Sea Control: Feasible, Acceptable, Suitable, or Simply Imperative

A Monograph

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As the United States is facing a rise in credible anti-access/area denial (A2/AD) threats, the United States Department of Defense started developing counter access denial strategies early in the twenty-first century. Access denial strategies are not a new defensive strategy; what makes access denial challenging on the modern battlefield is the dramatic improvement and proliferation of weapons capable of denying access to or freedom of action within an operational area. To develop an understanding of the current access denial threat, it is imperative to start by reviewing current United States policy and strategy pertaining to access denial challenges, followed by a review of the counter-A2/AD strategies currently under development by the Department of Defense. Through a historical review of Japanese naval battles during the early twentieth-century, a framework to model possible future contests for control of the maritime domain is possible. The identification that control of the maritime domain is the prerequisite for assured access sets the condition for successful joint operations. To achieve assured access, a unified Department of Defense counter-A2/AD strategy must holistically balance the logistical requirements arising from the multitude of distributed operations, expand concepts that directly apply ground combat forces to the defeat of sea denial capabilities, and emphasize research and investment in rapidly produced low-cost technology that extends the range of counter-A2/AD capabilities.

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Abstract

Sea Control: Feasible, Acceptable, Suitable, or Simply Imperative, by Major Michael F. Manning, 42 pages.

Three-quarters of the earth is covered by the ocean; an actor capable of restricting access to the maritime domain is a threat to the prosperity of the entire international community. As the US is facing a rise in credible anti-access/area denial (A2/AD) threats, the United States Department of Defense started developing counter access denial strategies early in the twenty-first century. Access denial strategies are not a new defensive strategy; what makes access denial challenging on the modern battlefield is the dramatic improvement and proliferation of weapons capable of denying access to or freedom of action within an operational area. To develop an understanding of the current access denial threat, it is imperative to start by reviewing current US policy and strategy pertaining to access denial challenges, followed by a review of the counter-A2/AD strategies currently under development by the Department of Defense. Through a historical review of Japanese naval battles during the early twentieth-century, a framework to model possible future contests for control of the maritime domain is possible. The identification that control of the maritime domain is the prerequisite for assured access sets the condition for successful joint operations. To achieve assured access, a unified Department of Defense counter-A2/AD strategy must holistically balance the logistical requirements arising from the multitude of distributed operations, expand concepts that directly apply ground combat forces to the defeat of sea denial capabilities, and emphasize research and investment in rapidly produced low-cost technology that extends the range of counter-A2/AD capabilities.

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Abbreviations

A2/AD	Anti-Access/Area Denial
US	United States
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy

Introduction

> Whosoever commands the sea commands the trade; whosoever commands the trade of the world commands the riches of the world, and consequently the world itself.
>
> —Sir Walter Raleigh

Sanya Naval Base, Hainan Island, 0930 Local Time, 17 December 2019.

As the Commander of the People's Liberation Army Navy Admiral Bao Yang could not be prouder than he was at this moment. Admiral Yang was filled with not only pride but confidence as he watched the Political Commissar, Admiral Guo Lee, accept the Chinese flag and a certificate with the ship's official name from the General Secretary of the Central Committee of the Communist Party of China. The *Shandong*, the first domestically built aircraft carrier, ensured Admiral Yang and the People's Liberation Army Navy could challenge the West as a peer navy.[1]

Admiral Yang reflected on his conversation with Admiral Lee earlier in the week as they walked the flight deck of the *Shandong*. While the crew and contractors hurried about finishing last-minute details for the pending ceremony, Admiral Lee suggested something Admiral Yang had long been contemplating.

"This ship provides us the global naval capability we need to finally dominate the South China Sea." Yang was thrilled to hear this, but he had to feign concern to avoid seeming too eager.

"Wipe that fake concern from your face, Yang. I know you want nothing more than to push the West out of the South China Sea once and for all. But we both know the party will counter with their standard economic concerns. Yes, our trade with the United States has tripled in the last decade and we still require access to the global energy and financial markets. True, trade has moved from $150 billion to $500 billion with the United States, but no one has

[1] Ben Westcott, "China's First Domestically-Built Aircraft Carrier Officially Enters Service," Cable Network News, 18 December 2019, accessed 15 February 2020, https://www.cnn.com/2019/12/17/asia/china-aircraft-carrier-shandong-intl-hnk/index.html.

addressed that the balance is in our favor as the deficit has grown by $200 billion. Plus, we have over $1.3 trillion in United States Treasury securities. The import to export ratio, in both dollars and GDP, is in our favor and growing stronger every year." Yang again feigned concern to encourage his boss to continue.

"I know what you are thinking, Yang. Yes, the American President won the trade war and he demonstrated his prowess for action through his dealings with Iran, but our economy and military are more powerful than Iran, and I know both scare him."

"What exactly are you suggesting we do, sir?" Yang finally responded.

"This ship is the final piece of our anti-access network, it provides us the increased power and range in the air that when combined with our arsenal of ballistic and cruise missiles and military assets in the Spratlys, gives us the ability to defeat any advancing force. I am suggesting we deny access to the South China Sea, controlling the flow of all maritime traffic to force the West to stay out of Chinese domestic issues. This ship completes our world-class navy; now is the time to end the political disorder in Hong Kong and return Taiwan to China, where it belongs. The South China Sea is our right; it was stolen when our great Navy failed to act during the first war with Japan. It is time we stop letting the American President bully us, and I am tired of having to feign pleasantries with Japan. China is the rightful leader in the Pacific region, so it is time we take responsibility for all Asian matters. Japan failed to control the Pacific when they overextended their defensive position. I am suggesting the opposite, we establish sea control over just enough of the Pacific to force the West to negotiate."

Lee's conviction and boldness thrilled Yang, but as his words sunk in, Lee's vision began to crystalize in Yang's mind as well.

Three-quarters of the earth's surface is covered by ocean. An actor that is capable and willing to restrict access to any portion of the maritime domain is a threat to the prosperity of the entire international community. The fictionalized account aimed to illustrate the high-stakes role

sea control, anti-access, and area denial may play in the not-too-distant future. However, these operational concepts are hardly new. In fact, they each have a rich and recent legacy in the Pacific theater. In response to Japan's aggressive sea denial strategy during World War II in the Pacific, the US Navy (USN), systematically established sea control through the destruction of Japan's sea denial capabilities. The United States' control of the sea allowed for the creation of thousands of miles of sea lines of communication to move and sustain Allied forces in their progress towards Japan. As Allied forces advanced through the Pacific theater, the breadth and depth of their communication lines extended, requiring greater control of the sea to protect from Japanese naval attacks. Japan's naval aim was to deny the United States access to the Pacific Ocean by destroying the Pacific Fleet in a decisive naval engagement. Japan, as a maritime nation, understood that control of the maritime domain prohibited its adversary from moving troops and supplies which denied the projection of combat power into the Pacific theater.[2] Japan employed a defensive strategy of layered capabilities throughout the Pacific to keep the United States from projecting combat power capable of defeating established Japanese defenses.

In an Indo-Pacific environment with a persistent anti-access/area denial (A2/AD) threat, operational planners must first focus on establishing control of the maritime domain as the projected concepts designed to counter current A2/AD capabilities increase challenges on maritime planning efforts. Current access denial threats require a combination of simultaneity, rapid operational tempo, and distributed operations to restore operational access in a contested environment. These elements of operational art impact the design and execution of sea control as each element applies additional strain on the management and protection of the maritime domain.

[2] US Department of Defense, Joint Staff, Joint Publication 3-0, *Joint Operations* (Washington, DC: Government Printing Office, 2017), VIII-15. Due to the limited scope of this study, the focus on the maritime domain is not intended to exclude the importance of any other domain or ignore the interconnected nature of all domains. JP 3-0 defines the operational environment (OE) as encompassing the physical areas of the air, land, maritime, and space domains; the information environment (which includes cyberspace); as well as the electromagnetic spectrum (EMS). JP 3-0 then defines mission success in large-scale combat as full-spectrum superiority; the cumulative effect of achieving superiority in the air, land, maritime, and space domains; the information environment; and the EMS.

In this new era, the Department of Defense must determine the key considerations for the geographic combatant commander regarding sea control in an Indo-Pacific campaign.

When faced with the rise in credible A2/AD threats, the US Department of Defense started developing counter access denial strategies early in the twenty-first century. The consistent component for the strategies is the requirement for multiple, simultaneously distributed operations. In the Pacific region, distributed operations require large sea control efforts to ensure freedom of movement and sustainment for dispersed combat power. The sea control requirements in support of current distributed operations strategies impose a greater challenge for the USN than previously encountered. In 2018 the Chief of Naval Operations, Admiral John M. Richardson stated, "it has been decades since we last competed for sea control, sea lines of communication, access to world markets, and diplomatic partnerships. Much has changed since we last competed."[3]

To determine the key considerations pertaining to control of the modern maritime domain, it is imperative to start by reviewing current US policy and strategy pertaining to access denial challenges. Understanding the current policy and strategy allows for a review of the developing counter-A2/AD strategies defined by the USN, Air Force (USAF), and Marine Corps (USMC). Once current policy, strategy, and doctrine are analyzed, a historical review of naval development through the first half of the twentieth-century helps establish a framework to conceptually model possible future conflicts. The historical case study of Japan's naval engagements during the Sino-Japanese War (1894-95), the Russo-Japanese War (1904-05), and the Solomon Island campaign (1942-43) provides similarities to the current Pacific maritime

[3] John Richardson, *A Design for Maintaining Maritime Superiority: Version 2.0* (Washington, DC: Government Printing Office, 2018), 3.

domain.[4] The analysis of these naval conflicts illuminates many lessons pertaining to sea control that remain applicable in the current maritime environment. Assessing the similarities found in these case studies to the current balance of power in the Pacific highlights potential friction points between the United States and China that might lead a contest for sea control. Finally, the identification that control of the maritime domain is the prerequisite for assured access setting the condition for successful joint operations highlights potential areas of future research, in the current Pacific maritime domain.

