Archipelagic Defense is an operational concept, we may also view it as a key component in an overall strategy for deterring Chinese aggression, and for defeating it if deterrence fails.

This, however, begs the question, What kind of strategy will the Coalition pursue?

For our purposes, I define strategy as a coherent set of actions that respond effectively to an important challenge or opportunity.<sup>180</sup> In this way, a strategy clearly states how a military force will employ the resources available to meet or overcome the challenge to enable the strategy’s success. A good strategy contains three parts:

1. A *diagnosis* that identifies the key challenges and opportunities and their character.
2. An *overall approach* to addressing the challenges or opportunities that the diagnosis identified, including key sources of competitive advantage and weakness, both existing and prospective.
3. A set of *integrated actions* designed to support the overall approach.

179 The term refers to the desire to secure victory rapidly in the event of a war. James R. Holmes, “Of Course the PLA Is Planning for a ‘Short, Sharp War,’” *The Diplomat*, March 14, 2014, <https://thediplomat.com/2014/03/of-course-the-pla-is-planning-for-a-short-sharp-war>.

180 Richard P. Rumelt, *Good Strategy, Bad Strategy* (New York: Crown Business, 2011), 6.

The initial five chapters of this study have focused on the first two elements of strategy.

## Annihilation and Attrition Strategies Increase Risk

There are three general strategies a belligerent can pursue: annihilation, attrition, and exhaustion.<sup>181</sup> They are not mutually exclusive.<sup>182</sup> A strategy of annihilation emphasizes seeking a single event, such as a battle, or a rapid series of actions to produce a decisive victory.<sup>183</sup> While the promise of a quick victory makes a strategy of annihilation desirable, historically speaking it has been rare in wars between great powers; instead, protracted conflicts have been the norm.<sup>184</sup> As I described above, in the nuclear era, a strategy of annihilation against a nuclear rival runs a high risk of becoming a strategy of *mutual* annihilation.

Given this study’s key assumption regarding the Armageddon Factor, either China or the Coalition could continue waging war regardless of whether the Chinese achieved their military objectives rapidly. This situation would be roughly similar to the Allies’ decision to persist against Germany even after losing France’s industrial heartland in World War I, or Britain’s decision to fight on following the fall of France in 1940, or the United States’ determination to persist despite Japan’s rapid series of victories following the attack on Pearl Harbor. A major difference between then and now, of course, is that in those great-power wars, the aggressor *lacked the means* to deliver a knockout blow to its rival, while today each side would have the means but could employ them only at grave risk of its own destruction.

The risk of triggering Armageddon also hobbles efforts at pur-

181 J. Boone Bartholomees Jr., “The Issue of Attrition,” *Parameters* 40, no. 1 (Spring 2010): 5–19.

182 That is to say, a belligerent could be pursuing a strategy of attrition and supplementing it with efforts designed to exhaust the enemy while also looking for opportunities to wage a brief campaign of annihilation. For example, the summer of 1945 found the United States blockading Japan (pursuing exhaustion) and bombing Japan’s military forces and industrial centers while planning an invasion of the home islands (pursuing attrition). The United States was also hoping to use nuclear weapons to win through a strategy of annihilation.

183 An example of the former is the Battle of Salamis, which ended the Persian attempt to conquer Greece. As for the latter, the six-week campaign in which Germany defeated France in 1940 offers a case in point.

184 For a discussion of the causes of protracted great-power war, see Krepinevich, *Protracted Great-Power War*, 9–13.

suing an attrition strategy, which emphasizes taking a direct approach to reducing an enemy's war-making potential by attacking and reducing its military forces. Attrition's goal is to degrade the enemy's combat capability over time to the point where it is no longer capable of mounting effective resistance. The last two general great-power wars were won primarily through strategies of attrition. The problem with the Coalition pursuing an attrition strategy in a contemporary war between nuclear great powers is that it would almost certainly require widespread attacks on China. Creating the conditions to wage such a campaign could also prove prohibitively costly if it involved taking down the PLA's A2/AD complex. Moreover, for a strategy of attrition to work, at some point it would probably have to target the CCP's nuclear forces, thereby running a high probability of escalating to nuclear weapons use and risking Armageddon.

### A Strategy of Exhaustion

Given the risks of pursuing a strategy of annihilation or attrition, what remains is an exhaustion strategy, which emphasizes *indirectly* depleting the enemy's forces and its will to continue the war. The American Civil War offers a case in point. Early in the war, there was hope on both sides that a strategy of annihilation would succeed, such as by winning a decisive battle or seizing the enemy's capital. These hopes proved ill-founded; still, neither side ever entirely abandoned them. Over time the Confederacy adopted an exhaustion strategy, hoping to extend the war to the point that the Union's will to persevere would run out, even though the North retained a favorable military balance. The Union, on the other hand, gravitated to the view that a war of attrition would be necessary to secure victory—but not sufficient. So it, too, adopted a strategy of exhaustion. As Herman Hattaway and Archer Jones put it, "The North needed some other strategy, and the only likely one was to exhaust the rebels by occupying territory and gradually depriving them of the resources and recruits for maintaining their armies."<sup>185</sup> Thus, the strategy that ultimately won the war for the North was a version

of the Anaconda Plan,<sup>186</sup> which called for the Union to blockade Confederate ports, seize control of the Mississippi River to preclude mutual support between the eastern and western parts of the Confederacy, and destroy the South's transportation infrastructure and arsenals. The strategy, combining exhaustion and direct attrition of the rebel forces through sustained engagement, succeeded in denying the South the ability to offset its combat losses while also convincing the Southern people that they could not achieve their goal of secession.

To summarize, owing principally to the risks of escalating to Armageddon, a modified version of what worked for the Union in the US Civil War seems likely to be the Coalition's best bet should a war with China become protracted: a strategy primarily based on exhaustion, supplemented by attrition of enemy forces (especially those positioned outside China) and by limited attacks on military and economic targets within China. Under these circumstances, economic warfare could become an important factor. Archipelagic Defense is designed to support a Coalition strategy emphasizing attrition and exhaustion.

How would the Coalition wage this form of warfare? Applying the Willie Sutton Rule<sup>187</sup> within the context of the Armageddon Factor suggests that the two sides would continue to battle largely in those relatively "safe" global commons domains most closely linked to the belligerents' economies: the sea surface, seabed, cyberspace, and space. Given the many and varied paths a Sino–Coalition war could take over the course of the first six months or so, even informed speculation regarding how economic warfare might play out lies well beyond the bounds of this assessment. The best that can be said is that both sides

<sup>186</sup> The baseline Union military strategy in the US Civil War, the so-called Anaconda Plan, described how the Union would employ forces as well as the priorities for their employment. For a discussion of the Anaconda Plan, see Bruce Catton, *This Hallowed Ground* (New York: Doubleday & Co., 1956), 53, 84, 86, 124; and James M. McPherson, *Battle Cry of Freedom* (New York: Oxford University Press, 1988), 333–35, 819. Just as the Union had to adapt the Anaconda Plan, while fundamentally sound, had to be adapted over time in light of changing circumstances, so too might Archipelagic Defense (for example, if key assumptions fail to prove out).

<sup>187</sup> The Willie Sutton Rule is based on a statement by American bank robber Willie Sutton. When a reporter asked why he stole from banks, Sutton answered, "Because that's where the money is." The rule states that one should focus on those activities that generate the highest returns. Hence, in waging economic warfare, the Coalition should focus its efforts on those domains that generate the greatest economic value to China.

<sup>185</sup> Herman Hattaway and Archer Jones, *How the North Won: A Military History of the Civil War* (Urbana, IL: University of Illinois Press, 1991), 19.

would likely find themselves drifting toward a strategy of exhaustion, prioritizing economic warfare as the principal means of eroding the enemy's means and—perhaps more importantly—its will to continue the fight. In brief, Archipelagic Defense assumes the Coalition will pursue primarily an exhaustion strategy, supplemented by a strategy of attrition.

## Geopolitical and Geostrategic Assumptions

### China Will Initiate Hostilities

Despite modern warfare occurring along increasingly compressed timelines, and the potentially large benefits of striking first, Archipelagic Defense assumes the Coalition will not initiate hostilities against China.<sup>188</sup> As I will elaborate on presently, the implications of this assumption are potentially profound.

### Australia and Japan Will Be Active US Allies

Given the fundamental values and enduring interests the United States shares with Australia and Japan, Archipelagic Defense assumes that in the event of isolated Chinese aggression against any of them, or against any other US ally or security partner located along the First Island Chain (the Philippines, South Korea, and Taiwan), Canberra and Tokyo will immediately come to their aid as fully active belligerents. In brief, these three powers constitute the Coalition's core, which may expand to include other states as well.

### Mutual Nuclear Deterrence Holds

Archipelagic Defense assumes that the belligerents accord high priority to avoiding escalation to Armageddon—a general nuclear exchange, as it is in all parties' interest to avoid the unprecedented loss of life and economic damage that would result from an all-out nuclear war.

There is precedent for this assumption. In several extended wars, including between great powers, one or both sides pos-

sessed weapons of mass destruction and did not employ them, not even the defeated power. In World War II, Germany suffered total defeat at the hands of the Allies without employing its formidable arsenal of chemical weapons, despite having employed such weapons in World War I. In the First Gulf War, Iraq suffered a severe defeat but did not resort to using its chemical weapons, nor did the US-led coalition's nuclear powers employ nuclear weapons. Nor did Israel, despite being targeted by Iraqi missile strikes.<sup>189</sup>

### Belligerent Homelands Will Be Subject to Attack

In the event of war, Coalition member homelands will be subject to attack, as will China's. That said, these attacks will be limited in scale and scope with an eye toward maintaining a balance between gaining an advantage in pursuing a belligerent's war aims and avoiding escalation to Armageddon.

## Temporal Assumptions

### Early Warning

The Coalition will *not* have a strategic warning of a Chinese attack, with such a warning defined as “a notification that enemy-initiated hostilities may be imminent.”<sup>190</sup> The basis for this assumption is the Chinese historical emphasis on surprise in warfare, current PLA doctrine with its emphasis on operating in the speed and intangible domains, and historical experience, which is replete with examples of countries being surprised at the onset of war.

To be sure, for large, conventional forces, attack preparations can require weeks, even months.<sup>191</sup> Thus, the Coalition may have early indications that the PLA has increased its *readiness*

<sup>188</sup> This does not preclude the United States or its Coalition partners from engaging in ambiguous forms of aggression prior to the initiation of general war, such as by positioning cyber payloads, breaking PLA operational codes, employing social media to foment internal discontent among the Chinese people against the CCP, and forcibly challenging Chinese intrusions on US and Coalition partner space, exclusive economic zones (EEZs), and sovereign territory.

<sup>189</sup> Indeed, despite its precarious position early in the 1973 Arab-Israeli War, Israel also refrained from using its nuclear arsenal in that conflict.

<sup>190</sup> Cynthia M. Grabo, “Strategic Warning: The Problem of Timing,” Central Intelligence Agency Historical Review Program, July 2, 1996, <https://www.cia.gov/static/16fac805d906f-98767118fa4cda4e33d/Strategic-Warning.pdf>. During the Cold War, however, assessments of strategic warning of a Warsaw Pact attack ranged from a few days to a few weeks. Richard K. Betts, *Surprise Attack* (Washington DC: Brookings Institution, 1982), 179–84.

<sup>191</sup> During the Cold War, a US national warning estimate concluded that “Intelligence is not likely to give warning of probable Soviet intent to attack until a few hours before the attack, if at all. Warning of increased Soviet readiness, implying a possible intent to attack, might be given somewhat earlier.” Grabo, “Strategic Warning.”

for war. This is not the same, however, as a warning of an impending attack. The growth in the speed and range of weapons systems functioning within an RSC suggests that initial large-scale operations could begin on very short notice. Thus, Archipelagic Defense assumes the Coalition will have only a few hours of warning.

### Conflict Duration

However the initial phase of the war plays out, by virtue of China's and the Coalition's sheer size and their nuclear arsenals, both sides will have the *potential* to fight a protracted war extending years. Consequently, the contest will likely come down to which of the two belligerents loses the *will* to continue the fight. This is likely to be a function of many factors, including the peace terms either side offers, the need to justify the human and material costs the fighting incurs, matters relating to pride and honor, the belligerents' views of their postwar positions in what may be an enduring rivalry in the peace that follows, and still others.<sup>192</sup> Thus, the Coalition and its allies need to prepare to wage a long war, defined as one extending beyond nine months.

This has important implications for Archipelagic Defense. Only the test of war will reveal the concept's true value—and its limitations. Even if forces employing Archipelagic Defense successfully defend the WPTO against the PLA's initial offensives, the war will likely resolve many uncertainties with respect to the relative value of military capabilities and how they may be employed to best effect. Consequently, the Archipelagic Defense operational concept will almost certainly need to be modified significantly, or perhaps even abandoned in the face of events. This study's modest objective is to ensure that it will prove sufficiently superior to the PLA's way of war to prevail in the war's initial stages.<sup>193</sup>

192 For an overview of the principal factors shaping modern general war between great powers, see Krepinevich, *Protracted Great Power War*, 10–13.

193 History attests to the value of this assumption. For example, the German military made significant changes to its concept of mechanized air-land warfare (blitzkrieg) following operations to occupy Austria (1938) and Czechoslovakia (1939), and after its campaign in Poland (1939). As a consequence of early operations in the Pacific following the opening

## Military-Related Assumptions

### A Duel of Reconnaissance-Strike Complexes

Archipelagic Defense assumes that military operations will be dominated by competing reconnaissance-strike complexes—highly integrated scouting, battle network, and strike forces operating in and across domains at extended ranges and along compressed timelines. As described above, this general view of warfare, initially put forth by Russian military theorists, has been adopted by the American and Chinese militaries, albeit in somewhat different forms.

### A Forward Defense Posture

Archipelagic Defense assumes that the United States and its Coalition partners will adopt a forward defense posture. Given the close proximity of China to the First Island Chain relative to that of Australia and (especially) America, combined with the speed at which modern military operations can be executed, establishing and sustaining a favorable military balance requires the Coalition to position substantial elements of its forces forward.

### PLA Emphasis on Air, Sea, and Information Control

PLA writings and doctrine identify air superiority, sea control, and information dominance as critical preconditions for successful offensive military operations along the First Island Chain. Archipelagic Defense assumes that by denying the PLA control in these domains long enough to block its efforts to achieve its campaign objectives, Coalition forces can deter aggression and defend successfully if deterrence fails.

### No Warfare Domain Sanctuaries

Archipelagic Defense assumes that no warfare domain will be off limits to military operations. Forces in domains that formerly have enjoyed some measure of sanctuary status—such as space and the seabed—will be subject to attack.

of hostilities between Japan and the United States in 1941, the American Navy abandoned its long-standing emphasis on the battleship as its capital ship and the line of battle as the principal tactical formation in favor of the aircraft carrier and extended-range airstrikes from a fast carrier task force. Between 1942 and 1943, the US Navy also made substantial changes in the structure of its carrier air wings. Krepinevich, *Origins of Victory*, 284–92, 338–41.

### Cyber Warfare Will Not Itself Prove Decisive

There is considerable uncertainty about how an all-out cyber war between major powers would play out. This is somewhat similar to the debate over the implications of operations in the air domain prior to World War II. This assessment assumes that, like airpower in World War II, cyber power will be an important factor in determining the military balance, but not the decisive factor.

### Selected Asymmetries

The Coalition’s strategy should have three underlying characteristics. First, given the open-ended character of the military competition, it should adopt a long-term perspective, looking ahead several decades and anticipating shifts in the balance of power and war’s character rather than focusing primarily on near-term contingencies. Second, it should build on the Coalition’s strengths, mitigate its most serious vulnerabilities, and exploit wherever possible China’s weaknesses. Third, it should attempt to shape the CCP’s behavior by taking steps that are likely to channel its attention, effort, and resources toward actions and investments that are less threatening to the Coalition’s security.<sup>194</sup>

With respect to establishing and maintaining a favorable competitive position, strategy necessarily involves identifying or creating *asymmetric* advantages that a country can exploit to help achieve its ultimate objectives, despite resource and other constraints, the opposing efforts of adversaries, and the inherent unpredictability of strategic outcomes.<sup>195</sup>

Broadly speaking, a good strategy prioritizes employing a country’s advantages, while a better strategy is one that aligns a country’s advantages against an enemy country’s weaknesses. An optimum strategy in an open-ended rivalry aligns *enduring* sources of strength or advantage against *enduring* enemy

<sup>194</sup> For a discussion of these and related issues, see A. W. Marshall, *Long-Term Competition with the Soviets: A Framework for Strategic Analysis* (Santa Monica: RAND, 1972).

<sup>195</sup> Andrew F. Krepinevich and Barry D. Watts, *Regaining Strategic Competence* (Washington DC: Center for Strategic and Budgetary Assessments, 2009), 19.

Table 5. Range and Status of PLA Ballistic and Cruise Missiles

MISSILE NAME	CLASS	RANGE	STATUS
DF-11	SRBM	28–300km	Operational
DF-12/M20	SRBM	280km	Operational
DF-15	SRBM	600km	Operational
DF-16	SRBM	800–1,000km	Operational
DF-17	HGV	1,800–2,500km	Operational
DF-21	MRBM	2,150km	Operational
DF-26	IRBM	4,000km	Operational
DF-31	ICBM	7,000–11,700km	Operational
DF-4	IRBM/ICBM	4,500–5,500km	Operational
DF-41	ICBM	12,000–15,000km	Operational
DF-5	ICBM	13,000km	Operational
HN 2	Cruise Missile	1,400–1,800km	Operational
HN 3	Cruise Missile	3,000km	Operational
HN 1	Cruise Missile	50–650km	Operational
JL-2	SLBM	8,000–9,000km	Operational
YJ-18	Cruise Missile	220–540km	Operational

Table 6. Range and Status of US Ballistic and Cruise Missiles

MISSILE NAME	CLASS	RANGE	STATUS
ALCM	ALCM	950–2,500km	Operational
FGM-148 Javelin	ATGM	2.5–4.5km	Operational
Harpoon	ASCM	90–240km	Operational
Hellfire	ASM	7–11km	Operational
JASSM/JASSM ER	ALCM	370–1,000km	Operational
ATACMS	SRBM	165–300km	Operational
Minuteman III	ICBM	13,000km	Operational
Tomoahawk	Cruise Missile	1,250–2,500km	Operational
Trident D5	SLBM	12,000km	Operational

Source: Author.

weaknesses. Again, to the extent possible, a strategy needs to also take into account the dynamic character of the military competition and how its key characteristics—the competitive environment—may change over time.

Some prospective asymmetries, such as geography, exist as matters of fact.<sup>196</sup> China is a continental power situated on the “global island” and positioned along its “rimland.”<sup>197</sup> The United States, the Coalition’s principal member, is an “insular” power. China has restricted access to the seas, whereas the United States has ready access to the world’s two principal oceans. The United States currently enjoys an advantage relative to China thanks to its global network of overseas bases.

Other asymmetries, however, are a matter of choice, such as where rivals decide to place bets in a key area of the military competition with an eye toward gaining or exploiting an advantage. The PLA, for example, has spent several decades developing an advantage over the US military in the size and range of its theater conventional strike systems, particularly ballistic missiles (see tables 5 and 6).

### China’s Focus on Asymmetries

The Chinese military has long emphasized identifying and exploiting asymmetries where it can—especially during periods when it was greatly inferior in material and technical resources—to gain an advantage. A clear example appears in its emphasis on *shashoujian*, or the “assassin’s mace.” The term derives from Chinese folk stories in which the hero employs a magic weapon to overcome a seemingly far more powerful enemy.<sup>198</sup> This con-

cept also prioritizes achieving surprise, as a mace is a weapon that an assassin could conceal, enabling him to maneuver into a position to surprise and kill a powerful figure.

During his term in office, Jiang Zemin called on China to field assassin’s mace weapons “against *developed countries* . . . suited to winning as quickly as possible.” General Fu Quanyou, head of the PLA General Staff Department, counseled that “to defeat a *better equipped enemy with inferior equipment* in the context of high-technology, we should rely upon . . . high-quality *shashoujian* weapons.” This mindset has endured with Xi Jinping, who linked *shashoujian* to the fielding of asymmetric capabilities.<sup>199</sup>

Thus, in its military context, assassin’s mace weapons are those that China could use to defeat more powerful and sophisticated enemies. For example, the PLA has for many years made heavy investments in the undersea domain, building the world’s largest submarine fleet along with the world’s largest inventory of antiship mines. Military analysts traditionally associate these capabilities with weaker maritime powers.

The PLA is also developing the first antiship ballistic missile, a relatively cheap weapon designed to destroy far more powerful—and expensive—military systems, such as aircraft carriers. What the PLA has done here is to identify and develop an asymmetric capability—anti-surface ship capabilities—that place it on the more advantageous side of the cost equation. At present, within the First Island Chain (and likely within the Second Island Chain), it arguably costs considerably more to defend a surface warship successfully than it does to mount a successful attack against it. Moreover, this is an area of the competition that is important to China, as the PLA concludes it must control the seas in order to mount a successful offensive campaign against countries along the First Island Chain.<sup>200</sup> Put simply, the PLA’s objective is to employ these “inferior” (less expensive)

196 China’s recent fabrication of “islands” in the South China Sea stands as a notable exception.

197 Nicholas Spykman introduced the concept of the “rimland,” the area stretching inland from the Eurasian coast. He argued that controlling the rimland is more important than controlling the central Asian heartland for powers aspiring to hegemony over Eurasia. Correspondingly, those powers seeking to prevent a rival from establishing control over the Eurasian landmass must contest any attempt by them to control the rimland, either in Europe or in Asia. Spykman’s theory challenged that of Halford MacKinder, who asserted that controlling the heartland was the key to gaining control over the world island. “Who rules East Europe commands the Heartland: Who rules the Heartland commands the World-Island: Who rules the World-Island commands the world.” H. J. Mackinder, *Democratic Ideals and Reality: A Study in the Politics of Reconstruction* (New York: Henry Holt and Company, 1919), 186.

198 Doshi, *The Long Game*, 74.

199 Doshi, *The Long Game*, 74. Emphasis mine.

200 Doshi, *The Long Game*, 65.

capabilities to deny Coalition fleets the ability to operate at an acceptable cost inside an expanding Chinese sphere of control.

Given the importance of asymmetries in the development of strategy and in support of operational concepts, the balance of this chapter presents selected asymmetries between China and the Coalition (with an emphasis on the United States) that should influence strategy and, by extension, the operational concepts that support it.

### Political System/Heritage

The patterns of politics between nations in different parts of the world tend to correlate well with the patterns of politics *within* them. In the Western world, countries checked the absolute power of kings over time, beginning with the aristocracy and eventually developing republics characterized by a separation of powers. Thus, we find in Europe a similar balancing of power between states and within them.

In most of Asia, however, the tendency to concentrate power in the hands of a single ruler or small group is far more prevalent. In the case of China, its history finds it oscillating over time between its roles as the Middle Kingdom, accepting tribute from other subordinate nations, and as the victim of “humiliation” by hostile foreign powers.

Perhaps not surprising then, unlike in the West, the East has no strong history of states maneuvering to establish a stable balance of power. Indeed, as Aaron Friedberg notes, until the mid-nineteenth century, “East Asian international relations were Sinocentric with societies arranged in varying degrees of subordination to, cooperation with, or autonomy from Beijing.”<sup>201</sup> Thus if history is any guide, Asian states are more likely to bandwagon with a rising China than to balance against it.

*Implications for Archipelagic Defense:* This asymmetry suggests that the Coalition has its work cut out for it in its efforts to expand. This is reflected in this study’s assumption that only two US treaty allies, Australia and Japan, which both reflect and have embraced key aspects of Western political culture, will be active Coalition members at the onset of hostilities. The same will hopefully prove true of the region’s other democracies. Of note, India does not share the East Asian political tradition. This may increase the odds of New Delhi joining its Quad colleagues in the Coalition.<sup>202</sup>

Finally, war can compel heretofore neutral states to choose one side or the other. The Coalition partners should establish a secondary objective of keeping such states from bandwagoning with China if they decide to remain outside the Coalition.

### Positional Advantage

#### Geographic Proximity

China is positioned far closer to the WPTO in general, and the First Island Chain in particular, than are the United States and some key current and prospective Coalition partners, such as Australia and India, respectively.

*Implications for Archipelagic Defense:* To reduce the “tyranny of distance” advantaging China, the United States needs to shift as promptly as possible from an expeditionary military posture to a forward-deployed and, where possible, forward-based posture in the WPTO. To supplement this effort, the US military should emphasize military capabilities capable of operating at extended ranges and with speed of action in contested environments.

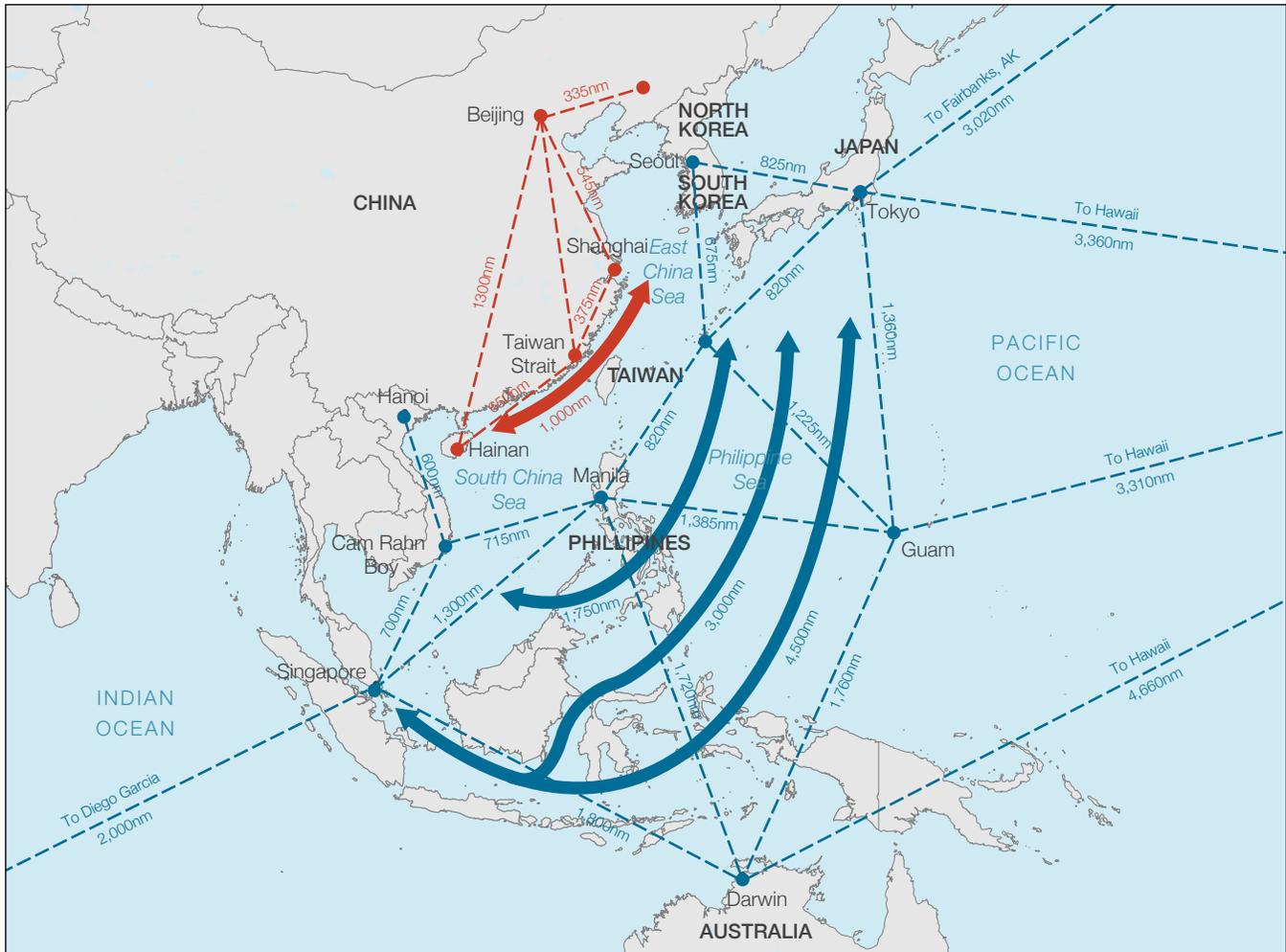
### Interior Lines of Communication

Interior lines of communication can be an important source of advantage. The First Island Chain forms an arc stretching along

201 Friedberg, *A Contest for Supremacy*, 202–3. See also Samuel P. Huntington, *The Clash of Civilizations and the Remaking of World Order* (New York: Simon & Schuster, 1996), 234; and David C. Kang, *China Rising: Peace, Power and Order in East Asia* (New York: Columbia University Press, 2007).

202 Given India’s enduring geostrategic tilt toward Russia, the United States and its Coalition partners should make incentivizing Moscow to shift its political orientation away from China and toward the Quad a priority objective. A strategy for achieving this objective lies well beyond the scope of this study. Given current circumstances, the United States should not expect such an effort to bear fruit for a decade or more.

Map 8. Interior and Exterior Lines of Communication



Source: Krepinevich, *Archipelagic Defense*, 94.

China's maritime periphery (see map 8). Relative to the states lying along the chain, China enjoys a positional advantage in that it lies along the inner portion of the arc. The distance between points along the inner arc is shorter than the distance between those along the outer arc; consequently, all other factors being equal, this enables the PLA to move forces along the "inside track" to points opposite the First Island Chain more quickly than corresponding Coalition forces lying on the outer track. Put

simply, this condition confers on the PLA a significant advantage in the ability to mass forces to mass military power.

*Implications for Archipelagic Defense:* Regarding the concentration/counter-concentration competition, the United States and its Coalition partners should accord priority to capabilities that can reduce China's geographic advantage. Again, all other factors being equal, capabilities operating in the speed

domains—the air, cyber, and electromagnetic domains—would be best suited to support counter-concentration efforts. Coalition land forces, being among the least mobile, would be at a relative disadvantage, although they have cross-domain capabilities (such as extended-range rocket artillery precision fires) that can offset their lack of mobility. They can contribute best by establishing strong fixed defenses at key points along the First Island Chain, thereby freeing up forces operating in the air domain. Among these advantages are their ability to stock deep magazines, harden their position, and defeat PLA scouting efforts (such as by positioning themselves in complex terrain like urban areas and jungles). Further, as a relatively static force, they can rely on hardened communications networks (such as buried fiber-optic cables with radio frequency, or RF, gateways).

### **First Island Chain Chokepoints**

The islands comprising the First Island Chain, along with those states on its flanks (South Korea in the north; Vietnam in the south) present a barrier to China's access to the open seas.

*Implications for Archipelagic Defense:* The First Island Chain archipelago canalizes PLAN attempts to reach the open seas. Coalition forces deployed along the First Island Chain and its flanks can play an important role in limiting the threat of PLA air and naval forces to the Coalition's "rear area" between the First and Second Island Chains, thereby enhancing these countries' defenses. They can do this by concentrating scouting and strike forces, including undersea sensor networks, submarines, UUVs, antiship missiles, and mines at the various maritime chokepoints. These forces could also defend against PLA attempts to seize islands along the chain. As will be elaborated on presently, ground forces can make a major contribution to chokepoint defense, thereby freeing up more mobile forces necessary for counter-concentration efforts.

### **Long Borders, Proximate Powers**

China's land border stretches nearly 14,000 miles, with a coastline extending over 9,000 miles. It shares borders with several

major military powers, including India and Russia, while Japan lies not far offshore. Moreover, the United States maintains an imposing basing posture in the Indo-Pacific region. The CCP cannot discount the military potential of any of these four major powers when calculating its military requirements.

*Implications for Archipelagic Defense:* China's long borders and seacoast could compel the PLA to stretch its resources over a wide area in order to maintain acceptable local military balances. Coalition forces, especially those of the United States, India, and Japan, can exploit this. For example, China's long borders provide many points of ingress for US extended-range forces, such as its bomber fleet. When the US Air Force fields its new B-21 bombers, it could compel the PLA to extend its air defenses—now heavily oriented toward the First Island Chain—along its southern borders. India's ongoing enhancements to its long-range strike forces and Japan's recent decision to field counter-strike capabilities could further accentuate the PLA's problems.<sup>203</sup>

### **Strategic Depth**

Strategic depth, or the lack thereof, is often an important factor in the military competition, and this is very much the case in the WPTO. Militaries that enjoy strategic depth can employ a defense in depth (or a layered defense), trading space to gain time so as to achieve a more advantageous position. They can also position important assets deep in their country's interior, making them relatively difficult to attack. Consequently, the absence of strategic depth for states along the First Island Chain places the Coalition at a major competitive disadvantage, as it lies increasingly within China's principal A2/AD complex. Comprising much of the chain's northern sector (see map 9), the Japanese archipelago and Taiwan run roughly parallel to the Chinese coastline, well within the range of the PLA's thickest A2/AD forces.

On both flanks, however, the chain runs away from the Chinese coastline. These two areas—the southern Philippines (including

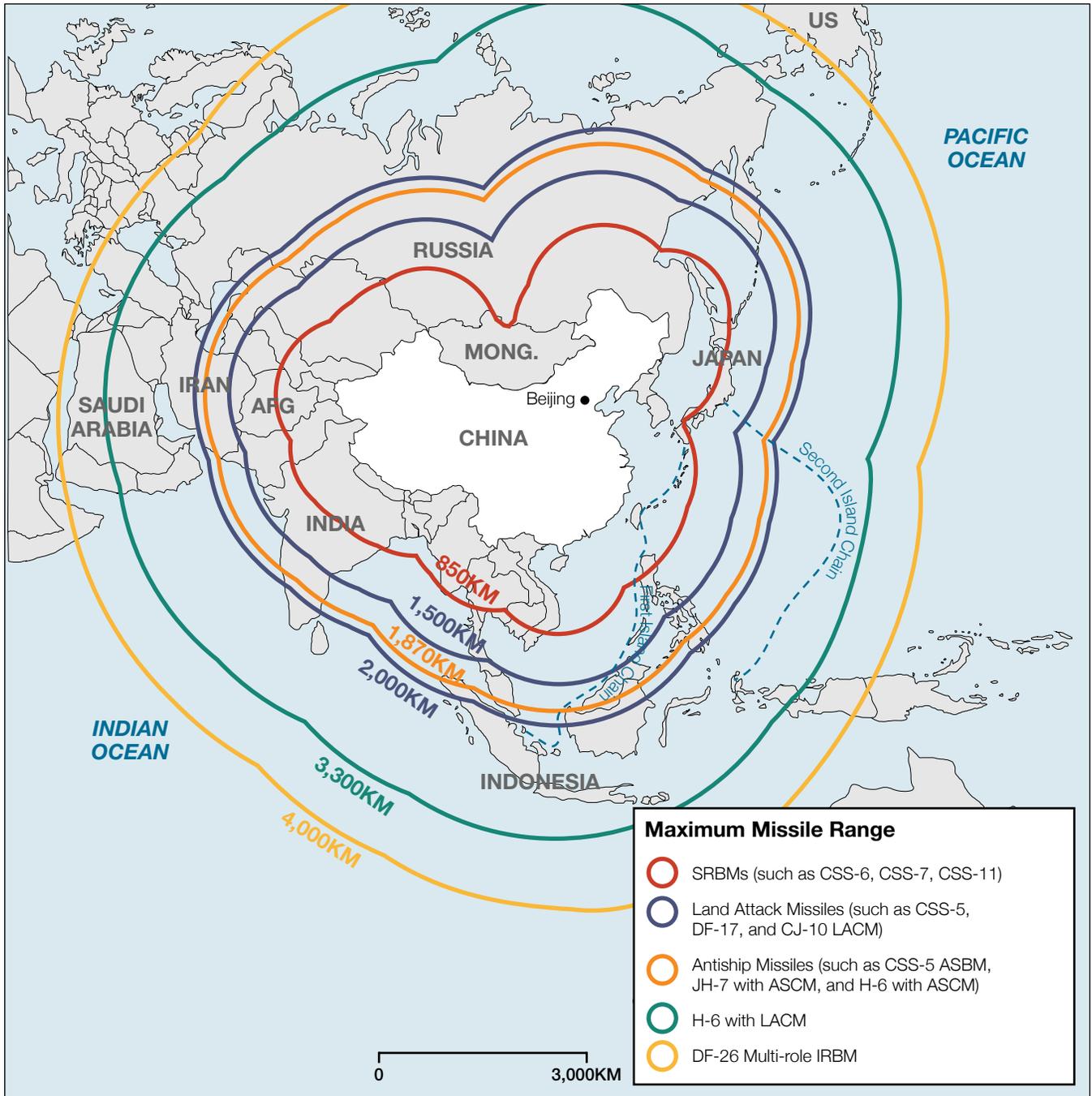
203 Kenji Nagayoshi, "Why Japan's Missile Defense Requires 'Counterstrike Capabilities,'" *The Diplomat*, December 7, 2022, <https://thediplomat.com/2022/12/why-japans-missile-defense-requires-counterstrike-capabilities>.

Map 9. The First Island Chain's Northern Sector



Source: Author.

Map 10. PLA Conventional Missile Ranges



Source: *Military and Security Developments Involving the People's Republic of China* (Washington, DC: Office of the Secretary of Defense, 2022), 67, <https://media.defense.gov/2022/Nov/29/2003122279/-1/-1/1/2022-MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA.PDF>.

Mindanao) and northeastern Japan (parts of northern Honshu as well as Hokkaido)—offer some measure of strategic depth. Moreover, as the distance from China increases, the PLA's scouting and strike capabilities decline (see map 10). Beyond 800–900 miles from China, the effective range of the PLA's medium-range ballistic missiles (MRBMs) and PLAAF tactical aircraft, the Chinese military's sensor and strike coverage decreases significantly. This has not escaped Beijing's attention. Recent Chinese moves to militarize natural and artificial South China Sea Islands find the Philippines and Vietnam losing much of their strategic depth while extending the PLA's ability to scout and strike more distant targets.

On the other hand, the United States also enjoys strategic depth thanks to its global posture and its ability to position forces along the Second Island Chain (such as in Guam) and beyond (such as in Hawaii and Australia). India's geography runs as much, if not more, away from its border with China as parallel to it, affording it significant strategic depth. Australia, the Quad's fourth member, is distant from China while occupying an entire continent.

That being said, relative to the First Island Chain, China enjoys great strategic depth. The PLA is leveraging this advantage to protect some key assets from attack, such as elements of its nuclear and missile forces, anti-satellite systems, command and control centers, and industrial and research facilities. Further advantaging Beijing, given the current geopolitical situation, Coalition forces can approach China only along its coast. Russia guards China's "back door" against attack from the north. The Central Asian states shield it from attacks from the west, as the US withdrawal from Afghanistan effectively eliminated any worries the PLA might have had regarding an attack from this point on the compass. Approaching China from the south would require India's active participation in the Coalition. Thus, at least for the time being, China can concentrate its attention on Coalition forces along the First Island Chain.

*Implications for Archipelagic Defense:* The Coalition is at a severe disadvantage relative to China when it comes to strategic depth as it relates to the WPTO's frontline states. The countries comprising the First Island Chain cannot trade space for time. Thus, the Coalition must defend forward. Other postures, such as the mobilization posture the United States employed before the two world wars, or Offshore Control (which relies principally on the threat of economic warfare through blockade), risk the loss of the First Island Chain (or parts thereof) based on the presumption that the Coalition could retake lost territory either by force or through negotiation. With respect to Offshore Control, the Coalition would expect US allies along the First Island Chain to endure attacks from China while the US foreswears any attacks on PLA forces located on Chinese soil. Put simply, it creates an enormous asymmetry in China's favor, granting PLA forces sanctuary while accepting none for Coalition forces. Under these circumstances, and given China's rapidly advancing A2/AD capabilities, it is difficult to see how the Coalition could launch a successful counteroffensive at anything approaching an acceptable cost, if it could do so at all, especially if it accords China sanctuary status.<sup>204</sup>

### **The US Global Basing Architecture**

As an insular power remote from the Asian continent, the United States enjoys great strategic depth, accentuated, at least for the present, by the absence of major Chinese military bases in close proximity to the US homeland. The United States, on the other hand, possesses a global network of bases. This enables the US military to position forces far closer to China than can the PLA to the United States. This places the PLA at a disadvantage in its ability to threaten targets in the contiguous United States (CONUS). Absent such bases, the PLA must rely on relatively costly long-range systems to mount a comparable threat,

<sup>204</sup> See T. X. Hammes, "Offshore Control: A Proposed Strategy for an Unlikely Conflict," Strategic Forum No. 278, Institute for National Strategic Studies, National Defense University, June 2012, <https://ndupress.ndu.edu/Portals/68/Documents/stratforum/SF-278.pdf>; and T. X. Hammes, "Offshore Control vs. AirSea Battle: Who Wins?" *National Interest*, August 21, 2013, <https://nationalinterest.org/commentary/offshore-control-vs-airsea-battle-who-wins-8920>. See also Elbridge Colby, "The War over a War with China," *National Interest*, August 15, 2013, <https://nationalinterest.org/commentary/the-war-over-war-china-8896>.

or on cyber payloads that offer the promise of overcoming the tyranny of distance.

*Implications for Archipelagic Defense:* Just as China derives an advantage from being able to contest for control of the WPTO as a “home game,” the United States gains some advantage by playing an “away game” far from its shores. The question is which side can better exploit its advantage while mitigating its weaknesses. Archipelagic Defense adopts a forward defense posture in the WPTO while emphasizing extended-range capabilities that can—if the opportunity presents itself—approach China from multiple directions.

Moreover, the United States military has demonstrated an enduring competence in long-range strike operations. By sustaining and enhancing this capability to hold at risk even high-value targets deep in China, the US military (and perhaps other Coalition member militaries over time) may compel the PLA to divert resources to defend these assets, leaving relatively fewer resources to field more threatening offensive capabilities.

### Allies

The United States enjoys a major advantage in its competition with China by virtue of its alliances with several states in the Indo-Pacific region, its security commitment with Taiwan, and its generally positive relationships with key countries like India, Indonesia, Singapore, and Vietnam. That being said, unlike in Europe, where it belongs to an integrated alliance comprising several dozen members, the United States’ alliances in the Western Pacific are bilateral, with Washington functioning as the hub in a hub-and-spoke structure. American allies—Australia, Japan, the Philippines, South Korea, and Taiwan<sup>205</sup>—are allied solely with the United States, not with one another.<sup>206</sup> At

the core of the US alliance system is Japan, which possesses the world’s third-largest economy and boasts enormous latent military potential. Australia and South Korea are also capable of exerting substantial influence on the WPTO military balance. The same can be said of Taiwan. Again, should India align itself with the Coalition, it could make a significant contribution toward establishing a favorable military balance, not only in the WPTO but in the Indo-Pacific in general.

There are relatively minor military powers that could greatly enhance the Coalition’s positional advantage. In particular, if the Philippines and Vietnam were to join the Coalition, it would do much to offset China’s militarization of South China Sea Islands, while Indonesia and Singapore could facilitate blockade operations along the sea-lanes from the Indian Ocean to the Far East.

