



The Marathon Initiative

Resourcing the Strategy of Denial: Optimizing the Defense Budget in Three Alternative Futures

This study identifies the priority military forces and capabilities for the strategy of denial, identifies what extant forces and capabilities could be de-prioritized, and simulates three defense budgets under this rubric over the five-year defense planning period known as the Future Years Defense Program (FYDP).

It assumes three alternative political futures with respect to defense appropriations: a “steady state” or the currently programmed level of appropriations, a significantly more fiscally constrained political environment represented by a mandated 10 percent topline cut, and a much higher level of appropriations which result in approximately a 9.5 percent additional increase.

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EXECUTIVE SUMMARY

What should a U.S. defense budget optimized for the strategy of denial look like? This study identifies the priority military forces and capabilities for the strategy of denial, identifies what extant forces and capabilities could be de-prioritized, and simulates three defense budgets under this rubric over the five-year defense planning period known as the Future Years Defense Program (FYDP). It assumes three alternative political futures with respect to defense appropriations: a “steady state” or the currently programmed level of appropriations, a significantly more fiscally constrained political environment represented by a mandated 10 percent topline cut, and a much higher level of appropriations which result in approximately a 9.5 percent additional increase. The defense budget options in the first two scenarios are optimized for the strategy of denial to the extent possible, while the third budget contains the priority military capabilities for the military component of the strategy along with many more forces in an attempt to resource a strategy of global primacy.

The report finds that the highest priority forces and capabilities for the strategy of denial could likely be resourced with approximately 3.6 percent additional growth over five years (on top of the currently programmed level of growth). However, there are significant limitations to what can be feasibly produced with the FYDP, primarily due to industrial base limitations.

While the report recommends a number of potential divestments to forthrightly resource the strategy of denial under the currently programmed level of appropriations, this would require politically or bureaucratically difficult cuts such as to Army force structure, rotational deployments to other theaters, as well as to civilian and contractor personnel levels.

The report also finds that the strategy of denial could not be adequately resourced if a 10 percent topline cut is imposed, even accounting for sharp reductions to de-prioritized force structure like Army land maneuver forces, aircraft carriers, and short-range aircraft.

The major recommendations of the report include:

1. Urgently begin stockpiling critical munitions across the military services.
2. Invest in the defense industrial base in order to expand capacity and enhance resilience.
3. Maximize and preserve capacity in priority forces and capabilities.
4. Invest in a range of improvements to infrastructure and basing in the Indo-Pacific Command area of responsibility.

BACKGROUND

The United States faces an increasingly competitive and dangerous international environment, most notably an intensifying interstate rivalry with China, an array of problematic regional powers, and the persistent threat of terrorism—all amid considerable economic turbulence and a range of public policy issues competing for scarce resources. To address these challenges, recent U.S. National Defense Strategies (NDS) have sought to reorient the Department of Defense (DOD) away from counterinsurgency and counterterrorism operations and toward strategic competition. Both the Trump administration’s 2018 NDS and the Biden administration’s 2022 NDS have prioritized the threat from China, sought to optimize the Joint Force for a denial defense along the First Island Chain, and instantiated a one-major power war force planning construct.¹ These are the right strategic choices.

Despite this relative consistency in top-level defense strategy, with a few notable exceptions such as the U.S. Marine Corps’ Force Design 2030, DOD has been slow to adjust its force planning initiatives to realize the Joint Force needed to execute this defense strategy.² Moreover, apart from adding inflation adjustments or other broadly shared resource increases, Congress has been unable or unwilling to make the necessary strategic and budgetary choices that would lead to such realization.

Meanwhile, most outside defense budget analysis takes an extreme approach: either suggesting “more of everything, everywhere” or “cut ‘X’ percent across the board.”³ This is principally because these extremes are (paradoxically) the most expedient way to negotiate the many bureaucratic and political constituencies of the “military-industrial-congressional complex.”⁴ Such blunt instruments are neither fiscally responsible nor

I am indebted to Robert Delfeld for his assistance in developing the initial framework for this study, and am grateful to Elbridge Colby, Wess Mitchell, William Kim, and Robert Delfeld for comments on an earlier draft and to Carlos Roa for his expert editorial assistance.