US Sea Control Policy and Strategy

President Donald Trump in the 2017 National Security Strategy directed that the United States be able to defeat any adversary, retain overmatch in capabilities, and ensure the ability to deter potential enemies by convincing them that they cannot accomplish objectives through the application of force or other forms of aggression. Specific to the US Indo-Pacific Command area of responsibility, the National Security Strategy states that the United States "ensures freedom of the seas and the peaceful resolution of the territorial and maritime disputes in accordance with international law."[5] Ensuring freedom in the maritime domain is even more complex in an era when the United States no longer has assured dominance in this domain.[6]

In the current maritime domain, the Joint Chiefs of Staff established the US policy pertaining to freedom of global navigation in the *Joint Operational Access Concept*. The *Joint*

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[4] John Prados, *Islands of Destiny: The Solomons Campaign and the Eclipse of the Rising Sun* (New York: The Penguin Group, 2012), 260-362. The Solomon Island campaign (1942-43) was an amphibious campaign fought between Japan and the United States seeking control of the Solomon Island chain in the South Pacific. Throughout this campaign fighting occurred in the air, land, and maritime domain demonstrating the critical interconnectedness of cross domain actions and support.

[5] Donald J. Trump, *The National Security Strategy of the United States of America* (Washington, DC: Government Printing Office, 2017), 28, 47.

[6] Trump, *The National Security Strategy*, 3; Department of Defense, *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington, DC: Office of the Secretary of Defense, 2018), 3-6; US Department of Defense, Joint Staff, *National Military Strategy 2018* (Washington, DC: Government Printing Office, 17 January 2012), 2.

Operational Access Concept stated that "the economic growth and development of the interconnected world relies on the ability to freely navigate safely through the global commons." The access concept defined the global commons as areas of air, sea, space, and cyberspace that belong to no one state.[7] The concept further stated that the essential access challenge for future joint forces is the ability to project military force into an operational area and execute sustainment against a hostile and capable adversary. The *Joint Operational Access Concept* labeled the specific access challenge as "operational access." Once operational access is achieved which creates freedom of action to accomplish the mission and sustain the force, the desired end state for the joint force is labeled as "assured access."[8]

To overcome the access challenge described in the *Joint Operational Access Concept*, the Joint Chiefs of Staff published a supportive strategy entitled joint forceable entry operations. The Joint Staff defined forcible entry as coordinated operations across the Department of Defense designed to seize and hold lodgments against armed opposition. The objective of forcible entry operations is to achieve operational access by projecting combat power into an operational area allowing for maneuver space against an armed adversary.[9] The joint forcible entry strategy provides a list of principles that are necessary for operational success. One of the principles is the superiority of the maritime domains, which the entry strategy labels as sea control. To operationalize the concept of sea control in a modern maritime environment, it is necessary to combine historical naval theories with current US maritime policies.

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[7] US Department of Defense, Joint Staff, *Joint Operational Access Concept (JOAC)* (Washington, DC: Government Printing Office, 2012), ii.

[8] US Department of Defense, Joint Staff, *JOAC* (2012), 1.

[9] US Department of Defense, Joint Staff, Joint Publication 3-18, *Joint Forcible Entry Operations* (Washington, DC: Government Printing Office, 2018), vii. The forcible entry concept defines a lodgment as a designated area in a hostile or potentially hostile operational area (such as an airhead, a beachhead, or combination thereof) that affords continuous landing of troops and materiel while providing maneuver space for subsequent operations.

Sea Control in a Modern Maritime Environment

Naval theorists have studied and debated the concept of dominance in the maritime domain throughout history. One of the earliest case studies is found in the battle of Salamis (480 BC). Through control of the sea, the smaller Greek naval force defeated the superior Persian naval force. The success of the Greek naval forces severed the Persian supply lines and ultimately contributed to the survival of Greece.[10]

Two influential naval theorists, Alfred Thayer Mahan and Sir Julian Corbett, established the foundational debate about sea control. Both Mahan and Corbett debated the extent that sea control is possible and the best manner of achieving it. Mahan believed that the Navy's primary focus was the destruction of the enemy's fleet. Removal of the enemy's fleet established total command of the sea needed to protect sea lines of communication, secure friendly and neutral commerce, and allow attacks on enemy trade.[11] Contrary to Mahan, Corbett believed that nations could not conquer the sea because it is not susceptible to ownership. Corbett believed that

[10] Sam J. Tangredi, *Anti-Access Warfare: Countering A2/AD Strategies* (Annapolis, MD: Naval Institute Press), 11; Barry Strauss, *The Battle of Salamis: The Naval Encounter That Saved Greece and Western Civilization* (New York: Simon and Schuster, 2004), 73-107. Themistocles, the leader of the Greek alliance, developed a plan to abandon the Greek cities and fight from ships. At the Battle of Salamis, the Greeks established their battle plan in the narrow channel between the island of Salamis and the Athenian territory, allowing the Greeks to win a decisive battle against the superior Persian naval force. This defeat allowed the Greeks to eventually control the supply lines supporting the Persian forces.

[11] Alfred T. Mahan, *The Influence of Sea Power Upon History, 1660-1783* (Boston, MA: Little, Brown, and Company, 1890), 138. Alfred Thayer Mahan (1840–1914) was a US naval officer and his two most noted writings are *The Influence of Sea Power Upon History, 1660–1783*, and *The Influence of Sea Power Upon the French Revolution and Empire, 1793–1861*. Mahan experienced combat as a Union Naval Officer during the American Civil War. He commanded the USS Wachusett. During his career, he served as an instructor at the US Naval Academy and President of the US Naval War College. Mahan's tactical focus was the concentration of the fleet executing an aggressive offensive at critical points to achieve victory in decisive battles.

command of the sea is relative and not absolute, so Corbett favored the strategic defensive and recommended naval blockade as the primary means for sea control.[12]

Mahan and Corbett agreed that for a nation to succeed in war, it must control the maritime domain. Where their theories differ is the type, extent, and purpose of control, and the way a state can gain control of the sea. While Mahan saw command of the sea as an operational end in itself, Corbett claimed that command of the sea will never win a war.[13] Under both theories, once a nation gains control of the sea, its adversaries are denied safe access to the maritime domain which leads to a contest for control of the sea.[14]

Significant changes have occurred in naval theory, tactics, and technology since Mahan and Corbett published their theories before the start of World War I. Despite these changes, modern sea control theorists believe that Mahan and Corbett's foundational theories remain valid today. In 2013, Geoffrey Till provided a modern definition for sea control. Till's definition stated that sea control provides the ability to disrupt freedom of movement and narrows an adversary's strategic options.[15] In 2015, the USN published its current maritime control philosophy in *A Cooperative Strategy for 21st Century Seapower*. Using the concepts listed in Joint Publication (JP) 3-32, *Joint Maritime Operations*, along with the concepts in its *21st Century Seapower Strategy*, the USN seeks sea control that allows naval forces to establish local maritime

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[12] Julian S. Corbett, *Some Principles of Maritime Strategy* (Annapolis, MD: Naval Institute Press, 1911), 15, 91. Sir Julian Corbett (1854-1922) was a British naval historian and his most noted writing is *Some Principles of Maritime Strategy*. After earning his law degree, he began lecturing at the Royal Naval College and later served as secretary of the Cabinet Historical Office. Corbett categorized sea control as general or local, temporary or permanent, therefore he favored the strategic defensive and recommend naval blockade as the primary means for sea control above physical destruction or capture of enemy warships.

[13] Everett Carl Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (New York: Routledge, 2005), 40.

[14] David C. Gompert, *Sea Power and American Interests in the Western Pacific* (Santa Monica, CA: RAND Corporation, 2013), 2.

[15] Geoffrey Till, *Sea Power, A Guide for the Twenty-First Century*, 3rd ed. (London, United Kingdom: Routledge, 2013), 331. Geoffrey Till is a naval historian, an emeritus Professor of Maritime Studies and Director of the Corbett Centre for Maritime Policy Studies.

superiority and deny an adversary that same ability. Sea control is achieved through the employment of forces designed to destroy enemy naval forces, suppress enemy sea commerce, protect vital sea lanes, and establish local military superiority in vital sea areas.[16]

In consideration of post-World War I and II technological improvements, the USN adjusted its definition of sea control. The USN's current definition of sea control states that total control or denial of the sea is not sustainable for long periods. Further, in a modern maritime environment control of the sea, in geographical terms, is more narrowly focused. The USN defined sea control as a nation's ability to operate in the maritime domain without enemy interference.[17] Regardless of the category or focus of control, the USN's definition remains rooted in a principle from Corbett's philosophy. Control of the sea is not an end in itself, but the United States requires control in the maritime domain as it "enables strategic sealift and facilitates the arrival of follow-on forces." The *Joint Operational Access Concept* defines the introduction of follow-on forces, projected from the maritime domain, as "Cross-Domain Synergy." Cross-Domain Synergy is essential in the modern operating environment as the additive employment of capabilities in different domains enhances the effectiveness and compensates for the vulnerabilities of the others which provides the freedom of action required in an access denied

[16] US Department of the Navy, US Marine Corps, and US Coast Guard, *A Cooperative Strategy for 21st Century Seapower* (Washington, DC: Government Printing Office, 2015), 22-23; US Department of Defense, Joint Staff, Joint Publication (JP) 3-32, *Joint Maritime Operations* (Washington, DC: Government Printing Office, 8 June 2018), 23-27.

[17] Stansfield Turner, "Missions of the U.S. Navy," *Naval War College Review* 27, no. 2 (March-April 1974): 6. The categories of sea control are *absolute*, *working*, and *control in dispute*. Absolute control occurs when one side has complete freedom to operate without interruption by the enemy as the enemy is unable to operate at all. Working control occurs when one side has the general ability to operate with a degree of freedom as the enemy can only operate with high risk. Control in dispute occurs when each side operates with considerable risk while establish working control for limited portions for a limited time to conduct specific operations.

theater.[18] The ability to project combat power and establish cross-domain synergy, historically, has created the conditions for a nation to be successful in war.[19]

Till carries naval theory forward from Mahan and Corbett into the modern maritime environment through his concept that the contest for control of the sea will not occur fleet-to-fleet on the open ocean, but in littoral regions facing very different challenges.[20] The concept that the contest for control is moving away from the open ocean and towards littoral regions greatly increases the challenge of gaining sea control. Nations not only have to compete with their enemy's major air and naval capabilities, but must also defend against land-based airpower, missiles, torpedoes, short-range anti-surface warfare assets, and coastal mines.

The complexity of operating in the littoral region is evident in the region's basic definition. The Department of Defense defines the littoral region as one environment consisting of two components. The first component is the ocean, outward from the shore, that must be secured to support operations ashore. The second component is the land, inward from the shore, that can be supported or defended from the sea.[21] Using this definition, the boundaries of a littoral operating environment are constantly changing based on the progress of friendly naval and ground forces.