Nor can one discount the contributions that could come from America’s NATO allies. Both Britain and France have key possessions in the Indo-Pacific region, such as Diego Garcia (Britain), New Caledonia (France), and French Polynesia. While both British and French abilities to project power into the WPTO are highly limited, as with Australia, their forces have a reputation for punching well above their weight. They are also believed to be among the world’s leading cyber powers.

China, on the other hand, lacks formal alliances. Those states that might join it in a war of aggression in the WPTO, such as Russia, North Korea, and Pakistan, compare poorly when matched against conventional forces that US Coalition partners and allies can bring to bear along the First Island Chain. The Russo-Ukrainian War has demonstrated Moscow’s severely limited ability to project significant military force beyond its borders, aside from its nuclear arsenal. Pakistan is relatively unsta-

<sup>205</sup> Recall that while Taiwan is not an ally of the United States, the latter is committed to its defense through the Taiwan Relations Act of 1979. The act states that the United States would “consider any effort to determine the future of Taiwan by other than peaceful means, including by boycotts or embargoes, a threat to the peace and security of the Western Pacific area and of grave concern to the United States.” HR 2479, 96th Cong. (March 24, 1979), <https://www.congress.gov/bills/96th-congress/house-bill/2479>.

<sup>206</sup> New Zealand’s status as a member of the ANZUS security treaty has been tenuous since 1985, when Wellington declared its territorial waters a nuclear-free zone. While relations

with the United States have improved in recent years, New Zealand is not a member of the recently established English-speaking AUKUS group comprising Australia, the United Kingdom, and the United States. As one security expert put it, “Australia and New Zealand are culturally quite similar and geographically in similar positions, but they are poles apart in the way they see the world.” Tess McClure, “AUKUS Submarines Banned from New Zealand as Pact Exposes Divide with Western Allies,” *The Guardian*, September 15, 2021, <https://www.theguardian.com/world/2021/sep/16/aukus-submarines-banned-as-pact-exposes-divide-between-new-zealand-and-western-allies>.

ble politically and (nuclear weapons aside) a far weaker military power than India. We can say the same about North Korea relative to South Korea.

*Implications for Archipelagic Defense:* The bilateral alliance structure, however, makes it difficult for the United States and its allies in the WPTO to develop interoperable systems and command structures to enhance their overall military effectiveness. The absence of formal security relationships with prospective security partners, such as India, Indonesia, Singapore, and Vietnam, further aggravates the problem. This highlights the importance of formalizing these bilateral relationships into an expanded, increasingly integrated Coalition. The Coalition is making progress toward greater cooperation between Australia, Japan, and the United States—and increasingly with the Philippines, South Korea, and Taiwan. If these efforts mature, they could form the foundation for a broad-based coalition.

Nevertheless, in the absence of a coherent US strategy and associated plan of action, Chinese influence in the WPTO continues expanding in scale and scope. One study finds China's influence in Southeast Asia growing dramatically in recent decades, while American influence is experiencing a long, albeit slow, retreat.<sup>207</sup> The CCP is also making inroads with Thailand, a long-standing American ally, while enjoying growing influence with Indonesia and Singapore. These gains build on China's status as the primary source of external influence in Bangladesh, Burma, Cambodia, Laos, North Korea, and Pakistan. In brief, when it comes to key states currently sitting on the fence between China and the Coalition, the general trend finds Beijing making significant gains in displacing the United States as a source of influence.

Perhaps more worrisome, Beijing's efforts seem focused and aggressive, while until recently Washington's appeared aimless

and reactive. A senior Japanese security official summed it up best in a conversation with your author, declaring it was long past time for “the United States to get its head in the game.” The message may have resonated, as a combination of China's growing belligerent attitude and increasing US diplomatic efforts appears to be paying dividends in areas as far-ranging as the South Pacific and, especially, the Philippines and South Korea.

## Coherence and Speed of Action

### Unity of Command

The PLA's unity of command enhances its ability to act quickly and with unity of purpose, boosting its advantages in interior lines of communication and physical proximity to the WPTO. All contribute to the PLA's ability to prevail in the critical concentration/counter-concentration competition—the ability to mass forces and effects at the decisive point. By comparison, the Coalition's core members—Australia, Japan, and the United States—lack a combined command. This will stand as a major disadvantage in a war with China.

### The First-Move Advantage

China almost certainly enjoys a significant edge in this area of the military competition. Recall this study's assumption that China will initiate war at a time and place of its choosing. The high speed and extended range of modern military weapons accentuates this advantage. The first-move advantage will also enable China to pre-position its naval forces beyond the First Island Chain chokepoints, and its forces in the South China Sea to launch a preemptive salvo of strikes. On the other hand, were the Coalition to initiate operations, the PLAN would have to run the First Island Chain chokepoint gauntlet before reaching the open seas, while Coalition strikes would likely destroy PLA units based on South China Sea Islands.

### War in the Speed Domains

As described earlier in this study, the pace of warfare has increased greatly since the mid-nineteenth century, thanks in large measure to remarkable increases in the speed of com-

207 Jonathan D. Moyer, Collin J. Meisel, Austin S. Matthews, David K. Bohl, and Mathew J. Burrows, *China-US Competition: Measuring Global Influence* (Washington, DC: Atlantic Council, 2021), 1, 9, <https://www.atlanticcouncil.org/wp-content/uploads/2021/06/China-US-Competition-Report-2021.pdf>.

munications (telegraph, radio, radar, internet), and weapons systems (aircraft and missiles in particular), as well as in the range over which these capabilities operate. Both the US and Chinese militaries have, in their own way, adopted the view that a war between them would be, in the broadest sense, a duel between rival RSCs in which having the initiative and speed of action at the tactical and operational levels of war is an important source of advantage. To this end, both the US military and the PLA have invested in capabilities associated with the speed domains.

Of particular note, the PLA enjoys a near monopoly in conventionally armed ballistic missiles.<sup>208</sup> These missiles enable the PLA to strike fixed targets promptly and accurately over extended ranges, conferring an important advantage in a contest between RSCs.

Three decades ago, shortly after the First Gulf War, the PLA's Second Artillery Corps leaders advanced a proposal to the CCP's Central Military Commission to build conventional missiles to target US airfields and surface warships along with other key military infrastructure, such as that associated with US C4ISR capabilities. A little over a decade later, in 2004, the PLA's *Science of Second Artillery Campaigns* described how it would employ antiship ballistic missiles (ASBMs) as an assassin's mace weapon against aircraft carriers as part of the PLA's counter-intervention operations. Senior Second Artillery officers' vision of future maritime warfare finds "the primary form of future sea combat will be the extensive use of precision-guided ballistic missiles in long range precision attacks. . . . We must view . . . long range sea-launched precision-guided ballistic missiles as the priority of our weaponry building."<sup>209</sup> Thus, the Coalition should expect the PLA to employ ASBMs and other missiles (such as those launched by aircraft and submarines) in

saturation attacks against US carriers and other major surface warships and auxiliaries, with the intent of overwhelming their defenses.

For nearly 40 years, the United States was a signatory to the INF Treaty with the Soviet Union (and then Russia). The treaty prohibited the US military from deploying similar classes of missiles to offset the Chinese buildup. In August 2019, Washington withdrew from the treaty, enabling it to field both intermediate-range and medium-range ballistic missiles, or IRBMs and MRBMs respectively.<sup>210</sup> To date, however, the United States appears to have no plans to offset the PLA's dominance in this important area of the military competition.<sup>211</sup>

*Implications for Archipelagic Defense:* As the trends over the past two centuries indicate, military operations feature an increased speed of action. Yet relative to the PLA, to borrow from President Abraham Lincoln, the Coalition suffers from a case of the "slows." History strongly suggests that moving toward a unified command structure would greatly enhance the speed and effectiveness of Coalition forces operating within the Archipelagic Defense operational concept. Yet there are few signs of significant progress along these lines. Moreover, the speed of military systems that compress the engagement cycle needs to complement the speed of action that unity of command would enable. Here the absence of a Coalition conventionally armed ballistic missile force to offset the PLA's monopoly in these systems represents a major unforced error.

Given this study's assumption regarding warning time, the Coalition needs to anticipate that a Pearl Harbor-type surprise attack is more likely than not. This suggests that the Coalition will need to adopt an early warning system linked to various levels of readiness. For example, warning indicators of Chinese preparation for war should find all major warships leaving port and moving to

208 The PLA's inventory includes four types of short-range ballistic missiles (SRBMs), three different intermediate-range ballistic missiles (IRBMs) and two medium-range ballistic missiles (MRBMs). Center for Strategic and International Studies, "Missiles of China," April 12, 2021, <https://missilethreat.csis.org/country/china>.

209 Doshi, *The Long Game*, 90, 92–93, 198.

210 MRBMs have a maximum range of 1,000–3,000 km (620–1,860 miles), while IRBMs have a maximum range of 3,000–5,500 km (1,860–3,410 miles).

211 Center for Strategic and International Studies, "Missiles of the United States," March 3, 2021, <https://missilethreat.csis.org/country/united-states>.

their war stations while combat aircraft disperse to air bases. At some point, Coalition forces beyond the First Island Chain, such as those based in Australia and the United States, would need to deploy forward. At present, such a comprehensive early warning and readiness system is lacking. Perhaps this is understandable given the nascent state of the Coalition. Yet it is not too early to begin planning and holding staff talks on how the relevant countries might establish such a system.

### Manpower

The manpower China can bring to bear in the WPTO far exceeds that of the Coalition, in raw numbers as well as in the CCP's ability to mobilize its people for war. China's current population exceeds 1.4 billion, while the combined populations of the United States, its WPTO allies (Australia, Japan, the Philippines, and South Korea), and Taiwan are less than half that (roughly 670 million). The Chinese Communists' totalitarian state also gives the CCP much greater latitude than that of the Coalition states in assigning its civilian population to work supporting the war effort.

Demographic trends and military considerations, however, paint a more complex picture. China's population is aging. Unlike the world's advanced economic powers, China is growing old before its economy has fully developed.<sup>212</sup> Compounding Beijing's problems, its rapidly growing elderly population and shrinking workforce will increasingly act as a brake on the country's economic growth. China also confronts potentially serious consequences from a male-biased gender ratio imbalance, as there is some evidence that societies with a surplus of young adult males suffer from higher levels of crime and internal disorder.<sup>213</sup>

212 Jane Cai, "China's Shrinking Working-Age Population to Send Ripples through Global Economy," *South China Morning Post*, December 20, 2022, <https://www.scmp.com/news/china/politics/article/3203833/chinas-shrinking-working-age-population-send-ripples-through-global-economy>. See also Nancy E. Riley, "China's Population: New Trends and Challenges," *Population Bulletin* 59, no. 4 (June 2004): 3–36; Nicholas Eberstadt, "Power and Population in Asia," *Policy Review*, no. 123 (February–March 2004): 3–27; and Wenmeng Feng, *The Silver and White Economy: The Chinese Demographic Challenge*, Local Economic and Employment Development (LEED) Working Paper Series, Organization for Economic Cooperation and Development, 2012, <https://www.oecd.org/employment/leed/OECD-China-report-Final.pdf>.

213 "The Worldwide War on Baby Girls," *The Economist*, March 4, 2010, <http://www.economist.com/node/15636231>. See also Valerie M. Hudson and Andrea den Boer, "A Surplus of Men, a Deficit of Peace," *International Security* 26, no. 4 (Spring 2002): 5–38.

The demographic picture from the Coalition's perspective is more nuanced; India and the United States have by far the largest populations of the major powers likely to form a broad coalition to counterbalance China.<sup>214</sup> India will soon be the world's most populous country, if it is not already. Were it to become an active Coalition member, the manpower balance would shift decisively in the democracies' favor. The United States has a population of roughly 338 million. Its demographic profile is strong and will likely improve relative to China over the next several decades.<sup>215</sup> Japan, with a population of around 125 million, is the world's oldest country and continues aging as its birth rate remains well below replacement levels. India, the United States, and Japan currently possess large pools of technically literate manpower, while Australia, South Korea, and Taiwan also boast technically sophisticated populations, albeit on a substantially smaller scale. Thus, the Coalition of democratic states arguably enjoys a qualitative edge over China.

*Implications for Archipelagic Defense:* The sheer size of China's population and its growing technical literacy represent a potentially significant source of advantage. That being said, logistics limitations are likely to substantially constrain the PLA's ability to project and sustain large land forces to territories along the First Island Chain. Simply put, the WPTO's geography and key trends in warfare work to dilute China's manpower advantage. The presence of manpower-rich India along China's southern border may further diminish this advantage. To the extent China views India as a threat, New Delhi's large army serves to draw PLA manpower and other resources away from China's coastal areas. This may significantly ease the Coalition's efforts to maintain a stable military balance in the Western Pacific Theater of Operations. Finally, China's sex-ratio imbalance is producing large numbers of surplus males. This wild card could pose an

214 It is worth noting that the Philippines' population exceeds 111 million, while South Korea's population is roughly 51 million and Taiwan's around 23 million.

215 That being said, as with most aspects of this study, further detailed analysis is warranted. For example, only 17 percent of US military age citizens meet military standards in terms of obesity, addiction, or criminal status. Would these standards change in the event of a war with China? Does China suffer from the same problem? The United States abandoned conscription fifty years ago. Will Americans volunteer in sufficient numbers to enable Archipelagic Defense to be implemented on the scale necessary to prevail?

internal security threat, diverting resources away from the PLA and into the country's internal security forces. Alternatively, it could find the CCP directing the energies of this potentially volatile group toward the regime's external enemies.

The Archipelagic Defense concept mitigates the Coalition's relative manpower disadvantage by seeking to avoid combat on the Asian mainland, the only exception is the Korean Peninsula, whose geography greatly aids the defender. South Korea's flanks are anchored on the seas, and its terrain is mountainous in most areas along the demilitarized zone (DMZ), save for a narrow plain along the west coast. Combat along the Indo-Chinese border is clearly possible, but the mountainous terrain serves as a significant break on the scale of ground forces that can be brought to bear. In any event, it is India that enjoys a manpower advantage over China.

Moreover, Archipelagic Defense accepts that Coalition forces will be on the strategic defensive, seeking to repel China's acts of aggression and eschewing any notions of a war of conquest. Its emphasis on land forces assuming primarily a defensive posture reflects this, with air and maritime forces serving as a maneuver force and operational/strategic reserve. This may, relatively speaking, find Coalition forces less vulnerable to casualties than those of the PLA.

Examining a war that expands to the South Asia Theater of Operations lies beyond the scope of Archipelagic Defense. That being said, the kinds of US forces necessary to execute Archipelagic Defense—with its extended-range maritime and air strike elements; long-range land force missile fires; and space, cyber, and EM capabilities—could provide substantial support to India, all without heavily taxing Coalition manpower.

## Selected Military Asymmetries

### Force Posture

Although it enjoys the advantage of an unsurpassed global basing architecture, the US military maintains only a small fraction

of its overall combat power overseas. Following the Cold War, the United States moved away from a forward-based posture to emphasize expeditionary forces deploying primarily from CONUS to hot spots around the world. Given the exceedingly modest capabilities of hostile powers at that time, such as Iran, Iraq, and North Korea, this shift was arguably justified. Today only a small fraction of the US military's forces are forward deployed in the Western Pacific. Consequently, in the event of Chinese aggression along the First Island Chain, the United States would have to deploy the majority of its military power from CONUS and from bases and garrisons outside the WPTO. Even under optimum circumstances, the bulk of these forces would take months to deploy to the theater.<sup>216</sup> Recall that after entering World War II, the US needed roughly a year to deploy a significant force in the Pacific to contest Japanese forces for control of Guadalcanal. It then needed nearly half a year following Iraq's invasion of Kuwait to deploy forces to execute a counteroffensive.<sup>217</sup> Facing China's increasingly sophisticated A2/AD complex, deploying major US reinforcements to the Western Pacific would almost certainly take considerably longer and incur far greater costs.

These challenges to deployment—in terms of both the great distances involved and the likelihood of significant attrition—risk creating a window of opportunity for the PLA to wage a short, successful war to achieve a fait accompli against countries along the First Island Chain as well as against South Korea and Vietnam. Furthermore, US efforts to reinforce its forward-deployed forces in a crisis could undermine deterrence, inducing the Chinese to attack before the military balance begins shifting in the Coalition's favor.

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<sup>216</sup> The most direct route from the US Navy's major West Coast base in San Diego to the First Island Chain is roughly 5,700 nautical miles. Assuming a US Navy task force departed immediately and steamed at full speed along the shortest possible route, it would take 12 days at a minimum for it to reach the vicinity of Okinawa. Ground forces typically require significantly longer time to deploy. For example, according to the US Army, a brigade combat team's anticipated transit time from CONUS to points along the First Island Chain would take roughly 37 days via sealift and 29 days via airlift. (Power-Point Presentation at the US Army Senior Leader Seminar, November 20, 2013, slide 15).

<sup>217</sup> A force of roughly 16,000 US marines deployed to Guadalcanal in August 1942, almost nine months to the day after the attack on Pearl Harbor. By October, allied strength on the island was roughly 23,000. Brigadier General Vincent J. Esposito, ed., *The West Point Atlas of American Wars*, Vol. II (New York: Praeger Publishers, 1959), map plate 136.

*Implications for Archipelagic Defense:* Arresting the erosion in the balance will require, among other things, the United States to shift from an expeditionary force posture to a primarily forward-deployed (and, perhaps over time, a forward-based) posture.

### Vulnerable Bases

At present, the Coalition would generate the majority of its naval and air combat power from only a few bases in the region. This is particularly true with respect to the United States. With China's growing power-projection capabilities, a substantial portion of US combat forces positioned along the First and Second Island Chains are likely to find themselves increasingly at a relatively high risk of suffering "Pearl Harbors," especially given this study's assumptions regarding attack warning.

Of course, this situation is not unique to the American military. Countries located along China's maritime periphery—including Japan, the Philippines, South Korea, Taiwan, and Vietnam—confront similar risks. The same would be true, albeit to a significantly lesser degree, for India in a Sino-Indian war.

To be sure, the danger runs both ways. China's naval bases are well within the range of significant Coalition forces. The same is true for many PLAAF bases. But they are far more numerous than similar Coalition bases along the First Island Chain. Moreover, assuming that the Chinese will enjoy the first move in any war, the PLA can do much at the war's onset to attack Coalition bases, thereby mitigating the effects of any Coalition broken back strikes against the PLA.

*Implications for Archipelagic Defense:* Unlike the United States, countries along the First Island Chain do not have a choice with respect to establishing bases distant from China. Moreover, the United States lacks the means to fight a war primarily at a greatly extended range, and the cost of creating such a capability would be prohibitively expensive. Further, a US move to over-the-horizon (OTH) bases would, from its Coalition partners' point of view, suggest a US intent to abandon a for-

ward-defense posture in favor of retaining a more aloof—and less reassuring—expeditionary posture. Geography dictates the Americans have to position their forces forward. But how best to do so?

Attempting to defend its highly concentrated forward-deployed Coalition forces against PLA air and missile attack will find the Americans at the wrong end of the cost equation. This is a losing proposition against an economic power like China. As I will elaborate upon presently, Archipelagic Defense addresses this issue, including offsetting the PLA's major advantage in prompt, long-range conventional precision-strike forces.

### Vulnerable Surface Combatants

The vast majority of the Coalition's maritime striking power in the WPTO is concentrated in the American and (to a much lesser extent) Japanese fleets' surface ships, especially the US carriers. Just as the Americans have relatively few forward air bases in the region, the same is true with respect to their carriers. Only a few are in the theater of operations at any given time. The decades-long decline in the US fleet's size finds the US Navy challenged to disperse its maritime combat power to reduce its vulnerability. The PLA's relative gains in scouting and strike forces further exacerbate this Coalition weakness. Complicating matters further, Coalition navies, especially the American and Japanese fleets, find themselves driven to devote an ever-greater share of their magazines to defensive weapons to defend against the PLA's growing arsenal of antiship weaponry, leaving less magazine room available for offensive munitions.<sup>218</sup> In light of these trends, and absent any offsetting measures, it seems almost certain that the Coalition's major surface combatants will find operating inside the Second Island Chain increasingly, and perhaps prohibitively, costly.

<sup>218</sup> The US Navy typically dedicates roughly two-thirds of its cruisers' and destroyers' vertically launched weapons capacity to defensive weapons. Bryan Clark, *Commanding the Seas: A Plan to Reinvigorate US Navy Surface Warfare* (Washington DC: CSBA, 2014), 17; and Bryan Clark, *Commanding the Seas: The US Navy and the Future of Surface Warfare* (Washington, DC: CSBA, 2017), 16. See also Gerald G. Brown and Jeffrey E. Kline, "Optimizing Missile Loads for U.S. Navy Combatants," *Naval Postgraduate School Military Operations Research* 26, no. 2 (2021): 25–38, <https://faculty.nps.edu/jekline/docs/Optimizing%20Missile%20Loads%20For%20U.S.%20Navy%20Combatants.pdf>.

*Implications for Archipelagic Defense:* As will be elaborated on presently, Archipelagic Defense mitigates this unfavorable asymmetry in several ways. One centers on expanding the problem of how best to defend large, fixed bases and relatively slow-moving surface warships. A second action accords greater emphasis to increasing the range of US recce-strike elements—especially aircraft and missiles, thereby enabling large surface combatants to operate at an acceptable risk beyond the range of most PLA strike forces. Third, in the case of maritime forces, the Coalition needs to give more emphasis to operating in the relatively safer undersea domain, where the US Navy in particular has long enjoyed a competitive advantage. In addition to investing greater resources in nuclear attack submarines (SSNs), such as in the recent AUKUS agreement, the Coalition should aggressively pursue the potential of UUVs. Notwithstanding the current emphasis on SSNs, the US submarine industrial base, like most of its defense industrial base, is faltering. The time to build an SSN has increased by nearly two years in recent times. This represents a major barrier to AUKUS’s successful execution. Given present trends, it appears the “Arsenal of Democracy” that sustained the United States and its allies in World War II will be displaced by a Chinese “Arsenal of Authoritarianism.”

Lastly, the Coalition navies should invest heavily in antiship mines. Minefields positioned at chokepoints along the First Island Chain could impose heavy costs on PLAN forces attempting to transit to the open seas while also making it difficult for those that succeed to return safely to their home port.

### Vulnerable Satellite Communications

The US military has become highly reliant on space-based systems for a wide range of C4ISR-related activities—especially for conducting power-projection operations. We can say the same regarding the PLA. As the expanding range and sophistication of its anti-satellite, cyber, and electronic warfare capabilities show, the Chinese military recognizes the importance of space in the military competition and is moving to exploit it.

*Implications for Archipelagic Defense:* All other factors being equal, Coalition forces, standing on the strategic defensive, may be less impaired by the loss of access to space-based systems than the PLA, especially if they adopt the offsetting measures called for in Archipelagic Defense. If this proves to be the case, it would likely be to the Coalition’s advantage to place less emphasis on capabilities for assuring access to space, and more on space-denial capabilities.<sup>219</sup>

That being said, the competition in space appears to be in a dynamic phase. Thanks to the private sector, the cost to launch has declined fantastically in recent decades, incentivizing more states and commercial firms to become “spacefaring.” Perhaps even more important, new kinds of space systems, including very small satellites and space planes, like the US X-37B and what appears to be a Chinese counterpart, could make space-based architectures more resilient—or vulnerable.<sup>220</sup> All this suggests that while the competition in space may favor the side seeking to deny its rival access over the belligerent attempting to ensure its own access, it would be wise not to abandon capabilities designed to operate in space. Finally, as will be described later in this study, the Coalition should make greater efforts to expand terrestrial systems that can serve as substitutes for capabilities provided by space-based systems.

### Shallow Magazines

Allied air and maritime forces, as compared to ground forces, are relatively limited in the payloads they can carry. They also often have to travel great distances to reload. Aircraft return to land or sea bases, while warships must often return to major naval bases. These bases are becoming increasingly vulnerable to PLA attack. Moreover, as the Russo-Ukrainian War shows, Coalition

219 The ultimate method of space denial may be through the Kessler effect (or syndrome). NASA space debris expert Don Kessler observed that, once past a certain critical mass, the total amount of space debris will keep on increasing due to collisions of existing debris, giving rise to more debris and lead to still more collisions in a chain reaction that will eventually make orbits uninhabitable. The problem is particularly acute in low Earth orbit (LEO), where debris levels have increased 50 percent in the last five years. It is not clear, however, how quickly a belligerent could make a given orbit uninhabitable. Mike Wall, “Kessler Syndrome and the Space Debris Problem,” Space.com, July 14, 2022, <https://www.space.com/kessler-syndrome-space-debris>.

220 See, for example, Krepinevich, *Origins of Victory*, 75–81.

munitions stocks themselves may be wholly inadequate to sustain operations in a war with China extending beyond a month or two.<sup>221</sup> To date, the United States has transferred vast amounts of munitions to Ukraine, while China has “kept its powder dry,” providing Russia with few if any munitions. Thus, the munitions balance appears to be shifting significantly in China’s favor.

*Implications for Archipelagic Defense:* Given the state of the Coalition members’ munitions production capabilities, expanding munitions stocks is likely to prove both expensive and time-consuming. Should China conclude the Coalition lacks the munitions necessary to prevail in an extended conflict, it may undermine Archipelagic Defense’s objective of deterring aggression in the first instance.

## Summary

As I noted in the introduction to this chapter, those responsible for developing military strategy and the operational concepts to support it would do well to listen to the advice of Albert Einstein and Andrew Marshall. That is to say, they should devote time and persistent intellectual effort to thinking about the character of the problem at hand and the factors that will matter most in addressing it successfully.

The effort might begin by asking such questions as the following: What are we trying to do? What is the operational challenge toward which we are directing our planning? This should be in-

formed by the strategy the operational concept is supporting. In the absence of a well-defined military strategy, this study makes a key assumption regarding the Coalition’s strategic objectives and assumes it will pursue a strategy emphasizing deterrence through denial within the context of a strategy of exhaustion, supported, where possible, by one of attrition.

We next examined the question, What key factors are likely to exert the most influence on the military competition? Then, having identified these factors, we asked, What assumptions are we making regarding how they will play out? Note that the effort here was not to eliminate uncertainties but to state assumptions as to how they will be resolved. The Coalition needs to address these uncertainties, not ignore them, and identify a Plan B course of action in the event a given assumption fails to prove out.

As with strategy, developing a good operational concept requires identifying key sources of advantage that can be exploited to maximize the chances of success, as well as those weaknesses that risk undermining its success and how they might be mitigated. Thus, the discussion addressed key asymmetries between China and the Coalition that exert a significant bearing on the military competition and how they affect Archipelagic Defense.

Having taken the time and made the effort to think about the problem, we now apply the resulting insights to the Archipelagic Defense operational concept.

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<sup>221</sup> Echevarria, “Time to Recognize Sustainment.”



## 6. ARCHIPELAGIC DEFENSE 2.0: PART I

This chapter is the first of two describing Archipelagic Defense. It begins with a summary of the concept—the bottom line up front. The remainder of the chapter addresses the competition between China and the Coalition for positional advantage, including the Coalition’s defense posture and issues relating to mobilization, such as early warning and attack warning. This is followed by a discussion of the concentration/counter-concentration competition. It addresses China’s current advantage and how Archipelagic Defense seeks to offset it. To the extent possible, I present the information in this and the following chapter in a linear fashion.

### The Bottom Line Up Front

The Coalition’s military objective is to deter China from acts of aggression or coercion, principally by establishing a favorable military balance that enables a successful defense of coun-

tries comprising the First Island Chain and, by extension, other Coalition members in the WPTO and South Asian Theater of Operations (SATO).<sup>222</sup> Should deterrence fail, the objective is to defeat Chinese aggression and terminate the war as quickly as possible on terms favorable to the Coalition (for an overview of the concept, see map 11). Toward this end, adopting a strategy of exhaustion supplemented by attrition will serve the Coalition well, as will an operational concept that prioritizes the following measures:

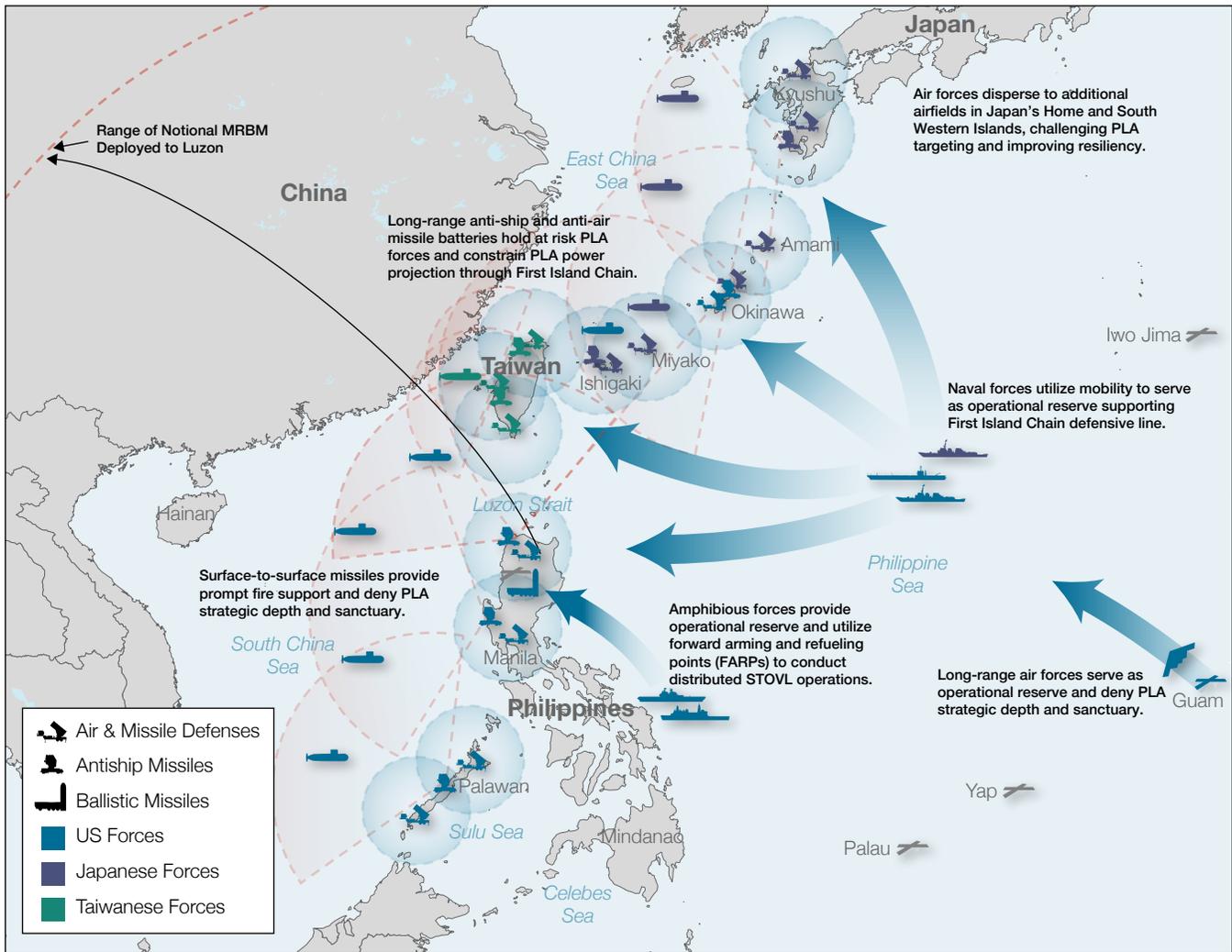
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<sup>222</sup> The SATO, in this study, comprises the US Indo-Pacific Command’s area of responsibility to the west of Indonesia, including Bangladesh, Burma, Bhutan, India, Laos, Nepal, Pakistan, Thailand, and the Indian Ocean. In brief, the SATO and WPTO together roughly approximate the US Indo-Pacific theater command area of responsibility.

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Photo: Two US Air Force B-1B Lancers prepare to park at Andersen Air Force Base, Guam, on November 17, 2022. (US Air Force photo by Senior Airman Yosselin Campos)

Map 11. Archipelagic Defense Overview



Source: Krepinevich, *Archipelagic Defense*, 70.

- Shift the US defense posture<sup>223</sup> from an expeditionary to a forward-deployed posture, and a forward-based posture over time, including diversifying its basing footprint and establishing robust Coalition logistics stocks in the WPTO, with an emphasis on the First Island Chain.

<sup>223</sup> This shift in posture would also apply to Coalition members that are relatively remote from the First Island Chain and capable of projecting significant military power. Australia immediately comes to mind. Over time, India, should it join the Coalition, could contribute substantial forces toward establishing a favorable military balance along the chain.

- Enhance the Coalition's ability to mobilize combat power positioned beyond the WPTO and SATO by prioritizing those capabilities whose effects it can employ promptly, such as those operating in the air, cyber, space, and electromagnetic domains.
- Preserve access to the sea lines of communication (SLOCs) beyond the First Island Chain to support reinforcement and

sustainment of forward-deployed forces, and to enable effective blockade and counterblockade operations.

- Reduce reliance on vulnerable large land and sea bases, especially those along the First Island Chain, while augmenting those capabilities and systems capable of conducting long-range scouting and strike operations in contested environments, along with active and passive defenses to degrade the PLA's ability to scout and strike effectively at extended ranges.
- Form a mobile operational reserve of forces operating primarily (but not exclusively) in the air, cyber, and electromagnetic domains capable of deploying rapidly to threatened sectors along the First and Second Island Chains.
- Deny China its ability to exploit its strategic depth by holding key strategic military and economic assets at risk.
- Extend the amount of time China requires to achieve its wartime operational and strategic objectives, thereby enabling the Coalition to mobilize to win a protracted war, if necessary.

## Some Thoughts on Domains

Given the operational challenge it is designed to address, the trend toward cross-domain operations, and the PLA's thinking regarding the character of warfare, Archipelagic Defense emphasizes Coalition forces that can compete effectively in the following domains:

- Those that the PLA believes it must control to wage an offensive campaign in the WPTO, with emphasis on the First Island Chain. These are the space, cyber, electromagnetic, and air domains.
- Those in which the Coalition can accomplish its objectives at a relatively low cost. These are domains in which, all other factors being equal, it is easier to deny control than to establish it.

Generally speaking, the Coalition should emphasize denial operations in those domains that the PLA believes it must dominate *and* that favor operations designed to deny it this control.

These appear to be the sea surface, space, and cyber domains. Of these domains, the sea surface is the one for which we have significant data going back to World War II, and that, all other factors being equal, from a cost perspective favors the side seeking sea denial, rather than control. Consequently, Archipelagic Defense calls for exploiting this advantage. Things are rather dicey with respect to the space and cyber domains. There is little data showing how successful efforts to deny the PLA control of these domains would play out, or the possible second-order effects of such operations.

The Coalition would also likely benefit from operating in domains in which PLA efforts to control them would likely prove difficult, such as the air, cyber, and undersea domains. Finally, taking the Armageddon Factor into consideration, domains that the belligerents consider part of the global commons—such as space, cyber, and maritime domains (the sea surface, undersea, and seabed)—are more likely to be fair game. Thus, constraints on military operations in these domains would likely be far less than on operations against targets in China or in Chinese airspace. Finally, it bears repeating that the Chinese and the Coalition can—and almost certainly will—conduct operations in a particular domain that employ forces resident in other domains—cross-domain operations—as well as the one being contested.

## The Competition for Positional Advantage

A military that enjoys a positional advantage over its rival can realize a significant favorable shift in the military balance. A classic example appears in the boast of Royal Navy Admiral Jackie Fisher that Great Britain controlled all the “keys”—Gibraltar, the Suez Canal, the English Channel, and the North Sea—that enabled its European rival fleets to access the world's major sea-lanes. Similarly, were the Coalition to include as members the Philippines and perhaps Indonesia, as well as Japan, it would control the keys enabling the PLAN to access the open seas beyond the First Island Chain. Were the Coalition to enjoy and exploit this source of positional advantage

as Archipelagic Defense calls for, it would greatly enhance the concept's effectiveness.

### China Looks to “Jump the Chain”

The CCP is persistently seeking to enhance its positional advantage in the Indo-Pacific relative to the Coalition. This is reflected in Chinese actions, particularly in the South China Sea but also in the South Pacific and SATO. Through a combination of military force, positional advantage, and economic coercion, China seeks to Finlandize the Western Pacific extending out to the Second Island Chain.

Toward this end, Beijing is looking to “jump” the First Island Chain as part of its effort to gain a positional advantage over the Coalition in particular and the Quad in general. The Chinese Communists are likely considering Indonesia, Myanmar, Pakistan, Thailand, Singapore, Sri Lanka, and the United Arab Emirates as locations for establishing base access.<sup>224</sup> At present, China has a naval facility in the East African country of Djibouti. There are concerns that it may also be looking to acquire base access at Gwadar in Pakistan, among other locations.

### Southeast Asia

Closer to the WPTO, the Chinese appear to be making significant progress in their efforts to expand their presence in Southeast Asia, with a particular emphasis on Cambodia, where they have funded the expansion of the Ream Naval Base in Sihanoukville on the Gulf of Thailand. Northwest of the base is Dara Sakor International Airport, developed by a Chinese company. The airport boasts Cambodia's longest runway, at 3,200 meters (roughly 10,000 feet), making it suitable for military traffic.<sup>225</sup>

China is also courting a long-standing American ally, Thailand, and its efforts appear to be bearing fruit. Beijing supplies arms to the Thai military. In August 2022, the PLAAF and its Thai

counterpart conducted an 11-day exercise, Falcon Strike 2022. It was the fifth iteration of the exercise, which began in the wake of Thailand's 2014 military coup.<sup>226</sup>

### South China Sea

China has placed some of its best *Wei Ch'i* stones in the South China Sea. In 2012, Beijing provoked a standoff that left it in control of an uninhabited atoll, Scarborough Shoal, which under United Nations maritime law belongs to the Philippines. Then, despite President Xi's assurances to President Barack Obama three years later that China would not militarize South China Sea Islands, it did exactly that, undertaking a massive terraforming exercise that transformed reefs and rocks into artificial islands with runways for long-range bombers, along with reinforced bunkers, missile batteries, and radars.<sup>227</sup> Not only have these actions robbed the Coalition of much of the strategic depth it might enjoy in the Philippines, but they have also significantly extended the reach of PLA scouting and strike systems.

### South Pacific

In 2022 China signed a security agreement with the Solomon Islands as part of a larger effort to convince Pacific countries like Fiji, Kiribati, Samoa, Tonga, Vanuatu, Papua New Guinea, and Timor-Leste to join China's “global security initiative,” which would find Chinese police and other security forces deploying to participating nations while establishing Confucius Institutes that would embed Chinese-language consultants, teachers, and “volunteers” throughout the islands.<sup>228</sup> Of note, after China

224 *China Military Developments*, 2022, 143–44.

225 Ellen Nakashima, “China Secretly Building PLA Naval Facility in Cambodia, Western Officials Say,” *Washington Post*, June 6, 2022, <https://www.washingtonpost.com/national-security/2022/06/06/cambodia-china-navy-base-ream/>.

226 Sakshi Tiwari, “China Is Now Courting Thailand, a Key US Ally, with Joint Military Drills and Massive Arms Sales,” *Eurasian Times*, August 22, 2022, <https://eurasiatimes.com/china-is-now-courting-thailand-a-key-us-ally/>; and Panarat Thepgumpanat and Panu Wongcha-um, “Thailand, China to Resume Air Force Exercises after Pandemic Pause,” Reuters, August 8, 2022, <https://www.reuters.com/world/asia-pacific/thailand-china-resume-air-force-exercises-after-pandemic-pause-2022-08-08/>.

227 “China Does Not Have It All Its Way in the South China Sea,” *The Economist*, January 15, 2022, <https://www.economist.com/asia/2022/01/15/china-does-not-have-it-all-its-way-in-the-south-china-sea>; and “New Photos Show China's Artificial Islands Are Highly Developed Military Bases,” Radio Free Asia, November 2, 2022, <https://americanmilitarynews.com/2022/11/new-photos-show-chinas-artificial-islands-are-highly-developed-military-bases>.

228 Damien Cave, “Why China Is Miles ahead in a Pacific Race for Influence,” *New York Times*, May 31, 2022, <https://www.nytimes.com/2022/05/31/world/australia/china-united-states-pacific.html>; John Garrick and Yan C. Bennett, “China's Real Ambitions in the South Pacific,” *Maritime Executive*, June 17, 2022, <https://www.maritime-executive.com/editorials/china-s-real-ambitions-for-the-south-pacific>.

signed the agreement with the Solomon Islands, the latter refused a US Coast Guard vessel permission to make a port call at Guadalcanal.<sup>229</sup>

### The Coalition: Strengthening the Chain

The United States announced its pivot to the Indo-Pacific over a decade ago. Yet until recently Washington failed to match its words with actions. Indeed, a 2021 US review of its global military posture yielded little in the way of significant change, once again disappointing existing and prospective Coalition partners who hoped their putative leader would finally back its words with actions.<sup>230</sup> Recent events, however, paint a brighter picture for the Coalition and for the prospects of Archipelagic Defense.

### The First Island Chain

*Japan.* Since 2016, Japan has been moving to improve the defenses along what it calls the Southwest Wall, the islands comprising the Ryukyu chain stretching parallel to China's coast, from Kyushu to less than 100 miles from Taiwan (see maps 12 and 13). The effort is concentrated on four islands. The first base, or "camp," was established on Yonaguni, the island closest to Taiwan. The completion of two additional facilities, on Amami-Ōshima and Miyako, followed in 2019. It has scheduled the fourth base, on Ishigaki, for completion in the near future. As called for in Archipelagic Defense, these bases will host surface-to-air missile (SAM) and antiship cruise missile (ASCM) units, save perhaps for Yonaguni.<sup>231</sup>

Importantly, the Japanese are extending these systems' range. They are upgrading Type-03 SAMs, doubling their range from 50 to 100 kilometers. In 2019, the Ground Self-Defense Force began deploying advanced Type-12 ASCM batteries with a

maximum range of 200 kilometers (roughly 125 miles) on Amami-Ōshima, and then on Miyako. Deployments on Ishigaki are scheduled to be completed by 2023.<sup>232</sup>

*Taiwan.* Taiwan is the linchpin in the Coalition's First Island Chain line of defense. Senior Japanese officials see it as anchoring the Southwest Wall, linking the chain's northern sector with the Philippines to the south.

