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Countering China's Military Strategy in the Indo-Pacific Region

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Countering China's Military Strategy in the Indo-Pacific Region

Testimony of Caitlin Lee[1]
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Before the U.S.-China Economic and Security Review Commission

March 21, 2024

Co-chair Price, co-chair Schriver, and distinguished members of the commission, thank you for inviting me to appear before you today to discuss the state of U.S., ally, and partner preparedness to confront China's military strategy in the Indo-Pacific region. The opinions and conclusions in this testimony build on my own research, a review of U.S. force planning literature, and a rich body of research conducted at RAND over more than a decade on the subject of a U.S.-China war over Taiwan.

To this end, my testimony proceeds as follows. First, I explain why it is important to field combat-credible forces in the Indo-Pacific and why current U.S. posture, forces, and capabilities are ill-suited to the task. I then describe the implications of China's military strategy and anti-access/area denial (A2/AD) capabilities for U.S. forces in a conflict over Taiwan. Finally, I close with some thoughts on steps the United States can take to bolster deterrence in the Indo-Pacific, an assessment of U.S. progress toward taking those steps, and some final recommendations for Department of Defense (DoD) and congressional consideration.

The Importance of Fielding a Combat-Credible Force for the Indo-Pacific

The military balance in the Indo-Pacific is of central and utmost importance to U.S. foreign policy. After the cataclysm of World War II, U.S. leaders recognized that the security,

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prosperity, and freedom of Americans depended on active engagement in Eurasia based on shared values of freedom, democracy, and the dignity of the individual.[3] Since then, U.S. military power has underwritten the post–World War II liberal international order; it plays a central role in preventing any one power from seeking to dominate critical regions in Eurasia or undermine those shared values. Over the past decade or more, however, U.S. and like-minded nations have witnessed the rise of a formidable challenger in China, which increasingly appears to possess both the intentions and the military capabilities needed to challenge the extant international order and U.S. interests both at home and abroad. At the same time, U.S. military power in the Indo-Pacific has eroded dramatically relative to China's, opening the possibility of reduced U.S. influence, growing instability, and conflict in the region.[4]

Given these trends, the central question for the U.S. military is how to present combat-credible concepts, capabilities, forces, and posture that sow doubt in the minds of China's leaders about their ability to prevail in a conflict with the United States. The 2018 and 2022 national defense strategies call on U.S. forces to deter large-scale aggression through a strategy of *deterrence by denial*, which involves building a force to credibly convince adversaries that aggression is infeasible or unlikely to succeed.[5] In a U.S.-China conflict, the goal of denial would be to blunt a Chinese invasion of Taiwan *before* Beijing can achieve a *fait accompli, confronting the United States and its allies with the choice between accepting* Beijing's domination of Taiwan or undertaking a painful, bloody war of attrition to take it back.[6] Denial deters by directly confronting China with the prospect of failing to forcibly absorb Taiwan.[7] This is an attractive approach because it credibly holds at risk the thing Beijing would presumably want the most—for its invasion to succeed—and it avoids the escalatory risk associated with more indirect approaches, such as blockades, nuclear use, or other forms of cost imposition.[8]

But what would a denial campaign practically look like? This is still a subject of debate within the U.S. defense establishment, yet it has huge implications for how the services organize, train, and equip their forces to deter and defeat aggression by the nation's most capable

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[3] See NSC-68, *United States Objectives and Programs for National Security*, the document that in 1950 set out the main elements of the Cold War strategy of containment (Executive Secretary of the National Security Council, *A Report to the National Security Council on United States Objectives and Programs for National Security*, NSC-68, April 14, 1950, pp. 3–4, https://www.trumanlibrary.gov/library/research-files/report-national-security-council-nsc-68).

[4] DoD, *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge*, 2018, https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

[5] DoD, 2018; DoD, *2022 National Defense Strategy of the United States of America*, 2022.

[6] Hal Brands and Michael Beckley, "Washington Is Preparing for the Wrong War with China," *Foreign Affairs*, December 16, 2021.

[7] David A. Ochmanek, *Determining the Military Capabilities Most Needed to Counter China and Russia: A Strategy-Driven Approach*, RAND Corporation, PE-A1984-1, June 2022, p. 4, https://www.rand.org/pubs/perspectives/PEA1984-1.html.

[8] For more on the viability of a denial campaign, see Jacob L. Heim, Zachary Burdette, and Nathan Beauchamp-Mustafaga, *U.S. Military Theories of Victory for a War with the People's Republic of China*, RAND Corporation, PE-A1743-1, 2024, https://www.rand.org/pubs/perspectives/PEA1743-1.html.

adversaries.[9] The 2018 National Defense Strategy called for new operational concepts and capabilities to counter China, and the 2022 National Defense Strategy continued that theme.[10] But today the U.S. defense establishment still lacks a consensus regarding a concrete approach to defeating large-scale aggression by nuclear-armed peer adversaries. There is a vigorous, if quiet, debate around these issues—a sign that real changes in U.S. strategy and force development may be coming. The problem is that the changes are not coming fast enough. Despite a few bright spots of reform, DoD is still stuck in old ways of doing business.