The increased potential from new threats, along with the technological improvements of all current access denial capabilities suggests that the ability to apply sea denial in the littoral region is less challenging while the ability to gain sea control is more complex.[22] One example of the maritime complexities encountered in a littoral region is evident in the 2006 conflict between

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[18] US Department of Defense, Joint Staff, *JOAC* (2012), 14-23.

[19] Tangredi, *Anti-Access Warfare*, 157. "The forces that achieved a greater degree of cross-domain synergy were indeed victorious, but it must be admitted that such is the case in all combined arms warfare."

[20] Till, *Sea Power*, 36.

[21] Joint Staff, JP 3-32 (2018), X.

[22] Till, *Sea Power*, 150; Gompert, *Sea Power and American Interests*, 9.

Israel and Lebanon. As Israeli ships were enforcing a naval blockade off the coast of Beirut, Hezbollah forces fired anti-ship cruise missiles from the coast damaging one of the Israeli ships. Operating in the cluttered littoral environment, the ship's reaction times were shortened and it could not effectively deploy defensive measures.[23] Had Hezbollah's forces been better trained or a fully funded state actor, they could have effectively stopped the naval blockade through its shore-based sea denial missile capability.

To prevent an adversary from projecting combat power from the maritime domain, a nation must apply sea denial along its coastline. The current terminology for strategies designed to deny an adversary access to any domain is anti-access/area denial. The *Joint Operational Access Concept* defines anti-access as actions and capabilities, usually long-range, designed to prevent an opposing force from entering an operational area, and area denial as actions and capabilities, usually short-range, designed to limit an opposing force's freedom of action within the operational area.[24]

The combination of layered anti-access and area denial actions and capabilities create a defense-in-depth strategy designed to attrite advancing hostile forces. The attrition of advancing enemy forces ensures that adversaries are not able to mass sufficient combat power capable of achieving successful war termination. The critical component of a defense-in-depth strategy is the ability to outrange the adversary in multiple domains. The significance of this style of defense is not a new concept. The Japanese naval leadership designed its defense of the Pacific during World War II using the concept of outranging the enemy as the critical means of achieving success. What makes this style of defense concerning on the modern battlefield is "the dramatic

[23] Phillip E. Pournelle, "The Deadly Future of Littoral Sea Control," *US Naval Institute Proceedings* 141, no. 7 (July 2015): 26-31, accessed 13 November 2019, http://web.a.ebscohost.com.lumen.cgsccarl.com/ehost/detail/detail?vid=0&sid=69997cbf-6f1d-4e38-be2c-ef94535a7c76%40sdc-v-sessmgr03&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#bib13.

[24] US Department of Defense, Joint Staff, *JOAC* (2012), i.

improvement and proliferation of weapons capable of denying access to or freedom of action within an operational area."[25]

Great Power Competition in the Modern Maritime Environment

The National Security Strategy identifies China as a current near-peer adversary seeking great power competition with the United States. As a result, Chinese access denial capabilities are the most threatening challenge in the modern maritime environment. China's maritime denial strategy is developed around its short and intermediate-range ballistic missiles, its anti-ship cruise missiles, and its integrated air defense systems. To create the most complex challenge, China continues to employ all weapon systems across its air, surface, and subsurface forces allowing for multiple delivery methods.

China's anti-access capabilities are focused on the long-range payload and fixed position targeting ability of ballistic missiles to target fixed infrastructure or large land forces. China's family of ballistic missiles have the capability to reach all current US fixed infrastructure in the US Indo-Pacific Command area of responsibility.[26] The precision and lethality of the cruise missile and integrated air defense systems, targeting maritime and air forces, are the focus of China's area denial capabilities. "An integrated air defense system is designed to limit an adversary's use of the air domain by combining anti-air detection capabilities and anti-air weapons systems that operate under a common command and control network."[27]

China constantly improves its access denial capability by expanding its ability to launch short-range ballistic missiles, intermediate-range ballistic missiles, and anti-ship cruise missiles

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[25] US Department of Defense, Joint Staff, *JOAC* (2012), ii.

[26] Missile Defense Project, Center for Strategic and International Studies, "Missiles of China," last modified 13 January 2020, accessed 3 February 2020, https://missilethreat.csis.org/country/china/; US Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019* (Washington, DC: Government Printing Office, 2019), 45.

[27] David Rainey, "Expeditionary Advanced Base Operations in the India-Pacific Command Area of Responsibility" (Monograph, School of Advanced Military Studies, Fort Leavenworth, KS, 2019), 13.

from a variety of land, air, and maritime surface and subsurface platforms.[28] China's ability to launch missiles from air and maritime platforms, compared to its land-based platforms, increases the maximum range of its missiles in relation to the operating radius of the platform from which it is launched. Using multiple diverse platforms, China increases the range and mobility of its missiles which increases the complexity and lethality of its access denial network. The increased range and mobility create the ability for China to engage advancing enemy forces further from Chinese territory. The overarching principle of all access denial strategies is to align the cost of an attack with its potential loss, such that a million-dollar missile leads to the loss of a billion-dollar ship.[29]

China is also extending the maximum range of its land-based A2/AD capabilities through the militarization of reclaimed territory in the South China Sea. The militarization of the Spratly Islands, for example, extends China's interior lines which increases the range of its access denial strategy. A nation operating with interior lines possesses the advantage of increased range, volume, and payload of munitions.[30] With an understanding of the USN's current definition of sea control, it is evident that China's access denial strategy, a layered defense-in-depth operating from multiple diverse platforms, presents a challenge for the United States' policy of ensuring freedom of access to the global commons in the Pacific region. China further complicates US

[28] US Department of Defense, *Annual Report to Congress*, 31-47.

[29] Sam J. Tangredi, "Breaking the Anti-Access Wall," *US Naval Institute Proceedings* 141, no. 347 (May 2015): 40-45, accessed 15 January 2020, http://web.b.ebscohost.com.lumen.cgsccarl.com/ehost/detail/detail?vid=0&sid=f6298dd4-f55f-49b1-8f8c-c014d4db0a62%40pdc-v-sessmgr06&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=102624277&db=a9h.

[30] US Department of Defense, Joint Staff, Joint Publication (JP) 5-0, *Joint Planning* (Washington, DC: Government Printing Office, 2017), IV-28. JP 5-0 defines interior lines as a central position, where a friendly force can reinforce or concentrate its elements faster than the enemy force can reposition. A force operates on interior lines when its operations diverge from a central point. With interior lines, friendly forces are closer to separate enemy forces than the enemy forces are to one another. Interior lines allow an isolated force to mass combat power against a specific portion of an enemy force by shifting capabilities more rapidly than the enemy can react.

policy aims by selling its access denial technology to other nation-states, some which support radical non-state actors.[31]

US Strategies to Counter Access Denial

To achieve the United States' political aim of ensured access to the global maritime domain, the Department of Defense developed counter-A2/AD strategies to defeat an adversary's attempt to implement sea denial. Specifically, the USAF, USN, and USMC developed interconnected counter-A2/AD strategies that contribute to the joint forcible entry strategy. All developed strategies aim to counter or avoid the devastating effects of near-peer long-range precision fires that can accurately target legacy forward-based US infrastructures, such as large runways, deep-water ports, and major troop installations.[32]

The USAF's strategic document, *Air Superiority 2030 Flight Plan*, defines the need for capabilities and strategies that provide options to enable joint force air superiority in the highly contested environment of 2030 and beyond.[33] To achieve this goal, USAF defines five capability development areas. The first area of focus is basing and logistics. Within this capability, the two pillars of *recover and reconstitute* along with *support and sustain* impact USAF's counter access denial strategy within the Pacific. Both pillars target the Air Force's ability to keep fully armed and fueled planes actively engaging denial capabilities.

USAF developed the Agile Combat Employment concept to achieve the desired end state of these pillars. To account for the vast distance and the water-to-land ratio of the Pacific theater, USAF created a rearming, repairing, and refueling capability that can operate away from legacy forward-based large runways while creating the smallest signature possible. The agile combat

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[31] US Department of Defense, *Annual Report to Congress*, 24-27.

[32] Arthur Corbett, *Expeditionary Advanced Base Operations (EABO) Handbook: Considerations for Force Development and Employment* (Quantico, VA: Marine Corps Warfighting Lab, 1 June 2018), 15.

[33] US Department of the Air Force, *Air Superiority 2030 Flight Plan: Enterprise Capability Collaboration Team* (Washington, DC: Government Printing Office, 2016), 2.

concept designs task-organized, combat support packages tailored to rearm and refuel combat planes rapidly. The Agile Combat Employment concept "operates in austere environments with minimal resources, enabling better support to continuous operations providing projection of airpower from anywhere in the Pacific." An example of a tailored support package would be a USAF C17 Globemaster task-organized to carry the necessary supplies and equipment for cross-trained maintenance and support personnel to rapidly rearm, refuel, and repair F22 Raptors on an austere runway. Upon completion of replenishment actions, both the Raptors and the Globemaster would depart as quickly as possible to avoid detection and targeting by the adversary.[34] Through the Agile Combat Employment concept, both the support package and the combat airplanes operate in the adversary's denial environment, while minimizing their signature on the ground to the greatest extent possible. By inserting and extracting as quickly as possible and avoiding legacy large fixed aviation infrastructure, the Agile Combat Employment concept keeps fully armed combat aircraft constantly airborne to engage enemy aircraft or destroy A2/AD assets.

With USAF focused on combating and minimizing denial capabilities in the Pacific air domain, the USN, supported by the USMC, focused on defeating maritime access denial capabilities. Despite modern naval theorists forecasting that the contest for sea control will occur in the littoral regions, the USN must also remain prepared to win fleet battles in the open ocean. The USN must be able to protect the nation's investment in all capital ships while ensuring freedom of navigation allowing joint expeditionary operations.[35] The USN's ability to protect freedom of navigation in the open ocean is critical because "only through enduring sea power can the United States bring the logistical sinew of the joint force to bear."

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[34] Isaac Johnson, "Airmen exercise Agile Combat Employment at Red Flag Alaska," Kadena Air Base, 16 August 2019, accessed 11 January 2020, https://www.kadena.af.mil/News/Article-Display/Article/1937075/airmen-exercise-agile-combat-employment-at-red-flag-alaska/.