The United States and its allies increasingly, and rightly, see the defense of Taiwan as critical to the defense of the independent states comprising the First Island Chain, as well as South Korea and Vietnam on its flanks. Were the CCP to seize Taiwan, it would breach the First Island Chain, profoundly shifting the military balance of power in Asia in China's favor. The PLAN's submarines and surface fleet could move directly into the Philippine Sea, blowing a hole in Archipelagic Defense's island chokepoints. A PLA buildup on Taiwan would threaten Japan's southern flank, greatly complicating its ability to coordinate with the Coalition's southern sector defenses.<sup>233</sup>

The Coalition would suffer yet another great loss if Taiwan's semiconductor industry were to fall into the CCP's hands. The Taiwan Semiconductor Manufacturing Company (TSMC) is the central node in the semiconductor industry as it possesses the majority of the world's leading-edge manufacturing capacity. Advanced chips are essential for making breakthroughs in a range of critical technology areas, from AI to synthetic biology to quantum computing. Put simply, for Coalition members, access to Taiwan's semiconductor industry is a strategic necessity.<sup>234</sup>

Taiwan's defense posture is currently in flux. Some recent initiatives are at odds with the Archipelagic Defense concept,

229 David Rising, "Report: US Coast Guard Ship Denied Port Call in Solomons," *Military Times*, August 26, 2022, <https://www.militarytimes.com/news/2022/08/26/report-us-coast-guard-ship-denied-port-call-in-solomons>.

230 Becca Wasser, "The Unmet Promise of the Global Posture Review," *War on the Rocks*, December 30, 2021, <https://warontherocks.com/2021/12/the-unmet-promise-of-the-global-posture-review/>; and Jack Detsch, "'No Decisions: No Changes': Pentagon Fails to Stick Asia Pivot," *Foreign Policy*, November 29, 2021, <https://foreignpolicy.com/2021/11/29/pentagon-china-biden-asia-pivot>.

231 "Japan Expanding GSDF's Presence on Southwestern Islands with New Bases and Missile Batteries," *Japan Times*, March 16, 2019; and Masaya Kato, "Japan Plugs Defense Gap in Southwest Islands with New Outposts," *Nikkei Asia*, March 26, 2019, <https://asia.nikkei.com/Politics/Japan-plugs-defense-gap-in-southwest-islands-with-new-outposts>.

232 Jeffrey W. Hornung, *Ground-Based Intermediate-Range Missiles in the Indo-Pacific* (Santa Monica, CA: RAND, 2022), 35–37.

233 Brendan Rittenhouse Green and Caitlin Talmadge, "The Consequences of Conquest: Why Indo-Pacific Power Hinges on Taiwan," *Foreign Affairs*, June 16, 2022, <https://www.foreignaffairs.com/articles/china/2022-06-16/consequences-conquest-taiwan-indo-pacific>.

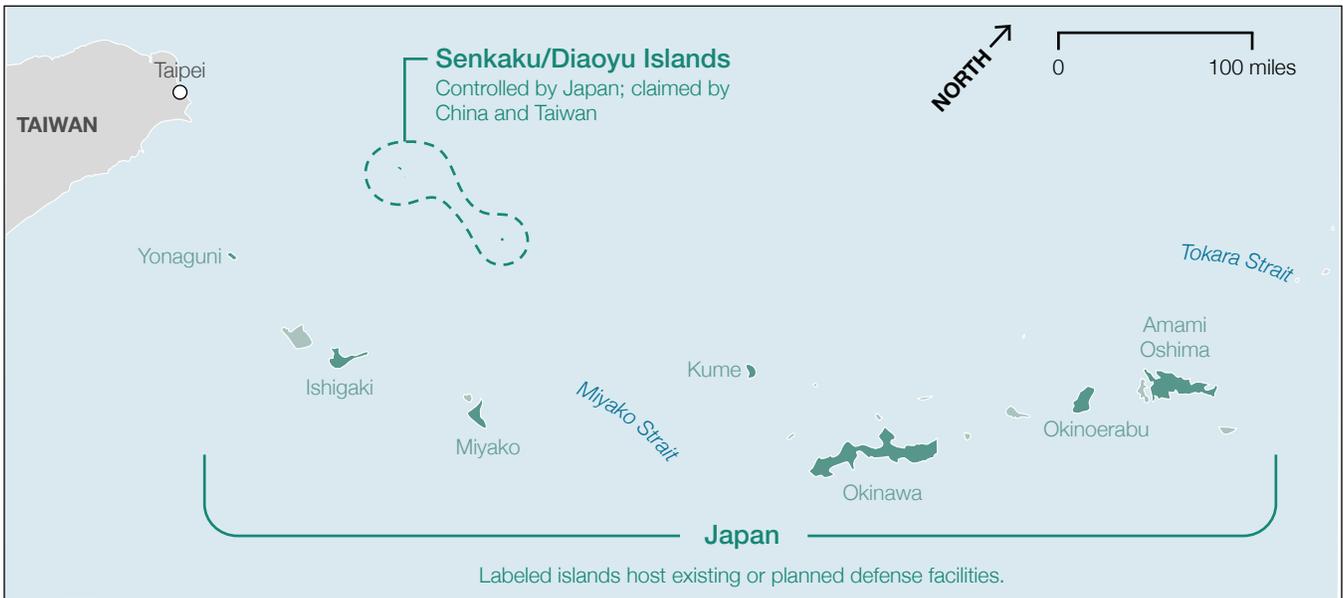
234 Becca Wasser, Martijn Rasser, and Hannah Kelley, *When the Chips Are Down* (Washington, DC: Center for a New American Security, 2022), 1.

Map 12. The Southwest Wall



Source: Simon Denyer, "Japan Builds an Island 'Wall' to Counter China's Intensifying Military, Territorial Incursions," *Washington Post*, August 21, 2019, [https://www.washingtonpost.com/world/asia\\_pacific/japan-builds-an-island-wall-to-counter-chinas-intensifying-military-territorial-incursions/2019/08/20/802bc282-ae11-11e9-9411-a608f9d0c2d3\\_story.html](https://www.washingtonpost.com/world/asia_pacific/japan-builds-an-island-wall-to-counter-chinas-intensifying-military-territorial-incursions/2019/08/20/802bc282-ae11-11e9-9411-a608f9d0c2d3_story.html).

Map 13. Japan Self-Defense Forces' Camps on the Southwest Wall



Source: Simon Denyer, "Japan Builds an Island 'Wall.'"

which takes an asymmetric approach to addressing the Chinese threat. In brief, rather than seeking to deny the PLA the sea control and air superiority it believes it must achieve to mount a successful invasion, the Taiwanese military appears to be advocating establishing its own control over these domains, objectives that are both unnecessary and likely beyond Taiwan's means to achieve. For example, rather than emphasize employing ground forces for coastal defense along the lines being pursued by Japan's Ground Self Defense Force with its ASCMs, in 2021 Taiwan committed to purchasing 108 American M1A2 Abrams main battle tanks. This suggests that, rather than keeping PLA forces from landing on Taiwan's shores in the first place, the Republic of China's (ROC's) military believes it stands a better chance of defeating the PLA by engaging in armored warfare once its forces are ashore. Similarly, although it lacks experience in their design and construction, the ROC military is building eight submarines. Their cost will consume roughly two years of Taiwan's defense budget. Given typical rotation rates, only two or three would be at sea at any given time. It might be better to spend the funds on establishing swarms of undersea smart mines and armed "suicide" UUVs, supported by a seabed acoustic detection system to aid in identifying PLAN submarines and surface ships.<sup>235</sup>

Following the large-scale PLA exercises surrounding Taiwan in the summer of 2022, Taipei proposed boosting its defense budget by roughly 15 percent, to \$17.3 billion. The budget gives substantial priority to procuring advanced fighters, even though it has no prospect of matching China's air forces quantitatively, and perhaps qualitatively as well. On a more encouraging note, however, Taiwan is also boosting funding for ASCMs and ground-based air defense missiles.<sup>236</sup>

235 Denny Roy, "Taiwan Needs a Defence Strategy Overhaul," *Straits Times*, August 20, 2022, <https://www.straitstimes.com/opinion/byinvitationtaiwan-needs-a-defence-strategy-overhaul>.

236 Thompson Chau, "Taiwan Raises Defense Budget by 14.9% amid Military Reform Debate," *Nikkei Asia*, August 25, 2022, [https://asia.nikkei.com/Politics/International-relations/Taiwan-tensions/Taiwan-raises-defense-budget-14.9-amid-military-reform-debate?utm\\_source=pocket\\_mylist](https://asia.nikkei.com/Politics/International-relations/Taiwan-tensions/Taiwan-raises-defense-budget-14.9-amid-military-reform-debate?utm_source=pocket_mylist). The increased budget calls for expanding annual missile production capacity by 150 percent and planning to manufacture "attack drones" with an annual production target of 48 aircraft. Yimou Lee, "Taiwan to more than double annual missile production capacity amid China tension," Reuters, March 3, 2022, <https://>

There are growing arguments that if Taiwan is to adopt a defense more in line with trends in the US and Japanese militaries, Taipei must have greater confidence that both countries—but especially the United States—will come to its aid if China attacks. In brief, the call is for an end to the US policy of "strategic ambiguity" when it comes to the defense of Taiwan. Japan's late Prime Minister Shinzo Abe expressed the issue well when he noted:

The policy of ambiguity worked extremely well as long as the U.S. was strong enough to maintain it and as long as China was far inferior to the U.S. in military power. But those days are over. The U.S. policy of ambiguity toward Taiwan is now fostering instability in the Indo-Pacific region, by encouraging China to underestimate U.S. resolve, while making the government in Taipei unnecessarily anxious. Given the change in circumstances since the policy of strategic ambiguity was adopted, the U.S. should issue a statement that is not open to misinterpretation or multiple interpretations. The time has come for the U.S. to make clear that it will defend Taiwan against any attempted Chinese invasion.<sup>237</sup>

Admiral (Retired) Harry B. Harris Jr., former head of the US Pacific Command, seconded Abe's views and declared the United States should adopt a position of "strategic clarity." Harris noted that China "isn't holding back its preparations for whatever it decides it wants to do simply because we're ambiguous about our position."<sup>238</sup>

The United States appears to be following the admiral's call for strategic clarity, in words and actions. In October 2021, only

[www.reuters.com/world/asia-pacific/taiwan-more-than-double-annual-missile-production-capacity-amid-china-tension-2022-03-03/](http://www.reuters.com/world/asia-pacific/taiwan-more-than-double-annual-missile-production-capacity-amid-china-tension-2022-03-03/).

237 Shinzo Abe, "US 'Strategic Ambiguity' over Taiwan Must End," *Japan Times*, April 19, 2022, <https://www.japantimes.co.jp/opinion/2022/04/19/commentary/world-commentary/u-s-taiwan-strategic-ambiguity>.

238 Edward Wong and Eric Schmitt, "US Speeds Up Reshaping of Taiwan's Defenses to Deter China," *New York Times*, May 24, 2022, <https://www.nytimes.com/2022/05/24/us/politics/china-taiwan-military.html>.

months after taking office, when asked if the United States would come to the defense of Taiwan, President Joe Biden declared, “Yes, we have a commitment to do that.” Despite repeated denials from his administration spokespersons that the US policy of strategic ambiguity has not changed, the president has reaffirmed his position on several occasions, in May and September 2022.<sup>239</sup> Moving beyond words to actions, in early 2023 the United States decided to increase substantially the number of trainers it has deployed to Taiwan, from roughly 30 a year ago to between 100 and 200—the largest deployment in decades. Taiwanese troops are also undergoing training in the United States.<sup>240</sup>

*The Philippines.* The United States and the Philippines are taking major steps to establish the forward-deployed Coalition posture that is key to defending the First Island Chain. At the same time, they are offsetting China’s moves to gain positional advantage through its militarization of the South China Sea Islands.

The Mutual Defense Treaty (MDT) of August 1951 between Washington and Manila calls for each to come to the aid of the other in the event of a third-party attack on either country or its ships, aircraft, or other assets in the Pacific region. Of note, however, if Beijing attempted to take over Taiwan forcefully and the United States moved to Taiwan’s defense, the Philippines would not be obligated to either come to Taiwan’s defense or support US forces attempting to do so.

There is also the Enhanced Defense Cooperation Agreement (EDCA), which the US and the Philippines signed in April 2014 amid growing mutual concerns about China’s assertive actions

in the South China Sea. The agreement addresses a provision in the Philippines’ 1987 constitution banning permanent foreign military bases by providing for rotating US military personnel and equipment onto Philippine military facilities, thereby enabling the United States to deploy conventional forces in the Philippines for the first time in decades. After signing the agreement, the

Map 14. Philippines Base Access



Source: “The Philippines’ Proximity to Taiwan Makes It Central to Western Strategy,” *The Economist*, February 21, 2023, <https://www.economist.com/asia/2023/02/21/the-philippines-proximity-to-taiwan-makes-it-central-to-western-strategy>.

239 Trevor Hunnicutt, “Biden Says United States Would Come to Taiwan’s Defense,” Reuters, <https://www.reuters.com/world/asia-pacific/biden-says-united-states-would-come-taiwans-defense-2021-10-22>; Tessa Wong, “Biden Vows to Defend Taiwan in Apparent US Policy Shift,” BBC News, May 23, 2022, <https://www.bbc.com/news/world-asia-china-61548531>; and Allie Griffin, “Biden Says US Troops Would Defend Taiwan; White House Backtracks Remarks,” *New York Post*, September 19, 2022, <https://nypost.com/2022/09/19/biden-says-us-troops-would-defend-taiwan-white-house-backtracks-remarks>.

240 Nancy A. Youssef and Gordon Lubold, “US to Expand Troop Presence in Taiwan for Training against China Threat,” *Wall Street Journal*, February 23, 2023, <https://www.wsj.com/articles/u-s-to-expand-troop-presence-in-taiwan-for-training-against-china-threat-62198a83>.

Americans launched construction projects in five Philippine camps and areas, although legal issues and other problems have slowed their completion.<sup>241</sup>

Things began to pick up following the election of Bongbong Marcos in May 2022. In November, the Philippine military chief of staff, Lt. Gen. Bartolome Bacarro, revealed that the United States wants to construct military facilities in five more areas in the northern Philippines, two of which are in the northern Cagayan province, which lies across a strait from Taiwan (see map 14). Other proposed sites are in the province of Palawan, located in the Philippines' southwest along the South China Sea. Perhaps most striking is the prospective return of US forces to Subic Bay, once America's largest military base in Asia. The base is oriented toward the South China Sea and is today a busy commercial port under the administration of the Subic Bay Metropolitan Authority (SBMA). The SBMA's chairman recently stated that he would be "very surprised" if Subic Bay does not become an EDCA site, as "during war, time is of the essence."<sup>242</sup>

Recently, Japan and the Philippines signed an agreement making it easier for Japanese forces to deploy to the Philippines on humanitarian missions. President Marcos announced that the two countries were negotiating a trilateral security pact that includes the United States. Australia, the other core Coalition member, is also the only country to have a visiting forces agreement with the Philippines aside from America.<sup>243</sup>

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241 The only facility completed to date is a warehouse at Cesar Basa Air Base on Luzon. The agreement also covers Antonio Bautista Air Base, Palawan; Benito Ebuena Air Base, Macatan; Fort Magsaysay, Nueva Ecija; and Lumbia Airfield, Cagayan de Oro. Viswa Nathan, "Manila's Tricky US-China Balancing Act"; Sebastian Strangio, "US to Spend \$66 Million to Upgrade Philippine Security Facilities," *The Diplomat*, November 16, 2022, <https://thediplomat.com/2022/11/us-to-spend-66-million-to-upgrade-philippine-security-facilities>; and Seth Robson, "New Philippine Administration Considers More Base Access for US Military, Ambassador Says," *Stars and Stripes*, September 9, 2022, [https://www.stripes.com/theaters/asia\\_pacific/2022-09-09/philippines-military-bases-american-forces-7265559.html](https://www.stripes.com/theaters/asia_pacific/2022-09-09/philippines-military-bases-american-forces-7265559.html).

242 "US Military Poised to Return to Subic Bay, Counter China's Presence," *Kyodo News*, November 24, 2022, <https://english.kyodonews.net/news/2022/11/34dad3ba3fae-us-military-poised-to-return-to-subic-bay-counter-chinas-presence.html>; and Todd South, "The Army Piece of a Growing US Footprint in Philippines, Indonesia," *Army Times*, November 21, 2022, <https://www.armytimes.com/news/your-army/2022/11/21/the-army-piece-of-a-growing-us-footprint-in-philippines-indonesia>.

243 "The Philippines' Proximity to Taiwan Makes It Central to Western Strategy," *The Economist*, February 21, 2023, <https://www.economist.com/asia/2023/02/21/the-philippines-proximity-to-taiwan-makes-it-central-to-western-strategy>.

Should these initiatives bear fruit, especially those between Manila and Washington, they will significantly advance Archipelagic Defense's requirement to shift toward a more forward-deployed US defense posture. They will also fulfill the concept's call to extend the Coalition's line of defense from its northern sector in Japan to the southern sector, dominated geographically by the Philippines.

*Singapore.* Singapore is strategically situated at the hinge between the Indian and Pacific Oceans along the Malacca Strait, a major maritime trade route. As such, it represents a key *Wei Ch'i* stone in the competition for positional advantage.

Recently, Singapore reinforced and deepened its defense ties with the United States. In 2019, it renewed the 1990 Memorandum of Understanding Regarding United States Use of Facilities in Singapore, in particular the RSS Singapura-Changi Naval Base (CNB). The base has berthing space capable of accommodating an aircraft carrier and often hosts ships of Britain's Royal Navy and the US Navy. In 2017, India and Singapore signed a bilateral agreement providing ships of the Indian Navy with limited logistical support, including refueling, at CNB.<sup>244</sup>

In the event of war with China, Singapore, owing to its location, would be an important Coalition partner, especially in supporting blockade operations. Moreover, its military, though small, is one of the most capable of any Southeast Asian state.<sup>245</sup>

## The Flanks

*South Korea.* Owing to its location, industrial and technological might, and advanced military capabilities, South Korea could

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244 Shaurya Karanbir Gurung, "Navy Gets Access to Singapore's Changi Naval Base," *Economic Times*, July 12, 2018, <https://economictimes.indiatimes.com/news/defence/navy-gets-access-to-singapores-changi-naval-base/articleshow/61855776.cms>; and Bureau of Political-Military Affairs, "US Security Cooperation with Singapore" (fact sheet), US Department of State, April 12, 2023, <https://www.state.gov/u-s-security-cooperation-with-singapore>. The US Navy maintains a logistical command unit, Logistics Group Western Pacific, in Singapore and rotates Littoral Combat Ships and P-8 Poseidon aircraft to Singapore.

245 Ben Brimelow, "How a Tiny City-State Became a Military Powerhouse with the Best Air Force in Southeast Asia," *Business Insider*, April 8, 2018, <https://www.businessinsider.com/singapore-military-best-air-force-navy-southeast-asia-2018-4>; and "2023 Singapore Military Strength," *Global Firepower*, January 1, 2023, [https://www.globalfirepower.com/country-military-strength-detail.php?country\\_id=singapore](https://www.globalfirepower.com/country-military-strength-detail.php?country_id=singapore), which ranks Singapore's military twenty-ninth out of 145 armed forces.

play a major role in defending the First Island Chain's northern sector. While not a core member of the Coalition, South Korea, like Japan, has grown increasingly concerned about the threat to its security from China, as well as North Korea. Consequently, and despite their turbulent history, both Seoul and Tokyo are restarting joint military exercises that include missile-warning drills and ASW operations. These drills follow a similar trilateral ASW exercise that the American, Japanese, and South Korean militaries conducted in September 2022.<sup>246</sup>

That being said, Chinese media openly refer to South Korea as “the weakest link” in the chain of US allies and partners in the region. China's missiles easily range South Korea's cities and bases. Moreover, South Korea's only land border is with North Korea, making it an “island” for reinforcement and communications purposes. Should Seoul join the Coalition and should war break out, the PLA will attack South Korea's fleet and blockade its ports. The South Koreans also have to take into account the prospect that North Korea might be tempted to attack it as well. For these reasons and others, Archipelagic Defense does not assume South Korea's participation in the Coalition.<sup>247</sup>

*Vietnam.* Given the long history of friction between Beijing and Hanoi, the Coalition should also make a strong bid for Vietnam to join its ranks. If these efforts bear fruit, over time the Coalition should encourage Manila, Hanoi, and Taipei to create local overlapping A2/AD defenses. As will be elaborated on below, these defenses should be bolstered with resistance forces capable of conducting irregular warfare operations roughly similar to, albeit far more sophisticated than, those employed by Afghanistan's Northern Alliance (with US support) in the immediate aftermath of the 9/11 attacks, and by Hezbollah (with Iranian support) in

the Second Lebanon War. In particular, the Philippines and Vietnam could leverage A2/AD capabilities to turn China's military buildup in the South China Sea into a highly vulnerable salient, restoring the Coalition's positional advantage in that region while providing a stronger anchor for the southern sector's defenses.

### Beyond the Chain: Central and South Pacific

*Australia.* Along with Guam and Hawaii, Australia represents a key staging area for US forces transiting to forward positions in the WPTO, as well as a prospective base for long-range scouting and strike operations. With this in mind, Canberra and Washington have recently made significant progress toward enhancing the Coalition's ability to execute Archipelagic Defense. Major construction is underway in the northern port of Darwin, nearby at Larrakeyah Defence Precinct, and at Royal Australian Air Force Bases Darwin and Tindal, to create facilities for US Air Force, Navy, and Marine Corps use (see map 15). The effort also includes constructing 11 massive tanks capable of storing

Map 15. Major US Military Bases in Australia



Source: Source: Seth Robson, “US Military's Footprint Is Expanding in Northern Australia to Meet a Rising China,” *Stars and Stripes*, September 8, 2022, [https://www.stripes.com/theaters/asia\\_pacific/2022-09-08/australia-military-construction-projects-china-7251762.html](https://www.stripes.com/theaters/asia_pacific/2022-09-08/australia-military-construction-projects-china-7251762.html).

246 David Choi, “South Korea to Expand Military Drills with Japan amid North Korean Threats, Defense Chief Says,” *Stars and Stripes*, January 19, 2023, [https://www.stripes.com/theaters/asia\\_pacific/2023-01-19/south-korea-japan-joint-military-drills-8814430.html](https://www.stripes.com/theaters/asia_pacific/2023-01-19/south-korea-japan-joint-military-drills-8814430.html); and Kang Seung-woo, “Korea, US, Japan Stage Trilateral Anti-submarine Drills,” *Korea Times*, October 2, 2022, [https://koreatimes.co.kr/www/nation/2022/10/356\\_337059.html](https://koreatimes.co.kr/www/nation/2022/10/356_337059.html).

247 Zhao Yusha, Zing Xiaojing and Xu Keyue, “S. Korea ‘Weak Link’ of US Strategy to Encircle China,” *Global Times*, March 17, 2021, <https://www.globaltimes.cn/page/202103/1218725.shtml>; and Sungmin Cho, “South Korea Would Play Role in a Taiwan Contingency,” *Asia Times*, January 6, 2023, <https://asiatimes.com/2023/01/south-korea-would-play-role-in-a-taiwan-contingency>.

80 million gallons of fuel. There are also reports of discussions regarding the possibility of basing long-range American bombers at Tindal Air Base.<sup>248</sup>

Owing to its size, Australia presents great opportunities for force dispersal. It also offers an ideal location for establishing a much-needed high-fidelity training range for Coalition forces to test and refine the Archipelagic Defense concept.

*Guam and Tinian.* The island of Guam offers US forces several important advantages. Located along the Second Island Chain, Guam is distant enough from China to reduce significantly the threat posed by its ballistic missile arsenal. Guam serves as a major logistics hub and staging area for US combat forces deploying to the First Island Chain. The island is also controlled by the United States, eliminating political issues with respect to ensuring base access. Andersen Air Force Base boasts F-22 fighter jets and periodic bomber deployments, while the Navy's deepwater port at Apra Harbor (Naval Base Guam) is capable of repairing and supplying ships of the Pacific Fleet. This base also hosts nuclear attack submarines. The Marine Corps also has a base (Camp Blaz) on the island.<sup>249</sup>

Given this study's assumption that China will initiate hostilities, Guam's large bases risk becoming the targets of preemptive PLA strikes. Consider, for example, that Pearl Harbor is twice the distance from Japan as Guam is from China, and that in the 80-plus years since that attack, weaponry has increased dramatically in range, speed, and accuracy.<sup>250</sup> With this in mind, and consistent with Archipelagic Defense, the United States is

undertaking major construction to transform Tinian into a back-up facility in the event the PLA puts nearby Guam out of action. This includes work on creating a new aircraft taxiway at Tinian's Divert Airfield with additional parking space.<sup>251</sup>

*South Pacific.* China's gambit to co-opt the island nations in the South Pacific caught the United States napping. As one expert put it, "I'm always shocked that in Washington they think they have a significant presence [in the South Pacific] when they just don't. . . . There's a lot of talk . . . and not much real substance."<sup>252</sup>

That said, Washington appears to have awakened from its slumber. The Biden administration has announced its Pacific Partnership Strategy as a response to "pressure and economic coercion by the People's Republic of China, which risks undermining the peace, prosperity, and security of the region, and by extension, of the United States."<sup>253</sup> The strategy calls for a substantial increase in the overall US diplomatic presence and engagement in the region, including new embassies, enhanced US Coast Guard presence, and defense cooperation. The strategy also emphasizes efforts with those states with which the United States has compacts of free association—the Republic of Palau, the Republic of the Marshall Islands, and the Federated States of Micronesia—as well as the Solomon Islands. If successful, Washington will have blocked Beijing's attempt to place its *Wei Ch'i* stones astride the SLOC linking the United States to Australia.

## Concentration/Counter-concentration

The concentration of combat potential, or "mass," at the decisive point is one of the principles of war. Archipelagic Defense views the Coalition's ability to maintain a favorable military balance of power at any point along the First Island Chain

248 Seth Robson, "US Military's Footprint Is Expanding in Northern Australia to Meet a Rising China," *Stars and Stripes*, September 8, 2022, [https://www.stripes.com/theaters/asia\\_pacific/2022-09-08/australia-military-construction-projects-china-7251762.html](https://www.stripes.com/theaters/asia_pacific/2022-09-08/australia-military-construction-projects-china-7251762.html); and Stephen Wright, "US Likely To Base Long-Range Bombers in Northern Australia," *Eurasia Review*, November 3, 2022, <https://www.eurasiareview.com/03112022-us-likely-to-base-long-range-bombers-in-northern-australia>.

249 Patty-Jane Geller, "Defense of Guam: Don't Let an Asset in Deterring a Chinese Invasion of Taiwan Become a Liability," in *Defending Guam*, ed. Rebecca Heinrichs (Washington, DC: Hudson Institute, 2022), 22; and Oriana Skylar Mastro, "Defense, Deterrence and the Role of Guam," in *Defending Guam*, ed. Rebecca Heinrichs (Washington, DC: Hudson Institute, 2022), 45.

250 The distance from Shanghai to Guam is roughly 1,921 miles; from Tokyo to Hawaii, 4,047 miles. *Distance From To* (Google Map Developers) web ed., data from Google Maps, [https://www.mapdevelopers.com/distance\\_from\\_to.php](https://www.mapdevelopers.com/distance_from_to.php).

251 Gabriel Honrada, "US Steps up Airfield Construction on Tinian," *Asia Times*, June 23, 2022, <https://asiatimes.com/2022/06/us-steps-up-airfield-construction-on-tinian>.

252 Damien Cave, "Why China Is Miles ahead in a Pacific Race for Influence," *New York Times*, May 31, 2022, <https://www.nytimes.com/2022/05/31/world/australia/china-unit-ed-states-pacific.html>.

253 Colin Clark, "US Touts \$810M for Pacific Islands to Help Fend Off China, Some for Solomons," *Breaking Defense*, September 29, 2022, <https://breakingdefense.com/2022/09/us-touts-810m-for-pacific-islands-to-help-fend-off-china-some-for-solomons>.

as essential to accomplishing its purpose. The PLA's efforts to concentrate forces for offensive operations and corresponding Coalition attempts to offset these efforts represent a concentration/counter-concentration competition between the two sides. Simply put, if the Chinese can concentrate sufficient forces to obtain an advantage in combat potential along a sector of the First Island Chain, it increases the chances of deterrence failing. Hence the Coalition needs to have the ability to counter-concentrate forces sufficient to preserve a favorable military balance at the PLA's prospective points of attack.

### The PLA's Advantage

The PLA currently enjoys several important advantages over the Coalition in its ability to concentrate forces in space and time. China's interior lines of communication aid the PLA's efforts to mass forces more rapidly than the Coalition, which must operate along exterior lines. China also enjoys the strategic initiative. No member of the Coalition seeks to achieve its aims through war. Thus, China can determine the time and place to attack, and the Coalition can expect it to do so when the military balance is most favorable to Beijing. Yet another PLA advantage is the First Island Chain's location, sitting on China's doorstep, while most US forces are located thousands of miles away. Related to these geographic asymmetries, a third source of Chinese advantage lies in the CCP's ability to mobilize its forces in far greater secrecy than can the Coalition, which must do so in open societies where secrecy is far more difficult to maintain than in the CCP's proto-Orwellian State. Finally, a more prospective source of Chinese advantage stems from its emphasis on capabilities resident in domains that emphasize *speed of action*—the electromagnetic, cyber, and air domains.

While the Coalition in general (and the US military in particular) fields advanced capabilities in these domains, it is not clear that they prioritize these domains as much as the PLA, or that they are coordinated and integrated within a coherent operational concept. Finally, unlike the Coalition, China does not have to contend with issues related to unity of command, another prin-

ciple of war. History shows that a splintered command structure can hobble efforts to employ forces in ways that maximize their effectiveness. Moreover, given that the Coalition comprises independent states, it seems highly unlikely that its members would respond to Chinese aggression by synchronizing their decision to mobilize forces or declare war. From the Coalition's point of view, and solely from the narrow perspective of unity of command, the problem only grows worse as other states join the Coalition.

### Attack Warning / Early Warning

War involves a dynamic interaction between rival belligerent forces. Military leaders have long realized that mobilizing forces can create major shifts in the military balance. The Napoleonic Era, for example, is replete with examples of how Bonaparte's ability to concentrate his forces more rapidly than his rivals was key to his success on the battlefield.<sup>254</sup> The Railroad, Rifle, and Telegraph Revolution of the mid-nineteenth century enabled a quantum leap in a military's ability to mobilize, deploy, and coordinate the movement of large ground forces. Prussia leveraged this to great advantage against Austria and then France in the Wars of German Unification.

These wars left a profound impression regarding the need for rapid mobilization. World War I was, in part, the result of the great European land powers believing that they had to engage in a mobilization race to avoid falling behind in the military balance and suffering the same fate as Austria and France a generation before. During the Cold War, both NATO and the Warsaw Pact devoted enormous time and resources to ensuring they would not be at a disadvantage during the period of mobilization prior to the initiation of hostilities.<sup>255</sup>

254 Alistair Horne, *How Far from Austerlitz?* (New York: St. Martin's Press, 1996), 95–99. As the author concludes, "Speed and mobility counted for everything with Napoleon." This emphasis on speed also extended to the command and control he exercised over the Grand Armée.

255 In the late 1980s, I served as editor in chief of the defense secretary's Annual Report to the Congress (popularly known then as the "posture statement"), a comprehensive report of US defense policy, strategy, forces, programs, and budgets. The temporal dimension of the competition, especially as it pertains to mobilization, was a key factor in senior US policymakers' assessments of the military balance. See, for example, Frank C. Carlucci, *Annual Report to the Congress, Fiscal Year 1989* (Washington, DC: US Government Print-

## Types of Warning

There are several categories of warning. *Political* warning indicates that rising tensions are increasing the chances of war. This can occur rapidly, or it can evolve gradually over weeks or even months. *Strategic* warning comes in the form of information indicating the enemy is mobilizing and deploying forces to their wartime positions. For large, conventional forces, mobilization can require weeks or even months, although it depends on a range of factors.<sup>256</sup> A third type of warning, *tactical* warning, provides notice of the aggressor's initial war movements. This warning can be as short as a few minutes (such as in the detection of a ballistic missile attack) or as long as several hours (such as in the case of ground forces approaching a border). Archipelagic Defense is most concerned with strategic and tactical warnings.

## Early Warning Indicators

For several reasons, such as cost and a desire to avoid ratcheting up tensions, countries rarely place their militaries on a war footing save in periods of intense crisis. The transition from a peacetime military posture to a war posture involves a number of distinguishing actions. If detected, such early warning indicators can alert the target of an attack that the aggressor has chosen the path to war. Thus, a key task of a state's intelligence arm is to identify those actions that indicate its rival is mobilizing for war—and to detect them when they occur.

What indicators could provide strategic warning of the CCP's decision for war? Although a comprehensive examination of this issue lies well beyond the scope of this study, some examples are presented here. First, as we are witnessing in the ongoing (at this writing) Russo-Ukrainian War, contemporary military operations between major powers (and even lesser powers) can consume large quantities of munitions. Thus one possible early indicator of the CCP's intent to go to war would find it surging

munitions production. One would also expect China to accelerate the stockpiling of basic necessities, ranging from fuel to foodstuffs, to insulate its people and economy from a Coalition blockade. At some point closer to the initiation of war, the PLA would increase its forces' readiness, such as by instituting a military-wide personnel stop-loss, intensifying systems maintenance activities, and ramping up training exercises. Closer to "D-Day," PLA cyber probes of high-priority Coalition military and economic targets, such as logistics systems in the case of the former, and critical infrastructure with respect to the latter, would likely increase. Highly concentrated PLA forces, such as those at major air and naval bases, would begin to disperse. Forces that have to transit the Coalition's First Island Chain chokepoints—such as PLAN attack submarines and UUVs—would deploy to their war stations.<sup>257</sup>

Although there appear to be numerous warning indicators for the Coalition to monitor, the likelihood that the Coalition will respond to them in a timely manner is far from assured. For example, China could take steps to reduce the value of certain indicators, such as by expanding its stockpiling of key items. Moreover, unless it feels pressed for time, the CCP could gradually mobilize to better conceal its preparations. Giving the PLA nine months to assume a war posture, as opposed to four weeks, would enable it to do so more discreetly.

Then there is the "Cry Wolf" problem to consider. Recall the story of the young boy who, as a prank, was prone to cry "Wolf!" to alert the people of his town that a wolf was threatening their livestock. After the boy's repeated false warnings, his neighbors came to ignore them, including the time when the boy's warning was not a prank but real. An example of the Cry Wolf problem appears in the run-up to the October 1973 Arab-Israeli Yom Kippur War. Between May and August 1973, the Egyptian army

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ing Office, 1988), 31–33.

<sup>256</sup> Betts, *Surprise Attack*, 179–84. During the Cold War, for example, the warning time of a Warsaw Pact attack ranged from a few days to a few weeks. For a detailed discussion of warning and surprise attack, see Betts, *Surprise Attack*, 4–5.

<sup>257</sup> John Culver, "How We Would Know When China Is Preparing to Invade Taiwan," Carnegie Endowment for International Peace, October 3, 2022, <https://carnegieendowment.org/2022/10/03/how-we-would-know-when-china-is-preparing-to-invade-taiwan-pub-88053>; and Gerard DiPippo, "Economic Indicators of Chinese Military Action against Taiwan," Center for Strategic and International Studies, August 16, 2022, <https://www.csis.org/analysis/economic-indicators-chinese-military-action-against-taiwan>.

conducted a series of military exercises near its border with Israel. In response, the Israeli army initially mobilized, at considerable economic cost. But the Egyptians did not attack. As the Egyptian exercises continued, the Israelis came to dismiss them as routine and not actual war preparations. In the week leading up to Yom Kippur, the Egyptian army staged a week-long exercise along the Suez Canal. Israeli intelligence discounted it as training. They detected similar movements of Syrian troops toward that country's border with Israel. Still, Israel did not mobilize.<sup>258</sup> Were the PLA to conduct the kind of exercises it did in the summer of 2022 on a regular basis, and thereby make them part of the strategic landscape, Coalition policymakers might gradually discount the threat of an attack, with potentially catastrophic consequences.

Leaders may also discount warnings owing to an unwillingness to accept them, or what one might call “willful ignorance.” This was the case with respect to Josef Stalin, who, despite mounting evidence that Germany was planning to invade the Soviet Union in June 1941, refused to place his military on high alert. Given the Red Army's perceived lack of preparedness against the German military, which had defeated mighty France and subjugated most of Europe, for Stalin war risked catastrophe. Therefore, in his eyes, despite the warnings of an impending attack, the Soviet Union had to do everything to avoid it, including not provoking the Germans by alerting Soviet forces.<sup>259</sup>

Then there is the problem of warnings getting lost in the “noise” of other information that sources are funneling to a country's senior decision-makers, making it difficult to separate the wheat from the chaff—the accurate warnings from extraneous reports.

258 Israel did, however, dispatch some forces to the Golan Heights. They proved crucial to the Israeli Defense Force's successful defense of that area in the war's initial stages. Gili Cohen, “Mossad Agent Warned of 1973 War—Documents: Explicit Warning of Yom Kippur War Failed to Reach Israeli Leaders,” *Haaretz*, September 20, 2012, <https://www.haaretz.com/2012-09-20/ty-article/golda-never-received-1973-war-alert/0000017f-f73b-d887-a7ff-ffffcb390000>. See also Uri Bar-Joseph, *The Angel: The Egyptian Spy Who Saved Israel* (New York: HarperCollins, 2016), 166–76; 190–91, 208, 221–22; and Moni Chorev, *Surprise Attack: The Case of the Yom Kippur War* (Washington, DC: Industrial College of the Armed Forces, 1996), 14–15, <https://apps.dtic.mil/sti/pdfs/ADA314675.pdf>. Colonel Chorev also explores other reasons for Israel's intelligence failure.

259 Alan Bullock, *Hitler and Stalin* (New York: Knopf, 1992), 719–22.

This was the case with the United States in the leadup to the Imperial Japanese Navy's attack on Pearl Harbor in December 1941.<sup>260</sup>

These problems are not mutually exclusive. Indeed, an examination of the Israeli situation leading up to the 1973 war finds all three of them, to a greater or lesser extent, at work.

Finally, there is the case in which the aggressor stumbles into war, making the conflict akin to a “come as you are” affair. The classic example here is, of course, World War I, which found the major powers mobilizing in reaction to events following the assassination of the Austrian Archduke Franz Ferdinand. While all the major European powers had mobilization plans, none were attempting to execute them prior to the assassination.<sup>261</sup> In such cases, mobilization is not measured in months, but in weeks or even days.

## Counter-concentration

### The Mobilization Race

The advantages of “going first” in modern warfare are substantial, particularly if the attacker's target has little or no warning. Both Germany's attack on Soviet Russia in June 1941 and Japan's attack on the United States in December of that year led to major (albeit not decisive) gains. North Korea's surprise attack on South Korea in June 1950 came perilously close to conquering that country. Israel's preemptive strike on Egypt, Jordan, and Syria in 1967 enabled it to defeat its Arab rivals in only six days. In brief, a surprise attack at the outset of war often rewards the attacker with a major—and potentially decisive—shift in the military balance of power.

Today, thanks to advances in military-related technology, militaries have the ability to mass forces and fires and to conduct strikes far more quickly and at far greater ranges than ever before. Satellites

260 For a classic treatment of this case, see Roberta Wohlstetter, *Pearl Harbor: Warning and Decision* (Stanford, CA: Stanford University Press, 1962).

261 Austria-Hungary was the first major power to mobilize, and then only partially, and even then nearly a month after the assassination.

can identify enemy forces halfway around the world and provide that information to a military force's targeting cell in moments, and the cell in turn can give the order to strike within seconds. Ballistic and hypersonic missiles can complete the engagement sequence in less than an hour's time, even over intercontinental ranges. Countries can deliver cyber payloads and (under certain circumstances) directed energy strikes even quicker. In brief, in the modern age of RSCs, the need to see first and engage first has never been more important. The side that can mobilize its forces to this end stands to enjoy a key advantage over its enemies.

Thus, the ability to sustain forces and operations in a particular domain may depend on which side strikes first. If belligerents cannot make such forces survivable at an acceptable cost, the prospective value of those forces on paper in peacetime may prove evanescent when they are placed in the cauldron of war. Operations may become difficult or impossible to conduct in, and from, certain domains that risk becoming no-man's-lands early in a conflict. This could occur, for example, in space, on the seabed, and in a belligerent's littoral waters. Thus, the assumption that China will initiate war, and that the Coalition will be limited to tactical early warning, has major implications for Archipelagic Defense.<sup>262</sup>

How might the Coalition offset the PLA's advantages in the concentration/counter-concentration competition? Archipelagic Defense emphasizes deploying forces with a relatively high ability to concentrate, adapting some forces to address missions that free up more mobile forces, and shifting US forces to a forward-deployed posture. It also calls for establishing combined commands, beginning with one for the First Island Chain's northern sector.

### Force Mix

The Coalition's principal military powers in the WPTO—Japan and the United States—need to take the lead in developing ca-

pabilities and a command structure to offset the PLA's advantages in the concentration/counter-concentration competition.

### Ground Forces and Positional Defense

Archipelagic Defense leverages ground forces, wherever possible, to free air and maritime forces to serve as a mobile operational reserve—a counter-concentration force (see map 16). Why this approach? Physically maneuvering ground forces deployed along the First Island Chain in the face of China's A2/AD forces is likely to prove exceedingly difficult, especially along the Ryukyu Islands and Taiwan. That being said, it is possible for these forward-deployed forces to “maneuver” extended-range fires, concentrating them at the point of greatest danger. This requires American and Japanese ground forces located along the First Island Chain to invest in rocket artillery and, over time, long-range cruise and ballistic missiles.

Moreover, armies—particularly those of advanced militaries like the American, Japanese, South Korean, and Taiwanese—have important advantages over their air and maritime counterparts, particularly with respect to survivability, lethality, and sustainability. Regarding survivability, ground forces can exploit the cover and concealment that complex land terrain offers (such as jungles, mountains, and urban areas) to complicate enemy scouting operations. Correspondingly, as currently structured, air and maritime forces are far more tethered to large, fixed bases, which the PLA's extended-range strike forces can place at risk.<sup>263</sup> Ground forces can also defend from hardened positions, such as deep underground bunkers, in ways that air and maritime forces cannot. Indeed, during World War II, well-dug-in Japanese troops mounted a ferocious defense of many Pacific islands despite a nearly total lack of air and naval support. When it comes to sustainability, ground forces can also establish far deeper munitions magazines and fuel stockpiles than other forces can load onto ships or aircraft.