Today, DoD continues to rely largely on a post–Cold War blueprint for confronting large-scale state aggression—cemented by the success of the 1991 Gulf War—that calls for overwhelming force, power projection across vast distances, and decisive victory.[11] But the core assumptions that underly this approach, which RAND analysis refers to as *decisive expeditionary force*, no longer hold.[12] After watching U.S. forces systematically dismantle Iraq's air defenses and pummel its armored divisions during the first Gulf War, China began modernizing and expanding its force to blunt and defeat U.S. power projection operations on its periphery. Beijing has poured billions into a network of A2/AD capabilities designed to keep U.S. forces at arm's reach, as well as a variety of systems that allow it to project power further afield. At the same time, the U.S. ability to resource its old way of fighting has steadily declined due to growing strategic demands—including 20 years of war in the Middle East, among other challenges—and painful cuts to defense budgets.[13]

As a result of these developments, DoD can no longer adhere to the same theory of victory that defeated regional adversaries, such as Iraq and Serbia, during the 1990s. More specifically, the posture and operational concepts that U.S. forces employed in these conflicts are not appropriate for a war with China. In terms of posture, the United States took five months to build up the "iron mountain" of fighters, warships, armor, supplies, and personnel before expelling Iraqi forces from Kuwait. U.S. leaders planned for and expected this buildup. It was a result of the expeditionary approach to force posture the United States adopted after the Cold War, which

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[9] Caitlin Lee, "Winning the Air Battle for Taiwan: Lessons Learned from Ukraine's Drone Operations," *War on the Rocks*, February 28, 2023, https://warontherocks.com/2023/02/winning-the-air-battle-for-taiwan-lessons-from-ukraines-drone-operations/.

[10] DoD, 2018; DoD, 2022.

[11] David A. Ochmanek, Anna Dowd, Stephen J. Flanagan, Andrew R. Hoehn, Jefferey W. Hornung, Michael J. Lostumbo, and Michael J. Mazarr, *Inflection Point: How to Reverse the Erosion of U.S. and Allied Military Power and Influence*, RAND Corporation, RR-A2555-1, 2023, p. 3, https://www.rand.org/pubs/research_reports/RRA2555-1.html.

[12] Michael J. Mazarr, *Defending Without Dominance: Accelerating the Transition to a New Defense Strategy*, RAND Corporation, PE-A2555-1, September 2023, p. 7, https://www.rand.org/pubs/perspectives/PEA2555-1.html.

[13] DoD now faces a serious strategy-resource mismatch. Strategic challenges include 20 years of war in the Middle East, North Korea's growing nuclear threat, China's conventional and nuclear build-out, and Russia's revanchist activity and possible resurgence following Ukraine, among other challenges, such as growing instability in the Middle East. At the same time, resources have declined. After the Cold War, the Clinton administration cut defense spending dramatically to focus on domestic priorities. In 2013, the Budget Control Act imposed ten-year caps on defense spending. The caps were subsequently amended but still reduced defense spending over that period by hundreds of billions of dollars. See Public Law 112-25, Budget Control Act of 2011, August 2, 2011.

involved closing overseas bases and bringing forces home to reduce costs.[14] Because the U.S. military possessed overmatch relative to Iraqi forces, U.S. leadership could be confident that the United States could regain the initiative, even on short warning.

Once in the theater, the U.S. military exploited superior operational concepts and technology to conduct a counteroffensive and achieve dominance across domains. New technology, such as stealth and precision-guided munitions, allowed the application of a concept of operations designed to achieve control over an enemy's essential systems: command and control, air defenses, and electricity production and distribution, among others. During the first day of the 43-day war, the coalition attacked more targets than the entire Eighth Air Force hit in Europe over the course of two years in World War II.[15]

U.S. forces no longer have that kind of leverage. If the United States were compelled to respond to a Chinese invasion of Taiwan, it may only have days or weeks of warning due to Chinese forces operating on their home turf and possible attempts to mask preparations under the guise of exercises.[16] Relying on the legacy expeditionary approach, the U.S. response would be sluggish and disjointed relative to the Chinese invasion force.[17] Once arriving in theater, U.S. forces would not be able to quickly achieve dominance in any domain. The conventional military balance increasingly favors China, and Beijing possesses nuclear weapons and a growing ability to threaten the U.S. homeland.[18] The United States would have to walk a careful line between escalation risk and operational decisiveness, which would likely put certain targets—such as command and control or over-the-horizon radars—off limits because of concerns about escalation to nuclear use.[19]

Given these realities, it should be a top priority for DoD to identify a viable alternative to *expeditionary decisive force*. The convergence of joint and combined forces around a new set of shared beliefs about the future of warfare, embodied in these new concepts, capabilities, technologies and force posture, could serve as a powerful deterrent, much the same way that the AirLand Battle doctrine of the 1980s was feared by Soviet generals and considered even more

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[14] Stacie L. Pettyjohn, *U.S. Global Defense Posture, 1783–2011*, RAND Corporation, MG-1244-AF, 2012, https://www.rand.org/pubs/monographs/MG1244.html. See also Caitlin Lee, Anthony D. Rosello, Elizabeth M. Bartels, Nathaniel Edenfield, Thomas Goode, Katherine L. Kidder, Karishma R. Mehta, Tucker Reese, and Andrew Stravers, *Infinite Game: Strategies for Managing the Supply of Indo-Pacific Air Assets in an Era of Strategic Competition*, RAND Corporation, 2023, Not available to the general public.

[15] David Deptula, "Desert Storm at 30: Aerospace Power and the U.S. Military," *War on the Rocks*, March 1, 2021, https://warontherocks.com/2021/03/desert-storm-at-30-aerospace-power-and-the-u-s-military/.

[16] Mark F. Cancian, Matthew Cancian, and Eric Heginbotham, *The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan*, Center for Strategic and International Studies, January 2023, p. 69.

[17] Ochmanek et al., 2023.