[35] Corbett, *Expeditionary Advanced Base Operations*, 21.

In 2016, the Chief of Naval Operations published the USN's major counter-A2/AD strategy, *Distributed Maritime Operations*. This concept "makes geography a virtue by spreading the combat power of the fleet, holding targets at risk from multiple attack axis, and forces adversaries to defend a greater number of targets." Distributed maritime operations also "challenge an adversary's decision-making cycle and material investment methodology."[36] Under this concept, USN ships are employed in a widely dispersed manner operating on a common data link. Operating on a common data link allows all sensors and weapons across all ships to connect to a common tactical operating picture. A distributed fleet, operating on a common tactical operating picture, possesses a greater offensive and defensive capability against all near-peer access denial threats. Despite distributed maritime operations focus on a fleet-on-fleet engagement in the open ocean, the USN is equally focused on the landward component of sea control.

The distributed maritime concept allows the USN to achieve greater "working sea control," making it possible for the US Army and USMC to land ground forces on contested shores. Landing ground forces is vital due to the enemy's ability to support sea denial through shore-based missiles and integrated air defense systems. To defeat the land-based component of sea denial, the USN and USMC developed the Littoral Operations in a Contested Environment concept. The littoral operations concept calls for "a modular, scalable, and integrated naval network of sea-based and land-based sensors, shooters, and sustainers" capable of operating within and defeating the adversary's access denial capabilities. Forces operating within this concept seek to counter the adversary's sea denial abilities while supporting sea control efforts to further friendly maritime power projection operations. The littoral operations concept is vital to contesting the maritime domain as future adversaries, operating with increasingly formidable sea

[36] US Department of the Navy, *Surface Force Strategy: Return to Sea Control* (Washington, DC: Government Printing Office, 2017), 10.

denial technology, can control choke points, hold key maritime terrain, or deny freedom of action and maneuver at ever-increasing ranges.[37]

One of the supporting concepts within the littoral operations concept is the USMC's Expeditionary Advanced Base Operations concept. The expeditionary base concept is under development as complementary to the USN's distributed maritime operations concept. The Expeditionary Advanced Base Operations concept employs resilient, sustainable, low-signature USN and USMC assets away from legacy fixed infrastructure, seeking to neutralize or secure adversarial sea denial capabilities or support friendly sea control actions. Expeditionary advanced bases can better position naval intelligence collection assets, better posture coastal defense or anti-air missiles, establish forward arming and refueling points for aircraft, ships, and submarines, or provide expeditionary basing for surface screening/scouting platforms. All of the above-listed possibilities, created under the expeditionary basing concept, increase sensor and shooter capacity while complicating adversarial targeting abilities.[38]

The distributed maritime and expeditionary base concepts are interconnected as land forces employed on an expeditionary advanced base are designed to operate using the same common operating picture as the distributed naval vessels. When both seaward and landward forces are employed with a common operating picture, all sensors and shooters are connected regardless of location. The connection of distributed sensors and shooters, both land and seaward, increase the efficiency and effectiveness of all systems while reducing the vulnerability of all resources. The expeditionary base concept creates a more dispersed, resilient, and hard to target forward based element that generates the virtue of mass without the historical vulnerabilities of

[37] US Department of the Navy, *Littoral Operations in a Contested Environment* (Washington, DC: Government Printing Office, 2017) 9.

[38] US Department of the Navy, *Littoral Operations*, 13; Corbett, *Expeditionary Advanced Base* Operations, 22-25.

concentration.[39] Having reviewed the developing sea control concepts and the current US counter-A2/AD doctrine, it is imperative to review relevant historical examples of near-peer adversaries contesting sea control to identify lessons applicable to a modern maritime environment.

Historical Case Study of Sea Control: Japan 1900 – 1945

A review of twentieth-century Japanese naval history identifies many lessons pertaining to the contest for the maritime domain between near-peer adversaries. The United States in the first four decades of the twentieth-century faced an ambitious rising power in East Asia during a period of rapid technological and doctrinal change.[40] The conditions faced by the United States during this period contain similarities to the environment between the United States and China today.

As an island nation, Japan has always been dependent on maritime trade and control of the sea as a natural buffer from hostile forces. The major naval power of the early twentieth-century established and maintained control of the seas that Japan's early navy thrived in. The Japanese naval experiences during the Sino-Japanese War (1894-95), the Russo-Japanese War (1904-05), and the Solomon Island campaign of World War II (1942-43) provide operational context for the development of Japanese naval strategy and tactics. From Japan's naval history, five lessons of sea control are identified that remain as relevant today as they were during the first half of the twentieth-century.

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[39] Corbett, *Expeditionary Advanced Base Operations*, 25; US Department of the Navy, *Littoral Operations*, 13. Expeditionary advanced bases may also control, or at least outpost, key maritime terrain to improve the security of sea lines of communication and chokepoints or deny their use to the enemy and exploit and enhance the natural barriers formed by island chains.

[40] Thomas G. Mahken, Grace B. Kim, and Adam Lemon, *Piercing the Fog of Peace: Developing Innovative Operational Concepts for a New Era* (Washington, DC: Center for Strategic and Budgetary Assessments, 2019), i.

The first lesson is that successful maritime operations are a prerequisite for successful joint operations.[41] Throughout the first half of the twentieth-century, Japan demonstrated its ability to establish and maintain control of the maritime domain in all three conflicts. In all three wars reviewed, Japan sought control of the sea by following the Mahanian principle of destroying the enemy's fleet. In both the Sino-Japanese and Russo-Japanese wars, Japan's actions inflicted damage to both the Chinese and Russian fleets, ensuring that neither was able to contest Japan's control of the sea. Gaining control of the sea allowed Japan to project combat power ashore and inhibit China and Russia from moving their combat power.[42] Japan's actions allowed combat power projection into Korea, China, and Russia, while denying their enemy to project combat power onto Japanese territory. These conditions created a combat power advantage for Japan, which contributed to its success in both the Sino and Russo Japanese Wars.

However, during the Solomon Island campaign, Japan's failed maritime operations allowed the United States to contest Japan's control of the Pacific maritime domain. Ultimately, the United States defeated Japan's sea control efforts, which created conditions for the United States to establish land-based aviation in the Pacific capable of delivering two war-terminating atomic weapons. As shown by Japan's naval history, nations increase their chances of successful war termination when control of the sea creates conditions for joint operations into other domains.

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[41] Tangredi, *Anti-Access Warfare*, 243. "In defeating anti-access warfare, successful maritime operations are a prerequisite for joint operations. Not an add-on, not yet another domain, not just one of a number of equal claims on resources."

[42] S. C. M. Paine, *The Japanese Empire: Grand Strategy from the Meiji Restoration to the Pacific War* (Cambridge, United Kingdom: Cambridge University Press, 2017), 35, 52-57. In the Sino Japanese War, Japan's military strategy prioritized control of the sea to allow for the movement of roughly one hundred thousand troops to mainland Asia. In the Russo-Japanese War, Japan conducted a surprise night attack against the anchored Russian squadron in Port Arthur which ensured the squadron remained unable to impede the movement of Japanese combat power, compounded Russia's burden to move combat power due to the damage of the Trans-Siberian railway, and denied Russia the ability to project combat power onto the Japanese mainland.

The next lesson is that control of the maritime domain is so vital that adversaries will contest control of the sea. Despite Japan's early establishment of control of the sea in both the Russo-Japanese War and the Solomon Island campaign, Russia and the United States applied resources to contest control of the maritime domain. In the Russo-Japanese War, Japan established sea control through attacks and blockades of the Russian Fleet in Port Arthur. Understanding the significance of Japanese control of the sea through the destruction of its Port Arthur Fleet, Russia sent its Baltic Fleet eight thousand miles to contest Japan's control of the sea.[43] Prior to the Solomon Islands campaign, Japan established control of the maritime domain to protect the flow of vital natural resources and to prevent the United States from projecting combat power into the Pacific theater. The United States, after recovering from the attack on Pearl Harbor, contested Japan's control of the maritime domain by applying resources to a joint Army-Navy plan along a dual-axis approach to the Japanese mainland.[44] The actions of Russia and the United States demonstrate the significance of sea control between near-peer adversaries.

Japan's sea control efforts in all three conflicts demonstrated the third lesson, control of the maritime domain is, at best, local and temporary. The Japanese naval philosophy of the early twentieth-century focused on Mahanian principles of total control of the sea through the

[43] Corbett, *Maritime Operations*, 63. On 15 February 1904, the Russian Minister of War defined the war efforts for Russia. Of the five war efforts described, "command of the sea" is the first and most critical war effort. Russia's fifth and final war effort was to land Russian troops in Japan to defeat Japanese forces and end the war on their terms.

[44] Edward S. Miller, *War Plan Orange: The U.S. Strategy to Defeat Japan, 1897-1945* (Annapolis: Naval Institute Press, 1991), 335.

destruction of the adversary's fleet.[45] During all three conflicts, Japan attempted to destroy the fleet of its adversary but was unsuccessful in each of its attempts. While the Chinese did not attempt to contest Japanese control of the sea during the Sino-Japanese War, both Russia and the United States did challenge Japanese control of the sea.

In the Russo-Japanese war, Japan's local control of the Yellow Sea and the Sea of Japan did not prevent Russia's Baltic Fleet from traveling to and attacking into Japanese-held waters. Russia's Baltic Fleet was ultimately unsuccessful in its attempts to defeat the Japanese Navy, but their actions demonstrated that the Japanese Navy only controlled the maritime domain in relation to the Korean theater. During the Solomon Islands campaign, for six months, the United States and Japan fought for control of the maritime domain surrounding Guadalcanal. Throughout these six months, both the United States and Japan possessed, what is defined today as, "control in dispute."[46] Japan could not control enough of the maritime domain to prevent American forces from projecting combat power ashore in August of 1942 to counter Japanese ground forces emplaced on Guadalcanal. Until February 1943, both nations operated in the waters around Guadalcanal with significant risk as neither side possessed credible sea control.[47] Both the Russo-

[45] David C. Evans and Mark R. Peattie, *Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy, 1887-1941* (Annapolis, MD: Naval Institute Press, 1997), 70. Akiyama Saneyuki studied in the United States reviewing United States Naval War College course material and personally interacting with Alfred T. Mahan about naval theory. Akiyama also spent time on an American vessel as a foreign observer during the Spanish-American War. Upon his return to Japan, Akiyama blended his western studies with his historical research on eastern philosophers of war, such as Sun Tzu, to create a unique Japanese naval theory. A principal that Akiyama embedded in his theory, like Ardant Du Picq, was the power of the unique Japanese will. His impacts on naval tactics merged modern tactical maneuvers, such as night attacks and fleet formations, with classic principals of deception, concentration, and indirect attacks. Akiyama's enhanced methods of instruction, along with the new tactics and theory of naval warfare, were responsible for creating a new generation of Japanese naval officers that would fight many of the world's great naval powers before the country's ultimate defeat in World War II.