¹ “2018 National Defense Strategy,” U.S. Department of Defense, January 2018, <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>;

“2022 National Defense Strategy,” U.S. Department of Defense, October 2022, <https://www.defense.gov/National-Defense-Strategy/>.

² “Force Design 2030,” United States Marine Corps, <https://www.marines.mil/Force-Design-2030/>.

³ See, *inter alia*: Kori Schake, “America Must Spend More on Defense,” *Foreign Affairs*, April 5, 2022, <https://www.foreignaffairs.com/articles/united-states/2022-04-05/america-must-spend-more-defense>; William D. Hartung, “Spending Unlimited,” Quincy Institute for Responsible Statecraft, September 12, 2022, <https://quincyinst.org/2022/09/12/spending-unlimited/>.

⁴ Christian Brose, *The Kill Chain: Defending America in the Future of High-Tech Warfare* (New York: Hachette Books, 2020), xvii.

strategically necessary.⁵ Nor are they politically realistic. What is needed is a more tailored approach to align DOD's force planning initiatives with its defense strategy and ensure congressional defense appropriations are strategically prudent and fiscally responsible.

Given this background, this study aims to fill this gap by answering the question:

What should a U.S. defense budget optimized for a strategy of denial look like?

APPROACH

This study seeks to answer this overarching question by addressing three constituent and interrelated questions:

1. What are the critical military forces and capabilities needed for a strategy of denial?
2. What current forces and capabilities are less relevant to a strategy of denial?
3. What budgetary levels and means are required to produce the desired mix of forces and capabilities?

This approach represents a return to a “threat-based” approach to force planning and defense acquisition, rather than the “capabilities-based” approach employed in recent decades.⁶ This approach is also consistent with the Department's own approach: in the 2018 NDS, DOD shifted its force planning construct (FPC) from two-major regional conflicts to one-major power war.⁷ The approach of this study builds on the one-major power war FPC and further focuses force planning on the imperatives of the strategy of denial.

In addition, consideration must be given to the element of time relative to both the international security environment and U.S. force planning efforts. In particular, the allocation of limited resources must be evaluated against the perception of the threat

⁵ Glenn Hubbard, “The Biden Budget’s Arithmetic Problem,” *The Wall Street Journal*, June 20, 2021, <https://www.wsj.com/articles/the-biden-budgets-arithmetic-problem-11624226224>.

⁶ P.H. Liotta and Richmond M. Lloyd, “From Here to There—The Strategy and Force Planning Framework,” *Naval War College Review*, Vol. 58 No. 2 (Spring 2005), Article 7.

⁷ Jim Mitre, “A Eulogy for the Two-War Construct,” *The Washington Quarterly*, Winter 2019

from China over time by intelligence analysts, defense strategists, military planners, and congressional decisionmakers.

For example, if near-term risk of a Chinese attack on Taiwan is judged to be low but growing toward the end of the decade and into the 2030's, DOD can assume risk in the near-term by divesting of aging but still capable forces while investing in research and development projects to modernize and build a more capable Joint Force in the medium- to long-term. In defense appropriations terms, research, development, test, and evaluation (RDT&E) would likely be the relative winner. If, however, near-term risk is judged to be more moderate or even severe, Washington ought to mitigate that risk by preserving relevant combat power, prioritizing readiness, and procuring more proven forces over investing in costly modernization programs that may only bear fruit years, if not decades, down the line. In defense appropriations terms, procurement and operations and maintenance (O&M) would likely be the relative winners.

The Biden administration has taken a position exactly on this question, noting six times in its October 2022 National Security Strategy that the 2020's are the "decisive decade" with respect to the U.S.-China strategic competition.⁸ More acutely, an intensifying chorus of officials has warned of the Chinese threat to American national interests, specifically the threat of invasion of Taiwan. At various times over the last two years, the Secretary of State, Director of National Intelligence, Director of the CIA, numerous general and flag officers including service chiefs and combatant commanders, and others have expressed increasing urgency on this matter or the state of the U.S.-China military balance more generally.⁹ In U.S. defense planning terms where change is

⁸ "National Security Strategy," The White House, October 2022, <https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf>.