[18] The People's Liberation Army (PLA) also has fielded power projection capabilities and concepts to conduct offensive operations within the second island chain, the Pacific and Indian oceans, and, increasingly, globally. Its survivable (and growing) nuclear arsenal, cyber capabilities, and long-range conventional strike capabilities—including a 2021 test of a potential fractional orbital bombardment system—give it an increasing ability to attack the U.S. homeland (Caitlin Lee and Aidan Poling, "Bolstering Arctic Domain Awareness to Deter Air & Missile Threats to the Homeland," *Mitchell Institute Policy Papers*, Vol. 41, June 2023, https://mitchellaerospacepower.org/wp-content/uploads/2023/06/Bolstering-Arctic-Domain-Awareness-FINAL.pdf).

[19] Heim, Burdette, and Beauchamp-Mustafaga, 2024, p. 6; Ochmanek et al., 2023, p. 23.

ominous than the strategic change wrought by nuclear weapons.[20] A new set of shared beliefs about the future of warfare, codified in doctrine, would reflect real *innovation*: a significant set of operational changes that could be fielded at scale to generate war-winning effects.

Planning for a Taiwan Strait Scenario

U.S. defense planners have had the most success developing new approaches to warfare when they have focused on scenarios that represent dynamics of future conflicts.[21] Scenarios are helpful because, if judiciously chosen, they can become a means to identify the central operational tasks and challenges that forces must confront to prevail in a future conflict.[22] The scenario need not accurately predict the future; it must only present the most credible, stressing, and strategically important case. In practice, this means the scenario should be centered on an adversary with the capability and intent to put important U.S. strategic interests at risk.[23]

Today, an obvious scenario for U.S. defense planning is a conflict between two nuclear-armed peers—the United States and China—over the future of Taiwan. The Chinese Communist Party is on an accelerated timeline for the reunification of democratic Taiwan, and China has engaged in a massive buildup of conventional and nuclear forces.[24] Pentagon leaders have repeatedly affirmed that preparing for conflict with China over Taiwan is a top priority.[25] The Pentagon has now spent more than a decade conducting wargames and analysis to examine the challenges it might face if China were to conduct an air and maritime invasion of Taiwan. In recent years, analysts outside DoD have also conducted research to further inform U.S. understanding of challenges U.S. forces would face and the tasks they must be able to perform to defeat a Chinese invasion.[26] Across these analyses, there is a healthy variation in key assumptions, such as the duration of the conflict, Taiwan's capability and will to fight, and the

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[20] An early assessment of Soviet reactions to the U.S. AirLand Battle concept and the deep attack capabilities that it called for judged that Soviet military planners had decided that these approaches would "have major implications for the conduct of war" and that, in developing these capabilities, the United States was attempting "to shift the correlation of forces in favor of NATO" (Michael J. Sterling, *Soviet Reactions to NATO's Emerging Technologies for Deep Attack*, RAND Corporation, N-2294-AF, 1985, p. v, https://www.rand.org/pubs/notes/N2294.html).

[21] William W. Kaufman, *Planning Conventional Forces, 1950–80*, Brookings Institution, 1982.

[22] For more on military innovation resulting from a focus on strategically important operational problems, see Adam R. Grissom, Caitlin Lee, and Karl P. Mueller, *Innovation in the United States Air Force: Evidence from Six Cases*, RAND Corporation, RR-1207-AF, 2016, https://www.rand.org/pubs/research_reports/RR1207.html.

[23] Ochmanek et al., 2023, p. 10. For example, the canonical U.S. scenario during the Cold War was a conventional conflict with the Soviets in the Fulda Gap. That conflict never occurred, but because U.S. forces were built around this highly credible and stressing case, they were able to handily defeat a regional challenger in the form of Iraq in 1991.

[24] Julia Mueller, "Blinken: China's Plans to Annex Taiwan Moving on a 'Much Faster Timeline,'" *The Hill*, October 18, 2022, https://thehill.com/policy/international/3694561-blinken-chinas-plans-to-annex-taiwan-moving-on-a-much-faster-timeline/.

[25] A Taiwan contingency is the pacing scenario for DoD. See Ely Ratner, "The Future of U.S. Policy on Taiwan," testimony presented before the Senate Foreign Relations Committee, December 8, 2021, https://www.foreign.senate.gov/hearings/the-future-of-us-policy-on-taiwan120821.

[26] For a summary of this research, see Cancian, Cancian, and Heginbotham, 2023, pp. 16–18.

degree of ally and partner participation, among other variables. Yet there are also some common themes that emerge, which start to paint a picture of what a Chinese invasion of Taiwan might entail.

In most U.S. analyses, the conflict starts with a bang. A Chinese invasion starts with large-scale missile attacks on Taiwan's military infrastructure and on naval and air forces at large bases with U.S. air and naval forces in the Western Pacific.[27] Chinese cyberattacks and antisatellite operations aim to isolate Taiwan and blind the U.S. military; Beijing might also blockade Taiwan to interdict any ships and aircraft seeking to resupply the besieged island.[28]

Beijing's rapid, paralyzing attacks create the conditions for China to launch an amphibious invasion. China's amphibious vessels and civilian transports race across the 90-mile-wide Taiwan Strait, carrying thousands of troops, equipment, and supplies. They move under the protection of coastal air defenses, surface combatants, and airborne fighters. Several hundred ships, constituting the core of the invasion force, might "hide in plain sight," surrounded by vessels conscripted from civilian service to clutter the strait and confuse U.S. and Taiwan targeting.[29]

Once PLA-operated ships reach Taiwan's beaches, military transport aircraft and air assault helicopters would airdrop assault forces to secure beachheads and ports.[30] Massive Chinese bombardment from missiles, rotary wing aircraft, and long-range rockets fired from the mainland would attrit Taiwan's ground forces in the field, sapping morale and combat power so that those forces cannot degrade the PLA as it breaks out of its lodgments.[31] In this fait accompli scenario, PLA forces would seek to subjugate Taiwan quickly—in a matter of weeks or less.