[46] Turner, "Missions of the U.S. Navy," 6. Control in dispute is defined as each side operates with considerable risk. This involves the need to establish working control for limited portions for a limited time to conduct specific operations.

[47] Prados, *Islands of Destiny*, 350-362.

Japanese War and the Solomon Islands campaign demonstrate that absolute control is a theoretical extreme and may not be attainable in a near-peer maritime conflict.

Throughout these three naval conflicts, Japan's ability to out-range its enemy was the next impactful lesson. During the interwar period, stemming from the restrictions in the naval treaties, Japan understood they could not compete with peer navies in battles of capital ships.[48] As a result, Japan prioritized the technological development of weaponry with longer ranges, such as torpedoes, reconnaissance and attack aircraft, and submarines.[49] The contest for the maritime domain around Guadalcanal during the Solomon Islands campaign demonstrated this lesson. Japan successfully used torpedo attacks from airplanes, submarines, and destroyers to defeat US capital ships. Japan then coupled these torpedo attacks with night tactics to increase its effectiveness against US ships poorly trained in night tactics. These torpedo attacks and night tactics allowed Japan to not only defeat USN ships, but it also allowed Japan to land or resupply combat forces on Guadalcanal despite the United States' sea control efforts.[50] A secondary benefit of torpedo improvement for Japan was the financial investment. The cost of improving and producing the advanced torpedo was far less than what was required to produce larger more advanced capital ships. As a result, Japan gained an advantage over the United States by producing an effective weapons capability of destroying the United States' expensive capital ships.

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[48] Evans and Peattie, *Kaigun: Strategy*, 194-196, 233-237. The United States proposed a ten-year moratorium on capital ship construction and a schedule for the scrapping of specific warships in each of the five largest navies to reach stabilized limitation in total tonnage. The limits focused on total tonnage per country, maximum tonnage, and ordnance per class of ship, and a nonfortification clause for all Pacific powers. Japan agreed to a seventy percent ratio in heavy cruiser tonnage while maintaining the right to build an unlimited number of cruisers, destroyers, and submarines.

[49] Evans and Peattie, *Kaigun: Strategy*, 130, 218, 270, 307.

[50] Richard B. Frank, *Guadalcanal: The Definitive Account of the Landmark Battle* (New York: The Penguin Group, 1990), 598-618, 637-646.

To increase the effectiveness of out-ranging the enemy, the use of interior lines provided considerable benefit to the belligerent possessing the ability to reinforce or concentrate its elements faster than the enemy force can reposition. In the Russo-Japanese War, Japan defeated Russia's Baltic Fleet after the Baltic Fleet sailed eight thousand miles prior to engaging Japanese naval forces possessing interior lines.[51] During the Solomon Islands campaign, the United States defeated Japanese naval forces after Japan overextended its interior lines attempting to isolate Australia. The capability to out-range an adversary allows a nation to blunt the combat power of an advancing adversary. When supportive interior lines increase a nation's ability to out-range its adversary, a smaller nation can reduce an unfavorable balance in combat power.

The final lesson gained from these three conflicts was the contribution ground forces provided to sea control efforts. During all three conflicts, Japan sought immediate control of the sea to allow for the delivery of combat power onto hostile shores or to claim undefended territory. During the Sino-Japanese and Russo-Japanese Wars, the Japanese ground forces focused on defeating the enemy's army to achieve victory. During the Russo-Japanese war, after the successful Japanese naval blockade of Port Arthur, Japanese ground forces contributed to control of the maritime domain by using siege weapons to complete the destruction of the Russian Fleet anchored in the harbor.[52] The destruction of the Port Arthur Fleet achieved Japan's Mahanian goal of absolute control of the sea in the Yellow Sea as well as the Sea of Japan. Without the direct contribution from ground forces, Russia's Port Arthur Fleet might have remained intact,

[51] Evans and Peattie, *Kaigun: Strategy*, 116-129. After sailing for eight months, the ships and men of the Baltic Fleet were in poor condition. With the loss of the port at Lushun, upon arriving in the Far East, the Fleet had no safe harbor to recover and refit in. Japanese ships spotted the advance screen of the Baltic Fleet and the Battle of Tsushima took place between 26 and 28 May 1905. Through good tactics, excellent internal communication, and some advantageous weather the Combined Fleet was able to destroy the entire Baltic Fleet while sustaining minimal causalities.

[52] Evans and Peattie, *Kaigun: Strategy*, 110-116. By December 1904, with an established position above the port allowing unobstructed visibility of the squadron, Japanese forces were able to apply direct fire from siege guns damaging or destroying all anchored Russian ships.

which would have complicated Japan's control of the maritime domain once the Baltic Fleet arrived.

During the interwar period, as technology advanced, both Japan and the United States identified the superiority of land-based aviation to carrier-based aviation. While carrier-based aviation revolutionized fighting in the maritime domain, the advantage in range and payload provided by land-based aviation far outstripped carrier-based aviation.[53] Henderson Field, established on Guadalcanal, provided critical land-based aviation support to the United States' contest for control of the sea during the Solomon Islands campaign. The projection of ground forces can support or enhance a nation's sea control capability either through the extended range of land-based aviation or through direct ground force action against an adversary's sea control capabilities.

Japan, in all three conflicts, understood that control of the sea was critical for its ultimate success as control of the maritime domain set the conditions necessary for a favorable balance of combat power. In the Sino-Japanese and Russo-Japanese War, Japanese leadership set their initial military aim on establishing control of the sea to allow for the projection of combat power necessary to achieve their political aim. During World War II, however, Japanese leadership set their initial military aim on establishing control of the sea to deny the United States from projecting combat power into the Pacific theater. During the Russo-Japanese War and the Solomon Islands campaign, both Russia and the United States viewed Japan's control of the sea as sea denial, which required both nations to contest Japan's control. Russia and the United States demonstrated that a willing adversary, capable of contesting established sea control, ensures control of the sea is temporary or localized. Finally, the Japanese naval leadership learned that the critical capabilities for gaining control of the maritime domain are the ability to out-range the enemy and the ability to project ground forces capable of supporting sea control efforts.

[53] Evans and Peattie, *Kaigun: Strategy*, 334-340.

Historians claim that Japan was successful in both the Sino-Japanese and Russo-Japanese Wars, not because of its great military strategy and action but because China and Russia failed in their respective military strategies and actions. S. C. M. Paine claims that Japan developed its flawed World War II naval strategy from the theory of "victory disease" as Japan was successful in the two previous conflicts due to poorly executed naval strategy and tactics by China and Russia.[54] The contest for sea control in the Pacific theater demonstrated that a significant component of grand strategy, between peer nations, must be control of the maritime domain. With a historical review of great powers contesting control of the maritime domain in the Pacific, operational planners can review potential political and military friction points existing between China and the United States that may lead to renewed great power competition for control of the sea.

Potential Great Power Conflict in the Twenty-First Century

In the Indo-Pacific theater, both China and the United States claim to be the stabilizing force in the region. At the same time, both nations published national security strategies that identify the other nation as the hostile, destabilizing force seeking to take advantage of the economic prosperity in the region.[55] Therefore, military planners must ask if a war between the near-peer nations of the United States and China is possible in the modern era. Carl von Clausewitz and Everett Dolman suggest that war is always possible because war is an extension of political aims and nations are continuously seeking political influence from a position of relative advantage.[56] Having identified that both China and the United States are seeking power

[54] Paine, *Sino-Japanese War*, 369; H. P. Willmott, *Sea Warfare: Weapons, Tactics, and Strategy* (Strettington, United Kingdom: Antony Bird Publications LTD, 1981), 32.

[55] Trump, *The National Security Strategy*, I-II, 2-4, 26, 46, 55; State Council Information Office of the People's Republic of China, *China's National Defense in the New Era* (Beijing, People's Republic of China: The State Council Information Office of the People's Republic of China, 2019), 3-5, accessed 26 July 2019, http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm.

[56] Dolman, *Pure Strategy*, 15.

in a zero-sum power balance within the Indo-Pacific theater, the question of war between the two nations is not one of possibility, but of probability. This section is not meant to demonize China or be provocative, but as the US Security Strategy listed China as a near-peer adversary and the People's Liberation Army continues to develop the most formidable anti-access network, China presents the most likely adversary in a twenty-first century military conflict in the Indo-Pacific theater.[57]

The important question then becomes, is a war between the United States and China probable or will a trading-partner status keep these nations as non-belligerents? Joseph Nye, Thomas Friedman, and Ivan (Jan) Bloch all claim that economic considerations will prohibit nations in an interconnected globalized economy from going to war.[58] Economically, the United States is positively connected to China in the form of 737.1 billion dollars' worth of trade, an estimated 911,000 US jobs are supported by trade with China, and an estimated 70,000 American

[57] Tangredi, *Anti-Access Warfare*, 251.

[58] Joseph S. Nye, Jr., *Soft Power: The Means to Success In World Politics* (New York: Public Affairs, 2004), 19-20. Joseph Nye's writing was published a year after the start of Operation Iraqi Freedom which did not take into account the economic costs associated with a protracted ground war involving the United States and proxy nations across the Middle East; Thomas L. Friedman, *The Lexus and The Olive Tree: Understanding Globalization* (New York: Anchor Books, 1999) 101-111. Thomas Friedman's writing was published two years before the terrorist attack in New York City on September 11, 2001 and did not foresee the global economic impacts associated with nation states engaging in military conflict as a result of terrorist attacks carried out by non-state actors ; Ivan S. Bloch, *The Future of War: In Its Technical Economic and Political Relations Is War Now Impossible?*, trans. R. C. Long (New York: Doubleday &McClure Co, 1899), ix-lxxix, Jan de Bloch's writing was published in 1899 after the Franco-Prussian War and prior to the start of World War I. Due to the destrcutive power of modern weapons, universal conscription, and the increasing interconnectedness of global marker, he did not foresee the world ever engaging in a great world war like War World I which occurred less than twenty years after the publication of his work.

companies are doing business in China today.[59] From China's economic perspective, in addition to the above-listed facts, a war with the United States would impact the movement of natural resources through the South China Sea. The interruption would impede the movement of approximately seventy-eight percent of China's crude oil imports.[60] Using these statistics Ney, Friedman, and Bloch would argue that the probability of war between the United States and China is very low as both sides would be economically disadvantaged by a war. However, both the United States and China suggest that the other nation is their main adversary, and each respective national security policy directs preparation for a possible conflict with the other.