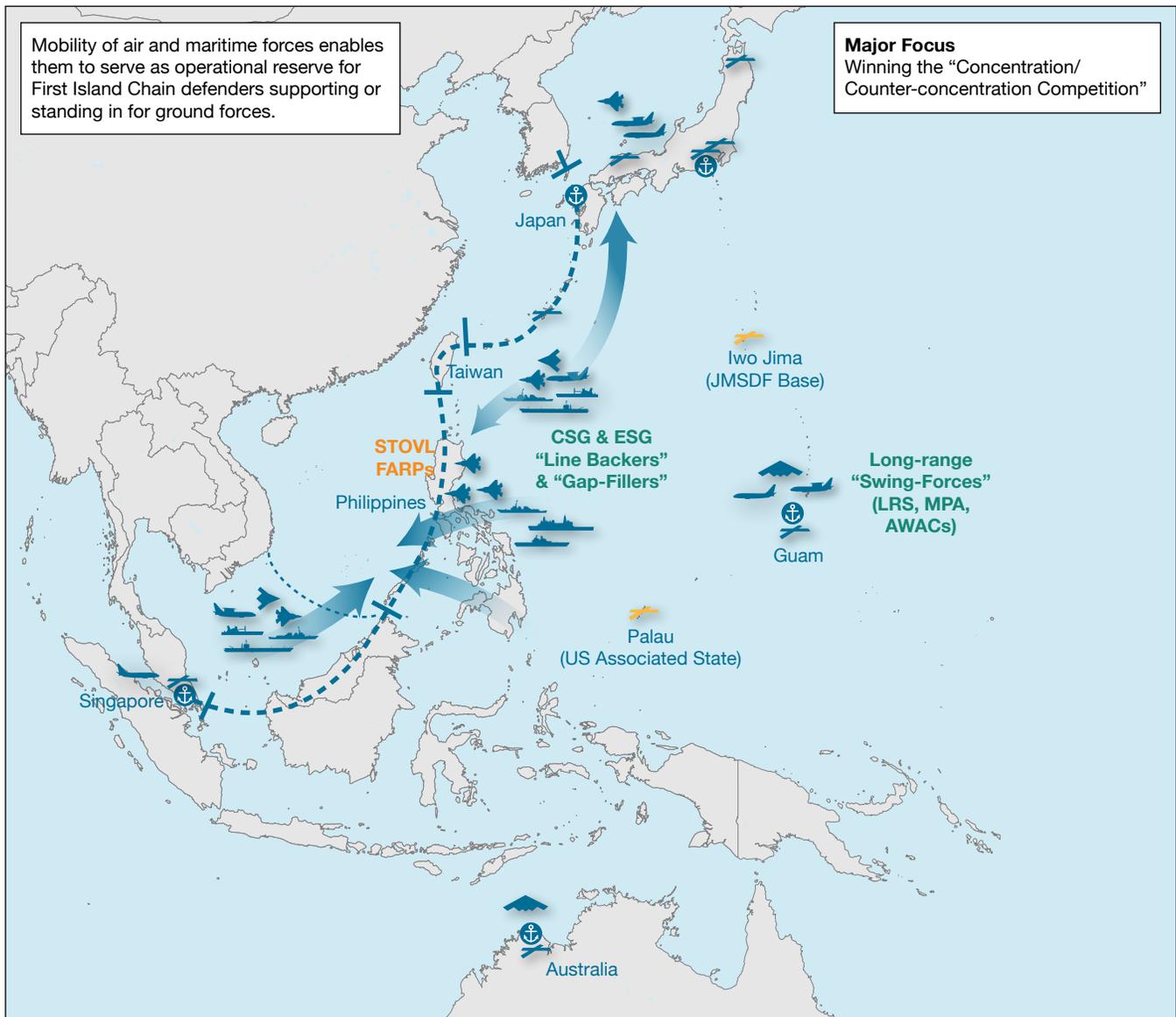
<sup>262</sup> Moreover, as I noted earlier in this study, the mix of capabilities necessary to dominate in a particular domain or competition against the PLA may be far from optimum to achieve similar results in a different phase of a war. Domains and competitions that may be at the center of a *protracted* war of exhaustion may vary significantly from those of greatest importance in a short war featuring efforts to bring about a *fait accompli*. See, for example, Colby, *The Strategy of Denial*, 133–46, 153–70.

<sup>263</sup> Warships operating at sea are not necessarily reliant on large bases. Combat logistic ships can also support them, providing oil, food, and ammunition. These logistics ships can operate from commercial ports as well as naval bases. Certain aircraft, like the F-35B fighter and some UAVs, can also land at austere bases, which the Coalition can increase in number at a relatively modest cost.

Regarding lethality, when ground forces assume a strategic defensive posture, as Archipelagic Defense calls for along the First Island Chain, they can also rely far less on satellites for command, control, and communications. Instead, they can empha-

size terrestrial communications, such as with buried fiber-optic cables linked to above-ground RF gateways. Finally, ground forces can enjoy far greater access to power sources than forces operating at sea or in the air. This can enable them to employ

Map 16. Operational Reserve



Source: Recreation of Solarium LLC graphic.

much more potent electronic jamming equipment and, as the technology continues to mature, directed-energy weapons.

### **The Counter-concentration Maneuver Force**

By leveraging the advantages ground forces provide for positional defense, the Coalition can focus its air and maritime forces on missions that emphasize their particular strengths, especially in speed and range. It will likely be far easier to concentrate air and maritime forces' combat power at points along the 3,400-mile First Island Chain than to do so with ground forces.<sup>264</sup>

The Coalition also possesses a modest strategic reserve of sorts, comprising primarily US long-range precision-strike forces, that can enhance its ability to counter-concentrate. This force greatly needs bolstering. Fortunately, there are some encouraging developments with respect to Coalition extended-range strike capabilities, which will be elaborated on presently.

Other military capabilities, current and prospective, could also exert a significant influence on the concentration/counter-concentration competition. Cyber munitions are one obvious possibility. Owing to their ability to act almost instantaneously, cyber payloads could play a key role in counterbalancing PLA forces at the main point of attack. Unfortunately for the purposes of this study, little detail is available regarding the cyber arsenals of either China or the Coalition. Consequently, the most helpful suggestion is for Coalition members to continue developing their offensive and defensive capabilities in this relatively new form of warfare.

Establishing an advantage in cryptography can provide a significant benefit in attempts to counter-concentrate Coalition forces at the decisive point. Again, as in the case of cyber arsenals, both China's cryptanalysis capabilities and those of the Coalition are closely guarded secrets, making this aspect of the competition impervious to informed, detailed public analysis. There is, however, one major exception to this shroud of secrecy. It concerns

efforts in the commercial sector to build a quantum computer. If scientists could build such a computer to operate at a sufficient scale, it would have the potential to decode cryptosystems that heretofore have been viewed as unbreakable.<sup>265</sup> Students of military history will appreciate the enormous advantage that the ability to "read the enemy's mail" provided to the US Navy at Midway, the German Army at Tannenberg, and Great Britain in the Battle of the Atlantic. Hence, the race to create a practical quantum computer—and to develop defenses against China's development of such computers—should be a Coalition priority.

### **Force Posture**

Owing to China's advantages in interior lines of communication and geographic proximity to the First Island Chain; the PLA's emphasis on operating in the speed domains; and in knowing the time and place it will initiate war, the Coalition needs to adopt a forward-deployed posture in order to maintain a favorable military balance in the WPTO, especially with regard to its ability to counter-concentrate forces at the PLA's point of attack. By virtue of their geography, some existing and prospective Coalition members are positioned forward. Members located at a distance—especially the United States—whose forces are critical to sustaining a favorable balance with the PLA need to move to adopt a forward-deployed—and eventually, a forward-based—posture.

The need for a forward-defense posture is especially true with respect to the United States. Following the Cold War, the US military shifted to an expeditionary posture. Currently, if a crisis were to occur, the US would have to transport the great majority of its combat power over vast distances to reach the First Island Chain. As the two Gulf Wars revealed, it would take many months to move a large American force to augment Coalition forces along the chain. Moreover, neither Gulf War subjected US deployments to interdiction operations, let alone the kind a first-tier military power like China is likely to prosecute. Finally, an expeditionary posture could undermine deterrence since US

<sup>264</sup> The distance is as measured in airline miles from the Kuril Islands to Mindanao. See Google Map Developers, [https://www.mapdevelopers.com/distance\\_from\\_to.php](https://www.mapdevelopers.com/distance_from_to.php).

<sup>265</sup> For an overview of this issue, see Krepinevich, *Origins of Victory*, 131–35.

moves to dispatch reinforcements in a crisis could incentivize the Chinese to initiate war to preclude the balance of forces from shifting against them.

A mobilization posture, which the United States adopted in major conflicts through World War II, would be even more problematic than an expeditionary posture. In brief, this posture requires mobilizing forces before deploying them. It worked in Europe during the two world wars in large measure because the United States had allies that could “hold the line” while it mobilized and then deployed. No such group of allies in the WPTO is capable of buying the time—measured in many months, if not years—necessary for a US mobilization posture to succeed.

Nor can a “tripwire” force maintain an effective defense posture. This posture calls for a small force to serve, not as a first line of defense, but as a sign of America’s commitment. To elaborate, a tripwire force by itself is not capable of mounting an effective defense. Rather, its purpose is almost exclusively rooted in deterrence under the assumption that, in the event of hostilities, enemies will spill American blood, triggering US entry into the war. An American tripwire force might work if the Coalition enjoyed escalation dominance or an advantage in strategic depth, enabling it to trade space for time while mobilizing superior forces. Alas, the states along the First Island Chain, as well as South Korea and Vietnam, lack these advantages. Put simply, a tripwire posture risks losing the First Island Chain, in whole or in part.

Consequently, Archipelagic Defense calls for the United States military to assume a forward-deployed force posture along the First Island Chain, supplemented with a defense-in-depth defense extending to the Second Island Chain and to Southeast Asia. It cannot adopt this posture overnight but needs to do so as promptly as possible, and shift to a more forward-based posture over time. This will require tackling the challenge of sustaining forward-deployed forces in the face of China’s A2/AD capabilities, a topic that will be addressed presently.

A good start toward a US forward-deployed posture would find Washington undertaking a program of stockpiling materiel—such as additional equipment sets, spare parts, munitions, and fuel—to reduce the time necessary to deploy reinforcements to the WPTO. This effort could also significantly reduce the demand on Coalition sealift and airlift early in the war while giving Coalition forces designed to secure sea control in the WPTO more time to achieve their objective. Alas, the Russo-Ukrainian War has revealed severe shortfalls in these items.

In the event the Coalition obtains political or strategic warning, it could take actions to enhance the survivability of its forward-deployed forces, such as by dispersing forward land-based air forces to other airfields and deploying naval forces from their bases to the open seas. Ground forces in garrison would move to preselected hardened or dispersed positions. Australian and US special operations and advisor forces assigned to support advanced irregular resistance forces in the Philippines and Taiwan<sup>266</sup> would deploy to join them.

As for Coalition capabilities based outside the WPTO, the highest deployment priority should go to those that can deploy quickly *and* are essential to defeating the PLA’s initial attacks. Thus, forces such as those in the intangible domains and the aerospace forces would likely have top priority, as opposed to those that take substantially longer to generate and deploy, such as major naval combatants and (especially) mechanized ground forces. Those forces that can operate in highly contested areas—within the PLA’s A2/AD network—should also have precedence. For example, the US might deploy forward elements of the US global conventional strike forces, such as its stealth bomber force, perhaps to locations in Australia. Similarly, US Navy nuclear guided-missile submarines (SSGNs), armed with over 100 cruise missiles each, would position themselves forward. The goal is to maximize and counter-concentrate Coalition combat potential as rapidly as possible.

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<sup>266</sup> The US would likely need to deploy any forces to Taiwan covertly prior to the onset of hostilities. Thus these forces would be greatly limited in size. Hence the emphasis on deploying Coalition special forces.



## 7. ARCHIPELAGIC DEFENSE 2.0: PART II

With the previous chapters having set the stage, this chapter begins with a discussion of reconnaissance-strike operations: the scouting (ISR) and battle network (C4) elements and their relationship to the RSC's strike component.

The Coalition's success in the scouting/counter-scouting competition can deny the PLA the information dominance it believes it needs to wage a successful offensive campaign. Similarly, the Coalition needs to demonstrate the ability to prevail in the strike/counterstrike competition as a means of denying Chinese forces control of the air. Success in these competitions will find the Coalition drawing on forces and capabilities operating in all warfare domains. The discussion then turns to how Coalition forces can deny the PLA control of the seas along the First Island Chain (see maps 17 and 18) to move and sustain its assault forces. An exploration of sustainment issues follows, including maritime blockade

and counterblockade operations. This includes some thoughts on how the Coalition might secure sufficient access to the Western Pacific SLOCs between the First and Third Island Chains to enable the reinforcement and sustainment of forward-deployed Coalition forces. The chapter concludes with some thoughts on ground defense and counteroffensive operations and some thoughts on ambiguous, or gray zone, aggression.

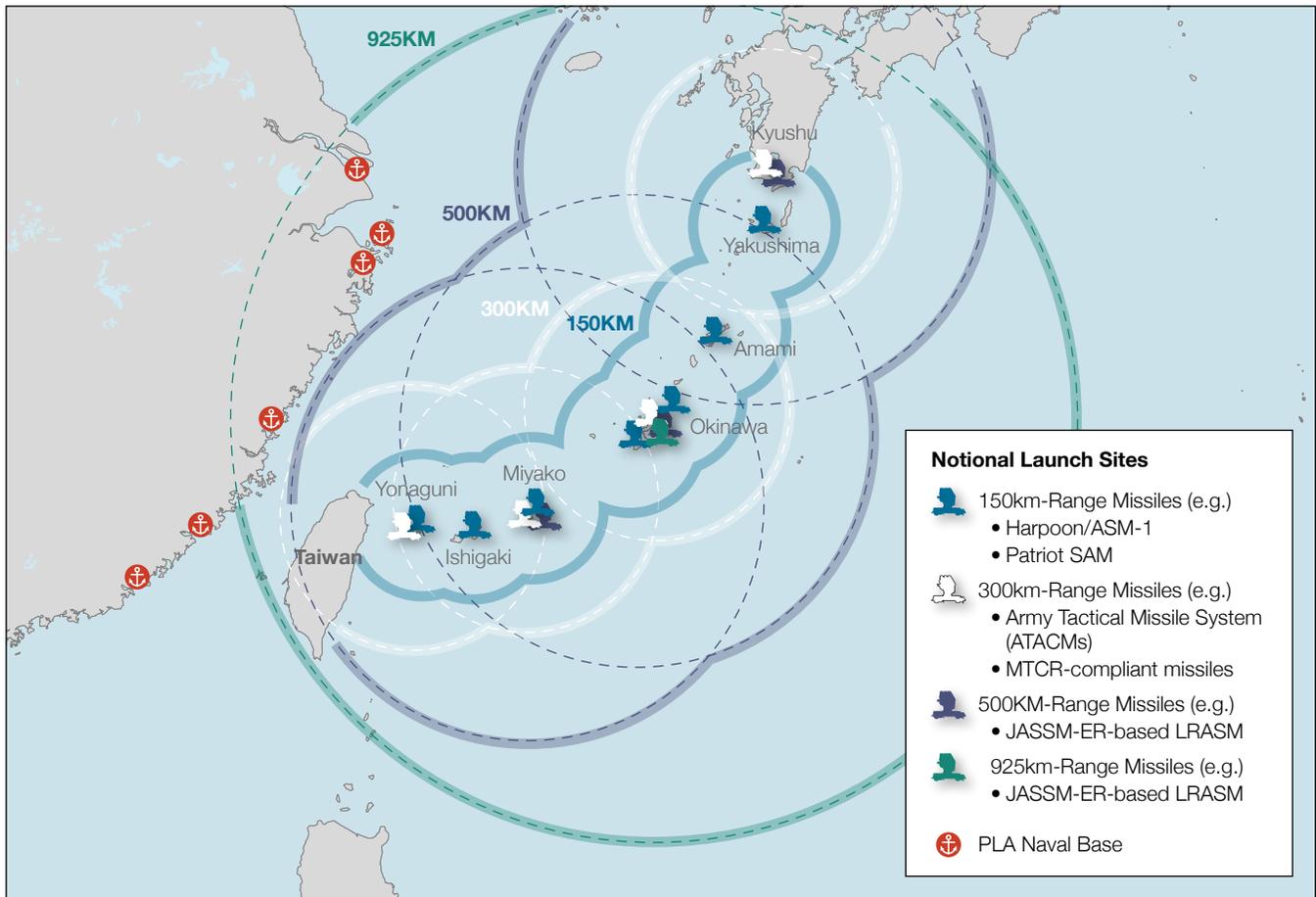
### The Scouting Competition

The ability to collect information about the enemy and to communicate and move the associated data quickly and reliably to

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Photo: US Marines and soldiers along with Filipino marines secure a landing zone during a joint, bilateral, littoral campaign as part of Balikatan 23 on Basco, Philippines, on April 23, 2023. (US Marine Corps photo by Sgt. Patrick King)

Map 17. Archipelagic Defense's Northern Sector



Source: Author.

large numbers of geographically distributed elements of the battle network is crucial to the effective functioning of a recce-strike complex. In the event of war between China and the Coalition, the competition between scouting and counter-scouting forces promises to be intense.<sup>267</sup>

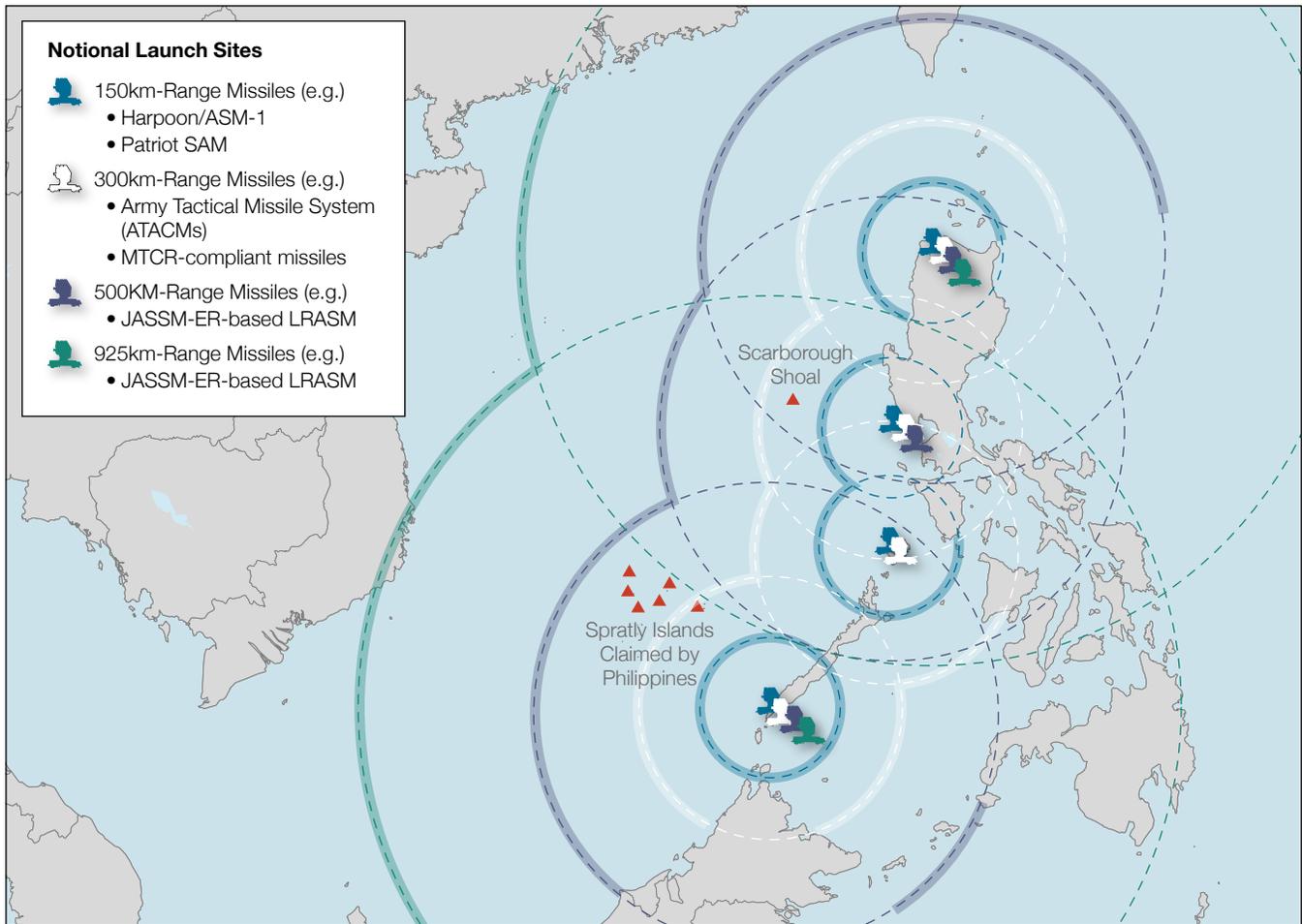
The PLA's Integrated Network Electronic Warfare (INEW) doctrine supports this view, declaring that achieving infor-

mation dominance is essential to the successful conduct of military operations.<sup>268</sup> Moreover, as its decades-long military buildup has progressed, the PLA has fielded systems enabling its recce-strike complex to operate at ever-greater distances. To this end, the PLA employs a wide range of capabilities, such as satellites, land-based radars, aircraft

<sup>267</sup> For a more detailed discussion of the scouting/counter-scouting competition, see Krepinevich, *Origins of Victory*, 54–62.

<sup>268</sup> "An essential element, if not a fundamental prerequisite, of China's emerging A2/AD regime is the ability to control and dominate the information spectrum in all dimensions of the modern battle space. PLA authors often cite the need in modern warfare to control information, sometimes termed 'information blockade' or 'information dominance,' and to seize the initiative and gain an information advantage in the early phases of a campaign to achieve air and sea superiority." *China Military Developments*, 2014, 30.

Map 18. Archipelagic Defense's Southern Sector



Source: Author.

(including unmanned aerial vehicles, or UAVs), and undersea sensors.<sup>269</sup>

China and the Coalition countries are waging the scouting/counter-scouting competition today, as both seek intelligence on each other's forces, including their size, location, capabilities,

and methods of employment. In the run-up to war, such efforts will intensify. A campaign designed to deny the PLA the information advantage it believes is necessary to wage a war of aggression would depend heavily on preserving the Coalition's ability to target high-value Chinese recce-strike assets effectively while denying the same capability to the PLA.

<sup>269</sup> Of course, platforms whose principal mission is not related to scouting, such as combat aircraft and submarines, can also perform a scouting function, as can individual soldiers and even civilians. Keith Breene, "Who Are the Cyberwar Superpowers?," World Economic Forum, May 4, 2016, <https://www.weforum.org/agenda/2016/05/who-are-the-cyber-war-superpowers>.

Both the PLA and Coalition forces will likely find it difficult to deny the other the scouting information necessary to target

fixed assets, such as major ports and air bases, and key components of fixed critical infrastructure, such as undersea cables and railheads. Both sides will almost certainly identify these targets and register their locations prior to a conflict.

Forces may neutralize certain mobile assets that follow predictable paths, such as ships that must transit maritime chokepoints or satellites in fixed orbits, through periodic strikes. Thus, even if it is unable to scout with a high degree of effectiveness, one might expect the PLA to launch recurring missile salvos at key maritime chokepoints to increase the risk to both military and commercial vessels of transiting these waters. In military parlance, this is referred to as a “mission kill”: while such a strike may not destroy the ships in question, it may nevertheless dissuade them from accomplishing their mission, be it a military operation or the movement of cargo.

Actions the Coalition takes to degrade Chinese scouting forces can help prevent China from identifying, targeting, and attacking Coalition scouting and strike forces. In addition to degrading the PLA’s scouting forces, winning the scouting/counter-scouting competition requires the Coalition to defend its scouting forces against the PLA’s efforts to degrade them. In brief, the Coalition’s ability to deny the Chinese military information dominance by prevailing in the scouting/counter-scouting competition can strengthen deterrence in peacetime while enabling an effective defense should deterrence fail.

## Active Measures

### Strike Operations

The Coalition can actively degrade the PLA’s scouting and battle network forces. This could be achieved by employing both kinetic and non-kinetic means (such as cyber payloads and directed-energy pulses) to neutralize or destroy PLA scouting systems, including OTH radars, electronic warfare systems, satellites performing ISR functions, and computer-enabled battle networks. Early in a conflict, Coalition strike elements capable of functioning well within the PLA’s A2/AD defenses (that

is, in a “non-permissive” environment) would execute kinetic attacks against terrestrial PLA targets. American and perhaps Japanese forces would take the lead in such operations, with the US military likely employing its long-range stealthy strike aircraft such as B-2 and, over time, B-21 bombers; SSNs and SSGNs armed with cruise missiles; and forward-deployed ground forces equipped with extended-range rocket artillery. As its fielding of extended-range strike systems advances, Japan’s Self-Defense Forces (JSDF) could substantially boost the Coalition’s counter-scouting strike capabilities.<sup>270</sup> These strike operations are discussed in greater detail in the upcoming section on strike/counterstrike operations.

With respect to Chinese space-based systems, the Coalition should give priority to neutralizing them in such a way as to avoid creating space debris that would threaten all satellites in their orbits. This might best be accomplished through non-kinetic strikes,<sup>271</sup> including jamming. Coalition fighter-interceptor aircraft and air defense forces would have primary responsibility for destroying or otherwise neutralizing PLA air-breathing platforms conducting scouting operations.

Coalition ASW forces might counter the PLAN’s submarines and UUVs seeking to scout (and engage) Coalition warships and cargo transports along the First Island Chain. Reflecting the trend toward cross-domain operations, these Coalition forces would comprise space, cyber, air, and maritime assets as well as land-based forces responsible for monitoring Coalition seabed sensors and antiship minefields. Within the First Island Chain, Coalition submarines and UUVs could at-

270 Japan has earmarked \$10.6 billion in its latest budget to buy and deploy several hundred US Tomahawk missiles on its destroyers. It also plans to extend the range of its Type 12 surface-to-ship missile to reach China. Jeffrey W. Hornung and Christopher B. Johnstone, “Japan’s Strategic Shift Is Significant, but Implementation Hurdles Await,” *War on the Rocks*, January 27, 2023, <https://warontherocks.com/2023/01/japans-strategic-shift-is-significant-but-implementation-hurdles-await/>; and Alastair Gale and Chieko Tsuneoka, “Japan to Spend Billions on US Tomahawk Missiles in Military Buildup,” *Wall Street Journal*, December 23, 2022, <https://www.wsj.com/articles/japan-to-spend-billions-on-u-s-tomahawk-missiles-in-military-buildup-11671784716>.

271 Recall that the ability of directed-energy systems to “soft kill” enemy satellites and of jamming operations to effect a “mission kill” is important, as the kinetic destruction of satellites can create large amounts of debris (“space junk”) that can, owing to the Kessler effect, damage other satellites, including Coalition satellites and those belonging to neutral powers.

tack Chinese seabed sensor systems and PLAN undersea scouting forces.

Coalition satellites, airborne systems, and command centers linked through fiber-optic communications can also aid scouting and counter-scouting operations, as they employ AI-enhanced, high-speed data processing to share target tracking information. Electronic warfare operations would support these efforts, employing such means as jamming and spoofing.<sup>272</sup>

### **Cryptography and Cyber Operations**

An important aspect of the scouting competition involves gathering, processing, moving, and protecting information regarding friendly and enemy forces. Code-breaking and cyber operations, if successful, may enable the Coalition to gain an advantage by selectively denying and distorting the PLA's C4ISR data while providing friendly forces with enhanced scouting information.

Since World War I, success in cracking a rival military's electronic codes has provided a major, and in some cases decisive, advantage.<sup>273</sup> More recently, the development of the internet has facilitated a whole new way of penetrating an adversary's scouting capabilities as well as other key military functions, such as logistics. That being said, given the secrecy under which Coalition and PLA forces conduct both cryptanalysis activities and cyber operations, it is impossible to state with any clarity how they might employ them effectively in the scouting competition.

## **Passive Measures**

### **Mobility**

The Coalition can degrade the PLA's ability to scout and target friendly forces through a range of passive counter-scouting op-

erations. For example, fixed targets are stationary and thus relatively easy to scout. Nevertheless, Coalition counter-scouting operations can reduce the effectiveness of PLA strikes against these kinds of targets. Consider a major Coalition naval base. There will be a greater concentration of ships at the base at some periods of time than others. All other factors being equal, the optimum point in time for the PLA to attack the base would find the fleet in port. To the extent the Coalition can reduce the PLA scouting force's revisit rate, it increases the probability of a suboptimal attack. A prime example is the Imperial Japanese Navy's attack on Pearl Harbor in December 1941. Two high-priority targets of the attack, the US carriers *Enterprise* and *Lexington*, happened to be on deployment on the day of the attack, significantly reducing its effectiveness. If the Coalition is able to receive early warning of the CCP's decision to go to war, it can disperse key assets located at major bases, such as air defense units, naval combatants, and aircraft, to minimize their vulnerability, thereby reducing the value of an attack. More broadly speaking, Archipelagic Defense calls for increasing the mobility of Coalition forces, as well as emphasizing camouflage, concealment, and decoys (CCD), to stress the PLA's scouting effectiveness.

### **Camouflage, Concealment, and Decoys**

Militaries have long sought to frustrate an enemy's scouting efforts by employing CCD. They accomplish this by employing materials and techniques to hide, blend, disguise, deceive, or disrupt the appearance of military targets or their backgrounds to prevent an enemy from detecting or identifying friendly troops, equipment, activities, or installations.<sup>274</sup> Given the vastness of the Pacific Ocean and the complex terrain in parts of the First Island Chain, CCD plays a significant role in Archipelagic Defense efforts to frustrate PLA scouting operations.

While a detailed discussion of Coalition CCD operations lies beyond the scope of this study, it is worth noting that over the past

272 In this context, generally speaking, "spoofing" means introducing false information returns in the defender's radar system.

273 Poor Russian communications discipline aided the German victory over Russian forces in the 1914 Battle of Tannenberg (the Russians sent messages without encoding them, or "in the clear"). As I noted earlier in this study, the US military's partial breaking of the Imperial Japanese Navy's code was a major factor in its decisive victory at the Battle of Midway in June 1942. The breaking of Germany's Enigma code in World War II and related signals cryptanalysis provided the Allies with a "priceless" advantage, according to US General Dwight Eisenhower. See F. W. Winterbotham, *The Ultra Secret* (New York: Harper & Row, 1974), 2.

274 US Department of the Army, *Camouflage, Concealment and Decoys*, Field Manual 20-3 (Washington, DC: US Government Printing Office, 2010), 1-1.

two centuries reconnaissance, surveillance, and target acquisition (RSTA) operations have come to rely far less on the human senses, such as sight and hearing, and far more on a wide array of man-made sensors. CCD efforts, which have been adapted accordingly, reflect this. For example, camouflage efforts increasingly focus on tricking electronic sensors rather than human eyes. Today “multispectral” lightweight camouflage nets are available in a range of patterns, such as snowfield, desert, urban, and woodland, for use in particular operational environments. Forces can link the nets together in building-block style to cover larger items such as command posts, or disassemble them for smaller force elements.<sup>275</sup>

The US military is also making impressive progress with decoys. Wind and solar energy power today’s US Navy surface drones, minimizing their heat signature. Large versions of these drones, properly configured, may be able to function as decoys by emitting radar returns similar to major combatants, such as aircraft carriers.<sup>276</sup> Along somewhat related lines, the US Air Force and Navy have developed the Miniature Air-Launched Decoy (MALD). As its name suggests, this small, unmanned, air-launched airborne decoy is designed to deceive enemy radars and IADSs by duplicating the flight profiles and radar signatures of US and allied aircraft. A follow-on missile, the ADM-160-MALD-J, can function as a decoy and a jammer and serve as a component of a constellation of decoys.<sup>277</sup>

### Commander’s Intent and Mission-Type Orders

Both the PLA and principal Coalition militaries emphasize disrupting the other’s ability to scout and maintain command and control over their forces. Given the intensity at which PLA and Coalition RSCs are likely to attack each other’s scouting forces

and battle networks, Coalition forces may find themselves operating with severely degraded C4ISR capabilities. If so, Coalition militaries capable of exploiting methods such as “commander’s intent” and “mission-type orders” may prove essential to sustaining effective operations. In the US military, the commander’s intent succinctly describes what constitutes success for the operation. It includes the operation’s purpose, key tasks, and the conditions that define the end state. It links the mission, concept of operations, and tasks to subordinate units. A clear commander’s intent facilitates a shared understanding between a commander and his subordinates as to those objectives that, when secured, represent mission accomplishment.<sup>278</sup>

Commander’s intent accepts that incomplete or distorted information, changes in enemy capabilities and methods of operation, and myriad other factors may render a plan partially or completely obsolete as a force is executing it. Under such circumstances, having a clear statement and understanding of the commander’s intent enables subordinates to adapt the plan to the changed battlefield environment in a way that focuses on the desired end state. As the Defense Department’s original assessment of the emerging Precision Warfare Revolution notes, “Junior commanders will need to know how their operations support the senior commander’s overall plan, how to integrate their operations within various elements of a full-dimension concept of operations, and how to react quickly, and often independently, to a rapidly changing conflict environment.”<sup>279</sup>

Closely aligned to commander’s intent are mission-type orders—the manner in which the commander communicates intent. The US Army states, “Orders must be timely, simple, clear and concise. Mission type orders are used to the greatest practicable extent, but should provide the commander’s concept, or intent, to insure [*sic*] that subordinate commanders, acting on

275 “Better Camouflage Is Needed to Hide from New Electronic Sensors,” *The Economist*, March 29, 2023, <https://www.economist.com/science-and-technology/2023/03/29/better-camouflage-is-needed-to-hide-from-new-electronic-sensors>.

276 Gary Anderson, “How Navy Decoy Drones Could Thwart China’s War Strategy in the Pacific,” *Military.com*, September 6, 2022, <https://www.military.com/daily-news/opinions/2022/09/06/how-navy-decoy-drones-could-thwart-chinas-war-strategy-pacific.html>.

277 “Miniature Air Launched Decoy (MALD) Flight Vehicle,” *Airforce Technology*, June 29, 2014, <https://www.airforce-technology.com/projects/miniature-air-launched-decoy-mald-flight-vehicle>.

278 Army Doctrine Reference Publication (ADRP) 5-0, *The Operations Process* (Washington DC: US Government Printing Office, May 2012), 2–19. See also Richard Dempsey and Jonathan M. Chavous, “Commander’s Intent and Concept of Operations,” *Military Review* (November–December 2013): 58–66.

279 Krepinevich, *Military-Technical Revolution*, 36–37.

their own initiative, direct their efforts to the attainment of the overall objective."<sup>280</sup>

Provided with commander's intent and mission-type orders, subordinate unit commanders cannot plead an absence of orders or the nonreceipt of orders as an excuse for inactivity in a situation in which action on their part is desirable, or in which a change in the situation on which the orders were based renders them impracticable or impossible to execute. Put simply, any lack of initiative on his or her part is unacceptable.<sup>281</sup>

Mission-type orders provide subordinates with maximum latitude in accomplishing the commander's intent. This requires subordinates who possess individual initiative. Mission-type orders emphasize this quality in their leaders at all levels, implying that those who are found lacking will be sacked. Developing a proficiency in operating within the context of commander's intent and mission-type orders requires persistent and extensive field training under realistic conditions.

### The Importance of Space

The PLA's view of modern warfare places priority on securing access to space while denying it to the Coalition as part of its objective of establishing information dominance. This makes sense, as PLA forces projecting power against states along the First Island Chain cannot easily coordinate their recce-strike operations by counting on seizing and exploiting the communications systems infrastructure in the territories they seek to occupy, let alone by having them provide secure transmissions or PNT. The PLA relies considerably on space-based systems to fill this void. Thus, access to space could, on balance, benefit an aggressor undertaking an offensive campaign more than the defender, as would be the case in a PLA effort to seize parts of the First Island Chain or areas in close proximity. Given that Co-

alition forces would be defending their own territory, they would arguably need to rely less on assured access to space than the Chinese. If it cannot control the space domain, the PLA will likely need to rely more than the Coalition on mobile terrestrial ISR scouting systems and C4 battle network systems, such as manned and unmanned airborne systems.

This is not to say the Coalition would not highly value access to its space systems. Given the key role they have played in US scouting, communications, and targeting since the First Gulf War, the PLA naturally sees the Coalition's dependence on satellites to support recce-strike operations, such as providing PNT, as a potential vulnerability it can exploit. To this end, the Chinese are developing and fielding systems and capabilities to destroy, damage, or disrupt these satellites.<sup>282</sup> One possible way of disabling the Coalition's satellite constellation is by jamming. Should jamming prove ineffective, the PLA can employ other kinetic and non-kinetic anti-satellite forces to degrade or destroy Coalition satellite constellations, especially those in low Earth orbit (LEO).<sup>283</sup>

Indeed, *ceteris paribus*, China and the Coalition will likely have difficulty defending their space-based systems against attacks. This stems from two factors: first, destroying or degrading an enemy's space-based systems, especially those in LEO, appears to be considerably cheaper than defending or replacing them. Second, in extremis, it is possible that, through accident or design, one or more belligerents might trigger the Kessler effect, effectively destroying most space-based capabilities, particularly those positioned in LEO.

Despite the growing risk to space-based systems, the competition in space also appears to be increasingly dynamic, suggesting that the Coalition may find ways to preserve its access to

280 US Department of the Army, *Field Service Regulations: Operations*, Field Manual 100-5 (Washington DC: US Government Printing Office, 1962), 51. See also Clinton J. Ancker III, "The Evolution of Mission Command in US Army Doctrine, 1905 to the Present," *Military Review* (March–April 2013): 42–52.

281 US Army, *Field Service Regulations*, 78.

282 For an overview of Chinese space-denial capabilities, including electronic and cyber warfare capabilities, directed energy weapons in-orbit capabilities, and ASAT missile systems, see *Challenges to Security in Space* (Washington, DC: US Defense Intelligence Agency, 2022), 17–18.

283 Eric Heginbotham et al., *The US-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996–2017* (Santa Monica, CA: RAND, 2015), 249, 253, 256.

space even in the face of concerted PLA efforts to secure control of this domain. The growth of national space constellations may enable the Coalition to employ satellites belonging to neutral states to support operations. Then there is the rapid proliferation of large numbers of small satellites that function independently or as part of a web of systems. These satellite clusters' capabilities appear likely to degrade more gracefully if the PLA puts a few of the web's small satellites out of action than would be the case following the loss of a large multipurpose satellite still in vogue among major military powers like the United States.

One way for the Coalition to enhance the robustness of its scouting and battle network capabilities along the First Island Chain is to develop and field an airborne-terrestrial communications network as a hedge against the loss of access to its space-based systems. Such a network could link high-altitude, long-endurance (HALE) manned and unmanned aircraft. The Coalition can enhance communications among its forces operating in and across domains by employing line-of-sight, narrow-band, and relatively low-power assets to complicate PLA electronic warfare jamming operations. To enhance communications security and resilience, a network of HALE UAVs could relay payloads to link a wide range of platforms employing varying tactical data links. Along these lines, the US Air Force has established the 430th Expeditionary Electronic Communications Squadron (EECS), which can provide communications coverage to US and Coalition partner forces. The EECS operates the E-11A aircraft, which carries the Battlefield Airborne Communication Node payload, essentially enabling the aircraft to operate as an LEO "satellite," or "Wi-Fi in the sky." By refining and expanding this capability, the Coalition could realize a significant advantage in both the scouting/counter-scouting and network/counter-network competitions.<sup>284</sup>

The Coalition could exploit its status on the strategic defensive by linking these airborne scouts and battle management elements with terrestrial systems incorporated into a hardened,

<sup>284</sup> Shannon Bowman, "430th EECS Begins Operations with New E-11A BACN," US Air Force, January 7, 2023, <https://www.af.mil/News/Article-Display/Article/3258455/430th-eeecs-begins-operations-with-new-e-11a-bacn>.

underground fiber-optic network linked via RF gateways. A network of battle network data fusion centers would receive, analyze, process, and transmit ISR data and information from scouting forces. The Coalition could make these fusion centers mobile (such as by positioning them on ships and road-mobile ground vehicles) or place them at fixed, hardened land-based sites. The more robust this web of fusion centers, the more resilient it will be against PLA efforts to establish information dominance.

Given its resources, technical sophistication, and status as the First Island Chain's northern sector, Japan is the logical location to begin constructing this airborne-terrestrial communications network. While the initial phase would extend along the Japanese archipelago, the Coalition should invite the two states comprising the majority of the First Island Chain's southern sector, Taiwan and the Philippines, to participate in creating this robust fiber-optic telecommunications backbone. In addition to its value for Archipelagic Defense, the system could also provide resilient communications in the event of typhoons and other natural disasters.

With respect to ground-based radars, the Coalition should leverage Japanese and US investments in active electronically scanned array (AESA) radars. These radars can simultaneously radiate multiple beams of radio waves at multiple frequencies, making them more difficult to detect than standard radars over background noise. Thus, ships and aircraft equipped with AESA radars can generate powerful radar signals while remaining relatively difficult to detect. AESA radars are also more difficult to jam than other radars. These "Swiss army knife" radars can perform a wide range of missions, including air defense, surface search, surveillance, jamming, and communications.

Japan and the United States already possess AESA systems, including those aboard F-35 fighter aircraft.<sup>285</sup> Land- and sea-

<sup>285</sup> For example, the F-35 has built-in electronic warfare capabilities to locate and track enemy forces and jam radio frequencies. The Coalition can use AESA radar to create false targets, conduct network attacks, and suppress enemy radars. According to Lockheed Martin, the F-35 can function as either a standoff jammer, providing 10 times the effective radiated power of any current fighter, or a stand-in jammer. Lockheed Martin, "About F-35: Unrivaled Capabilities," <https://www.f35.com/f35/about/5th-gen-capabilities.html>.

based AN-TPY-4 radars, like AESA radars, can also execute multiple missions.<sup>286</sup> Moreover, AESA radars can employ electronic decoying and deception measures, such as digital radio frequency memory (DRFM),<sup>287</sup> Ground forces, thanks to their potentially greater access to electric power than aircraft and ships at sea have, are in a particularly good position to exploit AESA radars' capabilities.

## The Strike/Counterstrike Competition

### The Value of Range

Over the past 175 years or so, a military's ability to strike accurately at ever-increasing ranges and with ever-greater speed has expanded dramatically. Similar advances in scouting, including in the range and speed of communications and data processing that constitute key components of reconnaissance-strike complexes, have boosted the ability to exploit these enhanced strike capabilities. Modern warfare also finds militaries continuing an enduring competition to gain an advantage in the range at which they can engage the enemy. A clear example appears in the advantage several nineteenth-century European imperial powers enjoyed in the form of the rifles and cannons they employed against native troops armed primarily with swords, muskets, spears, and arrows. Time after time, small European contingents defeated far larger native forces—so long as they could fire beyond the locals' effective engagement range.<sup>288</sup>

This phenomenon has long held true for advanced militaries. For example, the Royal Navy's desire to outrange rival fleets' long-range guns and torpedoes greatly animated the emergence of modern battleships (dreadnoughts).<sup>289</sup> Similarly, the range advantage that an aircraft carrier's scouting and strike

elements afforded led to the eclipse of the battleship.<sup>290</sup> Today long-range missiles that enjoy an advantage in range and speed threaten to destroy the bases hosting slower air-breathing systems with "shorter legs."