Scenario Assessment: An Opening for Chinese Victory

For roughly a decade, games centered on U.S. attempts to counter a Chinese invasion of Taiwan typically ended poorly for the United States.[32] As a result, U.S. defense planners have become acutely aware of China's increasingly formidable military modernization and expansion efforts relative to the United States, and they consider those realities in their analysis.[33]

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[27] See, for example, Brands and Beckley, 2021; and Stacie Pettyjohn, Becca Wasser, and Chris Dougherty, *Dangerous Straits: Wargaming a Future Conflict over Taiwan*, Center for a New American Security, June 2022, p. 4.

[28] For examples of an invasion plus blockade, see Ochmanek et al., 2023, p. 13; and Cancian, Cancian, and Heginbotham, 2023, p. 3.

[29] Ochmanek et al., 2023, p. 14.

[30] Ochmanek et al., 2023, p, 14; Cancian, Cancian, and Heginbotham, 2023, p. 3.

[31] Ochmanek, et al., 2023, p. 14.

[32] Sydney J. Freedberg, Jr., "US 'Gets Its Ass Handed to It' in Wargames: Here's a $24 Billion Fix," *Breaking Defense*, March 7, 2019, https://breakingdefense.com/2019/03/us-gets-its-ass-handed-to-it-in-wargames-heres-a-24-billion-fix/.

[33] Eric Heginbotham, Michael Nixon, Forrest E. Morgan, Jacob L. Heim, Jeff Hagen, Sheng Li, Jeffrey Engstrom, Martin C. Libicki, Paul DeLuca, David A. Shlapak, David R. Frelinger, Burgess Laird, Kyle Brady, and Lyle J. Morris, *The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996–2017*, RAND Corporation, RR-392-AF, 2015, https://www.rand.org/pubs/research_reports/RR392.html.

Today, China has fielded a variety of A2/AD capabilities designed to blunt and defeat U.S. power projection operations on its periphery. These capabilities include a variety of ballistic and cruise missiles that can target U.S. bases in the Indo-Pacific, as well as surface ships, land- and sea-based counter-air capabilities, fourth and fifth generation fighters with long-range air-to-air missiles and radar, quieter submarines that can target U.S. and ally surface ships with torpedoes and antiship cruise missiles, underwater sensor networks that can detect U.S. submarine presence, and antisatellite weapons and cyber capabilities to disrupt U.S. command, control, and communications. From 2000 to 2016, China's military budget increased annually by 10 percent,[34] then slowed to 5–7 percent per year to level out at about $236 billion in 2024.[35]

China's military modernization efforts combine with geographic advantages to pose a daunting challenge to U.S. forces. Much of the U.S. military capability needed for a Taiwan contingency is stationed in the continental United States and must traverse more than 4,000 miles from the West Coast to get to the fight. China, in contrast, is situated less than 100 miles from Taiwan and has "interior lines" that allow it to employ its forces and resupply them much more quickly than the United States can.[36] The Pacific Ocean itself provides an additional defense, acting as a moat around China and Taiwan by limiting the real estate available to support forward-deployed U.S. operations.

Taken together, China's A2/AD capabilities and Indo-Pacific geography would impose a heavy tax on U.S. forces, which would have to devote more resources to self-defense missions, freedom of maneuver operations, and standoff capabilities required to operate outside the first island chain. As a result, U.S. forces might not be able to generate combat power fast enough to stop the invasion force. Carriers would need to operate well outside the range of China's ship-killing missiles. Bases hosting land-based fighters in the first and second island chains would be subject to heavy and sustained missile attacks. Long-range bombers—particularly, nonstealthy ones—would need to employ expensive standoff weapons from a distance. Submarines might be diverted away from Chinese ship-killing missions to trail Chinese subs. And surface combatants with ballistic missile defense capabilities might find themselves defending air and sea bases instead of employing their cruise missiles against Chinese ships. These are just a few examples of how China's A2/AD capabilities and Indo-Pacific geography might slow down and reduce the American firepower available to blunt and halt the Chinese invasion force.

It might still be possible, under some optimistic assumptions—such as Taiwan being better equipped and willing to fight, the United States being able to use Japanese air bases, and Chinese forces underperforming—for the United States to enjoy some success employing the legacy *expeditionary decisive force* approach against Chinese aggression.[37] But that outcome cuts

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[34] Defense Intelligence Agency, *China Military Power: Modernizing a Force to Fight and Win*, 2019, p. 3, https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/China_Military_Power_FINAL_5MB_20190103.pdf.

[35] Gordon Arthur, "China Unveils New Defense Budget, with a 7.2% Increase," *Defense News*, March 6, 2024.

[36] David Vergun, "General Highlights China's Military Advantages, Disadvantages," U.S. Department of Defense, October 11, 2023, https://www.defense.gov/News/News-Stories/Article/Article/3553901/general-highlights-chinas-military-advantages-disadvantages/.

[37] Cancian, Cancian, and Heginbotham, 2023.

against the grain of most other games and analysis, which point toward the possibility of a Chinese victory. Prior research highlights other risks as well, including nuclear escalation, high attrition of conventional forces, stalemate, and protraction.