⁹ The Chief of Naval Operations, Commandant of the Marine Corps, Chief of Staff of the Air Force, Chief of Space Operations, two consecutive commanders of Indo-Pacific Command, Commander of Strategic Command, Commander of Transportation Command, and more have expressed increasing urgency over the Chinese invasion threat to Taiwan, the state of the U.S.-China military balance, or both. See, *inter alia*: "Iain Marlow, "Blinken Says China Wants to Seize Taiwan on 'Much Faster Timeline,'" *Bloomberg*, October 17, 2022, <https://www.bloomberg.com/news/articles/2022-10-17/blinken-says-china-wants-taiwan-on-much-faster-timeline>; U.S. Senate, Committee on Armed Services, "Hearing to Receive Testimony on Worldwide Threats," May 10, 2022, https://www.armed-services.senate.gov/imo/media/doc/22-40_05-10-2022.pdf; "Putin can be 'dangerous and reckless:' CIA director discusses Russian president's path forward," CBS News, October 3, 2022, <https://www.cbsnews.com/news/william-burns-vladimir-putin-can-be-dangerous-and-reckless-cia-director-interview/>; Mallery Shelbourne, "China's Accelerated Timeline to Take Taiwan Pushing Navy in the Pacific, Says CNO Gilday," *USNI News*, October 19, 2022, <https://news.usni.org/2022/10/19/chinas-accelerated-timeline-to-take-taiwan-pushing-navy-in-the-pacific-says-cno-gilday>; @austinjdahmer on

mostly measured in five-year increments known as the Future Years Defense Program (FYDP), these are urgent, near-term warnings.

The more prudent approach to resourcing the strategy of denial is to therefore prioritize the preservation of extant combat power, the procurement of viable platforms and forces, and accelerating late-stage developmental programs. Unfortunately, the former (or so-called “divest-to-invest”) approach is what DOD appears to be pursuing despite the strategic rationale delineated in the administration’s national security and defense strategies.¹⁰ This reflects an inherent disconnect between the threat assessment and the Department’s security and defense policies on one hand, and the means to resource the proposed strategy on the other.

During the first two fiscal years for which the Biden administration proffered budget requests (Fiscal Years (FY) 2022 and 2023), both Democrat-controlled chambers of Congress saw fit to add additional considerable resources to the president’s budget request for DOD. However, there is considerable uncertainty with respect to future defense appropriation due to the uncertainty of a divided government, disparities between the White House and Congressional Democrats on defense appropriations, and calls from some Congressional Republicans for as much as a 10 percent cut to the defense topline. At the same time, despite an array of national security challenges, there

Twitter, December 10, 2022,

<https://twitter.com/austinjdahmer/status/1601713140240068608?s=20&t=-wQLs4bqdm6O-LdCRPnmrg>; “VIDEO: Brown on Accelerating Change to Empower Airmen at AFA’s Air, Space & Cyber ’21,” *Air and Space Forces Magazine*, September 23, 2021, <https://www.airandspaceforces.com/video-brown-on-accelerating-change-to-empower-airmen-at-afas-air-space-cyber-21/>; Svetlana Shkolnikova, “US space operations face stiff competition from China and Russia, top Space Force general says,” *Stars and Stripes*, September 13, 2022, https://www.stripes.com/branches/space_force/2022-09-13/space-force-operations-china-russia-7322009.html; Jim Garamone, “Erosion of U.S. Strength in Indo-Pacific Is Dangerous to All, Commander Says,” U.S. Department of Defense, March 9, 2021, <https://www.defense.gov/News/News-Stories/Article/Article/2530733/erosion-of-us-strength-in-indo-pacific-is-dangerous-to-all-commander-says/>; Brad Lendon, “Chinese threat to Taiwan ‘closer to us than most think,’ top US admiral says,” *CNN*, March 24, 2021, <https://www.cnn.com/2021/03/24/asia/indo-pacific-commander-aquilino-hearing-taiwan-intl-hnk-ml/index.html>; C. Todd Lopez, “Stratcom Commander Says U.S. Should Look to 1950s to Regain Competitive Edge,” U.S. Department of Defense, November 3, 2022, <https://www.defense.gov/News/News-Stories/Article/Article/3209416/stratcom-commander-says-us-should-look-to-1950s-to-regain-competitive-edge/>; Chris Gordon, “TRANSCOM Unveils More Agile Strategy to Deter China, Defend Logistics,” *Air and Space Forces Magazine*, October 17, 2022, <https://www.airandspaceforces.com/transcom-unveils-more-agile-strategy-to-deter-china-defend-logistics/>; Edward Wong, David E. Sanger, and Amy Qin, “U.S. Officials Grow More Concerned About Potential Action by China on Taiwan,” *The New York Times*, July 25, 2022, <https://www.nytimes.com/2022/07/25/us/politics/china-taiwan-biden-pelosi.html>.