Accepting that war between the United States and China is possible, despite their economic interconnectedness, what then are the potential political conflict points that might lead one nation to seek its political aim through violent means? Through analysis of current policy issues, China's perception of the United States' interference in matters of Chinese sovereignty is the one underlying point of contention relating to all issues. China operates under the "Mandate of Heaven" ideology, so any foreign intervention in Chinese affairs is unacceptable. The "Mandate of Heaven" belief allows the Chinese rulers to maintain power because they maintain the favor of the gods as indicated by the good fortune befalling the country and its people. From this logic, foreigners have been a source of instability and tragedy for the Chinese for the last 150

[59] Office of the United States Trade Representative, "US-China Trade Facts," 2020, accessed 29 January 2020, https://ustr.gov/countries-regions/china-mongolia-taiwan/peoples-republic-china. U.S. goods and services trade with China totaled an estimated $737.1 Billion in 2018. Exports accounted for $179.3 billion while imports accounted for $557.9 billion. According to the Department of Commerce, U.S. exports of Goods and Services to China supported an estimated 911,000 jobs. Also, China was the United States' third largest goods export market in 2018 and China was the United States' largest supplier of goods imports in 2018: Evan Osnos, "The Future of America's Contest with China," *The New Yorker*, 29 January 2020, https://www.newyorker.com/magazine/2020/01/13/the-future-of-americas-contest-with-china. There are an estimated seventy thousand American companies doing business in China today.

[60] Office of the Secretary of Defense, *Annual Report to Congress*, 12; Daniel Workman, "Crude Oil Imports by Country," World's Top Exports, 16 September 2019, accessed 29 January 2020, http://www.worldstopexports.com/crude-oil-imports-by-country/. In 2019, China imported $240 billion dollars of crude oil, which is over 20 percent of the crude oil imports across the globe.

years.[61] Understanding China's cultural aversion towards intervention in domestic Chinese affairs from any outside source, the situation regarding Taiwan provides a clear example of an issue that might lead China to seek political ends through violent means.[62]

Taiwan, an island originally under Chinese rule, was ceded to Japan in 1895, later claimed independence after World War II, and now hosts the nationalist government that fled China in 1949.[63] Currently, Beijing claims Taiwan is still part of the Peoples Republic of China, despite Taiwan's attempts to be recognized as a sovereign territory. The United States and Taiwan entered an alliance during World War II and from that alliance, a strong partnership developed that remains in effect. The United States has supported Taiwan each time China attempted to reclaim it. Beijing sees the actions of the United States to support Taiwan as a foreign power interfering with China's "Mandate of Heaven." The United States would likely see any attempt by China to achieve its political aims through force as an act of war between the two nations.

The Taiwan situation presents a clear model to review other policy issues between the United States and China that could lead to war. China's National Defense policy addressed Tibetan independence and the attempts to create an "East Turkistan" in the same manner as an independent Taiwan. China comments on "external separatist forces" supporting these issues as a veiled nod towards the United States and others. Similarly, China addresses the issue of

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[61] Lawrence E. Grinter, ed., *The Dragon Awakes: China's Military Modernization Trends and Implications* (Montgomery, AL: US Air Force Counterproliferation Center, 1999), 48.

[62] The United States and China both address Taiwan in their national security policies. The US National Security Strategy states that it will support Taiwan by providing for Taiwan's legitimate defense needs and deter coercion. China's national defense policy states that the "Taiwan independence" separatist forces and their actions remain the gravest immediate threat to peace and stability in the Taiwan Strait and the biggest barrier hindering the peaceful reunification of the country. China claims they will work towards a peaceful resolution, but they will prevent Taiwan's separation by force if necessary.

[63] Paine, *Sino-Japanese War*, 265. In 1895, the Treaty of Shimonoseki ended the First Sino-Japanese war. As part of the treaty, Taiwan was given to Japan as a concession; Peter Worthing, *A Military History of Modern China: From the Manchu Conquest to Tian'anmen Square* (Westport, CT: Praeger Security International, 2007), 142.

"territorial sovereignty of some islands and reefs" in its defense policy. The islands and reefs refer to China's dispute in the South China Sea over the "nine-dash line" and the Diaoyu Islands in the East China Sea.[64] China, again, implies that the United States is interfering in these territorial disputes.[65] The United States, in direct response, acknowledges their support for partnerships and alliances with Vietnam, the Philippines, Malaysia, and other Pacific nations "to help them become cooperative maritime partners."[66] Recent protests in Hong Kong occurred when the pro-democracy population objected to increased influence by Chinese leadership. One of the objectives of the protestors is "universal suffrage, which would allow Hong Kong voters to directly pick their leaders rather than the current process that includes Beijing's involvement."[67] China objects to any loss of control and directly attributes this movement to influences from the United States.[68]

The developing global novel coronavirus (designated COVID-19) pandemic provides a unique situation impacting China.[69] Since the acknowledgment of the outbreak of COVID-19, the Chinese leadership has been under heavy scrutiny both domestically and internationally. To stop

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[64] Office of the Secretary of Defense, *Annual Report to Congress*, 7-9. China claims sovereignty over the Spratly and Paracel Island groups and other land features within its self-proclaimed "nine-dash line."

[65] State Council Information Office of the People's Republic of China, *China's National Defense*, 5. Countries from outside the region conduct frequent close-in reconnaissance on China by air and sea, and illegally enter China's territorial waters and the waters and airspace near China's islands and reefs, undermining China's national security.

[66] Trump, *The National Security Strategy*, 47.

[67] Siobhán O'Grady, Ruby Mellen, and Miriam Berger, "What's happening in Hong Kong? Some key questions answered," *The Washington Post*, 14 November 2019, accessed 1 February 2020, https://www.washingtonpost.com/world/2019/08/09/airport-sit-ins-citywide-strikes-street-protests-whats-happening-hong-kong/.

[68] Edward Wong, "Hong Kong Protesters Call for U.S. Help. China Sees a Conspiracy," *The New York Times*, 3 November 2019, accessed 1 February 2020, https://www.nytimes.com/2019/11/03/world/asia/hong-kong-protesters-call-for-us-help-china-sees-a-conspiracy.html.

[69] World Health Organization, "Rolling Updates on Coronvirus Disease (COVID-19)," *World Health Organization: Rolling Updates on Coronvirus Disease (COVID-19)*, last modified March 11, 2020, accessed March 11, 2020, https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen. The Chinese office of the World Health Organization first reported the disease on December 31, 2019 starting in Wuhan City, Hubei Province. The World Health Organization declared it a public health emergency on January 30, 2020 and then declared it a pandemic on March 11, 2020.

the spread of COVID-19, the Chinese government mandated actions that stopped travel and halted manufacturing and production which collectively disrupted global supply chains and financial markets. These prevention measures significantly impacted China's economy, as well as the global economy, and this pandemic is only in its infancy. Domestically, should the Chinese leadership fail to properly support China's population during this health crisis, both medically and economically, potential domestic strife may undo the current political stronghold. Internationally, the impact on the global market resulting from the disruptions of Chinese supply chains may lead to a loss of global standing for China which may also lead to domestic turmoil.

Each one of these issues directly challenges China's sovereignty and its "Mandate of Heaven." Through partnership, alliance, or moral beliefs, the United States is connected to each issue in some capacity. Should China seek to achieve their political aim through violent means in any of these issues, less the COVID-19 situation, the chances of the United States responding with force greatly increases. The current relationship between China and the United States has similarities to the relationship between the United State and Japan prior to World War II. Edward S. Miller, after detailed research of historical pre-World War II records, assessed that "despite friendly relations in the past, war with Japan was coming because of Japan's quest for national greatness as seen by attempts to dominate the land, people, and resources of the far east."[70] Using the historical events between Japan and the United States as a conceptual model to analyze current events between China and the United States, a modern contest between great powers for the Pacific maritime domain may be looming on the horizon.

Conclusion

In the current operating environment, joint operations are required to create the conditions for successful war termination. Through control of the maritime domain, especially in the US Indo-Pacific Command's area of responsibility, projection of combat power from the sea

[70] Miller, *War Plan Orange*, 3.

has historically been the prerequisite to successfully ending wars. In the modern maritime domain, which includes the open ocean as well as the littoral region, a force that can control the sea possesses a combat power advantage. As described previously, during the 2006 conflict between Israel and Lebanon, a smaller force using land-based missile was able to gain an advantage in a littoral region. Naval history is also filled with examples of successful joint operations initiated through control of the open ocean. Operations Overload during World War II was successful after the Allies established working control of the English Channel. As the counterpoint, Germany was unable to execute their planned invasion of the United Kingdom, Operation Sea Lion, because they could not control the maritime and air domain.

As stated in the *Joint Operational Access Concept*, sea control establishes the foundation for assured access that enables joint operations. Through the historical review of Japanese naval conflicts, five lessons are identified that operational planners can apply to military plans seeking control of the maritime domain. To illustrate these lessons in a current maritime environment, China's access denial strategy was provided as an example that US sea control plans can be modeled against.[71] China's continued advancement of its A2/AD capability, coupled with its actions in the South China Sea, pose an obstacle to the United States' political aims in the Pacific region. China's developing access denial strategy, similar to Japanese development during the interwar period, seeks to establish control of the sea by creating a layered defense-in-depth strategy. China's strategy is focused on the destruction of the advancing combat power of an adversary attempting to contest China's control of the maritime domain. China's strategy aims to prevent its adversaries from achieving joint operations that have historically proven necessary to successfully end wars. China's access denial developments focus on increasing the maximum range of its access denial capabilities through advancements in its missile arsenal and

[71] Precision analytical modeling using China's A2/AD strategy and capabilities is beyond the scope of this research project. Conceptually, China's continued advancement of its A2/AD technology and increased posturing actions throughout the South China Sea are the critical components for comparison to Japan's actions during the interwar period.

militarization of reclaimed territory. The combined landward and seaward capabilities, distributed across multiple platforms, including a new domestically built aircraft carrier, ensures adversarial attempts to control or deny the sea are temporary and narrowly focused. More importantly, China's access denial network is equally capable of denial across the entire maritime domain, both the open ocean as well as in the littoral region.