On this last point, if history is any guide, it is possible that a U.S.-China conflict could drag on for months or years, careening across a spectrum of ceasefire, stalemate, and high-intensity conflict.[38] In one game, U.S. forces halted China's initial invasion but then struggled to generate offensive combat power after emptying their munitions quiver. Neither side felt as if it had lost, and both sides buckled down for a long fight that eventually escalated to nuclear use.[39] In such a protracted scenario, a war that starts as an air and naval battle could eventually take on an additional land component, with hand-to-hand fighting in Taiwan's mountains and urban areas for control of the island.[40]

Given these risks, it is clear the United States needs new operational concepts and capabilities to bolster deterrence in the Indo-Pacific region. It is unlikely that a new way of war could eliminate all these risks, but it could mitigate them while increasing both ally and adversary confidence in the U.S. ability to defeat China's aggression in a conflict.

A New Way of War

To bolster deterrence in the Indo-Pacific, force planners clearly need to replace aspects of the *expeditionary decisive force* approach with new concepts and capabilities. These new elements would fall under the umbrella of a denial strategy. Focused squarely on attriting China's invasion forces, a denial strategy appears feasible for at least three reasons: (1) halting an amphibious invasion is hard but probably easier than mounting one, (2) U.S. forces maintain a capability and capacity edge over China in some areas and are developing the edge in others, and (3) Taiwan is bolstering its own defensive capabilities.[41]

An important qualification is that a "pure" denial strategy is predicated on the critical assumption that the United States would be able to quickly halt the invasion in weeks, if not days. Even as the United States postures for rapid denial, it must also prepare for a messier, longer conflict that ebbs and flows below the threshold of nuclear conflict. Denial would help to hedge against this outcome, but other cost-imposing capabilities are needed to effectively deter and, in the case of war, convince the other side that it has lost.

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[38] Most great-power wars have lasted longer than expected due to a variety of factors, including the strategic depth of both sides and perceived high stakes.

[39] Pettyjohn, Wasser, and Dougherty, 2022, pp. 5–6. See also Edward Geist, "Defeat is Possible," *War on the Rocks*, June 17, 2021. https://warontherocks.com/2021/06/defeat-is-possible/

[40] Jacqueline Schneider, "The Uncomfortable Reality of the U.S. Army's Role in A War Over Taiwan," *War on the Rocks*, June 17, 2021, https://warontherocks.com/2021/11/the-uncomfortable-reality-of-the-u-s-armys-role-in-a-war-over-taiwan/.

[41] Heim, Burdette, and Beauchamp-Mustafaga, 2024, pp. 22–24.

New Concepts and Operations

In consideration of the Taiwan scenario outlined above, U.S. forces need to pursue a new approach to warfare that can replace *decisive expeditionary force*. The new approach—based largely on prior RAND analysis—entails the operational tasks outlined below.

Adjust Posture

The United States should increase permanent and rotational forward presence in the Indo-Pacific and ensure the survivability of those forces so they can bring combat power to bear quickly. Priority should be placed on assets that can be deployed forward in large numbers without reliance on large and complex base infrastructure and logistics, such as unmanned undersea vehicles and runway-independent unmanned air vehicles.[42]

In addition to the "small, many, and low-cost" solutions, the United States needs to posture highly survivable systems that can strike adversary forces at long ranges or penetrate contested environments. Bombers—including both the stealth B-21 and B-2, as well as the B-1 and B-52—and submarines are central to the force mix because they can put bombs on target within hours if they are postured to do so.[43] Fighters and other manned aircraft tied to fixed infrastructure in the theater also warrant posture considerations. RAND research suggests that passive defenses—such as dispersal of forces and equipment around the base, deception techniques, expeditionary aircraft shelters, and runway repair kits—improve the survivability of aircraft against a variety of threats.[44] And all these weapon systems need standoff, precision missiles that can target ships in the Chinese invasion force from the outset of hostilities.

Find, Track, Target

Moving ships are difficult to hit, especially when an adversary is taking steps through space, cyber, and electronic warfare to blind U.S. sensing capabilities, employing air defenses to protect the amphibious invasion force, and flooding the strait with civilian ships and obscurants to confuse U.S. targeting.

In this highly contested and crowded environment, it will be essential to develop a more survivable sensing capability that can distinguish key platforms, such as destroyers, from civilian ships and to help guide standoff weapons to their intended targets. One possible solution could be the deployment of a sensing and targeting grid, consisting of hundreds of low-cost, attritable, autonomous unmanned aerial vehicles (UAVs) that could relay targeting information back to

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[42] Ochmanek et al., 2023, p. 25

[43] On the importance of bombers in the Indo-Pacific, see Christopher J. Bowie, *Airpower Metamorphosis: Rethinking Air Force Combat Force Modernization*, Center for Strategic and Budgetary Assessments, 2023. See also Caitlin Lee and Mark Gunzinger, *The Next Frontier: UAVs for Great Power Conflict*: Part 1, *Penetrating Strike*, Mitchell Institute for Aerospace Studies, December 2022, https://mitchellaerospacepower.org/the-next-frontier-uavs-for-great-power-conflict-part-1-penetrating-strike/.