¹⁰ Jim Garamone, “Austin Lays Out Reasoning Behind DOD Budget Request,” U.S. Department of Defense, April 7, 2022, <https://www.defense.gov/News/News-Stories/Article/Article/2993216/austin-lays-out-reasoning-behind-dod-budget-request/>.

is a bipartisan consensus that China is and ought to be the priority, making it essential for defense strategists, congressional appropriators and staffers, and other relevant policymakers to have clear-eyed analysis of defense budget options.

In approaching these questions (what do we need, what do we not need, and how much will it cost), this study provides candidate spending plans using three alternate topline levels of spending according to alternative political futures. The strategy in each case is optimized (to the extent possible within each alternative future) for the strategy of denial; it is the amount of spending that is different.¹¹

- The first option assumes the same level of funding of the current (FY2023-2027) FYDP, which seems to be the most likely scenario politically. Under this spending level, the United States prioritizes capabilities and forces optimized for a denial defense along the First Island Chain while responsibly hedging risk and assuming burden shifting to allies in other theaters.
- The second option assumes a 10 percent reduction in the topline level of funding over the current FYDP, but strategically allocates the remaining defense appropriations rather than assuming a proportionate cut to each service department or funding account. This budget option prioritizes capabilities and forces for the strategy of denial (albeit less forthrightly and with less urgency) while assuming significant risk in secondary theaters, necessitating a greater degree and more urgency in the pace of burden shifting to allies.
- The third option assumes a political appetite for a radically increased defense budget. This scenario seeks to provide some analytical rigor to others' calls to attempt to resource a strategy of global primacy—what many in the national security intelligentsia refer to as “walking and chewing gum at the same time.”¹² This option adds approximately 9.5 percent to the defense budget above the already programmed increases in spending over the FYDP. However, due to the limitations of what can actually be achieved within the FYDP, even this large increase in spending is inadequate for resourcing a strategy of global primacy.

While neither the second nor third alternative futures is assessed to be very likely, the alternative defense budgets provided in these scenarios demonstrate what forces and

¹¹ This study was begun before the passage of the Fiscal Year 2023 National Defense Authorization Act (NDAA) and therefore analyzes the FY23-FY27 FYDP. Additionally, it relies on open source tools like the Defense Futures Simulator which has not yet been updated for the FY24-FY28 FYDP.

¹² “Pentagon Press Secretary John F. Kirby Holds a Press Briefing,” U.S. Department of Defense, January 27, 2022, <https://www.defense.gov/News/Transcripts/Transcript/Article/2915281/pentagon-press-secretary-john-f-kirby-holds-a-press-briefing/>.

capabilities are prioritized and de-prioritized in the strategy of denial, as well as their budgetary impact. This provides defense strategists, force planners, congressional staffers, and other policymakers with a clearer look at the choices available.

In approaching this study, I relied on U.S. national security and defense officials' statements and Congressional testimony; existing analysis of defense budgets, strategy, and force planning; open source defense budget analytic tools, primarily the Defense Futures Simulator as well as the Interactive Force Structure Tool; participation in various think tank and academic workshops; as well as my own analysis and experience.¹³

Finally, while I strove for analytical and economic rigor, the intent of this study is to connect defense strategy and force planning imperatives with necessary budgetary choices. The point of this paper is not to be a perfect forecast of future defense appropriations, or to capture anywhere near every individual line item of the defense authorization. Nor is the objective of the study to design an entirely new or ideal U.S. military force structure optimized for the strategy of denial. The ultimate goal is to demonstrate what can be plausibly achieved for the strategy of denial within the FYDP under reasonably conceivable spending levels.