It is not surprising, then, that the PLA sees its ability to strike at Coalition forces over extended ranges as key to establishing its control in the air and sea, and to securing information dominance. The PLA Rocket Force (PLARF) boasts some 900 medium- and intermediate-range missiles, including the DF-26 and DF-21. These two missiles are capable of ranging most of the WPTO, including Guam, and striking with precision accuracy. The PLA strike forces also include cruise missiles launched from land-, sea- and air-based systems that are also capable of striking Guam.<sup>291</sup>

As noted earlier, the PLA's focus is on creating asymmetric advantages in strike forces, with an emphasis on imposing disproportionate costs on the Coalition. The 2012 *Joint Campaign Theory Study Guide* observes, "If the enemy has combat capabilities that we lack, we must use other means that can defeat the enemy and win in order to create an asymmetric advantage, such as having the necessary number of cruise missiles, submarines, and mines against an aircraft carrier, which together makes up an asymmetric strike advantage."<sup>292</sup>

The Coalition can erode China's ability to project power through extended-range precision strikes through a combination of suppression strikes against the PLA's scouting and strike forces and active and passive Coalition defenses. If the Coalition's C4ISR components can hold their own (or better) against the PLA, this can set the conditions to dismantle the Chinese recce-strike complex, and with it the PLA's ability to pursue systems destruction warfare. To this end, stealthy US long-range bombers

286 "Lockheed Martin Completes First AN/TPY-4 Radar Production," Airforce Technology, May 5, 2022, <https://www.airforce-technology.com/news/lockheed-martin-tpy-4-radar>.

287 DRFM exploits technological advances in data processing rates. Basically, it employs high-speed sampling and digital memory to capture and alter a radar's physical radio wave properties, returning a distorted version to the radar that propagated the original signal, leading it to incorrectly estimate a target's range and velocity.

288 Where imperial forces failed to maintain this advantage, as at the Battle of Isandlwana in South Africa in 1879, the results for the Europeans could be catastrophic. Donald R. Morris, *The Washing of the Spears* (New York: Konecky & Konecky, 1965), 353–77.

289 For a discussion of the Royal Navy's development of a battle fleet focused on striking at extended ranges, see Krepinevich, *Origins of Victory*, 166–253.

290 For a discussion of the US Navy's shift from a fleet centered on the line of battle to one built around the fast carrier task forces, see Krepinevich, *Origins of Victory*, 296–341.

291 Geller, "Defense of Guam," 23.

292 Doshi, *The Long Game*, 82.

and unmanned aircraft, along with submarines operating within the PLA's A2/AD threat ring and armed with extended-range missiles, can execute suppression strikes against the PLA's strike arm and scouting elements. Cyber payloads, electronic warfare, and accurate battle damage assessment (BDA) can support and enhance these strikes.

The Coalition can boost the defense of its strike arm through such initiatives as base hardening and aircraft dispersion, as well as by increasing the range of carrier-based aircraft, thereby enabling carriers to operate from more distant, and safer, locations. Coalition forces can also employ preferential air and missile defense, whereby air and missile defense units concentrate their efforts on defending only those air bases where friendly aircraft are actually located. Finally, as will be elaborated on presently, by degrading the PLA's scouting capability, including its ability to perform effective BDA, the Coalition can greatly complicate the Chinese targeting problem while driving up its costs.

### Strike Operations

Coalition strike forces capable of penetrating China's A2/AD forces and operating effectively in nonpermissive environments can do much to deny the PLA the conditions necessary to wage a war of aggression. Most of this capability resides in the US military. Unfortunately, when it comes to defending the First Island Chain, the US military's ability to execute such strikes is relatively modest when measured against the size and range of China's strike forces. On a more positive note, the United States is planning to expand its fleet of penetrating long-range bombers through its B-21 program. It is also looking to expand its production rate of *Virginia*-class SSNs, which it can arm with cruise missiles.<sup>293</sup> These submarines can operate in relative safety within China's A2/AD bubble, as can the US Navy's *Ohio*-class SSGNs, each of which the DoD can equip with over 100 cruise missiles. Although these SSGNs are being phased out of

<sup>293</sup> While the "procurement rate" in the US Navy's budget is two ships per year, the actual *construction/delivery rate* is only 1.3 ships per year. With older Los Angeles-class boats being inactivated at three per year, America's submarine force is *shrinking* and likely will not stop shrinking for another ten years or so. I am indebted to Karl Hasslinger for this observation.

service, newer *Virginia*-class SSNs will include Virginia Payload Modules (VPMs) that can increase the sub's payload capacity to 40 cruise missiles to offset the loss of the SSGNs. In the longer term, the United States could extend production of the follow-on *Columbia*-class ballistic missile submarines (SSBNs) beyond current projections to provide SSGN replacements for the retiring *Ohio* boats.<sup>294</sup> As for the US Navy's carrier strike arm, there are no plans to increase the carrier air wing's near-term ability to operate at significantly greater ranges in nonpermissive (A2/AD) threat environments. There is a requirement for 1,300 long-range carrier-based aircraft—but the date for realizing this aspirational objective is 2045.<sup>295</sup>

On a more positive note, two Coalition core members, Australia and Japan, are making significant progress in fielding strike capabilities to enhance Archipelagic Defense.

### Australia

The Australia–United Kingdom–United States (AUKUS) trilateral security agreement, signed in September 2021, calls for the latter two states to assist Australia in building an SSN force in Australia. To that end, the US Navy is preparing to increase the number of Australian sailors aboard its nuclear attack submarines and to expand their roles while they are serving aboard these boats.<sup>296</sup> Even more important than size—the US Navy's

<sup>294</sup> While this option is available in theory, it will be difficult to exercise in practice without incurring a substantial gap in the US Navy's SSGN force. Megan Eckstein, "US Navy Reorganizes Submarine Enterprise to Address Challenges in Construction, Maintenance," *Defense News*, September 27, 2021, <https://www.defensenews.com/naval/2021/09/27/us-navy-reorganizes-submarine-enterprise-to-address-challenges-in-construction-maintenance/>; and Tony Capaccio, "New US Nuclear Submarines Hobbled by Billions in Growing Costs and Delays," *Stars and Stripes*, June 8, 2022, <https://www.stripes.com/branches/navy/2022-06-08/navy-submarine-programs-delays-costs-6275357.html>.

<sup>295</sup> Brian Everstine, "US Navy Wants Its Carrier Air Wing 60% Uncrewed," *Aviation Week*, September 19, 2022, <https://aviationweek.com/shows-events/afa-air-space-cyber-conference/us-navy-wants-its-carrier-air-wing-60-uncrewed>. See also Jerry Hendrix, *Retreat from Range* (Washington, DC: Center for a New American Security, 2015), 1; John M. Donnelly, "Navy's Top-Dollar Stealth Fighter May Not Go the Distance," *Roll Call*, May 21, 2018, <https://rollcall.com/2018/05/21/navys-top-dollar-stealth-fighter-may-not-go-the-distance>.

<sup>296</sup> The three countries have also agreed to work on sharing technology in areas such as unmanned systems, hypersonics, electronic warfare, and quantum computing. John Grady, "Fast Track Aussie Nuclear Submarine Development, Says MP on AUKUS Anniversary," US Naval Institute, September 16, 2022, <https://news.usni.org/2022/09/16/fast-track-aussie-nuclear-submarine-development-says-mp-on-aukus-anniversary/>; and Paul Garvey, "US Raises Closer Submarine Ties under Nuke Deal," *The Australian*, December 2, 2022, <https://www.theaustralian.com.au/nation/defence/us-rear-admiral-richard-seif-raises-closer-submarine-ties-under-nuke-deal/news-story/e5e43c-09c4d84f5fca44487a7419a18>.

Virginia-class SSNs are roughly twice the displacement and 50 percent longer than the Australian Navy's diesel-powered *Collins*-class boats—is the difference in propulsion. Nuclear-powered submarines offer much higher speed (important for the WPTO) and effectively unlimited range. (The current limitation on how long an SSN can spend at sea is the amount of food it can hold on board for its crew.) Thus, Australian SSNs can play an important role in defending the First Island Chain and securing the SLOCs between Australia and the United States.<sup>297</sup>

The Australians are also taking steps to improve their extended-range precision-strike capability. Canberra recently entered agreements with Washington to purchase 80 Joint Air-to-Surface Standoff Missile—Extended Range (JASSM-ER) missiles. These stealthy cruise missiles have a range exceeding 500 miles, and Australian forces can deploy them from the Royal Australian Air Force's (RAAF) F-35 Lightning II or F/A-18F Super Hornet fighters.<sup>298</sup>

As alluded to above, Australia can also enhance Archipelagic Defense by virtue of its strategic location. There is no clearer example of this than with respect to hosting long-range US bombers on its soil. In particular, once the US B-21 bomber now in development reaches its initial projected force of 100, it will provide the Coalition with a substantial amount of prompt striking power at the point of greatest danger along the First Island Chain. Moreover, the bombers can penetrate deep into China along multiple axes, presenting the Chinese with a difficult choice. The PLA can divert forces to defend these threatened high-value assets, either at their location (point defense)

or along the new Coalition axes of advance (for example, along approach routes through South or Southeast Asia)—or leave these assets increasingly vulnerable to attack.

## Japan

In recent years, Japan has begun developing its strike capabilities, including the air-to-surface Joint Strike Missile and the JASSM-ER. These missiles have a range of roughly 500–900 km (around 300–550 miles). The JSDF is also extending the range of Japan's Type-12 ASCM from the current 200 km to 900 km (roughly 125–550 miles). The JSDF's new ASCM, currently under development, reportedly has a range of 2,000 km (or about 1,250 miles). These missiles would be capable of holding Chinese assets operating in and above the East China Sea at risk, as well as key military and economic targets along much of China's northern coast.<sup>299</sup>

In December 2022, the Japanese government approved establishing a capability to strike enemy bases that are preparing to launch attacks. To this end, Japan's Defense Ministry is considering developing at least 10 types of missiles, including hypersonic missiles, that its forces can launch from land, sea, and air. In the meantime, Tokyo is planning to buy up to 500 US Tomahawk cruise missiles by 2027. In addition, the Japanese are planning to launch some 50 small satellites to provide real-time information on the location of enemy military facilities on the ground and on naval vessels at sea, thereby providing scouting information for Japan's extended-range strike arm.<sup>300</sup> Capabilities like these, along with Japan's move to diversify its basing structure, would significantly enhance its ability to execute Archipelagic Defense.

That being said, as in the case of Australia—and, one might add, the United States—history suggests that while Japan's

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297 As with any extended, large-scale, and complex undertaking—even between close allies—significant barriers must be overcome to create an Australian nuclear attack submarine force, and to do it in a reasonable amount of time. One barrier is the American submarine industrial base, which is experiencing difficulties simply staying on track with the US Navy's production needs. There are some US concerns over the Australians' ability to protect the highly sensitive technology that goes into the submarines. And there are worries that Canberra may not have the resolve to persist in the face of the unforeseen obstacles that, history shows, inevitably arise along the way in such complex endeavors. Peter Jennings, "Memo PM: On AUKUS, You Need to Lead It or Lose It," *The Australian*, January 9, 2023, <https://www.theaustralian.com.au/commentary/memo-pm-on-aukus-you-need-to-lead-it-or-lose-it/news-story/8ad5665cfcdbd74f5dc4f2c3005dab21c>.

298 Gabriel Honrada, "US Missile Sale to Australia Aims Fast and Hard at China," *Asia Times*, July 23, 2022, <https://asiatimes.com/2022/07/us-missile-sale-to-australia-aims-fast-and-hard-at-china>.

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299 Hornung, *Ground-Based Intermediate-Range Missiles*, 35–37.

300 Development of 10 Long-Range Missiles Being Mulled," *Yomiuri Shimbun*, December 1, 2022, <https://japannews.yomiuri.co.jp/politics/defense-security/20221201-74256>; "Satellite Constellation to Be Launched in Line with Counterattack Capabilities," *Yomiuri Shimbun*, November 28, 2022, <https://japannews.yomiuri.co.jp/politics/defense-security/20221128-73800>; and Mina Pollmann, "Japan's Ruling Coalition Approves Counterstrike Capability," *The Diplomat*, December 6, 2022, <https://thediplomat.com/2022/12/japan-approves-counterstrike-capability>.

moves to improve its defenses are very encouraging, the road ahead will be challenging. Put simply, for democracies in particular, it is easier to proclaim a defense buildup than to complete one.<sup>301</sup>

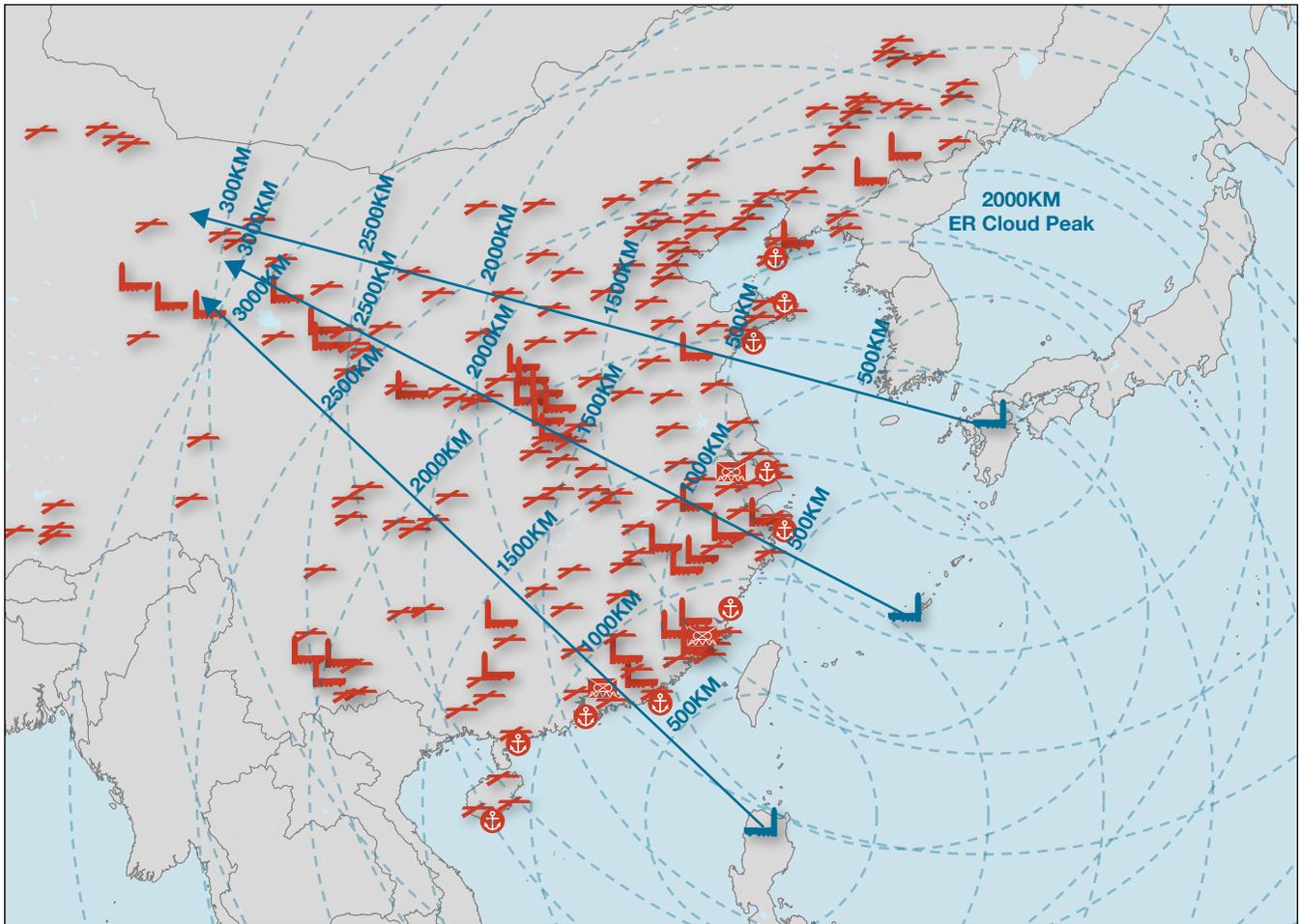
301 Ryosuke Hanada, "Japan's Ramped-Up Defense Spending Not a Done Deal," *Asia Times*, August 1, 2022, <https://asiatimes.com/2022/08/japans-ramped-up-defense-spending-not-a-done-deal>. Taiwan plans to increase its defense budget by roughly 4 percent in the coming year, which would raise it to \$12.78 billion—less than 2 percent of the country's GDP. Lee Hsin-fang and Jonathan Chin, "Defense Budget to Grow 4% on China Threats: Sources," *Taipei Times*, July 31, 2022, <https://www.taipeitimes.com/News/front/archives/2022/07/31/2003782709>. South Korea is a notable exception, making significant increases to its defense budgets in recent years, raising it to nearly 3 percent of the country's GDP. Its focus, however, is primarily on the threat posed by North Korea. "Mil-

### Ballistic Missiles

Ideally, within the next decade, the Coalition would equip its forward-positioned ground forces along the First Island Chain with extended-range rocket artillery and cruise missiles (see map 19). Moreover, now that the United States is no longer a party

itary Expenditure (% of GDP)—Korea, Rep.," World Bank Data, accessed March, 2023, <https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS>; and Jon Grevatt and Andrew MacDonald, "South Korea Proposes 4.5% Increase in 2022 Defence Budget," *Janes*, August 31, 2021, [https://www.janes.com/defence-news/news-detail/south-korea-proposes-45-increase-in-2022-defence-budget\\_19960](https://www.janes.com/defence-news/news-detail/south-korea-proposes-45-increase-in-2022-defence-budget_19960). This would bring South Korea's annual budget to roughly \$48 billion.

Map 19. Archipelagic Defense: Extended-Range Precision Strikes



Source: Author.

to the INF Treaty, it should move to field MRBMs and IRBMs, as well as extended-range ground-launched cruise missiles (GLCMs). This would end the PLA's long-standing monopoly in this important area of the military competition. A strike capability along these lines would enable the Coalition to hold a growing number of key PLA targets at prompt risk of destruction, even those deep in China's interior. As in the case of the threat posed by the US bomber fleet, the PLA would have to decide whether to leave these assets vulnerable or divert substantial resources to defend them.

This begs the question, however, of where the Coalition would base these missiles. The most likely candidates are America's two core Coalition partners, Australia and Japan.

Given Canberra's expressed willingness to consider US bomber deployments to Australia, it might welcome US basing conventionally armed IRBMs on its soil. If so, the two allies would confront the problem of Australia's distance from China. Even an IRBM base in northern Australia at the RAAF Base Tindal could range only a small portion of southern China.

Japan, on the other hand, sits on China's doorstep, greatly reducing the range problem. Given Japan's increased interest in extended-range strike systems, the prospect of Tokyo and Washington co-developing IRBMs and basing some in Japan under either Japanese, US, or combined control does not seem farfetched. Importantly, IRBMs based on Japanese soil can reach much of the First Island Chain, enabling these missiles to provide prompt, accurate defensive fires as part of the Coalition's counter-concentration force.

Interestingly, IRBMs do not clearly fall within Japan's taxonomy of offensive systems. In 2018, Defense Minister Onodera Itsunori, in presenting examples of weapons that exceed the minimum necessary level for self-defense, referenced only intercontinental ballistic missiles, long-range strategic bombers, and aircraft carriers. Arguably, the basis for this rests in a 1956

statement by the Japanese government that declared, in not so many words, that Japan is not obligated to "sit and wait to die" when it faces an imminent attack. Instead, it should have the means to strike enemy bases where forces are preparing to strike Japan. This logic is the foundation of Tokyo's decision to pursue a counterstrike capability.<sup>302</sup> In this regard, the most important near-term action before Tokyo and Washington concerns whether the United States should proceed alone in developing IRBMs and GLCMs or do so jointly.

### **Bombs or Missiles?**

As the Coalition moves to offset the PLA's advantage in extended-range missile systems for the reasons I described above, it has to address the issue of bombs versus missiles. While the Coalition does not want to be outranged by the PLA, range comes at a cost. And while missiles offer speed relative to air-breathing systems, speed also comes at a premium.

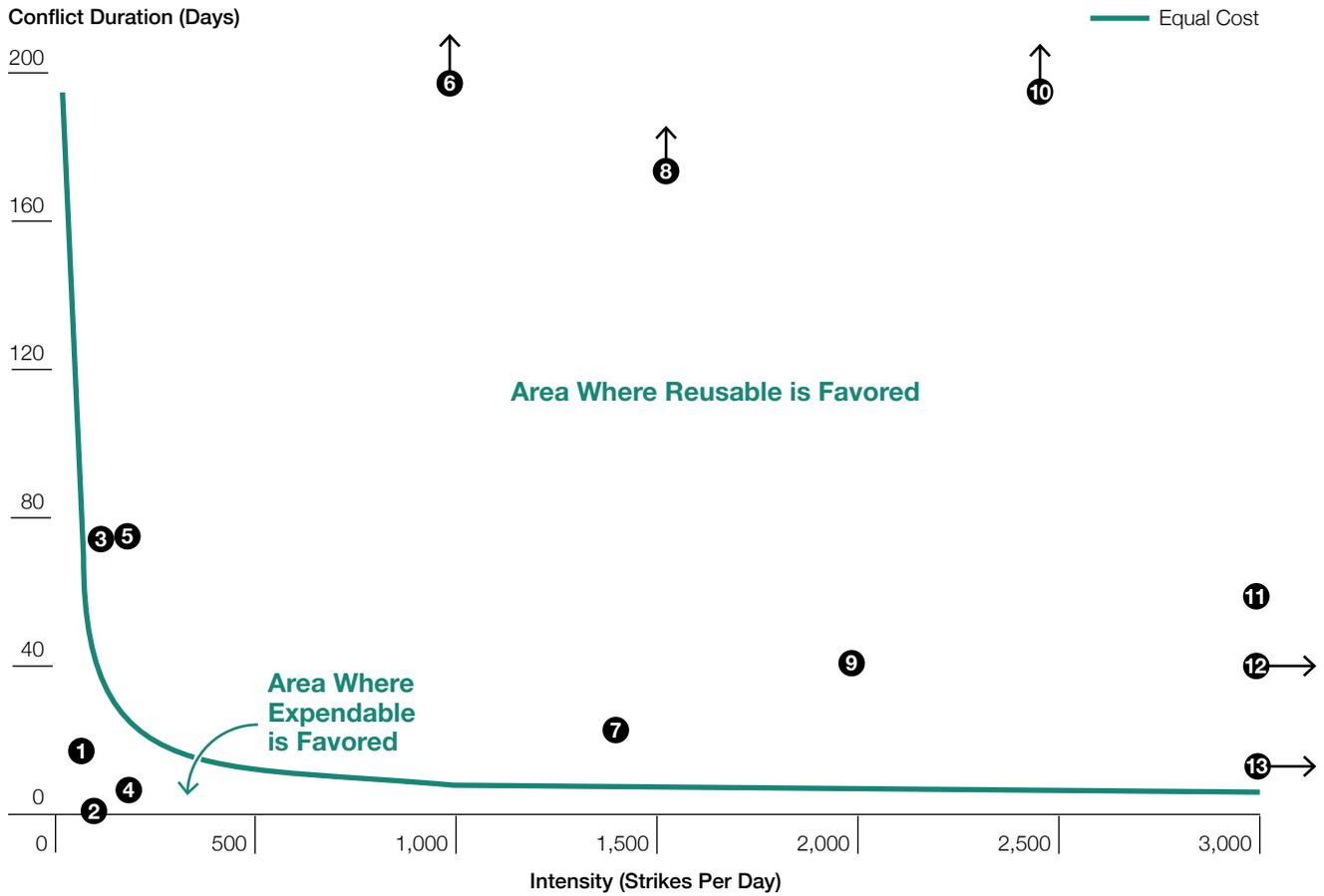
Thomas Hamilton has provided a point-of-departure approach to thinking about the issue. His assessment finds that if the Coalition's only contingency is a short campaign against a minor adversary, then developing, fielding, and maintaining weapons platforms like stealthy aircraft is not cost-effective. Missiles can do the job at considerably less expense. As Hamilton puts it, "There is no point in buying a reusable platform if you are not going to reuse it." Of course, China is not a minor adversary. Thus, as Hamilton's analysis shows, displayed graphically in figure 2, reusable strike platforms are increasingly cost-effective as a conflict lengthens, which a Sino-US Coalition war is assumed to do in this study.<sup>303</sup>

As Archipelagic Defense makes clear, the question of bombs or missiles presents a false choice. It is not a matter of one or

<sup>302</sup> For a detailed assessment of the potential role of IRBMs in a defense of the First Island Chain, see Hornung, *Ground-Based Intermediate-Range Missiles*, 14, 17, 19, 23–25, 30.

<sup>303</sup> Thomas Hamilton, *Expendable Missiles vs. Reusable Platform Costs and Historical Data* (Santa Monica, CA: RAND, 2012), ix–x. Hamilton notes that the crossover point between missiles and bombs depends on a range of assumptions, including the cost of the various strike systems and munitions, their availability (such as sortie rates), and weapon utilization rates.

Figure 2. Reusable vs. Expendable Costs and Historical Conflicts



- 1 Deliberate Force
- 2 Infinite Reach
- 3 Enduring Freedom (B-1 and B-52)
- 4 Desert Fox
- 5 Allied Force (Total)
- 6 Rolling Thunder (1,320 days duration)
- 7 Iraqi Freedom
- 8 Linebacker I
- 9 Desert Storm (B-52)
- 10 1968 all B-52 Southeast Asia
- 11 Niagara (Khe Sanh B-52)
- 12 Desert Storm total
- 13 Linebacker II (B-52)

Source: Thomas Hamilton, *Expendable Missiles vs. Reusable Platform Costs and Historical Data* (Santa Monica, CA: RAND, 2012), ix.

the other but rather the mix of the two, their quantities, where the Coalition positions them, and how it protects and employs them, among other factors, that will determine the composition of the Coalition's strike arm.

### Counterstrike Operations

In a contest between reconnaissance-strike complexes, the Chinese will be looking to deconstruct the Coalition's scouting, battle network, and strike capabilities as part of their goal of

establishing control of domains they deem necessary to accomplish their aggressive objectives. As is the case with respect to the scouting/counter-scouting competition, the strike/counterstrike competition finds the Coalition seeking to protect its strike forces from the PLA's initial attacks and to expand and sustain them over time. A preliminary assessment of this challenge emphasizes base hardening and dispersion, preferential air and missile defense, reduction of the PLA's BDA capabilities, hit-and-run operations, strikes against Chinese strike forces, and the use of ground force strike elements. Of course, given the tight integration of the Coalition's scouting and strike components, its ability to prevail in the scouting competition will also exert significant influence on how it fares in the strike competition.

### Base Hardening

The Coalition cannot assume it will be able to disperse its forward-based aircraft from their bases prior to an attack. Moreover, countries located along the First Island Chain (especially Japan and Taiwan) must, owing to their geographic locations, position their strike forces within range of China's A2/AD capabilities. As for the United States, since long-range strike systems cost substantially more than short-range systems, there is a limit to the proportion of long-range systems the Americans can include in their strike force mix without significantly diminishing its overall striking power. Thus, for reasons of cost as well as military effectiveness, the US military needs to maintain a forward-deployed strike force. Moreover, forward-deployed US forces, including combat aircraft located at bases like Kadena on Okinawa, are important indicators of American resolve and thus an important means of assuring its Coalition partners.

Given these considerations, the question arises, How best can the Coalition protect these strike assets against PLA missile and air attacks? One way is through base hardening that increases the cost to China of taking out Coalition strike forces through air and missile strikes.

### Base Dispersion

Expanding the number of bases from which Coalition strike forces operate can also enhance their survivability, especially in the case of aircraft. The potential to exploit base proliferation is significant. For example, the Japan Air Self-Defense Force (JASDF) has concentrated its combat aircraft at 10 bases.<sup>304</sup> The US military has but three air bases in Japan hosting combat aircraft.<sup>305</sup> All of these airfields, except the US base at Andersen on Guam, are within range of substantial numbers of PLA ballistic and cruise missiles, as well as PLA fighter-bombers.<sup>306</sup> These concentrated Coalition air assets need to be capable of dispersing during crises or in a war to reduce their vulnerability. Japan alone has over 50 existing runways suitable for fighter aircraft.<sup>307</sup> Dispersing Coalition military air assets among these airfields as part of its peacetime posture would compel the PLA to spread its attacks over a far greater number of air bases than is currently the case. The Coalition should also consider constructing austere air bases to frustrate PLA targeting. Iwo Jima, Palau, Saipan, and Tinian along the Second Island Chain offer potential base locations. The US Marine Corps is also exploring the deployment of its F-35B STOVL (short takeoff and vertical landing) strike aircraft to various austere air bases as a means of further complicating Chinese air base targeting.<sup>308</sup>

To be sure, there are significant costs in proliferating and hardening bases, as the economy-of-scale benefits that forces gain

304 The JASDF has 20 main air bases. Of these, Chitose, Gifu, Hamamatsu, Hyakuri, Kanazawa/Komatsu, Misawa, Nagoya, Naha, Nyutabaru, and Tsuiki host combat aircraft. The base at Misawa also hosts US combat air units. Scramble, "Japan Air Self-Defense Force," accessed March, 2023, <https://www.scramble.nl/planning/orbats/japan/japan-air-self-defense-force>. See also "JASDF Base Histories," J-HangarSpace, <http://www.j-hangarspace.jp/jasdf-base-histories>.

305 The US Air Force operates from bases at Kadena on Okinawa and at Yokota and Misawa on Honshu. The US Air Force also maintains air bases at Kunsan and Osan in South Korea and Andersen Air Force Base in Guam. Darah Phillip, "US Air Force in Japan," Japan-US Military Program, accessed March, 2023, <https://www.jumprogram.org/us-air-force-in-japan>; and "US Military Bases in South Korea," MilitaryBases.com, accessed March, 2023, <https://militarybases.com/overseas/south-korea>.

306 *China Military Developments*, 2022, 52–53, 55, 60, 64–65.

307 Japan has 51 runways over 8,000 feet long, while the Philippines has 12, South Korea 23, and Taiwan 15. Central Intelligence Agency, "Field Listing—Airports—with Paved Runways," *World Factbook*, <https://www.cia.gov/the-world-factbook/about/archives/2021/field/airports-with-paved-runways>.

308 David H. Berger, *Force Design 2030* (Washington, DC: US Marine Corps, Dept. of the Navy, 2020), 6, <https://www.hqmc.marines.mil/Portals/142/Docs/CMC38%20Force%20Design%202030%20Report%20Phase%20I%20and%20II.pdf?ver=2020-03-26-121328-460>. <http://www.mccdc.marines.mil>.

by concentrating aircraft at a few “soft” bases are substantial. Thus, it will be important for the Coalition—especially the United States and those members positioned along the First Island Chain—to identify an optimum mix of systems and bases, not only between short- and extended-range aircraft, and between aircraft and missiles, but also in the number and type of bases: between major and minor, hardened and unhardened, forward and remote.

### Battle Damage Assessment

During the Cold War, the United States made substantial investments in hardened shelters for fighter aircraft as well as in buried fuel and weapons storage facilities to enhance the resilience of its main operating bases in Western Europe and Japan.<sup>309</sup> While hardening bases can boost aircraft survivability, hardening alone is not a panacea. For example, following a Chinese attack, while the PLA conducts BDA scouting operations, it could continue pinning Coalition aircraft in place by employing submunitions in a follow-on attack. While the submunitions would not damage sheltered aircraft, they could prevent the aircraft from leaving their shelters until crews have cleared or repaired runways. This could take hours or longer to accomplish, allowing time for the PLA to complete its BDA operations to identify targets that survived the initial assault. The PLA could then concentrate its follow-up attacks on any surviving Coalition targets.<sup>310</sup>

For the Coalition, the picture is not entirely bleak. As in many instances in which the conflict centers on competing recce-strike complexes, scouting is key. If the Coalition were able to degrade the PLA’s scouting capabilities, particularly those providing BDA, then a combination of hardened and proliferated bases could greatly complicate PLA targeting, driving up its at-

tack costs to potentially unsustainable levels. This is because, lacking knowledge of which shelters and other hardened assets it had destroyed, the PLA would have to re-strike all of them fully to ensure a comparable level of success.

### Preferential Air and Missile Defense

The Coalition can augment its defenses still further by employing preferential air and missile defenses.<sup>311</sup> As the term suggests, this involves Coalition partner air and missile defense forces defending only those bases under PLA attack that actually host Coalition aircraft,<sup>312</sup> while ignoring attacks on bases that do not. Preferential defense further drives up Chinese strike force requirements as, absent accurate BDA, the PLA must assume any base it chooses to attack will encounter concentrated Coalition air and missile defense forces.

With regard to preferential defense systems, mobile Coalition air and missile defense forces offer several advantages. First, they are generally more difficult for an enemy to keep track of than fixed systems, and second, they can maneuver to concentrate their defensive fires.<sup>313</sup> Interestingly, in a manner quite consistent with Archipelagic Defense, some Chinese analysts view Aegis-equipped alliance maritime forces as an operational reserve, maneuvering to create a Coalition defensive multilayered “sea wall.”<sup>314</sup> Creating this maritime sea wall and integrating it with land-based air and missile defense systems should be a Coalition priority.

309 See Christopher J. Bowie, *The Anti-Access Threat and Theater Air Bases* (Washington DC: CSBA, 2002), 6–9. See also John Stillion and David T. Orletsky, *Airbase Vulnerability to Conventional Cruise-Missile and Ballistic-Missile Attacks: Technology, Scenarios, and US Air Force Responses* (Santa Monica CA: RAND, 1999), 30.

310 Roger Cliff, Mark Burtles, Michael S. Chase, Derek Eaton, and Kevin L. Pollpeter, *Entering the Dragon’s Lair: Chinese Antiaccess Strategies and Their Implications for the United States* (Santa Monica, CA: RAND, 2007), 34.

311 Given that the military competition between China and the Coalition is open-ended, enhancing air and missile defense, as the US might by leveraging advances in directed energy, may over time provide new sources of advantage for Coalition forces—and for the PLA as well.

312 Importantly, this could also apply to warships at naval bases.

313 There is speculation that the PLA has significant concerns about Japanese and US Aegis defense systems in terms of their ability both to attrite the PLA’s scouting forces and to intercept its extended-range strike elements. When the US Navy employed an Aegis interceptor to destroy a US satellite in February 2008, it triggered speculation in Chinese military circles about American anti-satellite capabilities and concern that the United States would share its technology and know-how with Japan, South Korea, and perhaps India as well. Chinese analysts have also expressed alarm about the Aegis system’s potential to intercept cruise and ballistic missiles as well as aircraft. Some Chinese military leaders see Washington as determined to create an “anti-ballistic missile net” over the two island chains. Toshi Yoshihara and James Holmes, *Red Star over the Pacific: China’s Rise and the Challenge to US Maritime Strategy* (Annapolis, MD: Naval Institute Press, 2010), 109–10.

314 Yoshihara and Holmes, *Red Star over the Pacific*, 110.

The Coalition's ability to neutralize Fifth Column efforts may represent an important factor in enabling effective preferential air and missile defenses. In theory, Chinese agents posing as civilians and living near Coalition air and naval bases could employ binoculars, consumer drones, cell phones, and internet access to scout these locations and report their findings in near real-time to the PLA. The Coalition will likely need to establish "keep-out" zones around bases in populated areas and increase their emphasis on using bases in remote, unpopulated areas.

### Hit and Run

Given their modest improvements in aircraft strike range, especially relative to PLA land-based systems, Coalition maritime surface forces facing China's A2/AD complexes will likely find it highly risky to operate in close proximity to the west of the First Island Chain. Generally speaking, this kind of challenge is not new. It stretches back as far as World War II, when German and Italian land-based aircraft and submarines made it prohibitively costly for the Royal Navy to operate in large parts of the Mediterranean Sea. Similarly, Japanese kamikaze pilots inflicted heavy losses on US Navy surface combatants during the invasion of Okinawa.<sup>315</sup> The trend has continued, as modern missiles and aircraft are rendering forward naval bases increasingly vulnerable to attack.<sup>316</sup>

A similar problem confronted the United States Navy during the Cold War, particularly its Sixth Fleet, which operated in the Mediterranean Sea. In the event of war, one of the fleet's principal missions involved launching air attacks on the Soviet Union, including strikes with nuclear weapons. The range limitations of US carrier strike aircraft compelled the fleet to maneuver into the Eastern Mediterranean to launch its attacks, bringing it within range of Soviet land-based strike aircraft. There was also the Soviet Union's submarine force to consider, which by the latter half of the 1950s had begun to challenge the Sixth

Fleet's access to the Middle Sea's eastern waters. Under these conditions, questions arose as to whether the fleet could sortie far enough into the Eastern Mediterranean, remain there long enough to launch its attacks, recover its aircraft, and depart before the Soviets could locate and engage it.<sup>317</sup>

Beginning in 1956, the Sixth Fleet conducted a series of experiments to increase the survival time of its carriers in the event of war with the Soviet Union.<sup>318</sup> The exercises tested and refined a concept called "Haystack," as the objective was to make locating US warships—especially its carriers—"as difficult as finding a needle in a haystack." The concept emphasized dispersing fleet elements, operating more autonomously, employing deception methods, and minimizing communication.

Three major exercises took place: Haystack Charlie, Delta, and Echo. Two aircraft carriers, their escorts, and their logistics support ships operated against an "enemy" force of conventional submarines and land-based attack and ISR aircraft. In contrast to their practice of forming task groups, which characterized carrier operations toward the end of the Pacific campaign in World War II, the carriers operated some 250 miles apart, launching simulated air strikes while "enemy" forces sought to locate and attack them.

The Haystack exercises enabled the Sixth Fleet to develop methods of operation that extended the time before the enemy detected and engaged the carriers. Prior to the exercises, strategists projected that US carriers operating in the Eastern Mediterranean could avoid detection for two hours. By the end of the exercises, the carriers operating in fleet task forces employing the refined Haystack concept were avoiding detection for at least eight hours; half were avoiding detection for 15 hours.

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<sup>315</sup> Krepinevich, *Maritime Competition*, 28–41.

<sup>316</sup> Hal M. Friedman, "The Quiet Warrior Back in Newport: Admiral Spruance, the Return to the Naval War College, and the Lessons of the Pacific War, 1946–1947," *Naval War College Review* 64, no. 2 (Spring 2011): 132.

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<sup>317</sup> For a detailed discussion of the US Navy's response, see Robert G. Angevine, "Hiding in Plain Sight: The US Navy and Dispersed Operations under EMCON, 1956–1972," *Naval War College Review* 64, no. 2 (Spring 2011): art. 6. See also Operations Evaluation Group, *The Sixth Fleet Concept and Analysis of Haystack Operations*, OEG Report 77 (Washington, DC: Office of the Chief of Naval Operations, 1958).

<sup>318</sup> For a more detailed discussion of US fleet exercises conducted to address this matter, see Krepinevich, *Maritime Competition*, 41–47.

Today the US Pacific Fleet confronts a similar problem to that of the Sixth Fleet nearly 70 years ago. While the Western Pacific gives it more room to “hide” from PLA scouts than was the case in the Eastern Mediterranean, the PLA’s scouting capabilities are far superior to those of the Soviets in the 1950s. Moreover, a substantial range disparity also exists between the PLA’s strike systems and those of the US fleet, in favor of the former. Thus, US combatants, and those of its Coalition partners, in their role as the operational maneuver force, will likely run a high risk of detection—and engagement—if they attempt to move within the PLA’s engagement envelope to defend the First Island Chain. Given these circumstances, the Coalition navies would do well to emulate the US Navy’s Cold War efforts by conducting a sustained series of exercises to identify how they can move forward to engage in strike operations at acceptable levels of risk. Of course, they should supplement these exercises with efforts to enhance the fleet’s counter-scouting capabilities and, especially, to substantially extend the range at which it can conduct strike operations.

### **Strike the Archer**

The Coalition can make its air and missile defense forces’ job easier if it can “thin out” PLA strikes by compelling the Chinese to launch attacks in suboptimal pulses, or salvos. The challenge is to confront the PLA with a similar problem to that of the Coalition with respect to defending land-based strike forces from attack. Only now it is Coalition strike forces threatening Chinese air, naval, and missile bases and their strike platforms.

Coalition aircraft and missiles capable of operating effectively in highly contested environments, such as that posed by China’s A2/AD complex, can threaten PLA air and missile bases and the strike systems located there. Yet the Coalition lacks anything approaching the PLA’s capabilities in this area of the military balance, especially with respect to missiles. Consequently, the PLA can launch its attacks in optimal salvos without having to devote significant resources to defending against similar Coalition strikes.

Hence, the Coalition needs to redress this imbalance by developing a strike arm capable of holding high-value PLA forces at risk, including key operating bases throughout China. This can best be accomplished with stealthy long-range strike systems, such as bombers and extended-range unmanned strike aircraft, submarines armed with long-range cruise missiles, and land-based IRBMs. Although Archipelagic Defense assigns ground forces a primarily defensive role, they too can play a significant and potentially a major role in strike operations.

### **Ground Forces**

Given their relative advantage over naval and air forces to harden and disperse, as well as to draw on deep magazines, Coalition ground forces equipped with long-range rocket artillery and positioned along the First Island Chain could hold PLA air and naval bases along China’s coast at risk of attack. Extended-range rocket artillery could prove even more effective, however, in an extended conflict, in which economic warfare is likely to rise in importance. China’s most important industrial centers are in the Beijing–Tianjin, Shanghai–Nanjing, and Guangzhou–Shenzhen corridors, all located along the PRC’s coastline. As *Science of Military Strategy* finds, “These areas directly face the powerful enemy’s superior sea, air, space, and cyber combat systems. In wartime, they very likely will become the strike areas of first choice by the powerful enemy.”<sup>319</sup> The Coalition should ensure it can exploit this vulnerability.

Should the Coalition field a ground force extended-range strike capability, as with air and naval forces, the PLA will either have to accept its own strike forces’ vulnerability or devote more time and resources to defending them. To the extent the PLA pursues the latter course of action, such as by shifting bases or (in the case of mobile missiles) locations, its ability to launch optimum strike packages will likely be lower, perhaps significantly. If so, instead of a “downpour” of Chinese missiles and precision-guided munitions launched as a salvo, Coalition air

319 Recall that the term *powerful enemy* is a euphemism for the United States. Yoshihara, “Chinese Views of Future Warfare,” 164–65.

and missile defenses could find themselves defending against a more manageable “drizzle” of missiles, greatly reducing the attacks’ effectiveness.

### Summary

When it comes to the scouting/counter-scouting and strike/counterstrike competitions, Coalition defense planners must think *holistically*. There are a number of active and passive measures the Coalition can bring to bear to prevail in the scouting competition; space stands as possibly the dominant domain in the struggle for advantage. With regard to strike, the costs associated with adapting the Coalition’s basing posture—including base hardening, base dispersal, and the transport assets it needs to move necessary supplies to sustain this expanded base network—are likely to be substantial. This is all the more reason to compel the PLA to confront the same problems, and the costs that go along with them.