[44] Alan J. Vick and Mark Ashby, *Winning the Battle of the Airfields: Seventy Years of RAND Analysis on Air Base Defense and Attack*, RAND Corporation, RR-A793-1, 2021, https://www.rand.org/pubs/research_reports/RRA793-1.html. See also Christopher Lynch, Rachel Costello, Jacob L. Heim, Andrew Karode, Patrick Mills, Robert S. Tripp, and Alan J. Vick, *Operational Imperative: Investing Wisely to Bolster U.S. Air Bases Against Chinese and Russian Attacks*, RAND Corporation, January 2023, https://www.rand.org/pubs/perspectives/PEA1996-1.html.

strike platforms.[45] The benefit of this approach is that the UAVs would operate as a jam-resistant, resilient swarm in a contested communications environment, providing a resilient sensing capability. It might only take something on the order of 1,000 antiship weapons to annihilate the invasion force if those missiles were pointed at the right targets most of the time.[46] The cost, however, might be that the unarmed UAVs might waste opportunities to strike ships and must be weighed against the cost of buying more munitions.

Strike

The key to denying the invasion of Taiwan is to kill as many ships and aircraft as possible to prevent PLA forces from establishing beachheads or capturing ports. There are many different forces and approaches that could be employed to meet these objectives. Operating as a standoff force, long-range bombers would play a critical role in killing ships. The bomber force would begin the attacks with long-range munitions; once those ran out, stealthy B-21 and B-2 bombers would continue to attack with guided bombs dropped at closer range. Submarines could also launch cruise missiles and torpedoes at the invasion force, and manned and unmanned fighters would play a critical role in attriting Chinese fighters, air transports, and airborne warning and control assets.

Taiwan also would play a critical role in blunting the invasion. Taiwan's forces could employ large numbers of short-range anti-air and antiship defenses, loitering munitions, and autonomous drones to kill Chinese ships.[47] Dispersed and deployed in large numbers, these assets might survive initial Chinese missile strikes and engage amphibious forces. Taiwan could also employ High Mobility Artillery Rocket Systems (HIMARS) to attack Chinese ground and naval forces, Javelin anti-armor systems to attack Chinese ground forces, and Stinger missiles to shoot down Chinese helicopters.[48]

Close

Terminating hostilities in a conflict with China is a difficult problem that deserves more attention. RAND analysis suggests that a final operational task for U.S. forces is to "dismantle and attrit" the additional Chinese military assets to convince China that it has lost.[49] This is known as a "denial-plus" strategy because it involves broadening conventional attacks beyond the invasion force after the initial invasion has been blunted—but still avoiding major mainland attacks to minimize escalation risks. For this task, U.S. and ally forces would capitalize on their

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[45] Ochmanek et al., 2023, pp. 27–29. In addition to the sensing grid, other possible solutions include the deployment of inexpensive and replaceable satellites in low earth orbit (along the lines of Starlink in Ukraine); the employment of small numbers of stealth aircraft to conduct select intelligence, surveillance, and reconnaissance missions; or the use of open-source intelligence.

[46] Ochmanek et al., 2023, p. 30.

[47] Steve Trimble, "Invade Taiwan? Encounter a 'Hellscape,'" *Aviation Week*, September 26, 2023, https://aviationweek.com/defense-space/missile-defense-weapons/invade-taiwan-encounter-hellscape.

[48] Alexander Velez-Green, "Managing Trade-Offs Between Military Aid for Taiwan and Ukraine," Heritage Foundation, August 31, 2023, https://www.heritage.org/sites/default/files/2023-08/IB5328.pdf.

[49] Ochmanek et al., 2023, p. 31.

newly found freedom of maneuver, resulting from the success of the counteroffensive, to attack air defenses on China's coast, sink PLA ships and submarines that were not involved in the invasion, and strike Chinese military infrastructure in the South China Sea. The theory of the case is that this strategy—in conjunction with diplomatic and economic efforts—might provide the coercive leverage to bring Beijing to the negotiating table.

Prevail in Protraction

The advantage of a denial-plus strategy is that it calls for the United States to field capabilities to confront the most stressing case—an invasion scenario—and therefore would put U.S. and ally forces in a relatively strong position to manage a range of lesser contingencies. However, denial strategies emphasize speed and offensive action rather than long wars of attrition that might move between high and low intensity and offensive and defensive maneuver for years at a time. If a swift denial defense does not lead China to sue for peace, both sides may dig in—they certainly have the strategic depth and, potentially, the resolve to do so—leading to a protracted conflict.

In a long war, the United States will need more options and may call on U.S., ally, and partner forces to accomplish more operational tasks. Specifically, Washington may need to inflict punishment to bring Beijing to a negotiated settlement; this will require walking a fine line between effectively coercing Beijing versus risking escalation, up to and including nuclear use. One cost-imposing option that might strike this balance involves expanding the "dismantle/attrit" approach of the denial strategy to threaten a wider range of Chinese combat capability. U.S., ally, and partner forces would expand attacks to include Chinese ships and infrastructure outside the theater of operations, in the South China Sea, Indian Ocean, Africa, and elsewhere. The same kinds of systems that are most critical for denial operations—survivable sensors and shooters—would be required, so the defense industrial base would need to have the capacity to meet the demand.

Another cost-imposing option would be for U.S., ally, and partner forces to mount a distant blockade of Chinese commercial shipping at chokepoints in the Indian Ocean to coerce Beijing. The military requirements for such an operation are substantial, requiring significant U.S. Navy and Coast Guard presence in the Indian Ocean for a sustained period.[50] To meet the demands of this contingency (as well as the Chinese invasion and blockade scenarios), the United States might need to seriously consider ways to more quickly ramp up ship and submarine production. One example might be establishing partnerships between the United States and shipbuilding giants Japan and South Korea.[51]

In addition to ensuring the U.S. military can complete these operational tasks, the U.S. government also needs to take steps now to build up U.S., ally, and partner defense industrial bases, which are an instrument of power and source of deterrence in their own right. Taiwan also

[50] Fiona S. Cunningham, "The Maritime Rung on the Escalation Ladder: Naval Blockades in a US-China Conflict," *Security Studies*, Vol. 29, No. 4, 2020.