THE STRATEGY OF DENIAL

Before identifying what military forces and capabilities are optimal for a strategy of denial, the strategy should first be briefly outlined.¹⁴ In short, the “strategy of denial” refers to two levels of denial.

On the geopolitical level, the United States' principal objective is the denial of any credible aspirant to hegemony in any of the world's key regions, as defined by concentrations of productive capacity and measured by Gross Domestic Product (GDP). By this measure, the world's key regions are, in descending order of importance, East Asia, Europe, and the Arabian/Persian Gulf. There is, however, no credible aspirant to regional hegemony, or there exists a tolerable balance of power or sufficient anti-hegemonic coalition, in both Europe and the Gulf. The world's most important region,

¹³ “Defense Futures Simulator,” American Enterprise Institute, Center for Strategic and International Studies, and War on the Rocks, <https://www.defensefutures.net/>; Congressional Budget Office, “CBO's Interactive Force Structure Tool,” May 17, 2022, <https://www.cbo.gov/force-structure-tool>.

¹⁴ For more on the idea of the strategy of denial, see Elbridge A. Colby, *The Strategy of Denial: American Defense in an Age of Great Power Conflict* (New Haven, CT: Yale University Press, 2021).

and where a favorable balance of power does not currently exist and is unlikely to emerge without the forthright efforts of the United States, is East Asia.

On the military level, the strategy of denial emphasizes deterrence by denial—the strategic approach by which the United States convinces potential adversaries not to engage in behavior contra U.S. interests by persuading those states that they would fail to realize their objectives if they attempted such behavior. This is chiefly done through maintaining unequivocally favorable regional military balances vis-à-vis potential adversaries, especially credible aspirants to regional hegemony like China.

This strategy has obvious implications for U.S. force planning and defense appropriations. Both of these levels of denial—geopolitical and military—bear on what type of force for which Washington ought to plan. Geopolitically, given the relative importance of East Asia as the world’s economic center of gravity, the balance of power in the international system, Beijing’s geopolitical goals and intentions, and the increasing belligerence of Chinese foreign policy, China is unequivocally the greatest threat to the American national interest. The decline of U.S. national power relative to the rest of the world, as well as the relative balances of power in the world’s key regions, necessitate focus and choice on China and East Asia.¹⁵ Denial of Chinese regional hegemony in East Asia is therefore the cardinal interest of U.S. national security.

Militarily, the strategy of denial recognizes the United States’ fundamentally defensive goals. Accounting for Beijing’s own best strategy for regional hegemony in East Asia—a *fait accompli* seizure of an American ally or quasi-ally in the region (including and especially Taiwan) that might fracture the American-led anti-hegemonic coalition arrayed against it—the priority defense planning scenario for the United States is therefore a denial defense along the First Island Chain and specifically against an attempted Chinese seizure of Taiwan.¹⁶ In particular, this involves denying China the ability to seize and hold the key territory of any U.S. ally within the anti-hegemonic coalition. Since Taiwan is the most vulnerable such ally—in defense planning terms—if the United States can achieve this along with its allies, then it can presumably defend its other allies in the region, such as South Korea, the Philippines, Japan, and Australia. This effort also involves the nuclear forces needed to sustain this strategy through a denial-cum-cost imposition approach.

¹⁵ For more on this logic, see: Colby, *Strategy of Denial*, 1-37.

¹⁶ Other U.S.-China defense planning scenarios are essentially lesser included cases of a full-fledged Chinese invasion of Taiwan, including a Chinese blockade of Taiwan or other forms of coercion below the threshold of a high-end conflict. Similarly, an attempted Chinese seizure of Japan’s Senkaku Islands, or even Chinese territorial aggression against the Philippines, can be regarded as lesser included cases for U.S. defense strategy and force planning purposes.

This is now essentially the Department of Defense's position. DOD states that it will pursue a strategy of denial, that Taiwan is its pacing scenario, and that the threat to Taiwan is urgent. U.S. military forces ought therefore to be designed, developed, postured, and employed overwhelmingly in accordance with this "pacing threat" and planning scenario in consideration, with all other efforts secondary to it.