China provides a model for near-peer competition in the maritime domain, and the foreign military sales of its access denial weaponry creates an equally complex threat. Through the purchase of Chinese technology, smaller nation-states or non-state actors along any coastline across the globe can apply a credible access denial threat. The distribution of China's access denial strategy and capability creates additional challenges to the US's political aim of unimpeded access to the global maritime domain. Ensuring unimpeded access to the global maritime domain is vital to the continued expansion of all global trade. As the world's largest and most powerful navy, the United States is not capable of independently ensuring freedom of the entire global maritime domain. However, the US Security Strategy sets "free access to global markets" and "unimpeded flow of trade across the maritime domain" as political aims. To achieve these political aims, the US must be capable of defeating an adversary's established sea denial or implementing control of the sea to allow for the safe movement of combat power and global commerce through the maritime domain. To achieve freedom of the entire maritime domain, the United States must work in coordination with other major naval power to establish global protection of all oceans and sea lines of communication.

The current US sea control philosophy was developed primarily from the principles of Sir Julian Corbett's theories. The USN is focused on control of that sea that provides local maritime superiority and denies an adversary that same ability. To achieve control of the maritime domain, which prevents enemy interference of both military and commercial shipping, the USN's strategy seeks to destroy enemy naval forces, suppress enemy sea commerce, protect vital sea lanes, and establish superiority in vital sea areas. The USN has developed concepts that support control of

the maritime domain in both the open ocean and the littoral region. The Distributed Maritime Operations concept ensures that US naval fleets can engage in decisive fleet-on-fleet battles in the open ocean while minimizing the exposure of capital ships to an adversary's anti-access capabilities. The Littoral Operations in a Contested Environment concept supports the projection of ground troops into hostile territory while avoiding adversarial area denial capabilities. Combined with USAF's Agile Combat Employment and the USMC's Expeditionary Advance Base Operations, the USN's concepts create a foundation for a unified Department of Defense access denial strategy.

The key considerations for the geographic combatant commander regarding sea control in an Indo-Pacific campaign are clear. Access denial, a layered defense-in-depth, is designed to prevent an advancing force from massing combat power in any domain. To penetrate this style of defense and establish operational access, dispersed forces must conduct rapid, simultaneous, operations that are coordinated across a common operational picture. Once operational access is restored, ground forces can be projected into hostile territory to support gaining control of the sea. Control of the maritime domain is the prerequisite to setting the conditions for assured access. Assured access is required for the projection of large-scale follow on ground forces that have historically ended wars. Rapid, simultaneous, distributed operations conducted throughout the Pacific require a large amount of sea control, either in time or geographic area. Large amounts of sea control require coordinated concepts and approaches across the five services as the manpower and resource requirements are considerable. Finally, the manpower, resources, and concepts required to gain control of the Pacific maritime domain have not been exercised in decades, yet our adversaries have been improving their strategies and capabilities. The Department of Defense needs a unified anti-A2/AD strategy with a matching investment strategy to ensure success in future violent conflicts over control of the sea.

Recommendations for Further Research

The creation of a unified US strategy for the establishment of sea control is imperative because control of the maritime domain is the prerequisite for assured access, and assured access sets the condition for successful joint operations. A unified strategy, published by 2022 with an executive agent identified within the Department of Defense, ensures that all five services work in concert to develop mutually supporting concepts, applicable to as many domains as possible while avoiding redundant technology, systems, or processes. Ideally, this unified strategy would include interagency and international partners to further increase the effectiveness and reduce waste. Specific to the maritime domain, as the USN can not maintain sea control of the entire globe, international partners operating from a common sea denial strategy provide the combat power needed to ensure global freedom of the maritime domain. Based on the lessons identified from the review of relevant historical examples of near-peer adversaries contesting sea control and the access denial capabilities of a current near-peer, the following recommendations are provided for further research and review.

The primary effort should be the development of a unified Department of Defense counter-A2/AD strategy, applicable to all domains. Specific to the maritime domain of the Pacific region, the strategy must holistically balance the logistical requirements arising from the multitude of distributed operations designed to defeat access denial capabilities. Small forces dispersed across the geography of the Pacific, consisting of miles of ocean and thousands of islands, requires an extensive logistical network to ensure all forces remain combat effective. While the Department of Defense is working to make units as self-sufficient as possible, certain classes of supply, such as munitions, are still required to be resupplied. A logistical network, including the distribution assets, to sustain a theater of dispersed ships and forces does not currently exist. Ensuring a logistical focus will avoid the failure Japan encountered when it over-extended its interior lines.

The strategy should also focus on the expansion and integration of concepts that directly apply ground combat forces, either land-based aviation or combat troops, into a contested environment to defeat adversarial sea denial and support friendly sea control. The Agile Combat Employment, Expeditionary Advanced Base Operations, and Distributed Maritime Operations concepts reduce vulnerability for small elements while achieving the benefit of dispersed coordinated lethality. These concepts create the conditions for control of the sea and assured access which allows for the follow-on of large land forces necessary to end wars. All developed concepts that are designed to defeat access denial capabilities require coordination within the Department of Defense to ensure efforts are not unnecessarily redundant or worse counterproductive. Japan demonstrated the benefit of ground troops directly supporting sea denial during the destruction of Russia's Port Arthur Fleet in the Russo-Japanese War.

Two critical components of any concept that applies ground forces to support control of the maritime domain are delivery platforms and technology supporting access to a common operating picture. The current USN amphibious ships, considered as capital ships, are too lucrative a target to operate inside an access denied environment to deliver dispersed sea control capabilities.[72] Smaller, less expensive, delivery platforms are required to transport the numerous ground units necessary to support control of the sea. Once all forces are delivered, they must be connected to a common operating picture to coordinate command and control as well as execute effective fires. All five services must operate on the same operating picture to maximize all

[72] The term "capital ship" is not a doctrinal term. Historically the term has been used to refer to the largest, most expensive, and most powerful ship a navy possesses, such as battleships or aircraft carriers. For the purpose of this project, "capital ship" is used to denote the significant cost and capability of US Navy amphibious assault shipping. Economically each amphibious assault ship, excluding the USN manpower and USMC manpower and combat equipment, is an investment of billions of dollars. When fully loaded with a USMC combat power projection capability, manpower and equipment, a single amphibious assault ship provides a considerable landward and seaward sea control capability. The loss of a single amphibious assault ship, in terms of economic resources and capability, would be impactful to the Department of Defense. The US Navy amphibious assault class includes the following categories; landing helicopter assault (LHA), landing helicopter dock (LHD) landing platform dock (LPD), and the landing ship dock (LSD)

distributed forces and ensure dispersed forces do not become isolated. The requirement for access to a common operating picture can be a critical weakness if an adversary possesses the ability to impact communications technology.[73] The significance of this critical weakness will require specific forces and equipment augmentations to protect it, or it will require more cyber warfare training for all ground forces to ensure they can protect themselves.

The final recommendation for further review is the research and investment in rapidly produced, low-cost technology that extends the range of counter-A2/AD capabilities. Capital ships and aircraft are expensive but necessary in the modern maritime environment. However, as the Japanese torpedo demonstrated during World War II, a well-designed long-range weapon that can damage or destroy a capital ship is equally valuable. Each domain is challenging and when combined, an operating environment becomes immensely complex. Modern military technology that is required to compete with a technologically advanced peer is expensive. A unified counter-A2/AD strategy must balance the financial requirements necessary to be competitive across all domains.

Investments in man-portable anti-ship and anti-air missiles, command and control technology, amphibious troop delivery platforms, and intelligence, surveillance, target acquisition, and reconnaissance equipment all extend the effectiveness of ground-based sea control assets. Ground forces that can employ, remotely guide, or provide targeting information for anti-ship and anti-air missiles have a direct positive impact on sea control efforts. Investments in smaller amphibious platforms that can autonomously deliver troops, distribute supplies, or carry missile systems across the archipelagic waters of the Pacific are needed. Lastly, the continued investment in unmanned aircraft systems to support intelligence, surveillance, target

[73] This study did not discuss the impact of the information environment, which includes cyberspace, or the electromagnetic spectrum due to the scale and scope of this project. By no means does this omission ignore the importance of this domain in the modern operating environment. The ability to attack and protect friendly aspects in this domain are critical to the success of distributed forces operating on a common data link.

acquisition, and reconnaissance capabilities contributes to the increased effectiveness of sea control troops.

A current example of these possible investments is seen in recent guidance from the Commandant of the Marine Corps, General David Berger. General Berger is currently seeking to arm infantry Marines with anti-ship cruise missiles and disperse this capability across the Indo-Pacific theater in support of sea control efforts.[74] General Berger's concept follows Japan's example of a well-designed, low-cost, long-range weapon, launched from multiple platforms, aimed as damaging capital ships in the contest for control of the sea. General Berger's investment in a ground force that supports sea control through the defeat of capital ships and aircraft is one step in the right direction towards a unified sea control strategy.

[74] Todd South and Philip Athey, "We are the front line: How the top Marine wants the Corps sinking ships, shooting down planes and killing enemy forces," *Marine Corps Times*, 22 November 2019, accessed 12 January 2020, https://www.marinecorpstimes.com/news/your-marine-corps/2019/11/22/we-are-the-front-line-how-the-top-marine-wants-the-corps-sinking-ships-shooting-down-planes-and-killing-enemy-forces/.

Bibliography

Berdou, Jason. "Setting the Theater: United States Sustainment Operations in the Pacific during World War II." Masters Monograph**,** School of Advanced Military Studies, US Army Command and General Staff College, Fort Leavenworth, KS, 2016.

Bloch, Ivan S. *The Future of War: In Its Technical Economic and Political Relations Is War Now Impossible?* Translated by R. C. Long, New York: Doubleday &McClure Co, 1899

Carter, Worrall Reed. *Beans, Bullets, and Black Oil: The Story of Fleet Logistics Afloat in the Pacific During World War II*. Washington, DC: US Government Printing Office, 1953.