[51] Seth Cropsy, "The Sorry State of America's Submarine Fleet," *Wall Street Journal*, September 29, 2023.

should take steps now, in relative peacetime, to stockpile food, fuel, and medical supplies and secure its information networks from Chinese attacks.[52]

Assessing U.S. Progress toward Countering China's A2/AD Strategy

Measured against the operational tasks outlined above, how far has the United States come? U.S. defense leaders know that A2/AD strategies threaten a core mission of U.S. forces: deterring and defeating aggression via global power projection. But the United States has only attended to the A2/AD problem in fits and starts since 2012, when it was first formally identified in U.S. strategic guidance.[53]

There have been many causes of this strategic atrophy, but three stand out.[54] First, DoD has failed to coalesce around a new *theory of victory*: a coherent causal narrative that explains how U.S. forces can deter and defeat China. The lack of consensus is evident in the disjointed nature of service efforts to build more-resilient forward basing postures and develop multidomain command and control strategies. It is also evident in DoD's continued overreliance on exquisite military technologies, even when other low-cost and readily available technologies, from unmanned aircraft to conventional attack submarines, could be manufactured relatively quickly, at scale, by the United States and its allies and partners. This lack of a consensus around a new way of war makes it difficult for the defense community to agree on a set of strategically important operational problems. History suggests that such specificity is a critical ingredient of successful innovation, bringing stakeholders together around a common cause that drives cultural and doctrinal change, as well as technology investment, and deters adversaries with a compelling case that U.S. forces can solve strategically relevant operational problems.[55]

Second, DoD and Congress have struggled to fund force development efforts within legacy planning, budgeting, and acquisition systems that do not strike an appropriate balance between agility and predictability. DoD's acquisition system is notoriously ponderous and risk-averse, a problem compounded when service cultures agitate against technologies that do not fit with their vision for the future of warfare. As a result, it can be difficult to field weapons systems quickly, even if the funding and technology are available and the operational need is apparent.[56] Additionally, DoD's planning and budgeting system is too linear and inflexible to support the dynamic measure-countermeasure dynamics of intense wars, a point that has become painfully

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[52] For more on securing Taiwan's information networks, see Timothy M. Bonds, *Keeping the World Close: How Taiwan Can Maintain Contact with Allies, Supporters, and Its Own People If Attacked*, RAND Corporation, PE-A2557-1, July 2023, https://www.rand.org/pubs/perspectives/PEA2557-1.html.

[53] DoD, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, January 2012.

[54] For a systematic discussion of these causes, see Mazarr, 2023.

[55] Grissom, Lee and Mueller, 2016. Also see Ochmanek, 2022.

[56] The U.S. Air Force's MQ-1 Predator program is a classic example (Caitlin Lee, The Culture of US Air Force Innovation: A Historical Study of the Predator Program, thesis, King's College London, February 5, 2016, https://kclpure.kcl.ac.uk/portal/en/studentTheses/the-culture-of-us-air-force-innovation).

obvious in Ukraine over the past two years.[57] These drawbacks make it very difficult to adopt the kind of "small, many, low cost" approach that will be required to fight a great-power war with high levels of attrition. Congressional budgeting dysfunction compounds these problems. Contractors need the predictability of multiyear contracts to field weapon systems at scale, but lawmaker risk aversion and budget instability—in the form of continuing resolutions—make it difficult to provide defense contractors with the predictability of multiyear procurement contracts, which are essential for fielding the large numbers of weapon systems that would be required in a conflict with China.

These first two factors—the lack of a commonly shared theory of victory and a reliance on outdated bureaucratic and legislative processes—contribute to the third driver of strategic atrophy: an overreliance on exquisite weapon systems. To be sure, U.S. forces need some exquisite systems—especially, stealth bombers, submarines, and long-range precision munitions—to rapidly bring to bear the firepower required for a high-end fight. But DoD's overreliance on the exquisite can crowd out "small, many, low-cost" solutions produced in large numbers to increase the resilience, and therefore the lethality and survivability, of U.S. combat capabilities. Furthermore, these exquisite systems can take so long to field that, by the time they hit the inventory, they may be ill-suited for the threat.

Take, for example, the U.S. Air Force's F-22 stealth fighter, which costs about $350 million per copy.[58] The jet's software reached obsolescence several times before it was even produced, and the DoD acquisition system has struggled to keep up with constant software upgrades.[59] After experiencing high costs and production delays, the F-22 buy was truncated to less than 200 aircraft, meaning that only about 100 combat-coded jets in total would be available for an Indo-Pacific fight. Assuming basic air combat rotation math, this force could sustain only 30 fighters on station in the battlespace at any given time under ideal conditions.[60] And because of their relatively short range and infrastructure needs, these fighters would have to fly from main operating bases well within the range of Chinese missile attacks.[61]

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[57] Michael Marrow, "'A Crime': Air Force's Kendall Blasts Congressional Budget Dysfunction," *Breaking Defense*, February 9, 2024, https://breakingdefense.com/2024/02/a-crime-air-forces-kendall-blasts-congressional-budget-dysfunction/.