To sum up, the combination of hardening and dispersing bases, employing preferential air and missile defenses, denying the PLA accurate battle damage assessment information, holding key Chinese assets at risk, suppressing or destroying PLA strike forces before they can attack (“killing the archer”), exploring novel naval strike operations, and leveraging the potential of ground force long-range fires can tip the scouting/counter-scouting and strike/counterstrike balance in the Coalition’s favor.

### Sea Denial and Sea Control

Actions the Coalition takes to deny the PLA control of the seas within the First Island Chain can also enhance the Coalition’s ability to control the seas beyond the chain. The following discussion shows how the operations associated with achieving these two objectives are intertwined.

In a clash of reconnaissance-strike complexes featuring cross-domain operations, success in the struggle to control the sea and undersea domains will find PLA and Coalition forces drawing on capabilities resident in these and other domains.

Which domains matter most to the PLA in its efforts to control the sea surface domain along the First Island Chain? For example, would the loss of space-based sensors, communications, and PNT fatally compromise PLA efforts to exercise control over the waters around Taiwan? Or could PLA capabilities in other domains easily take up the slack?

Alas, answers to these and other related questions are *highly circumstantial*. We know that forces operating in one domain can exert significant (and potentially decisive) influence on the competition in other domains. Thus, the competition to seize advantage in a particular domain (the sea surface, for example) could find the outcome dependent on the actions of forces operating in some or all of the other domains. This is hardly new. Recall that the US Navy’s victory at Midway owed much to its success in the air and electromagnetic domains (including code-breaking) in addition to its sea surface capabilities. *What is new since the last great-power war, however, is the substantially greater number of domains involved and the significant increase in the speed and scope (range) over which military operations occur.*

The PLA sees controlling the sea surface as dependent on its ability to exploit capabilities in other domains, especially the space, cyber, electromagnetic, and air domains. Under these circumstances, identifying the optimum mix of forces across the warfighting domains and their proper application to deny the PLA assured access to the seas represents a demanding proposition, and an exciting opportunity, for Coalition military planners. This is due to the fantastic variety of forces and capabilities available to achieve sea denial around the First Island Chain, the resource limitations that mandate difficult choices as to those the Coalition will field (and in what numbers), and choices as to *how* it will employ them within the context of operational concepts.

Moreover, since military forces increasingly conduct operations across domains, *it is important to focus on the domains that*

*the belligerents will most heavily contest and not necessarily the forces competing within the domains themselves.* In our example of PLA efforts to control the sea surface, surface warships may not be the principal determining factor. The PLA's emphasis on forces operating in the air, space, electromagnetic, and cyber domains suggests a belief that if it can control these domains, it will stand a good chance of seizing command of the seas, even if the PLAN's surface fleet is inferior to that of the Coalition.

If so, it may be possible to deny the PLA control of the sea surface along the First Island Chain without sinking a single PLAN surface warship. This would be the case if, for example, the PLA needed sea control solely for the purpose of moving transports carrying troops for an invasion of Taiwan, the Ryukyu Islands, or Palawan Island in the Philippines. As long as Coalition forces can sink these transport ships, regardless of the presence of PLAN surface warships—such as through a combination of mines, land-based aircraft, submarines, UUVs, and shore-based antiship missiles, it may not even require the presence of its own surface fleet.

### Sea Denial: The First Island Chain

The Coalition needs to control the seas beyond the First Island Chain to support the Coalition forces positioned along the chain and to defeat PLA efforts at blockade.

As for the waters inside the chain, Archipelagic Defense seeks to create a maritime no-man's-land to deny the PLAN assured access to the seas. As I noted earlier in this study, PLA theorists have written of "using the land to control the sea" along the First Island Chain to set the conditions for waging a war of aggression.<sup>320</sup> Archipelagic Defense employs Coalition A2/AD forces to accomplish the more modest task of denying the PLA the control it seeks.

<sup>320</sup> The concept of employing land-based forces to deny an adversary control of the sea, or to sustain sea control, has its origins in the Japanese military's planning during the period leading up to the Pacific War. In early 1941, Vice Admiral Inoue Shigeyoshi presented a memorandum titled "*Shin gunbi keikaku ron*" ("On modern weapons procurement planning"). In it, Inoue argued that rapid advances in aviation made it possible to establish air superiority at sea by employing land-based aircraft. David C. Evans and Mark R. Peattie, *Kaigun* (Annapolis, MD: US Naval Institute Press, 1997), 482–86.

### Scouting

Identifying those PLA forces attempting to establish sea control in the waters around the First Island Chain requires effective scouting. This study has discussed ways to defend the Coalition's scouting capabilities and to degrade the PLA's scouting forces. The discussion here focuses on possible contributions from ground forces deployed along the First Island Chain, whose job is to take up as much of the scouting and strike mission in their sector as possible to liberate the air and maritime forces that serve as the core elements of the Coalition's counter-concentration maneuver force. Recall that ground forces enjoy relative advantages over air and maritime forces in their ability to harden themselves and to exploit terrain for concealment and dispersion. Ground forces can also sustain operations over long periods thanks to their ability to create hardened munitions magazines<sup>321</sup> and to stockpile other key supplies (such as water, rations, and fuel). And unlike warships and aircraft, which must periodically return to large bases to replenish their supplies, ground forces can more readily sustain their dispersed posture.<sup>322</sup> Thus forward-deployed ground troops can play significant major roles in air and sea denial, coastal defense, and counter-scouting operations.<sup>323</sup> Japan's Ground Self-Defense Forces (GSDF) have already adopted these missions along the Southwest Wall.<sup>324</sup>

Ground forces can provide targeting information to joint and combined forces from satellites, air and missile defense radars, unmanned aerial vehicles, and surface-wave and sky-wave

<sup>321</sup> The United States' use of the MOAB (Massive Ordnance Air Burst) weapon in April 2017 in Afghanistan reflects the active competition between those seeking to harden fixed-point targets against destruction by precision-guided munitions and those working to produce munitions effective against such targets.

<sup>322</sup> For an example of how a ground force element's logistics might be structured, see US Marine Corps, *Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century* (Washington, DC: Department of the Navy, 2016), 24–25, <https://www.mcwf.marines.mil/Portals/34/Images/MarineCorpsOperatingConceptSept2016.pdf>.

<sup>323</sup> For a discussion of the role of ground forces in cross-domain operations, with emphasis on their role in defense of the First Island Chain, see Krepinevich, "How to Deter China." See also Jim Thomas, "Why the US Army Needs Missiles," *Foreign Affairs* 92, no. 3 (May–June 2013), <https://www.foreignaffairs.com/articles/united-states/2013-04-03/why-us-army-needs-missiles>.

<sup>324</sup> Japan Ground Self-Defense Forces, Western Army Headquarters, "Welcome to Camp Kengun," (briefing presented on May 18, 2015); and "Situation Surrounding Japan" (briefing presented on May 18, 2015).

OTH radars.<sup>325</sup> Positioned initially along the Ryukyu chain and, ideally, in the Philippines (and perhaps over time in Vietnam and Taiwan), these systems could provide scouting information to Coalition forces engaged in cross-domain sea-denial operations. Militaries whose material and technical resources are more modest could still benefit from data fed to them by these Coalition scouting systems.

The Coalition could equip forces it has positioned along the First Island Chain's southern sector with similar air, missile, and coastal defense systems. By developing longer-ranged SSMs and SAMs, Coalition ground forces could expand the contested air and sea zones significantly while establishing overlapping (and hence mutually supporting) fields of fire. Irregular forces in the Philippines, Taiwan, and Vietnam could be provided with less sophisticated systems to further complicate PLA efforts to seize control of the air and sea.

The emphasis on ground forces for sea denial operations along the First Island Chain does not, obviously, preclude the use of air and maritime forces. For example, Coalition navies can conduct peacetime intelligence preparation of the undersea and seabed domains by mapping China's undersea sensor and communications arrays as well as its seabed economic infrastructure. And air and maritime forces would naturally be present in force to defend at the PLA's main point of attack.

## Mines

Archipelagic Defense calls for the Coalition to emphasize the use of antiship mines to deny the PLA control of the seas. Mines have proven to be a highly effective means of defending against maritime forces and imposing disproportionate costs on

the enemy. During World War II, for example, static underwater mines sank roughly 2,100 vessels. While this is less than half the estimated 4,600 craft that submarines sent to the bottom, it is far greater than the sinkings by aircraft or surface warships. More recent wars have found mines sinking or damaging nearly four times as many US warships as all other types of weapons combined.<sup>326</sup>

More broadly speaking, Operation STARVATION, the US 21st Bomber Command's aerial mining campaign to block raw materials and food from reaching Japan, sank or damaged over 1,250,000 tons of Japanese shipping in the last five months of World War II. Moreover, it damaged or destroyed some 670 Japanese vessels, of which roughly 60 were warships. Over the entire Pacific War, mines sank or damaged over two million tons of Japanese shipping, roughly 25 percent of Japan's prewar merchant marine fleet. As the then head of Japan's minesweeping efforts Tamura Kyuzu put it, had the US implemented the mining campaign sooner, it "could probably have shortened the war."<sup>327</sup>

Moreover, consider that during World War II mines laid by German U-boats closed the port of Charleston, South Carolina, for 16 days. In all, Kriegsmarine submarines laid over 300 mines from Halifax, Nova Scotia, to the Mississippi Delta, sinking or damaging 11 ships.<sup>328</sup>

The success of minelaying operations continued after World War II. During the Korean War, some 3,000 Soviet and Chinese mines kept a United Nations 250-ship amphibious task force at bay off the coast of Wonsan for a week. Not only did it delay the assault and give the North Koreans time to organize their defenses, but it caused the loss of three minesweepers and more than 100 men during the initial minesweeping operations.

325 The US military is constructing the Tactical Mobile Over-the-Horizon Radar, or TACMOR, surface-wave OTH radar in Palau. Surface-wave OTHs have far less range than sky-wave OTH radars but, on the positive side, they do not suffer from these radars' "blind spot" at close ranges, so they can be very helpful for tracking ships, low-flying aircraft, and cruise missiles. Combining these two types of radars offers a more complete picture of the surface and air environments at close and extended ranges. Kelsey D. Atherton, "A New Radar Installation in the Pacific Will Let US Forces Look over the Horizon," *Popular Science*, January 5, 2023, <https://www.popsci.com/technology/us-building-over-the-horizon-radar-palau>; and Emma Helfrich and Tyler Rogoway, "U.S. Building Advanced Over-the-Horizon Radar on Palau," *The Drive*, December 30, 2022, <https://www.thedrive.com/the-war-zone/u-s-building-advanced-over-the-horizon-radar-on-palau>.

326 "Mines Are the Neglected Workhorses of Naval Strategy," *The Economist*, August 31, 2022, <https://www.economist.com/science-and-technology/2022/08/31/mines-are-the-neglected-workhorses-of-naval-strategy>.

327 Gerald A. Mason, "Operation Starvation" (unpublished paper, Air University, Maxwell Air Force Base, Alabama, February 2002), 2; and *The Economist*, "Neglected Workhorses."

328 Scott C. Truver, "Mines and Underwater IEDs in US Ports and Waterways," *Naval War College Review* 61, no. 1 (Winter 2008): 109, <https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?article=1756&context=nwc-review>.

Nearly 40 years later, in April 1987, during the Iran-Iraq War, the US guided-missile frigate *Samuel B. Roberts* nearly sank after striking a World War I-era contact mine. The ship's repairs cost about \$96 million, all due to the damage from a weapon costing roughly \$1,500. On February 18, 1991, in the same waters, the US helicopter assault ship *Tripoli* struck an Iraqi contact mine, which blew a hole measuring 23 feet by 25 feet in its side. The same day, a bottom mine almost split the US Aegis guided-missile cruiser *Princeton* in two. Repairing the ship cost over \$100 million, while the mine that inflicted the damage had cost around \$15,000. As was the case in the Korean War, barges and tugs laid around 1,300 Iraqi mines that stymied the US Marine Corps' plans for an amphibious assault landing to create a second front east of Kuwait City.<sup>329</sup>

In brief, mines are not only effective but also relatively cheap and easy to emplace. Submarines, surface warships, small craft, commercial vessels, fishing vessels, pleasure boats, fixed-wing aircraft, and helicopters can all deploy them. They can be placed from the surf zone (less than 10 feet of water) to depths exceeding 200 feet. Their explosive charge can be as high as several tons of high explosive, and they can employ a wide range of triggering mechanisms.

Mines can be made mobile. For example, the Hammerhead Encapsulated Effector mine is designed to rest on the seabed and launch a torpedo against an enemy submarine. Then there is China's EM-56 smart self-navigating mine, which a submarine deploys and which then moves to a target area, such as a port, and settles in to await a target. The US Navy is looking to create a "flexible minefield" of mobile mines that communicate acoustically with each other and change positions as necessary to optimize the chances of striking a target, or dispersing to avoid enemy mine-clearing operations. There are, of course, tradeoffs when designing mines. For example, mines that sit on the seabed are more difficult to detect than

anchor mines. They can also pack a greater punch since they do not need to use some of their internal space for air to provide buoyancy.<sup>330</sup>

The PLA has emphasized mines as a means of imposing disproportionate costs on its rivals. An essay in the People's Navy journal highlights their importance, noting:

**China has advanced sea mines. . . . this is a fatal threat to U.S. seaborne transport. . . . The moment conflict erupted in the Taiwan Strait, the PLA Navy could deploy mines. U.S. ships that want to conduct ASW [would] have to first sweep the area clear. When the U.S. fought in the Gulf War, it took over half a year to sweep all Iraq sea mines. Therefore, it [would] not be easy for the U.S. military to sweep all the mines that the PLA [might] lay.<sup>331</sup>**

Of course, the same would apply to PLA forces attempting to clear Coalition defensive minefields along the First Island Chain.

Given the problems they pose, there are significant efforts underway to improve mine detection. They include developing UUVs that can both detect mines and destroy them. In this move-countermove competition, mine developers are now looking to disguise mines to look like rocks or encase them with materials that absorb sonar pings.<sup>332</sup> Even if mines are detected, sweeping them can be challenging, especially if the fields can be provided with overwatch, a role that ground forces along the First Island Chain perform in Archipelagic Defense.

With this in mind, Coalition forces can exploit the value of mines by seeding key chokepoints and coastal areas along the First Island Chain with large numbers of them. They can supplement these mines with so-called smart mines and UUVs that can

329 Rick Atkinson, *Crusade* (New York: Houghton Mifflin, 1993), 321, 323–29; "Neglected Workhorses," *The Economist*; and Truver, "Mines and Underwater IEDs," 110.

330 "Neglected Workhorses," *The Economist*.

331 Doshi, *The Long Game*, 88.

332 "Neglected Workhorses," *The Economist*.

function as mobile mines. Ground forces employing scouting and organic coastal defense strike assets, such as SAMs and ASCMs, can maintain an overwatch of these systems, frustrating PLA efforts to conduct minesweeping and counter-UUV operations.

“Offensive” mining along China’s coast will generally be effective near the approaches to ports and naval bases. Thus, Archipelagic Defense prefers stealthy minelaying platforms capable of penetrating China’s A2/AD inner-complex systems for conducting this mission, such as submarines, UUVs, and stealthy UAVs and bombers. (The US Navy currently has no surface minelaying capability.)<sup>333</sup> That being said, submarines have very limited payload capacity and so face difficult trade-offs between mines and torpedoes. The Navy’s Mk 67 mine, the only model currently available, is based on 60-year-old technology, and *Virginia*-class submarines cannot deploy it.<sup>334</sup> Moreover, submarines and UUVs have lengthy transit times, and the Coalition will need them for higher-priority missions, such as ASW operations beyond the First Island Chain. Thus, Archipelagic Defense emphasizes using air assets to deploy mines. If analysts deem the threat environment for air systems too high, forces might lay mines using UUVs, which could also probe Chinese undersea and seabed defenses.

The Coalition is making some progress here, albeit fitfully. The US Navy’s extra-large unmanned underwater vehicle (XLUUV) prototype program was supposed to deliver five of these 80-ton submersibles as part of a rapid acquisition for minelayers. The program, now in its seventh year, is over three years behind schedule. The current projection is for the developers to deliver all of these XLUUVs in 2024.<sup>335</sup> If the program pans out, it could

provide the basis for a flotilla of XLUUVs to operate within the First Island Chain.

As for airborne mine seeding, the US military is making significant progress. In 2018, a US Air Force B-52 bomber dropped a one-ton Mk-62 Quickstrike extended-range mine near the Northern Marianas. A Joint Direct Attack Munition (JDAM) kit positioned the mine, a major advance over simple gravity mines that required the bomber to fly low to achieve the necessary accuracy. With precision Quickstrike mines, bombers can accomplish their missions while facing far fewer risks from enemy defenses.<sup>336</sup>

American B-1, B-2, and B-52 bombers can deliver the Quickstrike mine. Assuming payloads of 70,000 pounds for both B-1s and B-52s, and a 40,000-pound payload for the B-2 bomber, the former two bombers could each carry 140 mines, and the B-2 could carry 80. In theory, a force of six B-1B, three B-2, and 20 B-52H bombers could emplace nearly 4,000 mines.<sup>337</sup> The arrival of the B-21 bomber, with a planned initial procurement of 100 aircraft, would boost this capability considerably. Given that the newest aircraft in the existing US bomber fleet is over 30 years old and that most of the aircraft lack stealth, the stealthy B-21 could also conduct minelaying operations at far less risk.

### Coastal Defense and Chokepoint Denial

With an eye toward denying the PLA control of the waters inside the First Island Chain, establishing Coalition sea control beyond the chain, and defending Coalition members along the chain from seaborne invasion, Archipelagic Defense emphasizes coastal defense and chokepoint denial as vital lines of attack and defense.

### Coastal Defense

Wherever possible, Archipelagic Defense stresses employing ground forces that the Coalition has positioned along the

333 Matthew Cancian, “An Offensive Minelaying Campaign against China,” *Naval War College Review* 75, no. 1 (Winter 2022): 8.

334 The Navy is developing a new mine. Danielle George, “US Navy Mine Warfare Programs” (presented at the Surface Navy Association Symposium, Washington, DC, January 16, 2020), 9, <https://www.navsea.navy.mil/Portals/103/Documents/Exhibits/SNA2020/SNA2020-MineWarfarePrograms-CaptDanielleGeorge.pdf>.

335 “Extra Large Unmanned Undersea Vehicle: Navy Needs to Employ Better Management Practices to Ensure Swift Delivery to the Fleet,” US Government Accountability Office, September 28, 2022, <https://www.gao.gov/products/gao-22-105974>.

336 Ben Werner, “Navy, Air Force Test Deploys 2,000-Pound Mine at Stand-Off Range,” *USNI News*, September 24, 2018, <https://news.usni.org/2018/09/24/36763>.

337 Cancian, “Offensive Minelaying Campaign,” 9.

First Island Chain and equipped with antiship scouting and surface-to-surface ASCMs. These forces will execute sea denial operations against PLAN surface warships to liberate air and maritime forces to act as a mobile counter-concentration force.<sup>338</sup> Wherever possible, ground force ASCM batteries should be hardened or mobile while exploiting opportunities to employ CCD to reduce their vulnerability to PLA attack. While the US Army has not invested significantly in coastal defenses, both Japan and Taiwan are enhancing their ASCM capabilities. Japan's Type 12 (an enhancement of its Type 88) ASCM has a range of roughly 100 miles, with plans to boost the range to over 500 miles and eventually to around 900 miles, as well to boost the missile's stealth. A ship-launched version, the Type 17, boasts a range of around 250 miles. Of note, Japan has equipped these missiles with AESA radars.<sup>339</sup> Taiwan's supersonic Hsiung Feng III (HF-3) ASCM has a range of approximately 250 miles and is deployable on mobile trailers as well as ships.<sup>340</sup> Prospective Coalition member militaries located along the First Island Chain (including those of the Philippines, South Korea, Taiwan, and Vietnam), as well as those with forces deployed along the chain (the United States in particular), should leverage Japan's experience in coastal defense to accelerate the fielding of ASCM forces.<sup>341</sup> A network of

ground-based extended-range ACSM batteries, supported at the point of attack by air and naval forces, would pose a significant threat to PLAN surface ships attempting to establish sea control in the waters around the First Island Chain. Such forces can also cover key chokepoints that PLAN warships might transit to reach the high seas, through the Miyako and Luzon Straits in particular.

### Chokepoint Denial

The defense of the Coalition's SLOCs beyond the First Island Chain would begin along the chain's northern sector, which comprises Japan's main islands along with its Southwest Wall, the Ryukyu Islands. In part, this involves guarding the maritime chokepoints along the archipelago, including against PLAN submarines. To this end, they would monitor undersea sensor grids, and emplace and monitor large antiship minefields.

The Coalition should accord priority to emplacing fixed seabed ASW sonar systems along the First Island Chain, as these systems will take considerable time to install, test, and evaluate. It will have to find ways to defend this sensor grid against PLA efforts to scout and target it. This could be particularly challenging as the PLA would likely seek to degrade or destroy the system (such as by cutting its cables) as one of its initial acts of aggression.

Recall that mines are clearly a source of concern for the PLA. The 2006 edition of the *Science of Military Strategy* was explicit that China would need to clear sea mines—while under attack—near the landing zone in any amphibious operation. Consequently, China has emphasized improving its mine countermeasure (MCM) capabilities.<sup>342</sup> The Coalition should seek opportunities to extend mine defenses to the First Island Chain's southern sector, which runs through Taiwan and the Philippines. Finally, it should plan to emplace minefields rapidly in international waters along the chain if the PLA attacks.

338 Perhaps the most formidable ASCM, at least on paper, is the BrahMos PJ-10, which India and Russia developed jointly. According to open sources, the BrahMos has a projected range between 300-500 kilometers (roughly 190-310 miles) and travels at supersonic speeds. "BrahMos," CSIS MissileDefense Project, August 2, 2021, <https://missilethreat.csis.org/missile/bramos/>. Both Norway's Naval Strike Missile and Sweden's RBS-15 Mk III ASCMs are capable of engaging targets at up to roughly 125 miles. Terrence K. Kelly, Anthony Adler, Todd Nichols, and Lloyd Thrall, *Employing Land-Based Anti-Ship Missiles in the Western Pacific* (Santa Monica, CA: RAND, 2013), 9, 15.

339 Yoshihiro Inaba, "Japan to Greatly Extend Range of Type 12 Anti-Ship Missiles, Modify It for F-15," *Naval News*, January 21, 2021, <https://www.navalnews.com/naval-news/2021/01/japan-to-greatly-extend-range-of-type-12-anti-ship-missiles-modify-it-for-f-15j>.

340 Kelvin Chen, "Taiwan to Mass Produce Extended-Range Anti-ship Missiles," *Taiwan News*, September 17, 2021, <https://www.taiwannews.com.tw/en/news/4290059>.

341 Japan might transfer ASCM batteries with its older Type 88 missiles to other like-minded nations in the WPTO, such as the Philippines and Vietnam. Should it do so, Japan could coordinate its efforts with the United States to provide recipients with the necessary scouting and command-and-control systems for their effective operation, or access to such systems. The Philippines has agreed to purchase three batteries of BrahMos missiles. Tayfun Ozberk, "BrahMos-Philippines Deal Becomes Official," *Naval News*, January 28, 2022, <https://www.navalnews.com/naval-news/2022/01/bramos-philippines-deal-becomes-official>; and Richard Javad Heydarian, "The Real Deal behind Selling BrahMos to the Philippines," *Asia Times*, January 18, 2022, <https://asiatimes.com/2022/01/the-real-deal-behind-selling-bramos-to-the-philippines>. Vietnam is in discussions with an eye toward purchasing BrahMos ASCMs. See Vu Anh, "BrahMos Aerospace Offers to Sell Supersonic Missile to Vietnam," *VNExpress*, December 10, 2022, <https://e.vnexpress.net/news/news/bramos-aerospace-offers-to-sell-supersonic-missile-to-vietnam-4546613.html>.

342 Doshi, *The Long Game*, 200–1. Dedicated MCM vessels have boosted the PLAN's capabilities, including the WOCI-class mine-hunting ships (MHS) and WOZANG-class inshore minesweepers (MSI). China is also improving its mine-hunting capabilities with improved SONARs and mine neutralization vehicles. The PLA's exercises routinely include both mining and mine countermeasure events.

Coalition submarines can play an important role in securing the chokepoints. Japan, whose Maritime Self-Defense Force (JMSDF) operates diesel submarines exclusively, would be in the best position to operate in the waters between the First and Second Island Chains, with an emphasis on patrolling key chokepoints.<sup>343</sup> Its 12 *Soryu*-class diesel-electric submarines are among the world's quietest and are equipped with air-independent propulsion (AIP).<sup>344</sup> A follow-on class, the *Taigei* ("Big Whale") is in production, with a total of seven boats planned.<sup>345</sup>

Alas, given our assumption that China will initiate war, these anti-submarine defenses cannot prevent the transit of PLAN submarines through international water chokepoints in peacetime. Thus, prior to initiating a general war, China would have a strong incentive to deploy its submarines to their wartime stations. In this sense, the Coalition's maritime chokepoint barrier will likely be akin to shutting the barn door after the horses have already departed. That being said, if the Coalition can detect a surge of PLAN subs as they move through the First Island Chain to take up their wartime stations, it would represent a key early warning indicator that hostilities may be imminent.

China would likely prioritize deploying its SSNs beyond the First Island Chain, owing to their higher speed and endurance, while keeping their diesel-powered submarines inside the chain. At least in the near term, Coalition ASW forces would have an advantage over the PLAN submarines, as the Chinese boats are relatively noisy and thus easier to detect. Of course, the submarines must eventually return to their base to rearm and refit.

343 The JMSDF operates 22 submarines. There are 12 *Soryu*-class submarines along with the recently commissioned *Taigei*, the first in a new class of submarines. The JMSDF also operates nine *Oyashio*-class submarines, with an additional two used for training.

World Directory of Modern Military Warships, "Japan Maritime Self-Defense Force (2022)," November 7, 2022, <https://www.wdmnw.org/japan-maritime-self-defense-force.php>.

344 Air-independent propulsion enables a diesel to operate without needing to surface to gain access to oxygen to recharge batteries or employing a snorkel. Both actions, but especially surfacing, are risky as they compromise a submarine's stealth. Augusto Conte-Rios and Juan-Diego Pelegrin-Garcia, "A Revolution in Submarine Propulsion," *Proceedings* 146/10/1,412 (October 2020), <https://www.usni.org/magazines/proceedings/2020/october/revolution-submarine-propulsion>.

345 Christian Orr, "Japan's Submarine Force Is One of the Best on Earth," *19FortyFive*, December 30, 2022, <https://www.19fortyfive.com/2022/12/japans-submarine-force-is-one-of-the-best-on-earth/>; and Kyle Mizokami, "Why Japan's Soryu-Class Submarines Are So Good," *National Interest*, October 1, 2016, <https://nationalinterest.org/blog/the-buzz/why-japans-soryu-class-submarines-are-so-good-17898>.

Here is where the maritime barrier can exert a significant influence on the maritime balance by intercepting PLAN submarines attempting to return to base—if the Coalition can successfully defend the First Island Chain against the PLA's initial assault.

## Blockade

Both the PLA's *Science of Campaigns* and *The Science of Military Strategy* emphasize repeatedly that the PLA must establish the "three dominances"<sup>346</sup>—of the air, information, and maritime domains—before conducting an offensive campaign along the First Island Chain. Importantly, however, it must maintain control in these domains as long as necessary to accomplish its objectives. While Archipelagic Defense does not address operations in a protracted war, the Coalition can enhance deterrence and defense if Beijing is convinced that, even if a successful offensive campaign is possible, the risks of not prevailing in a *protracted* conflict are too high to risk war.

The Coalition's ability to win a long war—one that extends beyond nine months—with China would depend on many factors, including its ability to mobilize resources for war, retain (and attract) key allies, and preserve national will. Coalition blockade and counterblockade operations can exert a significant influence on these factors, even in the war's opening months. For example, the Coalition's ability to impose a successful blockade could also increase Beijing's anxiety about its ability to sustain arms production and maintain internal stability in the wake of food and energy shortages.

The following discussion is limited to an overview of the military aspects of a maritime blockade.<sup>347</sup> It leaves other important factors that would likely determine the effectiveness of blockade and counterblockade operations for further analysis, as it does for military operations aimed at conducting interdiction opera-

346 Shou, *The Science of Military Strategy*, 164–65.

347 Japan has Cold War-era experience with planning and exercising blockade operations. During the 1980s, Japan assumed the alliance lead in blockading the Soya, Tsugaru, and Tsushima Straits in the event of war. To this end, the JMSDF improved its anti-submarine and mine warfare capabilities, along with introducing an ASCM capability. Narushige Michishita, Peter M. Swartz, and David F. Winkler, *Lessons of the Cold War in the Pacific: US Maritime Strategy, Crisis Prevention, and Japan's Role* (Washington, DC: Wilson Center, 2015), 7.

tions against overland trade into China and commerce raiding operations against its seabed economic infrastructure.<sup>348</sup>

China is the world's largest importer of raw materials, including oil, and most arrive via the sea. While Archipelagic Defense seeks to deny the PLA control of the seas within the First Island Chain, it calls on the Coalition to prioritize maintaining control of the SLOCs beyond the chain while denying access to China. To this end, the Coalition can leverage its members' favorable geographic position (the barrier to the sea that the First Island Chain creates) to exploit China's dependence on overseas trade. It can accomplish this through a distant maritime blockade.

A large portion of China's seaborne commerce, including many of its energy and food imports, passes through three chokepoints in the Malay barrier: the Malacca, Sunda, and Lombok Straits. The US military has traditionally assigned the interdiction of shipping through chokepoints such as these to maritime forces. As I described above, however, Archipelagic Defense relies primarily on ground forces wherever possible to maintain control at key maritime chokepoints. Again, this does not preclude the use of air and maritime forces in their role as the Coalition's principal maneuver force in blockade operations. Moreover, Coalition submarines and UUVs could prove crucial in establishing an "information blockade" by cutting China's undersea fiber-optic cables, and in conducting a commerce-raiding campaign on Beijing's undersea economic infrastructure.

Given the PLA's A2/AD complex, Archipelagic Defense calls for the Coalition to impose a distant blockade. Given the WPTO's geography and the prevailing trade routes, land-based forces can play a major role. Land-based forces conducting maritime interdiction operations could intercept ships sailing to China, with emphasis on vessels approaching the Malacca, Sunda, and Lombok Straits. These Coalition forces could employ antiship cruise missiles,

armed UAVs, and attack helicopters as necessary to enforce compliance. Coalition forces could identify merchant ships approaching the Southeast Asia archipelago in a variety of ways, including via satellites, UAVs, surface "picket" ships, OTH radars, and submarines. They would direct these cargo ships to wait in a "sorting area" for inspection by boarding parties deployed by helicopter or small boat to ascertain their true destination and cargo. The boarding parties would comprise inspectors and combat forces capable of seizing control of the ship, should the need arise. Shore-based forces would, of course, support the boarding parties.

Depending on the type of cargo the Coalition forces identified as contraband, they could detain ships that they have identified as bound for China while permitting passage by ships heading for friendly ports. If the Coalition cleared a merchant ship to proceed to a friendly or neutral port and then noted it attempting to divert to China, shore-based ASCMs along the First Island Chain or Coalition strike forces, such as aircraft, surface ships, or submarines, could engage it.

Given its location, Indonesia would prove a valuable member of the Coalition in efforts to impose a distant blockade. Were India to emerge as an ally, it might support the distant blockade from the Andaman and Nicobar Islands. In extremis, Coalition forces could direct all ships through the Malacca Strait with the blockading force operating primarily from Singapore, while Coalition navies and scouting forces monitor the other straits.

That being said, unless merchant ships self-police and do not attempt to run the blockade by approaching checkpoints with contraband cargo, the demand for inspection and combat forces would be significant. On average, each day over 200 ships (including 60 container ships) pass through the Malacca Strait alone.<sup>349</sup> Sorting, stopping, and inspecting roughly 10 ships each hour would require substantial numbers of well-trained

348 For an informative case study on the challenges of waging economic warfare against a great power in a protracted conflict, see Nicholas A. Lambert, *Planning Armageddon: British Economic Warfare and the First World War* (Cambridge, MA: Harvard University Press, 2012). See also Nicholas A. Lambert, *The War Lords and the Gallipoli Disaster* (New York: Oxford University Press, 2021).

349 George Lauriat, "The Strait of Malacca and the Indo-Pacific Region: Between Regionalization and Maritime Trade," Italian Institute for International Political Studies, October 20, 2021, <https://www.ispionline.it/en/publication/strait-malacca-and-indo-pacific-region-between-regionalization-and-maritime-trade-32052>.

forces. The same may be said for inspections that Coalition forces conduct at other chokepoints. One possible way of alleviating the problem would be establishing a system for approving cargo ships' manifests in advance, at their port of embarkation, thereby enabling them to pass through a rough equivalent of the "E-Z Pass" lanes on American highways that allow motorists to avoid waiting at tollbooths by paying from an account from which authorities withdraw toll fees electronically.<sup>350</sup>

As noted earlier in this study, Coalition strike forces in the Ryukyus (and perhaps the Philippines, South Korea, Taiwan, and Vietnam) could impose a close blockade on Chinese coastal shipping. The Coalition could expand scouting operations to identify and track Chinese merchant ships, while land-based ASCM forces expand their operations beyond targeting PLAN warships to strike cargo ships. As Coalition militaries field longer-range ASCMs, they could establish integrated fields of fire and expand the coastal blockade engagement envelope accordingly.

That being said, the optimum way of blocking China's maritime commerce may simply be to strike the Chinese ports themselves. For example, strikes against port gantries could render the on- and offloading of shipping containers difficult, if not impossible. If the Coalition could accomplish this with precision, it would also alleviate the problems that could emerge from damaging neutral-power ships that happen to be in port.

### Sea Control: Defending the SLOCs<sup>351</sup>

During World War II, the time needed to mobilize US forces in CONUS and transport them to combat zones in Europe and the Central Pacific found the US military unable to conduct signifi-

cant offensive operations for nearly a year after entering the war. This was the case even though the Pacific conflict had been underway for four years prior to the attack on Pearl Harbor.<sup>352</sup>

In part, this was due to the enormous distances involved, especially in the Pacific. The war saw Germany (as it had in the Great War) pursuing a vigorous campaign to sever the maritime lifelines between the United States and Europe. Although Luftwaffe aircraft were involved in SLOC interdiction efforts, German submarines and, to a lesser extent, mines dominated these efforts.<sup>353</sup> As was the case during the two world wars, success in keeping the Coalition's sea lines of communication open—from the Indian Ocean in the west to Australia in the south and (especially) CONUS in the east—will be crucial to Archipelagic Defense's prospects of success.

Now, as then, in the event of a war with China—even with the US shift from an expeditionary to a forward-deployed (and, over time, a forward-based) posture in the WPTO—the United States will have to transport the vast majority of its forces from the continental United States to the theater of operations. Now, as then, it will have to move most of these forces and their supporting logistics by sea while encountering an enemy attempting to sever the flow of troops and supplies.

This study's assumption that China will initiate hostilities makes the challenge confronting the Coalition all the more formidable. If this proves to be the case, Coalition forces guarding the maritime chokepoints along the First Island Chain will not be able to block PLAN submarines from deploying to their attack positions in the Central Pacific, between the First and Third Island Chains, before hostilities begin.

### The PLAN's Submarine Force

Above, I described the PLA's efforts to control the maritime surface and undersea domains within the First Island Chain and

350 Of note, cargos are often bought and sold multiple times after a ship leaves port and before it arrives at its destination. Modern communications and company routing capabilities support such activities that gain best price for the cargo, while also avoiding bad weather. Given the gravity of a war between China and the Coalition, "policies" could be forced on shipping companies prohibiting the sale of cargos after they depart port. That said, it probably wouldn't take sinking more than a few vessels before Lloyds of London and similar companies refuse to underwrite cargo headed for China. This would find China having to indemnify anyone trying to run the blockade. Email exchange with Captain (Retired) Karl Hasslinger, US Navy, May 24, 2023.

351 I am greatly indebted to Capt. (Ret.) Karl Hasslinger, USN, for many of the insights I present in this section of the study.

352 Japan invaded China in July 1937, while Germany invaded Poland in September 1939.

353 Rather ironically, the United States waged against Japan the most successful campaign against a rival's SLOCs. Again, the principal weapon was the submarine, supplemented primarily by mines. See Holwitt, *Execute against Japan*.

the threat that land-based ballistic missiles and aircraft pose to maritime forces and commercial traffic. The focus here is on what is likely to prove by far the most serious threat to the Coalition's SLOCs—the PLAN's submersibles.

The PLA has long prioritized modernizing and expanding its submarine force. Immediately after the First Gulf War, the PLA decommissioned large numbers of aging submarines to free up resources to create a modern undersea force. To aid the transition, China procured a dozen Russian Kilo-class boats. Then, in the first decade of the twenty-first century, the PLAN launched 31 new submarines.<sup>354</sup> Today the Chinese submarine force includes six SSNs and 46 diesel-powered attack submarines (SSs). Analysts anticipate that the PLAN will maintain roughly 65–70 submarines over the next decade as this modernization effort continues, including increasing its SSN force.<sup>355</sup> Owing to their ability to remain on station for lengthy periods (and therefore their ability to operate over extended ranges), SSNs are ideal for operating in the Central Pacific Ocean region between Hawaii and the First Island Chain.

As for the PLAN's targets, for reasons of efficiency the trend has been toward ever-larger container ships, troop transports, oil tankers, and maritime prepositioning (MPP) ships. This enables them to move cargo efficiently. It also makes them relatively easy to find with radar and other electro-optical systems, as well as by their noisy acoustic signatures. Once found, these ships are sitting ducks, easy to sink with a single heavy-weight torpedo. For this to happen, however, the PLAN submarine must gain the proper position relative to its track because of its torpedoes' limited range. While this may have been a limiting factor for submarines in World War II, the advent of antiship missiles that can attack surface ships from much longer distances gives the submarine skipper an important new option. Although such missiles are less effective than torpedoes for sinking ships, they are capable of disabling a ship to produce a mission kill.<sup>356</sup>

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354 Doshi, *The Long Game*, 84–85.

355 *China Military Developments*, 2021, 49.

356 Recall that a "mission kill" occurs when an attack on a target does not destroy it but

### Easing Strain on the SLOCs

To counter PLA efforts to interdict the SLOCs, first and foremost the United States needs to shift to a forward-deployed force posture that, along with its Coalition partners, can hold the First Island Chain until reinforced. This means a drastically augmented US (and perhaps Australian) military footprint along the chain. The more forces and supplies the Coalition positions forward, the stronger its defenses will be, and the less strain placed on the SLOCs.

How might the Coalition accomplish this? As described above, Australia has shown a willingness to welcome a greater US military presence. The political foundation appears to be progressing to enable a substantial increase in US military forces in Japan, the Philippines, and perhaps over time (albeit with a very modest footprint) in Taiwan. If this shift in posture seems ambitious, recall it took nearly a decade following its demobilization at the end of World War II for the United States to reestablish a strong military presence in Western Europe. That being said, given the ongoing PLA buildup, time is of the essence.

Second, a general war will almost certainly witness unprecedented use of munitions and substantial losses of major military systems. Regarding the latter, NATO anticipated this during the Cold War, and the US Army positioned entire division sets of equipment in Western Europe. This greatly reduced initial stress on sealift requirements, as the United States had to move only the troops necessary to fill out these divisions to Europe, and could accomplish this through airlift.<sup>357</sup> In brief, those Coalition militaries on what would be the First Island Chain's front line—especially the United States—will need to establish forward, hardened sites for prepositioned equipment and associated stocks of major systems, spare parts, fuel, and munitions.

Third, to arrive in time to weather the PLA's initial assault and deny it a quick victory, initial reinforcements not associated with prepo-

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damages it sufficiently to prevent it from fulfilling its mission.

357 The situation with respect to munitions was far less encouraging. Indeed, there were serious concerns about how long NATO forces could fight before exhausting key munitions stocks.

sitioned equipment in the WPTO will need to deploy rapidly, faster than the relatively slow pace of sea transit. To this end, the Coalition should emphasize forces and capabilities operating in the air, cyber, and electromagnetic speed domains. Aside from extended-range aircraft and missiles, Coalition capabilities remote from the First Island Chain capable of exerting a prompt effect on the WPTO military balance might also prove of particular value. For example, ASAT capabilities could challenge China's ability to secure the information dominance it believes necessary to cue PLAN submarines, or to conduct air and missile strikes against Coalition transport ships beyond the First Island Chain. Enhancing the US cyber payload arsenal might also contribute toward this end.

Finally, at least in the war's opening stages, the PLA will possess the means to hold Coalition ports and airfields of debarkation at high risk of destruction, or at least degradation. Indeed, it is reasonable to ask why the PLA would attempt to interdict the Coalition's SLOCs so far from China's shores when it can simply strike the main ports along the First Island Chain. To preclude the PLA from pursuing such an easy path, the Coalition needs to defend these ports, including the ability to effect their rapid repair when damaged. These efforts would approximate those described elsewhere in this study for the defense of major military air and naval bases. One obvious way to offset the potential loss of critical imports is through strategic stockpiling—particularly by Japan, the Philippines, South Korea, and Taiwan—of essentials such as food and fuel. Still another important element of a counterblockade strategy involves hardening key port functions to enable their effective operation. Procuring spares of key equipment (such as gantry cranes and fuel offloading pumps) and conducting exercises geared toward rapid repair of damaged port facilities could do much to sustain the flow of cargo.

### **Anti-submarine Warfare**

Success in the initiatives outlined above is necessary to buy the Coalition the time it needs to defeat the PLAN's submarine threat to its SLOCs. How might it accomplish this?

Submarines are excellent at conducting anti-submarine warfare. They operate in the same medium as the target, and US submarines, currently the world's best, enjoy an acoustic, or scouting, advantage over the PLAN's boats.<sup>358</sup> If PLAN submarines are on station at the onset of war, the Coalition has to address the threat they pose to the SLOCs before they have exhausted their weapons loads feasting on Coalition combatants and cargo ships. Thus, the Coalition navies' ability to dominate warfare in the undersea domain will be essential to any successful ASW campaign.

A submarine's stealth is its key asset. Thus, as is the case with dueling RSCs in general, in the struggle to defend the Coalition's SLOCs, much will depend on who wins the scouting/counter-scouting competition. A wide range of new capabilities is now available to enhance Coalition ASW capabilities, among them enhanced sensors, higher-speed data processing, AI-assisted satellite surveillance and communications, unmanned undersea vehicles, and smart depth charges.

Unlike the situation in which Coalition submarines are guarding First Island Chain chokepoints in a highly restricted search area, locating and engaging submarines operating in the vast waters of the Pacific between the First and Third Island Chains requires extensive scouting. While fixed seabed sonar systems might be a relatively attractive ASW option along the First Island Chain, they have significant drawbacks when the search area lies between the First and Third Island Chains. Again, the Coalition will need to win the support of those states it needs to host components of the sensor grid, which itself will take years to install and test, and to train competent operators.