Corbett, Arthur. *Expeditionary Advanced Base Operations (EABO) Handbook: Considerations for Force Development and Employment.* Quantico, VA: Marine Corps Warfighting Lab, 9 May 2018.

Corbett, Julian S. *Maritime Operations in The Russo-Japanese War: 1904-1905.* Annapolis, MD: Naval Institute Press, 1994.

———. *Some Principles of Maritime Strategy.* Annapolis, MD: Naval Institute Press, 1911.

———. *The Campaign of Trafalgar*. Vol 1. London, United Kingdom: Longmans, Green, and Company. Accessed 21 December 2019. https://books.google.com/books/about/The_Campaign_of_Trafalgar.html?id=P3sK7cS68dAC.

Dixon, William M. "The Devil is in the Concepts: Lessons Learned from World War II Planning Staffs for Transitioning from Conceptual to Detailed Planning." School of Advanced Military Studies, US Army Command and General Staff College, Fort Leavenworth, KS, 2017.

Dolman, Everett Carl. *Pure Strategy: Power and Principle in the Space and Information Age*. New York: Routledge, 2005.

Evans, David C. and Mark R. Peattie. *Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy, 1887-1941*. Annapolis, MD: Naval Institute Press, 1997.

Frank, Richard B. *Guadalcanal: The Definitive Account of the Landmark Battle*. New York: The Penguin Group, 1990.

Friedman, Thomas L. *The Lexus and The Olive Tree: Understanding Globalization*. New York: Anchor Books, 1999.

Goldstein, Donald M. and Katherine V. Dillon. *The Pacific War Papers: Japanese Documents of World War II.* Washington, DC: Potomac Books, Inc., 2004.

Gompert, David C. *Sea Power and American Interests in the Western Pacific.* Santa Monica, CA: National Defense Research Institute, 2013.

Grinter, Lawrence E., ed. *The Dragon Awakes: China's Military Modernization Trends and Implications*. Montgomery, AL: US Air Force Counterproliferation Center, 1999.

Hattendorf, John B. and Wayne P. Hughes, Jr., eds. *Mahan on Naval Strategy: Selection from the Writings of Rear Admiral Alfred Thayer Mahan.* Annapolis, MD: Naval Institute Press, 1991.

Headquarters United States Marine Corps. *The Marine Operating Concept: How an Expeditionary Force Operates in the 21st Century.* Washington, DC: Headquarters United States Marine Corps, September 2016.

———. *Tentative Manual for Defense of Advanced Bases.* Quantico: US Marine Corps Schools, June 1936.

Johnson, Isaac. "Airmen exercise Agile Combat Employment at Red Flag Alaska." Kadena Air Base. 16 August 2019. Accessed 11 January 2020. https://www.kadena.af.mil/News/Article-Display/Article/1937075/airmen-exercise-agile-combat-employment-at-red-flag-alaska/.

Livezey, William E. *Mahan on Sea Power*. Norman, OK: University of Oklahoma Press, 1981.

Mahan, Alfred Thayer. *The Influence of Sea Power Upon History: 1660 – 1783.* Boston, MA: Little, Brown, and Company, 1890.

Mahken, Thomas G. Grace B. Kim, and Adam Lemon. *Piercing the Fog of Peace: Developing Innovative Operational Concepts for a New Era*. Washington, DC: Center for Strategic and Budgetary Assessments, 2019.

Malik, Mohan, ed. *Maritime Security in the Indo-Pacific: Perspectives from China, India, and the United States.* Lanham, MD: Rowman and Littlefield, 2014.

Miller, Edward S. *War Plan Orange: The United States Strategy to Defeat Japan, 1897-1945.* Annapolis, MD: Naval Institute Press, 1991.

Miller, John Jr. *Cartwheel: The Reduction of Rabaul. United States Army in World War II: The War in the Pacific*. Edited by Kent Greenfield. Washington DC: Office of the Chief of Military History, 1959.

Missile Defense Project. Center for Strategic and International Studies. "Missiles of China." Last modified 13 January 2020. Accessed 19 February 2020. https://missilethreat.csis.org/country/china/.

Nye, Joseph S., Jr. *Soft Power: The Means to Success in World Politics*. New York: Public Affairs, 2004.

Office of the US Trade Representative. "US-China Trade Facts." 2020. Accessed 29 January 2020. https://ustr.gov/countries-regions/china-mongolia-taiwan/peoples-republic-china.

Osnos, Evan. "The Future of America's Contest with China." *The New Yorker.* 13 January 2020. Accessed 29 January 2020. https://www.newyorker.com/magazine/2020/01/13/the-future-of-americas-contest-with-china

Paine, S. C. M. *The Japanese Empire: Grand Strategy from the Meiji Restoration to the Pacific War.* Cambridge, United Kingdom: Cambridge University Press, 2017.

———. *The Sino-Japanese War of 1894-1895: Perceptions, Power, and Primacy*. Cambridge, United Kingdom: Cambridge University Press, 2003.

Prados, John. *Islands of Destiny: The Solomons Campaign and the Eclipse of the Rising Sun*. New York: The Penguin Group, 2012.

Pournelle, Phillip E. "The Deadly Future of Littoral Sea Control." *US Naval Institute Proceedings* 141, no. 7 (July 2015): 26-31. Accessed 13 November 2019. http://web.a.ebscohost.com.lumen.cgsccarl.com/ehost/detail/detail?vid=0&sid=69997cbf-6f1d-4e38-be2c-ef94535a7c76%40sdc-v-sessmgr03&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#bib13.

Rainey, David. "Expeditionary Advanced Base Operations in the India-Pacific Command Area of Responsibility" School of Advanced Military Studies, US Army Command and General Staff College, Fort Leavenworth, KS, 2019.

Richardson, John. *A Design for Maintaining Maritime Superiority: Version 2.0*. Washington, DC: Government Printing Office, 2018.

South, Todd and Philip Athey. "We are the front line: How the top Marine wants the Corps sinking ships, shooting down planes and killing enemy forces." *Marine Corps Times*. 22 November 2019. Accessed 12 January 2020. https://www.marinecorpstimes.com/news/your-marine-corps/2019/11/22/we-are-the-front-line-how-the-top-marine-wants-the-corps-sinking-ships-shooting-down-planes-and-killing-enemy-forces/.

State Council Information Office of the People's Republic of China. *China's National Defense in the New Era*. Beijing, People's Republic of China: Foreign Languages Press Co. Ltd, 2019. Accessed 26 July 2019. http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm.

Strauss, Barry. *The Battle of Salamis: The Naval Encounter That Saved Greece and Western Civilization*. New York: Simon and Schuster, 2004.

Tangredi, Sam J. *Anti-Access Warfare: Countering A2/AD Strategies*. Annapolis, MD: Naval Institute Press.

———. "Breaking the Anti-Access Wall." *US Naval Institute Proceedings* 141, no. 347 (May 2015): 40-45. Accessed 15 January 2020. http://web.b.ebscohost.com.lumen.cgsccarl.com/ehost/detail/detail?vid=0&sid=f6298dd4-f55f-49b1-8f8c-c014d4db0a62%40pdc-v-sessmgr06&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=102624277&db=a9h.

Till, Geoffrey. *Sea Power: A Guide for the Twenty-First Century*. 3rd ed. London, United Kingdom: Routledge, 2013.

Trump, Donald J. *The National Security Strategy of the United States of America*. Washington, DC: Government Printing Office, 2017.

Turner, Stansfield. “Missions of the U.S. Navy.” *Naval War College Review*. 27, no. 2 (March-April 1974).

US Army Center of Military History. *Logistics in World War II: Final Report of the Army Service Forces.* Washington, DC: US Army Center of Military History, 1993.

US Department of Defense. *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2019.* Washington, DC: Government Printing Office, 2019.

———. Joint Staff. *Joint Operational Access Concept.* Washington, DC: Government Printing Office, 2012.

———. Joint Staff. Joint Publication 3-0. *Joint Operations*. Washington, DC: Government Printing Office, 2017.

———. Joint Staff. Joint Publication 3-18. *Joint Forcible Entry Operations.* Washington, DC: Government Printing Office, 2018.

———. Joint Staff. Joint Publication 3-32. *Joint Maritime Operations.* Washington, DC: Government Printing Office, 8 June 2018.

———. Joint Staff. Joint Publication 5-0. *Joint Planning*. Washington, DC: Government Printing Office, 2017.

———. *National Military Strategy 2018.* Washington, DC: Government Printing Office, 17 January 2012.

———. *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military’s Competitive Edge.* Washington, DC: Office of the Secretary of Defense, 2018. Accessed 15 January 2020. https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

US Department of the Air Force. *Air Superiority 2030 Flight Plan: Enterprise Capability Collaboration Team*. Washington, DC: Government Printing Office, 2016.

———. *Littoral Operations in a Contested Environment*. Washington, DC: Government Printing Office, 2017.

US Department of the Navy. *Surface Force Strategy: Return to Sea Control*. Washington, DC: Government Printing Office, 2017.

US Department of the Navy. US Marine Corps, and US Coast Guard. *A Cooperative Strategy for 21st Century Seapower.* Washington, DC: Government Printing Office, 2015.

US Department of the Navy. US Marine Corps. Fleet Marine Force Reference Publication (FMFRP) 12-46. *Advanced Base Operations in Micronesia.* Washington, DC: Headquarters, US Marine Corps, August 21, 1992.

Westcott, Ben. “China’s First Domestically-Built Aircraft Carrier Officially Enters Service.” Cable Network News. 18 December 2019. Accessed 15 February 2020. https://www.cnn.com/2019/12/17/asia/china-aircraft-carrier-shandong-intl-hnk/index.html.

Willmott, H. P. *Sea Warfare: Weapons, Tactics, and Strategy*. Strettington, United Kingdom: Antony Bird Publications LTD, 1981.

Workman, Daniel. “Crude Oil Imports by Country.” World’s Top Exports. September 16, 2019. Accessed January 29, 2020. http://www.worldstopexports.com/crude-oil-imports-by-country/.

World Health Organization. “Rolling Updates on Coronvirus Disease (COVID-19).” *World Health Organization: Rolling Updates on Coronvirus Disease (COVID-19)*. Last modified March 11, 2020. Accessed March 11, 2020. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen.

Worthing, Peter. *A Military History of Modern China: From the Manchu Conquest to Tian’anmen Square*. Westport, CT: Praeger Security International, 2007.