[58] Peter Suciu, "Why the F-22 Fighter Is so Expensive," *National Interest*, December 22, 2023, https://nationalinterest.org/blog/buzz/why-f-22-raptor-stealth-fighter-so-expensive-208120.

[59] J.R. Wilson, "F-22 Avionics Designers Rely on Obsolescent Electronics, but Plan for Future Upgrades," *Military and Aerospace Electronics*, April 30, 2001, https://www.militaryaerospace.com/computers/article/16710716/f-22-avionics-designers-rely-on-obsolescent-electronics-but-plan-for-future-upgrades.

[60] Mark A. Gunzinger, Lawrence A. Stutzriem, and Bill Sweetman, *The Need for Collaborative Combat Aircraft for Disruptive Air Warfare*, Mitchell Institute for Aerospace Studies, February 2024, p. 12.

[61] Joseph Trevithick, "Today's F-35As Not Worth Including in High-End Wargames According to Air Force General," *The Warzone*, April 12, 2021, https://www.twz.com/40142/air-force-general-says-current-generation-f-35as-not-worth-including-in-high-end-wargames.

Conclusion and Recommendations

Maintaining a favorable military balance in the Indo-Pacific is critical to U.S. national security. Yet U.S. and ally military advantages in the Indo-Pacific have eroded because the Pentagon is stuck in old ways of operating and doing business, while China's military modernization races ahead. The United States has taken some steps to counter China's military strategy in the Indo-Pacific region, but it has not adopted the kind of comprehensive change to strategy and operations that is required to deter a great-power conflict that could lead to attrition levels not seen since World War II. To prevent such a war, the United States needs a new theory of victory that emphasizes a survivable and resilient forward-based posture, large numbers of smaller, lower-cost platforms that can be replaced relatively quickly and easily, and a robust and resilient defense industrial base, integrated with allies and partners, that is poised to surge in wartime. With this in mind, my testimony closes with recommendations for DoD and Congress.

For DOD

Build consensus on a new operating concept. DOD needs a new theory of victory that should be as explicit as the AirLand Battle doctrine in terms of outlining exactly what a conflict might look like. What operational problems will U.S. forces face? What missions will U.S. forces be called on to execute? And how will the conflict end? Of course, plans never "survive first contact," but a new concept—ideally, one that is codified in doctrine—would provide a clear path forward, sow more doubt in the minds of China's leaders about their ability to prevail over the United States in a conflict, and provide a foundational basis for a counter-A2/AD strategy that could be adapted in wartime. To develop this theory of victory, DoD might want to look to the historical analogue of AirLand Battle, which grew out of a tight working relationship between senior leaders in the U.S. Air Force and U.S. Army who identified problems, experimented with solutions, and developed a shared vision of new concepts and capabilities to solve those problems.[62]

For Congress

Consider structural changes that allow a new strategy to align with the defense budgeting process. A central issue is the lack of a timely budget process. Continuing resolutions, which fund the federal government at the previous fiscal year's appropriations levels, allow DoD to continue operating but make funding streams and execution for weapon procurement unpredictable. In many cases, a continuing resolution prevents DoD from starting new activities or programs and from increasing production quantities until full-year appropriations and

[62] The institutional processes and Army–Air Force coordination that led to AirLand Battle are covered in detail in Michael Spirtas, Michael Nixon, Sherrill Lingel, Jeff Hagen, Quentin E. Hodgson, Caitlin Lee, Christopher Lynch, Alan J. Vick, and James Dimarogonas, *E Pluribus Victoria? Assessing Multi-Domain Operations*, RAND Corporation, 2022, Not available to the general public.

authorizations have been enacted.[63] Continuing resolutions also distort spending rates, crowding obligation and execution at the end of the year, which shortens timelines for contract actions and jeopardizes new starts. DoD and industry are then forced to hedge against this uncertainty by planning for lower procurement quantities.

While continuing resolutions themselves stem from deep political issues, there are still constructive process improvements that can be made. For example, one important recommendation recently offered by a congressionally mandated panel on defense planning and resourcing is for Congress to pass legislation authorizing new starts and increased development or production rates during continuing resolutions under certain conditions. This would help to instill some level of predictability into production of defense capabilities, which is a prerequisite for building up defense industrial capacity and surging it in wartime.[64]

For DOD and Congress

Balance "fight tonight" capabilities versus longer-term modernization plans. Once a consensus is established around a new strategy and a streamlined resourcing process is available, DoD and Congress can work together to find the appropriate balance between legacy expeditionary concepts and capabilities versus new ones. This approach will make it easier to make trades across U.S. force structure and adjust those trades based on changing intelligence estimates regarding possible time horizons for conflict. When assessments lean toward "fight tonight," the joint force can draw on concepts and capabilities geared for the short term, such as passive defenses for air bases and other fixed infrastructure and the procurement and modification of large numbers of drones that are already flying today. When assessments suggest a medium- to long-term time horizon, investment can be made in new technologies that still aim to break the old cost curves but offer more capability, such as autonomous unmanned air, surface, and subsurface vehicles; a constellation of proliferated low Earth orbit satellites optimized for U.S. wartime use; and other capabilities.

[63] Commission on Planning, Programming, Budgeting, and Execution Reform, *Defense Resourcing for the Future*, March 2024, p. 81, https://ppbereform.senate.gov/wp-content/uploads/2024/03/Commission-on-PPBE-Reform_Full-Report_6-March-2024_FINAL.pdf.

[64] Commission on Planning, Programming, Budgeting, and Execution Reform, 2024, p. 82.