Even if this can be accomplished, the grid may not be defensible at an acceptable cost against PLA efforts to destroy it, either in part or in whole. Furthermore, even if a seabed system could be made resilient, "wiring the Pacific Ocean" would likely prove cost-prohibitive. A more feasible—and cost-effective—

358 Karl Hasslinger, email exchange with the author, November 30, 2022.

option may be for the Coalition to emplace sensor arrays at key points to provide some cueing for Coalition ASW scouting and strike forces, to include spacecraft and aircraft scouts, as well as submarines, ships, and aircraft, respectively. Assuming space does not become a no-man's land early in a war, and that bases are available for ASW aircraft, forces operating in these domains may prove more practical at ASW hunter-killer operations than Coalition submarines, and more cost-effective as well.

Denying the PLA bases beyond the First Island Chain from which to stage the PLAN's operations against the Coalition's SLOCs will likely be an important factor in successful ASW operations. If the PLAN can base its submarines beyond the First Island Chain, they can save a lot of time in assuming their war stations.<sup>359</sup>

Basing PLAN submarines (and UUVs) between the First and Third Island Chains would also provide the Chinese with a greater opportunity to attack the US Indo-Pacific Command's undersea communications cables, especially those supporting operations in Hawaii and Guam. The PLAN's SSNs would also be far more capable of posing a significant threat to US West Coast shipping, including ships transiting the Panama Canal. Should this threat materialize, it could well find Washington diverting badly needed ASW forces from the WPTO to defend home waters.<sup>360</sup>

The US Navy in particular needs to continue its practice of engaging in peacetime submarine-on-submarine tracking similar to the "blind man's bluff" competition during the Cold War undersea military rivalry between the United States and Soviet Russia.<sup>361</sup> Over time, in coordination with the Americans

<sup>359</sup> Of note, while nuclear-powered submarines have a greater range than diesel-powered submarines, the latter are significantly quieter when operating on the battery or in AIP mode. Thus basing them at locations beyond the First Island Chain would enable the PLA to deploy an SS-heavy mix of boats that could be both cheaper and quieter than SSNs.

<sup>360</sup> Karl Hasslinger, email exchange with the author, March 20, 2023.

<sup>361</sup> Among their most important missions, American submarines during the Cold War engaged in persistent efforts to identify Red Navy submarines coming out of their bases and track them for extended periods. Sherry Sontag, Christopher Drew, and Annette

and consistent with their capabilities, the Coalition countries should integrate their navies into these exercises.<sup>362</sup> To this end, Australia, the United Kingdom, and the United States should expand and accelerate the so-called AUKUS trilateral security pact whereby the UK and US are assisting Australia in acquiring SSNs.<sup>363</sup>

In the near term, before Australia ever receives its first SSN, basing and support facilities for visiting US and UK submarines should be built and tested. Over the longer term, the Royal Navy's modest submarine force suggests that, however desirable, it will likely not have any base in Australia. The Royal Navy's biggest contribution will likely be in training Australian crews and commanders (via their renowned Perisher Course) and providing experienced personnel to augment the Australian Navy.<sup>364</sup> Separately, since the US currently cannot build two SSNs per year, the likelihood of building a third to give the Australians is virtually nil—at least for the foreseeable future.

### Convoys

During both world wars, the Allies' success in ASW operations against Germany prevented its U-boats from cutting Great Britain's maritime lifeline and arresting the buildup of US forces in Europe. In both wars, efforts to defeat the submarine threat through search-and-destroy hunter-killer operations proved less successful in protecting the SLOCs than did convoys.<sup>365</sup>

In the age of reconnaissance-strike complexes, however, it seems highly unlikely that the concept of convoy operations as military forces practiced them over 75 years ago would prove ef-

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Lawrence Drew, *Blind Man's Bluff: The Untold Story of American Submarine Espionage* (New York: Public Affairs, 1998), 121–157.

<sup>362</sup> The Royal Navy supported the US Navy's tracking of Soviet submarines during the Cold War. Sontag, Drew, and Drew, *Blind Man's Bluff*, 127.

<sup>363</sup> Opportunities to base Royal Navy attack submarines in the WPTO should also be explored.

<sup>364</sup> The Royal Navy produces more officers qualified for command than it has command opportunities. Thus, Australia has provided command opportunities to UK officers for years. They would be especially welcome for Australia's first SSNs. Karl Hasslinger, email exchange with the author, May 24, 2023.

<sup>365</sup> Budiansky, *Blackett's War*, 34–35, 221–26.

fective today. In some ways, convoy operations can be made far more effective. For example, modern extremely high-frequency (EHF) communications are much more difficult to geolocate than the high-frequency (HF) communications used during the world wars. Moreover, convoy escort surface combatants have the ability to engage targets far more quickly and over a much wider area than was the case back then. Thus, it may be possible for a relatively smaller number of Coalition convoy escort combatants to protect Coalition shipping dispersed over a much larger area.

On the other hand, some tried-and-true convoy tactics employed during the Second World War would likely prove ineffective today. For example, during World War II, convoys benefited from employing zigzag maneuvers to frustrate submarine attacks. Instead of traveling in a straight line, they frequently altered course to port or starboard to deny the enemy a clear understanding of their true destination.<sup>366</sup> Today, however, such tactics are likely to prove ineffective. First, China possesses the capability to use both space-based assets and regional air-breathing assets along with shipborne and land-based radars to locate and track a convoy as it transits the Western Pacific. Second, the goal of zigzagging was to keep a slow-moving U-boat from being able to position itself for an optimal attack using straight-running, short-range torpedoes. Today's PLAN torpedoes have onboard sonars capable of updating "fire-control solutions" independently as targets maneuver. China's nuclear-powered submarines also enjoy a considerable speed advantage over surface ships. A PLAN SSN traveling at 30 knots can close range on zigzagging convoy ships.

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<sup>366</sup> During the Battle of the Atlantic in World War II, the Royal Navy adopted zigzag maneuvers for its convoys as a defense against German submarines. As convoys traveled in radio silence, the ships had to perform these maneuvers in unison using synchronized zigzag clocks. Even then, the maneuvers required experienced, well-trained crews. Erika Jones, "Zig-zagging: How to Confuse the Enemy at Sea," Royal Museums Greenwich, December 9, 2014, <https://www.rmg.co.uk/stories/blog/curatorial/zig-zagging-how-confuse-enemy-sea>. While employing zigzag maneuvers to frustrate PLA scouting efforts, Coalition escorts can employ "sprint and drift" tactics to enhance their efforts to locate PLAN submarines and UUVs. The faster a ship is moving, the less effective its sonar. Combining its zigzag maneuver with sprint and drift, a convoy would have intermittent periods of arrested movement (drifting), enabling escorts to engage their sonar equipment to maximum effect. Ronald E. Adler, "In the Navy's Future: The Small, Fast Surface Ship," *Proceedings* 104/3/901 (March 1978), <https://www.usni.org/magazines/proceedings/1978/march/navys-future-small-fast-surface-ship>. A ship runs up to flank speed and then cuts its engines, using the accumulated momentum to drift forward, albeit at a progressively reduced speed.

Then there are the PLAN submarines' ASCMs, which can engage a convoy at ranges exceeding 100 miles. Indeed, some ASCMs can find and attack ships autonomously. While these missiles are currently unlikely to sink a large surface ship—either a warship or major auxiliary—they can disable it, creating a mission kill. On the other hand, a single heavyweight torpedo will cut a ship in half, sending it, along with all hands, to the bottom.<sup>367</sup> Coalition convoy operations therefore need to address a different kind of threat from that American, German, and Japanese submarines posed in the last general war.

How should the Coalition structure its convoys? How should it defend them? Or should it abandon them as a means of transiting the SLOCs? What convoy routes would be most efficacious? We are barely scratching the surface in this study. The electromagnetic and cyber domains are all but assured to play a key role. For example, the Coalition could generate intelligence leaks to misdirect Chinese intelligence, along with "floods" of data to overwhelm PLA sensors and analysts. As with MALDs in the air domain, maritime decoys could employ electronic/acoustic decoys to generate false signatures and confound PLAN scouting efforts.

Given the brief discussion above, it seems highly unlikely that convoys will organize and sail as they did in the pre-RSC era. For example, it is hard to envision hundreds of ships clustering around a major port before heading out into the Pacific with their escorts. Instead, we might find cargo ships leaving multiple points of embarkation and forming a loose, widely spaced network of ships that may have only occasional contact with their escorts. American, Australian, and Japanese (and perhaps South Korean) escorts equipped with the Aegis Combat System could provide air and missile defense over extended ranges, enabling a convoy to sail over a very wide part of the ocean compared to historical displacements. If Coalition forces can identify PLA engagement hot spots, convoys, along with their escort elements, may shift their "shape" to avoid them as they move across the Pacific.

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<sup>367</sup> Hasslinger email, March 20, 2023.

Maintaining high speed, rather than zigzagging, would appear more efficacious in convoy operations. Today's merchant ships can make 20 knots with endurance levels measured in the thousands of miles, whereas their World War II ancestors could barely make half that speed. If a Chinese conventional submarine detects a fast-moving convoy, it may be limited to passing the convoy's location on to others or to attacking with antiship missiles that the convoy's escorts might intercept. Moreover, higher speeds may stress PLA scouting forces, especially those that struggle with bad weather or have problems overcoming electronic countermeasures.

Convoys operating at higher speeds also compel the submarine stalking them to follow suit. The faster a submarine moves, the more noise it generates, making it easier for passive Coalition sonars aboard convoy escorts to detect them. Moreover, for conventional submarines, operating at high speed more rapidly depletes its batteries (for submerged operations) or its fuel supply (for surface or snorkel operations).

On the other hand, a convoy moving at a speed of 15–20 knots will find its Coalition escorts struggling to detect China's submarines by employing their organic sonars. Of course, scouting systems operating in the air and space domains could support their efforts. To enhance their prospects of locating a convoy without traveling at higher speeds (and thereby risking compromising their stealth), PLAN submarines could launch long-endurance UAVs to scout for transports. These UAVs could provide targeting data for Chinese submarine-launched antiship cruise missiles as well as for air and missile strikes from land-based systems. Simply put, today's capabilities have consigned the World War II experience of destroyers pouncing on nearby submarines to history's dustbin.

To determine how best to defeat the PLA threat to its SLOCs, the Coalition—and the United States in particular—needs to intensively study and analyze how it can win the next Battle of the Pacific. It should clearly pursue this approach to the problem

at a level more detailed than what I have presented here. Success will likely require the Coalition to draw on the capabilities resident in all eight domains. It will need to subject concepts for SLOC defense to persistent wargaming.

Ultimately, the concepts that emerge from these games need to be subjected to rigorous, high-fidelity training exercises with Coalition convoys and their ASW escorts pitted against a "Chinese" opposing force (or "Op For"), similar to the experience US Army brigades encounter at that service's National Training Center and that Air Force squadrons confront at Nellis Air Force Base's Red Flag exercises.<sup>368</sup> History shows that high-fidelity training along these lines—combining new and legacy capabilities with an eye toward determining the optimum mix of forces and methods to accomplish the mission—can pay huge dividends. In brief, while today's militaries can learn from past experiences, tomorrow's successful ASW campaign will be different, perhaps dramatically so, from those of earlier general wars. Hence the need for high-fidelity training at the operational level of war under conditions that are as close as possible to war itself.

### Counterblockade

The Coalition is not alone in planning for maritime blockade operations. In addition to focusing on establishing sea control along the First Island Chain and interrupting the Coalition's SLOCs beyond it, the PLA is seeking to establish a "close" maritime blockade with "Chinese characteristics," particularly against Taiwan. These blockade operations would likely employ submarines, mines, a land-based air and missile "firepower blockade," and perhaps surface warships. As in the case of Coalition blockade operations, a Chinese blockade would target Coalition ports, ships it finds in its immediate approaches, and SLOCs transiting the Second and Third Island Chains.<sup>369</sup>

<sup>368</sup> A good general template for structuring the Coalition's approach to SLOC defense appears in the US Navy's approach to meeting the challenge the Imperial Japanese Navy posed prior to the Pacific War. See Krepinevich, *Origins of Victory*, 296–341.

<sup>369</sup> As noted above, in addition to conventional land-based missile forces and submarines, the PLA places great emphasis on antiship mines. It can employ them to restrict merchant ship and naval combatant movement in Coalition littoral (and especially narrow) waters.

If the Coalition adopts the defense posture called for in Archipelagic Defense, especially if the Philippines is an active participant and Taiwan is a de facto participant, the prospects of defeating China's efforts to impose a close blockade against countries along the First Island Chain are encouraging, especially if the Coalition adopts the initiatives described above with respect to reducing the strain on the SLOCs, including establishing sea denial at key maritime chokepoints along the chain.

With respect to the latter objective, Coalition defenders need to inflict high losses on PLA air, sea, and undersea scouting and strike forces attempting to penetrate First Island Chain chokepoints. This will enable Coalition forces along the chain to combine with those beyond it that are securing the Pacific SLOCs. Together they could establish a level of sea control in the Philippine Sea sufficient to enable transit of friendly shipping without incurring unacceptable losses.

As alluded to above, the danger to merchant shipping would likely be at its greatest as transports approach their port of debarkation, or while in port. The Coalition can mitigate this risk in several ways. First, by exploiting its current advantage in ASW—an advantage that it must sustain—the Coalition can reduce the danger that PLAN submarines pose while also engaging in counter-mine and counter-UUV operations.

Second, the same tactics and capabilities that the Coalition employs to reduce the risk of PLA attacks on forward air and naval bases, which I described above, might also prove sufficient to sustain port operations at minimum essential levels. Specifically, to supplement Coalition escort forces in the vicinity immediately behind (to the east) of the First Island Chain, ground-based air, missile, and coastal defense units can pro-

vide coverage to merchant ships as they approach their destinations. A combination of antiship missiles, local undersea active acoustic arrays, and ASW weapons with the support of forces operating in the space, cyberspace, and electromagnetic domains could raise the costs for PLA ships and submarines engaged in blockade operations. If successful, these capabilities could provide merchant ships with a “virtual escort” as they approach their destinations while reducing the risk to surface combatant escorts.

Even if these counterblockade efforts are successful, merchant losses are likely to be substantial, especially early in the conflict, as the Coalition must assume that the PLAN will have positioned its commerce raiders at their wartime stations beyond the First Island Chain chokepoints. The PLA will also have large numbers of precision-guided ballistic missiles available to strike key port facilities. These forces could inflict shipping losses at levels approaching or even exceeding those that countries experienced in World War II. The movement toward ever-larger container and tanker ships that concentrate more cargo in fewer hulls could exacerbate the problem. A major problem for the Coalition in this aspect of the competition is the United States' shipbuilding industry, which is a shadow of its Second World War ancestor. This highlights the importance of recruiting South Korea, the world's second-largest shipbuilder, to the Coalition.<sup>370</sup>

### Defending Ashore

Despite its best efforts, the Coalition cannot garrison every one of the thousands of islands comprising the First Island Chain. Nor can it assume that Coalition forces will defeat all PLA attempts to establish lodgments ashore. In those instances when the PLA derives a significant military advantage from positioning forces on a small island, the Coalition should accord priority to neutralizing them by remote precision fires, where possible. In other instances, it may be best to ignore Chinese forces, much

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As China has the world's largest inventory of antiship mines, Coalition minesweeping efforts around key ports along the First Island Chain could be demanding and costly. Liu Xuanzun, “PLA Fighter Bombers Practice Maritime Mine Blockade,” *Global Times*, July 12, 2021, <https://www.globaltimes.cn/page/202107/1228448.shtml>; and Zhang Peigao, *Lectures on the Science of Joint Campaign Command* (Beijing: Military Science Press, 2012), 347. Beijing has stated that it could blockade or close off the two major Taiwan ports by using IRBMs. James C. Bussert, “Chinese Mines Pose Taiwan Blockade Threat,” *Signal*, June 1, 2005, <https://www.afcea.org/signal-media/international/chinese-mines-pose-taiwan-blockade-threat>.

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370 “Global Shipbuilding Capacity from 2013 to 2020, with a Forecast for 2021 through 2026, by Country,” Statista, <https://www.statista.com/statistics/1256561/global-shipbuilding-capacity-by-country/>.

as American forces isolated some Japanese forces during the Pacific War.<sup>371</sup>

The Coalition should stoutly defend some islands owing to their military, political, or economic value. How might the Coalition accomplish this?

### First Island Chain “Turtles”

Depending on the size of the island they must defend and the resources available, the value of ground forces defending from hardened positions—“Turtle” defenses—could prove key, and perhaps decisive. The assumption here is that the PLA has established the conditions necessary to execute a successful invasion: control of the air and sea. This enables Chinese forces to secure a major beachhead or several beachheads on the targeted island. As used here, the term *beachhead* is not limited to forces occupying a substantial area along an island’s shores but can also include other areas under control, such as airheads that troops inserted by air have seized for the purpose of bringing in additional forces and supplies.

History suggests that the Coalition can mount a formidable defense by employing ground forces defending from hardened, integrated defenses—even when the PLA dominates in the air and sea domains. Again, the Pacific War provides a case in point. The Americans enjoyed almost total air and sea control when they assaulted Saipan, Iwo Jima, and Okinawa. Nevertheless, despite the persistent and tremendous bombardment of these islands by US air and naval forces, Japanese ground forces mounted a strong, protracted defense, inflicting heavy casualties on the Americans. Aside from the skill and courage that Japanese troops displayed, the formidable defenses they had constructed enabled their success.

Take the struggle for Iwo Jima, for example. Prior to the attack, US bombers and carrier task force aircraft bombed, shelled,

and strafed the island for over eight months; B-24 bombers attacked it for 70 straight days prior to the American assault. Yet the strikes, along with surface ship shelling, made little impression on the island’s defenses. This was because, as a US Marine Corps captain put it, “The Japanese weren’t on Iwo Jima. They were *in* Iwo Jima.” Despite the profound US advantage in firepower, the Japanese inflicted more casualties on the Americans than they suffered themselves.<sup>372</sup>

This suggests that the Coalition—especially those members positioned along the First Island Chain—should give strong consideration to exploiting the advantages of hardened, integrated land defenses linked by buried fiber-optic cables. Creating a series of such hardened Turtle defenses will likely require a substantial amount of resources, especially if they include such enhancements as underground aircraft shelters and basic living accommodations (which the defenders of Iwo Jima would have considered luxurious in the extreme).

That being said, a major problem for the concept of Turtle defenses could arise if their defenders feel they have no hope of prevailing, which was the case with the Japanese garrison at Iwo Jima. Are there men and women in the Coalition’s armed forces who are willing to stand and fight with little or no hope of relief? Moreover, major advances in munitions since World War II could compromise Turtle defenses. Modern munitions, such as the US military’s Massive Ordnance Penetrator<sup>373</sup> “bunker buster” bomb, and thermobaric weapons, have greatly enhanced an attacker’s ability to destroy hardened targets. We have, however, also witnessed similar improvements in materials science that could aid the defense.

Should the Coalition prioritize Turtle defenses and, if so, under what circumstances? The answer to this question lies beyond

371 During the Pacific War, American forces bypassed many small islands in the Central Pacific that Japanese forces occupied. In some instances, it isolated rather than assaulted major Japanese bases, such as Rabaul.

372 Toll, *Twilight of the Gods*, 478, 516. The Americans suffered 24,053 casualties, including 6,340 killed in action (KIA), while the Japanese suffered roughly 22,000, nearly all of them KIAs.

373 The Massive Ordnance Penetrator is a 15-ton precision-guided bomb designed to destroy deeply buried, hardened targets.

the scope of this study. It would seem, however, that they would prove attractive to the extent that they might enhance deterrence substantially; impose disproportionate costs on the PLA to defeat them; buy sufficient time for reinforcements to arrive to buttress the First Island Chain's defenses, including diverting PLA resources from threatening the Coalition's SLOCs; and, depending on the design of the Turtle defense structure, canalize PLA attacks into less-threatening areas. Finally, the Coalition should view Turtle defenses as part of an overall defense scheme involving, among other things, using advanced irregular ground forces and defending in "complex" terrain.

### G-RAMM Irregulars

Archipelagic Defense calls for combining Turtle defenses with irregular warfare ground forces—especially (assuming their participation in the Coalition) in the Philippines, Vietnam, and Taiwan. These forces would be armed with relatively light advanced capabilities, including guided rockets, artillery, missiles, and mortars (G-RAMM). The PLA's advance air base and port defense forces will likely have difficulty protecting these facilities from attacks by indigenous G-RAMM armed forces, especially during the early phases of an invasion. Today's "G-RAMM Irregulars" would be far more capable than the North Vietnamese Army (NVA) forces that besieged the US Marine Corps' base at Khe Sanh in 1968. Then the NVA was able to mass the fire of hundreds of artillery pieces, rocket launchers, and mortars on Khe Sanh's airfield.<sup>374</sup> A force equipped with G-RAMM could achieve similar effects with only a small fraction of the fires (and forces) the NVA employed and could even target specific aircraft and support elements (such as fuel storage areas).

Put simply, in this instance Archipelagic Defense seeks to confront the PLA with irregular forces that the Coalition has armed with far more advanced capabilities than the NVA, or than Hezbollah possessed in its confrontation with the Israel

Defense Forces (IDF) in the Second Lebanon War.<sup>375</sup> In that conflict during the summer of 2006, the IDF fought the Iran-backed Hezbollah, which operated as an irregular force, for 34 days, with the IDF controlling both the air and sea. Despite the IDF's standing as one of the world's most capable militaries—and although its leaders anticipated a "quick and decisive" victory—Hezbollah fought the Israelis to a standstill.<sup>376</sup> The IDF initially hoped airstrikes and occasional raids by special forces would minimize Hezbollah resistance, but these actions failed to suppress the rocket attacks on Israel. This found the IDF committing substantial ground forces, including heavy armor, in an effort to address the threat. Hezbollah forces employing some guided weapons (such as anti-tank guided munitions, or AT-GMs), stymied these forces. The IDF units ultimately advanced only four miles north of the border. During the war's final days, the IDF undertook an offensive to reach the Litani River. The attacks quickly stalled.<sup>377</sup>

Hezbollah employed large numbers of unguided rockets. It fired some 12,000 during the war, including around 250 in the conflict's final hours, a testament to the IDF's inability to accomplish its mission to suppress the attacks. When the ceasefire went into effect, some 10,000 Israeli troops withdrew, having suffered over 120 killed and 600 wounded while killing only 148 of the enemy in ground combat.<sup>378</sup>

Nearly 20 years later, the spread of precision weapons suggests that Coalition G-RAMM Irregulars, integrated with Turtle defenses, could present stiff resistance to invading PLA forces. The Coalition could strengthen these defenders further with special operations forces capable of calling on remote precision fires from the Coalition's air and maritime operational maneuver forces, along with extended-range rocket artillery fires from ground forces based along

374 Over the course of the 76-day siege, the NVA fired over 40,000 rounds at the airstrip and the surrounding Marine Corps defensive positions. Peter Brush, "The Withdrawal from Khe Sanh," June 12, 2006, HistoryNet, <https://www.historynet.com/the-withdrawal-from-khe-sanh>.

375 For an assessment of Hezbollah's use of rockets during the war, see Uzi Rubin, "The Rocket Campaign against Israel during the 2006 Lebanon War," *Mideast Security and Policy Studies* No. 71 (Israel: Begin-Sadat Center for Strategic Studies, 2007).

376 Matt M. Matthews, *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War* (Fort Leavenworth: US Army Combined Arms Center Combat Studies Institute Press, 2007), 1.

377 Matthews, *We Were Caught Unprepared*, 38–40, 43–56.

378 Matthews, *We Were Caught Unprepared*, 48.

the First Island Chain, in much the same way extended-range US strikes supported the Northern Alliance in Afghanistan following the 9/11 terrorist attacks on the United States.

The Coalition can arm G-RAMM Irregulars with a wide array of guided weaponry. The US Marine Corps, for example, is working on a medium-range air defense prototype using Israeli-made Iron Dome Tamir missiles, which can intercept targets to a range of roughly 40 miles, while the performance of small drones in the Russo-Ukrainian War offers evidence that irregular forces could employ them effectively.<sup>379</sup>

G-RAMM Irregulars could present a strong deterrent to aggression. The PLA believes that “small elite forces using advanced weapons or capabilities can attain military effects that previously required large armies and much higher levels of damage and cost.”<sup>380</sup> This is all the more reason to incorporate G-RAMM Irregulars into the Coalition’s ground defense forces. The Coalition should establish forces structured, equipped, and designed to operate along these lines in countries along the First Island Chain, especially in the southern sector and particularly in the Philippines and Taiwan,<sup>381</sup> but also in other prospective Coalition partners, such as Indonesia and Vietnam.

### Urban Warfare

Coalition forces can also employ complex terrain, especially urban terrain where it is available, to enhance their defenses against invading PLA forces. As the US military observes:

Urban terrain tends to restrict operations by counteracting most technological advantages in range,

379 Along these lines, the effort involves tests against a variety of targets using the corps’ Medium-Range Intercept Capability (MRIC) prototype. Irene Loewenson, “US Marines Finish Tests of Israeli ‘Iron Dome’ Missile Air Defense,” *C4ISRNet*, October 21, 2022, <https://www.c4isrnet.com/battlefield-tech/2022/10/21/us-marines-finish-tests-of-israeli-iron-dome-missile-air-defense>; and David B. Ottaway, “Stingers Were Key Weapon in Afghan War, Army Finds,” *Washington Post*, July 5, 1989, <https://www.washingtonpost.com/archive/politics/1989/07/05/stingers-were-key-weapon-in-afghan-war-army-finds/> d25f1e11-216a-417d-9d8e-a8e74ca34020.

380 *China Military Developments*, 2022, 81.

381 For a seminal work presenting a detailed example of a defense posture along these lines, see Jim Thomas, John Stillion, and Iskander Rehman, *Hard ROC 2.0* (Washington, DC: CSBA, 2014), 33–69.

mobility, lethality, precision, sensing and communications. . . . The highly compartmented geography of urban terrain limits observation, communications, fires, and movement. Urban terrain tends to favor the defender over the attacker and the ambusher over the active patroller. . . . It tends to absorb higher densities of troops and other resources than other types of terrain. It slows tactical ground movement and shortens the distance of individual ground maneuvers.<sup>382</sup>

As a result, “urban combat operations thus tend to be bloody, episodic, and prolonged, with the costs of achieving a decision running unusually high.”<sup>383</sup> As Frank Hoffman observes with respect to the Second Lebanon War: “[Hezbollah] skillfully exploited the urban terrain to create ambushes and evade detection, and to build strong defensive fortifications in close proximity to noncombatants.”<sup>384</sup> And as Matt M. Matthews notes, “Hezbollah was not simply hunkering down and defending terrain, but using its small arms, mortars, rockets, and antitank weapons to successfully maneuver against the IDF.”<sup>385</sup>

As suggested above, contemporary versions of G-RAMM systems are relatively mobile and concealable, making them extremely difficult to locate, suppress, and eliminate, especially in urban terrain. Coalition forces operating as G-RAMM Irregulars should seek to exploit the value of operating in urban environments whenever possible.

### Summary

The Archipelagic Defense operational concept’s objective is to deter the Chinese Communist Party from employing its People’s Liberation Army to engage in overt aggression in the Western

382 US Joint Forces Command, *Joint Urban Operations Joint Integrating Concept*, Version 1.0 (Suffolk, VA: US DoD, 2007), 5–6.

383 US Joint Forces Command, *Joint Urban Operations*, 6.

384 Frank G. Hoffman, *Conflict in the 21st Century: The Rise of Hybrid Wars* (Arlington, VA: Potomac Institute for Policy Analysis, 2007), 36.

385 Matthews, *We Were Caught Unprepared*, 44.

Pacific Theater of Operations, and to defeat such aggression if deterrence fails. In the event of war, Archipelagic Defense seeks to deny the PLA the ability to mount a successful assault on the states comprising the First Island Chain as well as those, like South Korea and Vietnam, lying along its flanks. It could accomplish this by denying the Chinese control of the air, sea, and information domains. Should this effort fail and the PLA establish a lodgment, Coalition forces need to be ready to defend their territory against the invader. To this end, Archipelagic Defense proposes combining Turtle defenses and G-RAMM Irregulars with access to remote precision fires. Where desirable, these forces should operate in complex terrain—mountains, jungles, and (especially) urban terrain—to complicate Chinese efforts to build up their forces ashore, lengthen the PLA's campaign timelines, and impose disproportionate costs on PLA forces.

### Counteroffensive Operations

China's calculations of the Coalition's ability to regain any lost territory could also significantly influence its assessment of the relative costs, benefits, and risks involved in undertaking acts of aggression. Given both historical experience and analysis of the contemporary military competition, especially with respect to A2/AD complexes, counteroffensive operations whose objective is to recover major islands along the First Island Chain are likely to prove difficult and costly.

If the PLA can set and extend its A2/AD complex before Coalition forces can mount a counterattack, this will exacerbate the challenge of regaining lost ground. To be sure, Japan's defenses from Hokkaido through Kyushu are almost certainly too formidable for the PLA to overcome. However, absent prompt countervailing action by the Coalition, territory lost at other points along the First Island Chain, including the Ryukyus, Taiwan, and the Philippines as well as the Korean Peninsula, will be progressively difficult to recover.

This is especially the case with respect to Taiwan. The situation regarding the Philippines appears less dire, as its geography

runs perpendicular to China's border, whereas Taiwan's runs roughly parallel to it. This provides Manila with some strategic depth. For example, assuming the Coalition (especially the United States and Australia) has forward-deployed forces along the First Island Chain's southern sector, liberating occupied areas of the Philippines and rolling back PLA forces in the South China Sea becomes more feasible. The Philippines' southern islands are beyond the range of most PLA scouting and strike capabilities. This could aid the Coalition's efforts to regroup and reinforce its forces on nearby islands (such as Mindanao) to conduct prompt counteroffensive operations.

Continuing our example, a local Coalition A2/AD complex on Mindanao could defend Coalition forces assembling for counteroffensive operations, thereby facilitating their deployment, staging, projection, and sustainment. As described above, local Coalition Turtle and G-RAMM irregular defense force resistance could slow and complicate Chinese offensive operations, including efforts to secure their gains and establish local PLA A2/AD complexes.

Coalition counteroffensive operations would also benefit from compelling the PLA to operate along extended sea lines of communication while Coalition forces profit from relatively shorter lines of communication, at least until the PLA secures its gains and establishes forward supply points. The resulting constraints on PLA logistics would likely place significant limits on the forces it can initially sustain forward. This could greatly advantage Coalition counteroffensive forces, which are likely to be relatively limited in number but—assuming they comprise primarily American, Australian, and Japanese forces, along with Filipino G-RAMM Irregulars and special operations forces—all of high quality.

Of note, the Americans have the world's most capable Marine Corps and special operations forces. In 2018, Japan's Ground Self-Defense Forces established an Amphibious Rapid Deployment Brigade whose mission is to counter invading forces at-

tempting to secure occupation of Japanese islands.<sup>386</sup> The US Army's 101st Air Assault Division and 75th Ranger Regiment could also play significant roles in counteroffensive operations, and perhaps its 82nd Airborne Division as well.

Moreover, both the US Army and US Marine Corps are fielding new force elements designed to operate more effectively along the First Island Chain. Their potential for conducting counteroffensive forcible entry operations is unclear. At first blush, these units—the Army's Multi-Domain Task Force (MDTF) and Marine Corps' Littoral Combat Regiment—appear better suited to defending Coalition positions along the chain than to retaking lost territory. That being said, these new force elements are still in their gestation period, and their focus and structure could change significantly with time. They may also prove to be well suited for establishing A2/AD defensive “bubbles” to protect Coalition forcible entry forces—both prior to their assault and once they are ashore. Naturally, the Coalition could draw additional scouting and strike capabilities from its air and naval forces, as well as from those operating in the cyber and electromagnetic domains.<sup>387</sup>

### Ambiguous Aggression

Archipelagic Defense is concerned with deterring and, if necessary, defeating *overt* Chinese aggression within the context of a general war, particularly against states comprising the First Island Chain. Consistent with its strategic culture, however, the CCP is also pursuing more ambiguous forms of aggression, including gray zone or gray area warfare—contemporary terms for what has been described as “ambiguous aggression.” An assessment of how the Coalition might best counter this form of aggression lies beyond the framework of this study. Nevertheless, a few observations are in order.

386 Eric Johnston, “Japan's Marine Corps: The Nation's First Responders for Remote Island Defense,” *Japan Times*, January 28, 2021, <https://www.japantimes.co.jp/news/2021/01/28/national/japan-sdf-brigade>.

387 Congressional Research Service, “The Army's Multi-Domain Task Force (MDTF),” March 16, 2023, <https://crsreports.congress.gov/product/pdf/IF/IF11797>; and Michelle Macander and Grace Hwang, “Marine Corps Force Design 2030: Examining the Capabilities and Critiques,” Center for Strategic and International Studies, July 22, 2022, <https://www.csis.org/analysis/marine-corps-force-design-2030-examining-capabilities-and-critiques>.

The gray zone of warfare refers to conflict at the lower end of the spectrum of war. To place this in context, if we view the spectrum as a continuum extending from peacetime competition beyond the far left to nuclear Armageddon on the far right, ambiguous (gray zone) conflicts sit well to the left of center, far below conventional (or general) warfare. Ambiguous aggression can include cyberattacks, such as the Russian attacks on Estonia in 2007; harassment of ships in international waters, such as Chinese air and maritime forces have done in the South China Sea; and incursions into a country's airspace, such as the presence of Chinese spy balloons over the United States.<sup>388</sup>

Arguably, the Chinese Communist Party is pursuing ambiguous aggression in the WPTO in part because it judges the risks of achieving its expansionist aims through overt aggression as too high.<sup>389</sup> Moreover, countering CCP military forms of ambiguous aggression has proved challenging for those states it has targeted. If Beijing believes time is on its side, it may continue along this path with the expectation that, as the military balance of power continues to shift in its favor, it will eventually be able to, as Sun Tzu counseled, “win without fighting.”

Archipelagic Defense seeks to frustrate Beijing's ambitions by maintaining a favorable military balance, thereby deterring the CCP from escalating to overt aggression in the WPTO and confining its military actions to ambiguous forms of aggression. Put simply, if all parties in the competition have an interest in avoiding nuclear Armageddon, and if the Coalition can establish and sustain a favorable military balance at the conventional level of war, if need be it can, through escalation control, restrict the

388 David Barno and Nora Bensahel, “Fighting and Winning in the ‘Gray Zone,’” *War on the Rocks*, May 19, 2015, <https://warontherocks.com/2015/05/fighting-and-winning-in-the-gray-zone/>; Hal Brands, “Paradoxes of the Gray Zone,” Foreign Policy Research Institute, February 5, 2016, <https://www.fpri.org/article/2016/02/paradoxes-gray-zone/>; and Sarah Canna and George Popp, *Strategic Multi-Layer Assessment (SMA) Panel Discussion on the Gray Zone in Support of USSOCOM* (Lexington Park, MD: NSI Inc., 2017), 1, 7, 12, [http://nsiteam.com/social/wp-content/uploads/2017/06/U\\_Final\\_SMA\\_SO-COM-Gray-Zone-Panel-Discussion-v2.pdf](http://nsiteam.com/social/wp-content/uploads/2017/06/U_Final_SMA_SO-COM-Gray-Zone-Panel-Discussion-v2.pdf).

389 This echoes somewhat the CCP's Cold War-era emphasis on “wars of national liberation,” which the PLA's pronounced inferiority in nuclear and conventional force capabilities at that time largely incentivized.

military competition to the least costly and dangerous part of the conflict spectrum.

Indeed, a successful defense of the WPTO may depend on the Coalition's ability to establish and maintain vertical and horizontal escalation control, or dominance. As used in this study, vertical escalation refers to escalating the intensity of military force. An example of vertical escalation would be a threat (or decision) to employ conventional military forces on a large scale in a conflict that countries previously limited to various forms of ambiguous warfare. Horizontal escalation refers to escalating the geographic scope of a conflict. An example of horizontal escalation would be one in which a confrontation between China and the Coalition in the Senkaku led to the Coalition threatening (or undertaking) actions to isolate PLA forces on natural and artificial islands in the South China Sea.

As the geopolitical and military-technical environments are substantially different from what they were when the Cold War ended, the Coalition needs to update both the vertical and horizontal escalation dominance “ladders.” Moreover, it needs to understand how the CCP's leadership has constructed its own escalation ladders.

In summary, Archipelagic Defense seeks to support the goal that former Japanese Prime Minister Shinzo Abe first proclaimed and that US President Joe Biden seconded: a “free and open” Indo-Pacific where states can make decisions free from coercion by external powers.<sup>390</sup> To accomplish this, the Coalition will need to reverse the ongoing shift in the military balance in China's favor. The following chapter sets forth some of the main initiatives that the Coalition should undertake to achieve this goal.

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<sup>390</sup> Tsuneo Watanabe, “Japan's Rationale for the Free and Open Indo-Pacific Strategy,” Sakakawa Peace Foundation, October 30, 2019, [https://www.spf.org/iina/en/articles/watanabe\\_01.html](https://www.spf.org/iina/en/articles/watanabe_01.html); and White House Briefing Room, “Fact Sheet: Indo-Pacific Strategy of the United States,” February 11, 2022, <https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/02/11/fact-sheet-indo-pacific-strategy-of-the-united-states>.



## 8. IMPLEMENTING ARCHIPELAGIC DEFENSE

The competition between a revisionist China and the Coalition of states whose core comprises Australia, Japan, and the United States shows no indication of ending anytime soon. The Coalition and its prospective security partners are unwilling to abandon their long-standing vital interests and submit to a new international order set in Beijing. Further, the Chinese Communist Party has offered no hint that it will accept anything less than such an outcome. Consequently, Coalition defense planning should consider not only the military balance as it exists today, or even over the next decade, but how it might evolve over the next several decades. This requires establishing a balance between resources the Coalition allocates to improve its competitive position in the short term and those it devotes to developing major new sources of competitive advantage in the long term. The uncertainties that the ongoing rapid advance in military-related technologies create and the complexities of modern warfare within and across eight domains further magnify the challenge.

Major changes in a country's defense posture typically require an extended period of time to bring about. Next-generation military systems, such as combat aircraft, warships, and armored vehicles, can take a decade or even decades to move from concept to reality. Increases in the production rate of munitions—let alone sophisticated equipment such as major naval combatants, helicopters, and long-range bombers—can take years to effect, as can a significant expansion of a military's force structure. New military doctrines that inform how the military will organize and train to conduct new kinds of operations also take many years to develop, test, refine, and master. Similarly, a new basing posture—the United States shifting, for example, from an expeditionary posture to a forward-deployed posture—can

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Photo: Filipino soldiers take part in a flag raising ceremony on June 29, 2023, in Mavulis Island, Batanes, Philippines—which is roughly 85 miles from Taiwan. (Photo by Ezra Acayan/Getty Images)

take a decade or more to effect, owing to the requirement to add new infrastructure and (in some cases) to adapt or create political agreements.

Given these considerations, the Archipelagic Defense concept in its current incarnation will almost certainly take a decade or more to implement fully. As it aims to address a long-term competition with China, its focus is not principally on today's military balance but on establishing and sustaining a favorable balance over the indefinite future.

This long view should come as no surprise. Recall that it required over a decade after NATO formed before the Americans, the Canadians, and their European allies had put into place the level of forces and infrastructure they needed in Western Europe to implement the flexible response defense strategy that came to define the alliance for the remainder of the Cold War. Like NATO, the nascent Coalition of independent states in the Indo-Pacific region finds itself in a race against time in a protracted and *dynamic* competition with China to maintain and sustain a favorable military balance of power. Under these circumstances, the sooner the Coalition adopts and begins refining Archipelagic Defense, the better.

Many specific recommendations and suggestions for implementing Archipelagic Defense are embedded in this study's preceding chapters. This chapter provides an overview of *selected* actions the Coalition should take to implement Archipelagic Defense. This set of actions is meant to be *illustrative, not exhaustive*. Moreover, as the military competition is dynamic, the Coalition will inevitably need to modify aspects of Archipelagic Defense over time to account for changes in the strategic environment.

## Geopolitics: Broadening the Coalition

The success of Archipelagic Defense will depend in large measure on the Coalition's members and on the military capabilities those members are able and willing to contribute to their col-

lective defense. Indeed, when it comes to countering an aspiring hegemon successfully, Coalitions have proven their worth. As Alistair Horne notes, "Muddled and inefficient as they may be, two world wars and a cold war show that, in the long run, they win wars—and possibly prevent them. Powers, however strong, that exist alone, isolated, are usually doomed."<sup>391</sup>

## The Southern Sector and the Flanks

This study assumes that Australia, Japan, and the United States constitute the Coalition's core members. That being said, it is essential that both the Philippines and Taiwan—the First Island Chain's southern sector—become active participants in the Coalition. The two countries have recently made significant progress in this regard. The new Marcos administration in the Philippines has shown a far greater willingness to build closer security ties with its American ally than the departed Duterte administration. Manila is moving forward with plans to expand the US military footprint in the archipelago. This effort is crucial, as US forces will need to be forward deployed to counter any Chinese attack on the country, as well as to parry Beijing's attempts at coercion.

Importantly, Taiwan's people have increasingly distanced themselves from a Chinese identity and expressed a growing desire to remain independent of Beijing. Short of war, Japanese and American military support for Taiwan is almost certain to consist of only military equipment and training missions. Nevertheless, Taipei can do much to enhance its ability to resist Chinese coercion and aggression. Indeed, despite institutional resistance, the Taiwanese military is fully capable of adopting the force structure and defense posture called for in Archipelagic Defense. And there are some encouraging signs that it is making progress toward this end, albeit fitfully.

As noted earlier, although relatively small, Australia's military is of high quality and has extensive experience deploying far from its homeland. South Korea and Vietnam occupy flanking positions

<sup>391</sup> Horne, *How Far from Austerlitz?*, 398.

along the First Island Chain. Their membership in the Coalition would greatly enhance its positional advantage relative to China. American and South Korean forces based on the Korean Peninsula could pose a significant challenge to any PLA attempt to seize islands along the Ryukyu chain. If the Coalition arms them with land-based, cross-domain forces, the Vietnamese, along with Coalition forces deployed on Palawan and Luzon, would greatly complicate Chinese efforts to conduct offensive operations using forces based on the South China Sea Islands.

Should they partner with the Coalition, Indonesia, Malaysia, and Singapore could provide significant military capability while greatly enhancing its positional advantage relative to China. Particularly in the case of a distant maritime blockade of Chinese ports, base access in these countries would facilitate land-based Coalition interdiction operations. Moreover, they could also serve as a staging and support area, if necessary, for counteroffensive operations in Southeast Asia.

### The Reluctant Giant

By its membership in the Quad and the security threat China poses to it, India arguably stands as a de facto Coalition member, albeit a highly aloof one. Simply by virtue of its location stretching along China's southern border, India diverts resources that the PLA might otherwise use to wage war in the Western Pacific. Yet while India has serious border disputes with China and views with concern Beijing's ongoing campaign to expand its influence into the Indian Ocean, New Delhi is the only Quad member that has no formal alignment with any of its three associates.

Should India expand its role in the Quad, it could significantly enhance deterrence in the Indo-Pacific region. For example, New Delhi could declare that, under certain conditions, it would provide US long-range strike forces with a southern avenue by which to enter Chinese airspace, thereby holding key targets at risk. If so, the PLA would have to either accept this vulnerability or divert additional resources to bolster its air and missile

defenses along its southern front, reducing the forces available to threaten countries in the Western Pacific or to expand the PLAN's presence in the Indian Ocean. India's strategically located Andaman and Nicobar Islands could prove highly useful in distant Coalition blockade operations, especially if Indonesia, Malaysia, or Singapore facilities were to stay outside the Coalition. These islands could also support ASW operations against PLAN commerce raiders in the South Asia Theater of Operations. Not only would this help secure India's SLOCs but it could also play a key role in enabling Coalition forces to defend the Pacific SLOCs.

### Thinking and Planning

Individually and (increasingly) collectively, Coalition members should task their best strategic thinkers to identify and develop new sources of competitive advantage, existing advantages worth sustaining, and existing sources of advantage that are declining in value that need to be divested. The Coalition strategy this study assumes, the operational challenge it presents, and the operational concept—Archipelagic Defense—it proposes to address the challenge should inform this effort.

As they form the Coalition's current core, Australia, Japan, and the United States will need to closely coordinate their strategic planning activities. As the Coalition expands beyond this core group, it should include new members in the strategic planning process. Given India's great-power status, the Coalition should seek opportunities to engage New Delhi in a more detailed strategic dialogue, even if it does not formally join the Coalition.

### Understanding China

Crafting a good strategy requires developing as comprehensive an appreciation of your rival as possible. To this end, the Coalition needs to develop the best possible understanding of how the Chinese are approaching the competition, including Beijing's revisionist objectives and the CCP's strategy for achieving them. What do we know about how the Chinese see themselves? What political realities do they need to accommo-

date, such as those pertaining to the CCP's legitimacy? Is there a timetable—2049, perhaps—for the repatriation of Taiwan? If China chooses the path of war, what, if anything, would lead the Chinese Communists from terminating the war on terms favorable to the Coalition?

With respect to Archipelagic Defense, Coalition policymakers, strategists, and military planners need to understand, among other things, how the Chinese calculate the military balance; the metrics they use to assess the balance; the conflict scenarios they plan against; their existing doctrine and prospective operational concepts; and how they calculate cost, benefit, and risk. The more these aspects of the competition are understood, the less uncertainty will hamper the development of a strategy to deter Chinese aggression and, should deterrence fail, to defeat it.

### Net Assessments

The Coalition should inform (and, as necessary, revise) its strategy through persistent analysis, leveraging insights it has derived from net assessments of the military balance. These assessments should explore the balance from both regional and functional perspectives. With regard to the former, prospective net assessment topics would include the Taiwan Strait, the northern sector, the southern sector, Southeast Asia, and South Asia military balances. With respect to functional net assessments, promising candidates might include those focusing on key domains—such as space, cyberspace, air, and undersea—as well as on the nuclear balance and the recce-strike competition. Again, these proposed assessments are meant to be suggestive, not prescriptive.

Such assessments should include a representative set of planning scenarios updated as necessary to incorporate significant shifts in the competitive environment, such as the introduction of new military capabilities or the addition of new Coalition members. Coalition analysts might group these scenarios into sets, each focusing on one particular aspect of the competition. This form of scenario-based war planning is similar to the

successful “color plans” the US military developed between the world wars.<sup>392</sup>

### Unity of Command

To counter PLA efforts to take down the Coalition's battle networks, it will need to make those networks more robust while also reducing its dependence on them. At present, however, the problem is even more fundamental: the Coalition lacks even bilateral command structures to coordinate and direct combined operations. As noted earlier, unity of command is a key PLA advantage—one that the Coalition needs to offset to the extent it is possible to do so.

As a point of departure, Japan might take the lead in assuming command of the First Island Chain's northern sector, which consists entirely of its own territory. Similarly, India would be the logical lead for the Coalition's defense of South Asia. The First Island Chain's southern sector offers no resident great military power with respect to command relationships. A potential starting point could find the Philippines military integrating with the US Indo-Pacific Command's structure to form a combined command along the southern part of the chain.

### The Battle Network

As the US military has far and away the Coalition's most capable battle network, it should form the basis for a Coalition network. A “baby steps” approach will probably work best, with Japan and perhaps Australia taking the lead in migrating over time into the US network. For its part, the United States should take the lead in enhancing the network's resilience. For example, advances in artificial intelligence and robotics may enable it to execute a range of missions autonomously and at acceptable levels of effectiveness, even when units or systems have lost access to the battle network. The Coalition should conduct training involving Australian, Japanese, and US forces at

<sup>392</sup> For detailed treatments of the American color plans, see Henry G. Cole, *The Road to Rainbow* (Annapolis, MD: Naval Institute Press, 2003); and Edward S. Miller, *War Plan Orange* (Annapolis, MD: Naval Institute Press, 1991). See also Krepinevich, *Seven Deadly Scenarios*.

a combined, high-fidelity training center to test and refine the combined battle network. The training should emphasize operations when parts (or even all elements) of the battle network are disrupted. Under these conditions, training emphasizing commander's intent and mission-type orders may enable forces to perform at acceptable levels of effectiveness.

The PLA poses a growing threat to the US space architecture, which American forces rely on for positioning, navigation, and timing; communications; command and control; meteorology; and intelligence, surveillance, and reconnaissance. The US military's tendency to place many of its eggs in relatively few baskets—launching smaller numbers of more capable space systems—accentuates the problem. The US might mitigate the risk to its space architecture by shifting over time to a satellite architecture based on clusters of small satellites (as described earlier in this study) and by employing terrestrial backup systems, such as unmanned aircraft.<sup>393</sup>

Along these lines, a time-phased deployment of the land-based, buried fiber-optic communications network should be an early Coalition priority, starting in Japan. Japanese and US forces should test the system as they emplace it, employing it as part of field exercises oriented toward vetting Archipelagic Defense. If the results are promising, they should emplace additional fiber-optic cable networks with “gateways” linking them via radio to space, air, and sea platforms to increase the resiliency of joint and combined force communications. Simultaneously, they should make efforts to extend the network, which has other uses (such as providing robust communications in the event of a natural disaster) to Taiwan and the Philippines.

### Institutionalizing Coalition Planning

No one can say if or when China might abandon its revisionist ambitions. Thus, the Coalition will need to sustain planning on

393 See Oliver Morton, “A Sudden Light,” *Technology Quarterly*, *The Economist*, August 27, 2016, <http://www.economist.com/technology-quarterly/2016-25-08/space-2016>. Small satellites might prove more survivable against PLA anti-satellite forces while providing the positioning, navigation, and timing necessary to effectively guide a range of precision-guided weapons to their targets.

both bilateral and multilateral bases over time. Ideally, this will involve integrated planning within the framework of a combined military planning staff working toward a common set of Coalition objectives that its members' political leaders have set.

Alas, such an approach is, at present, far more aspirational than real. As experts often point out, the US-centric hub-and-spoke security system in the WPTO is markedly different from NATO's unitary system. While the Coalition has made progress recently, especially on a bilateral basis, its members need to do much more.

There is time to form a tighter Coalition and to expand it as well. But given the unfavorable trends in the military balance, there is no time to waste. Hence the value, as noted earlier in this study, of “planning like it's 1948.” A phased, adaptive approach to implementing Archipelagic Defense will be necessary as Coalition-building is only in its early stages and because circumstances are certain to change along the way.

The NATO alliance experience is instructive in this regard. Early in its history, NATO relied heavily on the US nuclear deterrent. By the 1960s, its defense posture had shifted to emphasize conventional forces in the context of the flexible response concept. Toward the end of the Cold War, NATO also developed the Follow-On Forces Attack concept, and the US Army its AirLand Battle doctrine. These changes over time reflected shifts in the geopolitical and military-technical environments. The objective of these efforts, however, remained constant: to deter Soviet aggression against NATO members and, should deterrence fail, to defeat it through a forward defense.

### Creating a Virtuous Cycle

The Coalition should establish a “virtuous cycle” to test, validate, and refine the Archipelagic Defense operational concept. The analytic work underpinning net assessments, the assessments themselves, and the scenarios (or contingencies) provide the basis for war games designed to evaluate Archipelagic Defense. The Co-

alition should incorporate the insights it derives from these efforts into joint and combined exercises, *conducted at the operational level of war*, at high-fidelity training ranges. While exercises among current and prospective Coalition members are numerous (see Appendix A), none meet this requirement. The Coalition should pit forces participating in these exercises against an opposing force (OpFor) that it has organized, trained, and equipped to resemble the PLA as closely as possible. The OpFor should “fight” in the exercises as the PLA would fight, according to its doctrine.

The process should be iterative and ongoing. Insights the Coalition derives at each step in the process should inform the others. For example, the findings it derives from war games should inform the conduct of field exercises while enhancing analysis of the current version of Archipelagic Defense and supporting the crafting of new net assessments, thus sustaining the cycle. The insights derived from this virtuous cycle should enhance Coalition planning across a range of actions, including strategy, force planning, investment strategies, joint and combined concepts of operations, and doctrine.

## Selected Planning Issues

### The Mobilization Race

Any set of planning scenarios for the WPTO should include an assessment of how mobilization affects the balance and the Coalition’s ability to execute Archipelagic Defense. A key aspect of this assessment should center on identifying points along the mobilization timeline when the PLA would enjoy a pronounced advantage. In such cases, the Coalition should take steps to reduce or eliminate them. Given the uncertainties with respect to calculating the military balance, this assessment will prove highly challenging. Nevertheless, the Coalition should accord it high priority as, done well, it can substantially enhance efforts to set key defense planning and programming priorities.

### Economic Warfare

Given economic warfare’s potential importance in deterring war or, should deterrence fail, waging it to a successful res-

olution, Coalition planners should thoroughly assess blockade and counterblockade operations, including defense of the Coalition’s SLOCs. This assessment should capture the second- and third-order effects of various economic warfare campaigns. For example, a successful blockade of oil shipments to China, the world’s largest importer, would likely trigger a steep drop in the price of oil in addition to imposing economic hardship on China. The effect on the economies of some key oil-exporting states—and powerful neutrals—could be severe, compromising their relationships with the Coalition.

### Closing the Munitions Gap

The Coalition suffers from a profound shortfall of a wide array of munitions. In the US case, this is true even when planners measure these supplies against requirements for an extended conflict against a minor power. Failing to address this shortfall could force the Coalition to abandon key strategic positions (owing to a shortage of munitions to defend them) or escalate the conflict by employing nuclear weapons, thereby risking crossing the threshold to Armageddon.

More generally speaking, Coalition forces should field systems capable of employing interchangeable payloads on a common firing (or launch) platform. This will enable these systems to rapidly shift their munitions loads to accomplish various missions, such as air and missile defense, coastal defense, and extended-range surface-to-surface strike. In so doing, they can enhance Coalition forces’ military effectiveness and their ability to counter-concentrate military power at the decisive point against the PLA.

Clearly, these initiatives will take time, likely a decade or more, to complete. Yet given the benefits derived from such an endeavor, the increased spirit of cooperation among core and certain prospective Coalition members, and (aside from the United States) their commitment to significantly boost their investments in defense, resolving the munitions problem appears feasible.

## Avoiding Armageddon

The Coalition would prefer to deter a war rather than fight one. Should war occur, the Coalition would seek to deter the Chinese from escalating to nuclear weapons use. Therefore, Coalition strategy needs to account for intra-war deterrence. Coalition strategists will have to identify circumstances under which it, or the CCP, would escalate the conflict, lest the line is crossed to Armageddon. This will likely prove challenging.

An example shows why this is so. For instance, consider a situation in which PLA attacks on key Japanese ports, combined with its commerce raiding operations along the Western Pacific SLOCs, threaten to collapse Japan's economy or cut off its food supplies. Under these circumstances, Tokyo may be far more willing to escalate the war than other Coalition members. If Japan has the means to escalate, it could do so unilaterally. If it does not, and its Coalition partners with the means to do so refuse, Tokyo might decide to seek a separate peace with Beijing. One way to avoid this predicament would be if the Coalition shifts forces engaged in other missions to Japan's SLOC defense, including augmenting air and missile defense and counter-mine operations at key Japanese ports. Japan could also reduce risk by stockpiling key import items, such as food and fuel. This, however, could prove to be a case of "robbing Peter to pay Paul," as resources diverted to address this threat risk opening up other opportunities for China to exploit. Thus, fissures may emerge between the Coalition and other members.

Indeed, as was the case with earlier great-power coalitions, sustaining them in a war may prove more challenging than forming them. Consider another example, in which a Coalition member lacks the ability to escalate the conflict in any meaningful way. This could be the case with respect to the Philippines or Vietnam. Here the Coalition's leading powers—the United States, in particular—may confront a challenge in providing credible assurances to these states regarding their willingness to escalate under conditions similar to those described above with respect to Japan.

## War Termination

Any war that does not end in a general nuclear exchange will likely conclude with a negotiated settlement that finds a Chinese government continuing to harbor revisionist designs. Hence the need to explore strategies for war termination and to address possible strategic moves in an enduring postwar rivalry. An example of how a country has done this well appears in the British negotiations at the end of the Napoleonic Wars, which helped avoid another great-power war for nearly a century while enhancing Britain's overall competitive position.<sup>394</sup> Correspondingly, the "poor" peace following the Franco-Prussian War and the First World War led to a strong desire for revenge on the part of France and Germany, respectively, eventually leading to another war at great cost to both countries.

There is also the challenge of holding the Coalition together following the war in order to enhance the prospect of preserving the peace. History suggests this will be difficult to accomplish. Therefore, senior policymakers, especially those of the Coalition's leading members, should prepare for such contingencies.

## The Social Dimension of Strategy

Both Clausewitz and Sun Tzu emphasize what, in contemporary times, Sir Michael Howard has called strategy's "social dimension."<sup>395</sup> It speaks to a people's willingness, or lack thereof, to support their government's decision to go to war and to sustain their support for the war effort to a successful resolution, despite the sacrifices in blood and treasure involved.

To implement Archipelagic Defense successfully, the Coalition has to address the social dimension of strategy. Absent popular support, the governments of any Coalition will find it difficult, and perhaps impossible, to secure from their people the sacri-

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<sup>394</sup> Kissinger, *Diplomacy*, 78–91.

<sup>395</sup> Michael Howard, "The Forgotten Dimensions of Strategy," *Foreign Affairs*, May 1, 1979, <https://www.foreignaffairs.com/articles/1979-06-01/forgotten-dimensions-strategy>.

Table 7. Large Majorities in Most Countries Have Negative Opinions of China

☐ Most Unfavorable ☐ Least Unfavorable

COUNTRY	'02	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21
US	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73%	76%
Canada	-	27%	-	37%	-	36%	-	-	-	45%	-	48%	40%	40%	45%	67%	73%	73%
Sweden	-	-	-	40%	-	-	-	-	-	-	-	-	59%	49%	52%	70%	85%	80%
Netherlands	-	34%	-	-	-	-	-	-	-	-	-	-	43%	42%	45%	58%	73%	72%
Germany	-	37%	33%	54%	68%	63%	61%	59%	67%	64%	64%	60%	60%	53%	54%	56%	71%	71%
Belgium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71%	67%
France	-	42%	41%	51%	72%	60%	59%	49%	60%	58%	53%	49%	61%	52%	54%	62%	70%	66%
UK	-	16%	14%	27%	36%	29%	35%	26%	35%	31%	38%	37%	44%	37%	35%	55%	74%	63%
Italy	-	-	-	61%	-	-	-	-	64%	62%	70%	57%	61%	59%	60%	57%	62%	60%
Spain	-	21%	38%	43%	56%	41%	38%	39%	46%	47%	55%	50%	56%	43%	48%	53%	63%	57%
Greece	-	-	-	-	-	-	-	-	38%	37%	46%	-	37%	40%	48%	32%	-	42%
Japan	42%	-	71%	67%	84%	69%	69%	61%	84%	93%	91%	89%	86%	83%	78%	85%	86%	88%
Australia	-	-	-	-	40%	-	-	-	-	35%	-	33%	39%	32%	47%	57%	81%	78%
South Korea	31%	-	-	42%	49%	54%	56%	-	-	50%	42%	37%	-	61%	60%	63%	75%	77%
Taiwan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69%
New Zealand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67%
Singapore	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34%

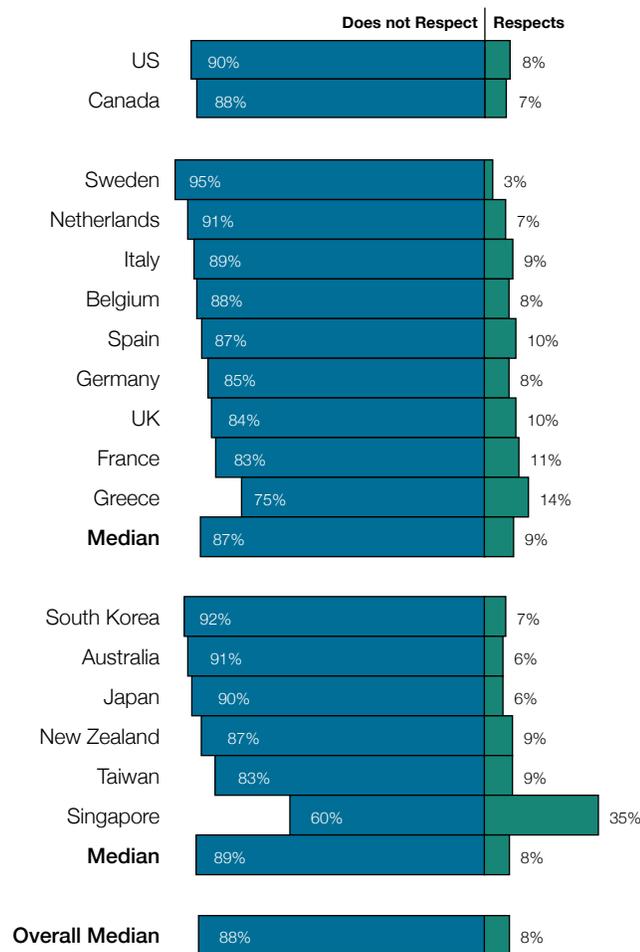
Source: Laura Silver, Kat Devlin, and Christine Huang, "Large Majorities Say China Does Not Respect the Personal Freedoms of Its People," Pew Research Center, June 30, 2021, <https://www.pewresearch.org/global/2021/06/30/large-majorities-say-china-does-not-respect-the-personal-freedoms-of-its-people/>.

fices necessary to establish and maintain an effective deterrent force in peacetime that can also prevail in war. The Chinese Communist Party recognizes this and is working hard to stoke nationalist fervor among the Chinese people and create a favorable image of China among the people of existing and prospective Coalition member states.<sup>396</sup>

396 For a discussion of the CCP's emphasis on what has become known as the "three warfares" — psychological, public opinion, and legal — see Dean Cheng, "Testimony before the US-China Economic and Security Review Commission: China's Active Defense Strategy and Its Regional Impact," January 27, 2011, 6–10, <https://www.uscc.gov/sites/default/files/1.27.11Cheng.pdf>; and Elsa Kania, "The PLA's Latest Strategic Thinking on the Three Warfares," *China Brief* 16, no. 13 (August 22, 2016), <https://jamestown.org/program/the-plas-latest-strategic-thinking-on-the-three-warfares>.

Relative to the CCP, the democratic states along the First Island Chain, as well as the powers comprising the Quad, have a better story to convey to their people, and to the Chinese people as well. That being said, there is a fundamental difference between having a superior case and making it effectively. Senior political leaders in the Coalition democracies should communicate to their people the threat that China poses, the need to counter it while there is still time, and the sacrifices it will require to sustain the peace and prosperity that have benefited the entire Indo-Pacific region for decades.

Table 8. Nearly All Respondents in Public Surveys Say China Disregards Its People’s Freedoms



Source: Laura Silver, Kat Devlin, and Christine Huang, “Large Majorities Say China Does Not Respect.”

The Coalition’s strategic narrative should highlight the individual liberties, quality of life, and standard of living that democracies and free-market capitalist systems have created for their peoples, in contrast to the totalitarian political system and state-directed economy the CCP imposes on the Chinese people. Coalition leaders need to make the case not only internally, to each mem-

ber’s population, but also collectively to all people living under the blessings of democracy (for public opinion polls that reveal China’s negative global image, see tables 7 and 8). And, as capitalist democracies did when confronting the Soviet Union in the Cold War, Coalition leaders should make strong and persistent efforts to inform the Chinese people of what the CCP has denied them with respect to their individual liberties and economic opportunities.

### Selected Cost-Imposition Capabilities

#### Cross-Domain Ground Forces

Coalition ground forces engaged in air-, missile- and coast-al-defense cross-domain missions, as called for in Archipelagic Defense, could pose a serious challenge to the PLA’s ability to establish the air, sea, and information control it seeks to wage a war of aggression in the Indo-Pacific region. Ground forces enjoy a relative advantage over air and maritime forces in the counter-scouting competition owing to their ability to disperse, harden, or exploit mobility through camouflage, concealment, and decoys. Consequently, with respect to the strike/counterstrike competition, the cost to the PLA to destroy or neutralize ground forces, assuming it can locate them, could be substantially greater than the cost Chinese forces would incur to inflict comparable damage on Coalition air and naval forces. If the Coalition employs ground forces as prescribed in Archipelagic Defense, it would not only complicate PLA targeting problems but may also induce China to invest in greater reconnaissance and strike capacity to identify, track, and engage ground forces, especially mobile forces (also referred to as critical time-sensitive targets), and in niche munitions necessary to neutralize hardened targets.

Indigenous Coalition ground forces capable of establishing Turtle defenses and operating as G-RAMM Irregulars that can exploit complex terrain to their advantage may also have great potential to impose disproportionate costs on the PLA.

#### Long-Range Precision Strike

Dating back to World War II, the US military has demonstrated an unmatched competence in long-range strike operations. In

the First Gulf War, these operations saw US forces employing precision-guided munitions.<sup>397</sup> Long-range strike operations can impose substantial costs on China by reducing the value of its strategic depth. China would need to defend vital assets deep in its interior that otherwise would be relatively immune from attacks or risk their destruction. Moreover, these strike forces do not require access to increasingly vulnerable forward air bases and, owing to their extended ranges, can approach China from multiple directions. This could compel the PLA to extend its air defense network farther along China's long border and to establish point defenses for high-value assets deep in the country's interior. In this way, long-range strike forces impose costs on the PLA by exploiting China's geography. As noted above, incentivizing the PLA to invest more in defenses leaves fewer resources available for more threatening systems, such as ballistic missiles and attack submarines. Finally, Coalition long-range precision strike forces can also make a significant contribution to efforts to win the concentration/counter-concentration competition with the PLA.

Despite its own history and the clear advantages that forces capable of executing long-range precision strikes offer, in recent decades the US military has accorded these forces relatively low priority. Recently, however, the US Air Force has committed to fielding a new stealthy long-range bomber, the B-21, with a projected minimum buy of 100 aircraft.<sup>398</sup>

The US Navy's situation is far less encouraging. The strike aircraft comprising the Navy's current carrier air wing, as well as the F-35C aircraft slated to replace many of them, have significantly less range than the Navy's A-6 carrier aircraft, which the DoD retired decades ago. The Navy should accord priority to getting long-range penetrating strike aircraft—manned and unmanned—onto its carrier decks.

397 The US military first employed large numbers of precision weapons during the Vietnam War; however, their use occurred over a period of many months, as opposed to a few weeks, as was the case during the First Gulf War.

398 C. Todd Lopez, "World Gets First Look at B-21 Raider," DoD News, December 3, 2022, <https://www.defense.gov/News/News-Stories/Article/Article/3235326/world-gets-first-look-at-b-21-raider>.

The Navy fares somewhat better in terms of its submarine arm. It faces the retirement of its SSGN force—its principal conventional undersea strike arm—over the next decade or so. Two programs are designed to mitigate the loss of the SSGNs. First, the Navy is considering modifying *Colombia*-class boats—the follow-on class to the Navy's Trident fleet SSBNs—to function as SSGNs.<sup>399</sup> Second, Block V *Virginia*-class attack submarines are longer than previous versions (460 feet instead of 377), which allows their missile payload to hold 40 more cruise missiles, and they have enhanced stealth via acoustic quieting modifications.<sup>400</sup>

Thanks in part to the INF Treaty, US ground forces have long lacked the ability to conduct long-range precision strikes. The US Army has not even fielded missiles with ranges within the treaty's limit of 500 kilometers (or slightly over 300 miles). The PLA has exploited this situation by fielding hundreds of ballistic missiles capable of executing prompt strikes with high accuracy over extended ranges. These missiles are a key element of the Chinese A2/AD complex. As noted earlier in this study, the challenges that PLA ballistic missiles pose to Coalition forces are considerable. Given the value that a prompt long-range precision-strike capability provides, the United States should at a minimum be developing ground-launched missile systems comparable to those the PLA deploys.

Japan, the Coalition great power situated along the First Island Chain, is moving to create a counterstrike capability. To this end, it is considering developing a range of missiles, including hypersonic missiles, that it can launch from land, sea, and air. In the interim, Japan plans to buy up to 500 US-made Tomahawk cruise missiles over the next four years and launch a network of 50 small satellites to facilitate counterstrikes.<sup>401</sup> Not only could

399 Joseph Trevithick, "Navy Plans for 'Large Payload Subs' Based on New Columbia Class to Take On SSGN Role and More," *The War Zone*, November 21, 2019, <https://www.thedrive.com/the-war-zone/24804/navy-plans-for-large-payload-subs-based-on-new-columbia-class-to-take-on-ssgn-role-and-more>.

400 Peter Suci, "The Navy's Block V Virginia-Class Submarine Has a Secret," *19FortyFive*, December 22, 2022, <https://www.19fortyfive.com/2022/12/the-us-navys-block-v-virginia-class-submarine-has-a-secret>.

401 Pollman, "Japan's Ruling Coalition Approves Counterstrike Capability."

these counterstrike forces complement US efforts to offset China's advantage in strategic depth, but they can also use their extended range to provide prompt, accurate fires along the Japanese archipelago, including the Southwest Wall.

### Exploiting the “Next Big Thing”

Rapid advances are occurring across a range of military-related technologies, among them artificial intelligence, bioscience, big data, directed energy, nanotechnology, novel forms of propulsion and energy storage, and robotics. The Coalition should accord high priority to identifying how it can leverage these technologies to enhance its militaries' effectiveness within the context of Archipelagic Defense. History strongly suggests that a combination of these technologies will substantially change the character of warfare. History also finds that the first militaries to identify and exploit these new forms of warfare will enjoy a major advantage over their rivals. Hence the imperative to identify and exploit the “next big thing” (or things) in warfare.<sup>402</sup>

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<sup>402</sup> For an overview of how military organizations over the past century have sought to identify and exploit discontinuities in warfare, see Andrew F. Krepinevich Jr., *Lighting the Path Ahead: Field Exercises and Transformation* (Washington DC: CSBA, 2002). See also

## Summary

This chapter has presented some selected initiatives to enhance Archipelagic Defense. The Coalition can exercise some in the near term. Others may take longer to pursue—if they can pursue them at all. The list of initiatives outlined above is not exhaustive. Many details associated with Archipelagic Defense will become apparent only after the Coalition has established a virtuous cycle and refined the concept. Indeed, a great deal of work remains to be done.

Moreover, the dynamic character of the military competition in the Western Pacific Theater of Operations in particular, and the Indo-Pacific region in general, guarantees that the Archipelagic Defense operational concept—or any such concept (or set of concepts) that the Coalition and its members adopt—will need to be modified over time; hence the need for persistent planning within the framework of a virtuous cycle.

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Krepinevich, *Seven Deadly Scenarios*, 1–29, 285–319; and Krepinevich, *Origins of Victory*, 135–39.



## 9. FINAL THOUGHTS

As with any major shift in defense posture and associated operational concepts, implementing Archipelagic Defense will require substantial time, resources, and political commitment. Just as it took NATO well over a decade after its formation to establish a formidable conventional deterrent to the Warsaw Pact, the Coalition and a (hopefully) growing number of like-minded states cannot implement Archipelagic Defense overnight. Thus, it is critical for the Coalition's core members—Australia, Japan, and the United States—to take action now, and to engage prospective members to do so, before the military balance shifts decisively in China's favor.

The willingness of states in the WPTO—and particularly those along the First Island Chain—to participate is critical. Fortunately, in the face of an increasingly belligerent China, both the Philippines and Taiwan are taking important, albeit preliminary, steps

to enhance their defenses and to integrate them into those of the Coalition. Several states in the Indo-Pacific region are taking encouraging steps in this direction. But these efforts—including concrete efforts to maintain a stable military balance—will only be sustained if they are supported by credible leadership from the Coalition's core members. Indeed, implementing Archipelagic Defense will require a significant increase in the resources devoted to defense by Australia, Japan, and—especially—the United States, and by like-minded states in the region. The Coalition cannot avoid the need for substantial increases in defense investments, but it can mitigate that need in several ways.

Photo: Australian Prime Minister Anthony Albanese, US President Joe Biden, Japanese Prime Minister Fumio Kishida, and Indian Prime Minister Narendra Modi pose prior to the Quad meeting on May 24, 2022, in Tokyo. (Photo by The Asahi Shimbun via Getty Images)

First, since the Coalition cannot implement Archipelagic Defense overnight, the cost of doing so will, necessarily, be spread over time. Second, Coalition members can reduce or eliminate lower-priority commitments to better align their overall military postures to meet China's challenge. Japan, for example, should continue reorienting its defense posture toward Kyushu and the Southwest Wall. As for the United States, it should be willing to accept additional risk with respect to its commitments in Europe and the Middle East. Archipelagic Defense also calls for a US realignment in the WPTO. The Pentagon still assigns significant ground forces to defend South Korea from a North Korean attack. Yet a large-scale invasion by conventional North Korean forces is unlikely. A greater and more likely danger comes in the form of Pyongyang launching a strike with nuclear or chemical warheads on South Korea and Japan, supported perhaps by artillery strikes, special forces infiltrating to sow terror, and cyberattacks. In any event, South Korea's population is twice as large as North Korea's, and its per capita income is more than 15 times greater. It should be possible for Seoul to assume a greater share of the US–South Korean alliance's ground force requirements, freeing up some US ground forces to support Archipelagic Defense.

Third, orienting Coalition military capabilities to support Archipelagic Defense would create more effective American and Japanese forces, as it would shift resources to the capabilities that are most useful and away from those for which reduction would lead to relatively little loss of combat effectiveness. Fourth, the Coalition's decision to take forceful action to deal with China's belligerent behavior can do much to convince other like-minded states in the Indo-Pacific region to join in counterbalancing China, rather than yielding to its acts of coercion. Growing support from states

such as India, Indonesia, the Philippines, South Korea, Taiwan, and Vietnam can significantly reduce the stress on American, Australian, and Japanese forces and on their defense budgets.

The hard fact remains, however, that Coalition members need to increase their defense funding significantly. During the Cold War, the United States allocated an average of over 6 percent of its GDP to defense to create the shield behind which it preserved peace, enabling its prosperity, and that of its allies, to reach unprecedented heights. Today the United States allocates barely 3 percent of its GDP to defense. To the extent the United States is experiencing financial difficulties, they stem not from overspending on defense but from a willingness to accumulate ever greater amounts of debt, and an unwillingness to adequately fund its entitlement programs and increase revenues. America could increase investments in its defenses by 25 percent—to between 4 and 4.5 percent of GDP—without coming close to risking “imperial overstretch.”<sup>403</sup>

Unless the Coalition takes steps to reverse the ongoing shift in the military balance in China's favor, the CCP's opportunistic leaders will become increasingly confident of their ability to achieve their expansionist aims through aggression, coercion, or a combination of both. The Coalition's challenge is to prevent this from occurring, and for as long as necessary in the open-ended challenge to the rules-based international order. Joint and combined concepts of operation, such as Archipelagic Defense, can play a major role in meeting this challenge objective efficiently and effectively.

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403 Paul Kennedy presents the case of “imperial overstretch” in *The Rise and Fall of the Great Powers* (New York: Random House, 1987), xvi–xxi, 338–40. For a contrasting perspective, see Samuel P. Huntington, “The US—Decline or Renewal?,” *Foreign Affairs*, December 1, 1988, <https://www.foreignaffairs.com/united-states/us-decline-or-renewal>.

# APPENDIX A: SELECTED 2022 EXERCISES

EXERCISE	DATE	PARTICIPANTS	COMMENTS
Vajra Prahar	Aug, Nov–Dec	IN, US	August exercise focused on special forces; the latter exercises conducted airborne conventional and unconventional warfare training in mountainous terrain 100 km from the Line of Actual Control (LAC).
Malabar	Nov	AUS, IN, JP US	Quad exercise off the coast of Yokosuka, Japan. Third year with AU and JP participation. Emphasized anti-submarine warfare, air defense, multinational replenishment-at-sea operations, communications, gunnery, maritime interdiction, and operational planning.
Project Convergence	Nov	AUS, US, UK	Use of AI, robotics, and autonomy to compress engagement cycle.
Keen Sword	Nov	AU, CN, JP, UK, US	Oriented mainly in and around Japan's southwestern islands, designed to boost operational capability in those areas. Involved some 26,000 JSDF personnel from Japanese ground, maritime, and air forces and about 10,000 US troops.
Kamandag 6	Oct	US, PH, ROK	Two weeks of maneuvers, including amphibious assaults and coastal defense, involving some 1,900 US marines and over 600 Philippine troops along with JP/ROK observers.
Resolute Dragon 22	Oct	JP, US	Involved 1,400 JGSDF soldiers and 1,600 US Marines with emphasis on enhancing bilateral command and control, multi-domain maneuver, and fires and effect in a geographically distributed environment.
Pitch Black	Aug–Sept	AUS, JP, ROK	JP and ROK contingents operated from a RAAF base at Darwin for the duration of the biennial exercise, which included aircraft from 10 countries plus NATO.
Cartwheel	Sept	AU, Fiji, NZ, UK, US	Conducted on Fiji; involved some 270 troops focused on operations in jungle and urban environments.
Pitch Black	Aug–Sept	AUS, JP, ROK	JP and ROK contingents operated from a RAAF base at Darwin for the duration of the biennial exercise, which included aircraft from 10 countries plus NATO.
Super Garuda Shield 2022	Aug	AU, IA, JP, US, SN	Involved approximately 2,000 US troops, 2,000 Indonesian Army soldiers, and nominal participation from partner nations; focused on enhancing interoperability training.
Pacific Dragon	Aug	AU, CA, JP, ROK, US	Focused on improving participant interoperability and coordination in ballistic missile defense.
Balance Piston 22-3	Aug	PH, US	Directed at enhancing the interoperability of the PH's Special Forces Regiment (Airborne) and the US Army's Special Operations Command Pacific (SOCPAC).
Udarashakti	Aug	IN, SN	Focused on combined air operations.
Pacific Vanguard 22	Aug	AU, JP, ROK, US	Emphasized integrating task group maritime training and maneuver.
Pacific Partnership 2022	Aug	AU, Chile, PH, ROK, UK, US	Nearly 2,000 military and medical personnel participated in this humanitarian assistance exercise, which concluded in Palawan.
RIMPAC 2022	June–Aug		US-led exercise centered on Hawaii and southern California and involved 26 nations and over 25,000 service members, 38 surface ships, 4 submarines, over 170 aircraft, and more than 30 unmanned systems. Included training in disaster relief, security operations, sea control, and complex warfighting.
Valiant Shield	June	US	Conducted on Guam, the Mariana Islands, Palau, and the Mariana Island Range Complex. Emphasized joint operations focused on the spectrum of operations from humanitarian assistance to armed conflict.

EXERCISE	DATE	PARTICIPANTS	COMMENTS
Cope North	Jan	AU, JP, US	Training conducted at Guam, Saipan, Tinian, Palau, and the Federated States of Micronesia. Training involved some 130 aircraft flying over 2,000 sorties across 7 islands and 10 airfields. More than 2,500 US service members participated, along with roughly 1,000 from Australia and Japan.
REFORGER "Certain Strike"	1987		Involved the deployment to Europe of a substantial part of III (US Army) Corps, roughly 78,000 troops from 6 nations, 20,000 wheeled vehicles, and 2,200 tracked vehicles.

Notes: AUS = Australia, CN = Canada, IA = Indonesia, IN = India, JP = Japan, NZ = New Zealand, PH = Philippines, ROK = Republic of Korea, SN = Singapore, UK = United Kingdom, US = United States.

Source: Author.

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# APPENDIX B: ACRONYM LIST

<b>A2/AD:</b> Anti-access/area-denial	<b>GLCM:</b> Ground-launched cruise missiles
<b>AESA:</b> Active electronically scanned array	<b>GPS:</b> Global Positioning System
<b>AI:</b> Artificial intelligence	<b>G-RAMM:</b> Guided rockets, artillery, missiles, and mortars
<b>AIP:</b> Air-independent propulsion	<b>HALE:</b> High-altitude, long-endurance
<b>ARPANET:</b> Advanced Research Projects Agency Network	<b>HF:</b> High-frequency communications
<b>ASAT:</b> Anti-satellite	<b>HF-3:</b> Hsiung Feng III antiship cruise missile
<b>ASBM:</b> Antiship ballistic missile	<b>IA:</b> Indonesian Army
<b>ASCM:</b> Antiship cruise missile	<b>IADS:</b> Integrated air defense systems
<b>ASW:</b> Anti-submarine warfare	<b>IAMDS:</b> Integrated air and missile defense systems
<b>ATACMS:</b> Advanced Tactical Missile System	<b>IDF:</b> Israeli Defense Forces
<b>AUKUS:</b> The Australia–United Kingdom–United States trilateral security agreement	<b>INEW:</b> Integrated Network Electronic Warfare
<b>BAT:</b> Brilliant Anti-armor Tank	<b>INF:</b> Intermediate-Range Nuclear Forces
<b>BDA:</b> Battle damage assessment	<b>INSA</b>
<b>C3:</b> Command, control, and communications	<b>ISR:</b> Intelligence, surveillance, and reconnaissance
<b>C4:</b> Command, control, communications, and computer	<b>IT:</b> Information technology
<b>C4ISR:</b> Command, control, communications, and computer, intelligence, surveillance, and reconnaissance	<b>JADC2:</b> Joint All-Domain Command and Control
<b>CCD:</b> Camouflage, concealment, and decoys:	<b>JAM-GC:</b> Joint Concept for Access and Maneuver in the Global Commons
<b>CCP:</b> Chinese Communist Party	<b>JASDF:</b> Japan Air Self-Defense Force
<b>CNB:</b> Changi Naval Base	<b>JASSM-ER:</b> Joint Air-to-Surface Standoff Missile—Extended Range
<b>CONUS:</b> Contiguous United States	<b>JCS:</b> Joint Chiefs of Staff
<b>CSBA:</b> Center for Strategic and Budgetary Assessments	<b>JDAM:</b> Joint Direct Attack Munition
<b>DE:</b> Directed energy	<b>JFCOM:</b> Joint Forces Command
<b>DMZ:</b> Demilitarized zone	<b>JGSDF:</b> Japan Ground Self-Defense Forces
<b>DoD:</b> Department of Defense	<b>JMSDF:</b> Japan Maritime Self-Defense Force
<b>DRFM:</b> Digital radio frequency memory	<b>JSDF:</b> Japan Self-Defense Forces
<b>ECCM:</b> Electronic counter-countermeasures	<b>JSTARS:</b> Joint Surveillance Target Attack Radar System
<b>ECM:</b> Electronic countermeasures	<b>JWC:</b> Joint Warfighting Concept
<b>EDCA:</b> Enhanced Defense Cooperation Agreement	<b>KIA:</b> Killed in action
<b>EECS:</b> Expeditionary Electronic Communications Squadron	<b>LAC:</b> Line of actual control
<b>EHF:</b> Extremely high-frequency	<b>LEO:</b> Low Earth orbit
<b>EMP:</b> Electromagnetic pulse	<b>MALD:</b> Miniature Air-Launched Decoy
<b>First Island Chain:</b> The Philippines, South Korea, and Taiwan	<b>MCF:</b> Military-Civil Fusion
<b>FOFA:</b> Follow-on forces attack	<b>MCM:</b> Mine countermeasure
<b>FONOP:</b> Freedom of navigation operations	<b>MCO:</b> Major combat operation
<b>GDP:</b> Gross domestic product	<b>MDT:</b> Mutual Defense Treaty
<b>GIUK:</b> Greenland-Iceland-United Kingdom	<b>MDTF:</b> Multi-Domain Task Force

**MHS:** Mine-hunting ships  
**MPP:** Maritime prepositioning  
**MRBM:** Medium-range ballistic missile  
**MRC:** Major regional contingency  
**MRIC:** Medium-range intercept capability  
**MSI:** Inshore minesweepers  
**MTW:** Major theater wars  
**NVA:** North Vietnamese Army  
**ONA:** Office of Net Assessment  
**Op For:** Opposing force (in a wargame)  
**OTH:** Over the horizon  
**PLA:** People's Liberation Army  
**PLAAF:** People's Liberation Army Air Force  
**PLAN:** People's Liberation Army Navy  
**PLARF:** People's Liberation Army Rocket Force  
**PLASSF:** People's Liberation Army Strategic Support Force  
**PNT:** Positioning, navigation, and timing  
**POMCUS:** Prepositioned materiel configured to unit sets  
**PRC:** People's Republic of China  
**RAAF:** Royal Australian Air Force  
**RF:** Radio frequency  
**RMA:** Revolution in military affairs  
**ROC:** Republic of China (Taiwan)  
**ROK:** Republic of Korea  
**RSC:** Reconnaissance-strike complex (also: recce-strike complex)  
**RSTA:** Reconnaissance, surveillance, and target acquisition  
**SAM:** Surface-to-air missile  
**SATO:** South Asian Theater of Operations  
**SBMA:** Subic Bay Metropolitan Authority  
**SLOC:** Sea lines of communication  
**SOC PAC:** Special Operations Command Pacific  
**SS:** Diesel-powered attack submarine  
**SSBN:** Nuclear-powered ballistic-missile submarine  
**SSGN:** Nuclear-powered guided-missile submarine  
**SSN:** Nuclear-powered attack submarine  
**STOVL:** Short takeoff and vertical landing  
**TFP:** Total factor productivity  
**TSMC:** Taiwan Semiconductor Manufacturing Company  
**USD:** United States Dollars  
**USSR:** Soviet Union  
**UUV:** Unmanned underwater vehicle  
**WPTO:** Western Pacific Theater of Operations  
**WTO:** World Trade Organization  
**XLUUV:** Extra-large unmanned underwater vehicle





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1201 Pennsylvania Avenue, Fourth Floor, Washington, D.C. 20004  
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