PRIORITY MILITARY FORCES AND CAPABILITIES FOR THE STRATEGY OF DENIAL

Key to this strategy then are military forces that can 1) deny the attacker's ability to *seize* key territory, and/or 2) deny the attacker's ability to *hold* seized territory.¹⁷ This places a premium on forces that can effectively target China's People's Liberation Army (PLA) invasion forces as they are marshaling in mainland China, traversing the Taiwan Strait in both the air and maritime domains, disembarking onto Taiwan, and/or attempting to seize and consolidate any territorial gains on the important parts of the main island. Although the air and maritime domains feature prominently given the geographic realities of this pacing scenario, land, space, and cyber domain forces, and indeed nuclear and special operations forces, all would have significant roles to play in a denial defense of Taiwan or a similar scenario elsewhere along the First Island Chain. This is also a major reason why overly simplistic force employment models encouraging the Army to focus on European Command (EUCOM) and the Navy to focus on Indo-Pacific Command (INDOPACOM) are unrealistic. It is at once true that the geography of the Indo-Pacific necessitates a greater focus on maritime and air capabilities *and* that this division of labor is impractical.

The main effort of a denial defense of Taiwan is the first type of forces: those that can deny the attacker's ability to seize key territory. Forces that deny the attacker's ability to hold seized territory are largely supplementary to this main effort and indeed are very similar in nature at any rate. The focus would be on attriting PLA power projection forces, specifically those necessary to seize Taiwan's core territory. The critical vulnerability of PLA power projection forces is their reliance on transportation from mainland China over the Taiwan Strait: amphibious shipping (both naval and civilian/dual-use), fixed-wing transport aircraft, and rotary-wing assault support aircraft. Forces that can credibly sense, target, destroy, degrade, or otherwise neutralize PLA ships and aircraft are therefore the critical capabilities to the strategy. These would include the following.

¹⁷ Colby, *Strategy of Denial*, 147-170.

CRITICAL CAPABILITIES FOR THE STRATEGY OF DENIAL

DOMAIN	PLATFORMS/FORCES	MUNITIONS	ENABLERS
MARITIME (SURFACE)	-Surface combatants (FFG, DDG, CG) that can generate long-range fires, especially smaller surface combatants to enable more distributed operations	-LRASM -SM-6 -Maritime Strike Tomahawk -CPS	-Sonobuoys -Amphibious shipping, especially smaller craft such as Light Amphibious Warships and LPD over larger and more vulnerable capital ships like LHAs and LHDs
MARITIME (SUBSURFACE)	-SSN -UUV (e.g., Orca XLUUV) -SSGN -SSK	-Mk 48 torpedoes -Naval mines (e.g., SLMM, Hammerhead, CDM, some of which include Mk 54 torpedoes) -ASCM -LACM	-Sonar arrays
AIR	-Long-range, long-endurance aircraft (especially stealthy aircraft), including bombers (B-21, B-2, B-1, B-52), maritime patrol (P-8), cargo (C-17, C-130; w/necessary modifications), and UAVs -5th generation fighter aircraft (less important due to shorter range)	-Naval mines (e.g., Quickstrike) -Aerial torpedoes (Mk 54) -LRASM -JASSM-ER -HACM -Harpoon -SLAM-ER -Stormbreaker (SDB II) -AARGM-ER -JATM -LREW	-HAAWC kits for Mk 54 torpedoes -Rapid Dragon palletized munition system -Tanker aircraft (KC-46, MQ-25, KC-135, KC-130) -ISR aircraft
LAND	-Surface-to-surface strike (HIMARS, MLRS, ROGUE Fires, LRHW, Long Range Fires Launcher, conventional IRBMs) -Surface-to-air (M-SHORAD, Patriot, MADIS, MRIC) -MLRs -MDTFs -Patriot battalions -SFABs	-Tomahawk CMs (including Maritime Strike version) -NSM -PrSM -ATGM (esp. Javelin) -MANPADS (e.g., Stinger) -PAC-3 -THAAD -NASAMS -Tamir	-G/ATOR

DOMAIN	PLATFORMS/FORCES	MUNITIONS	ENABLERS
SPACE	-Counterspace systems (kinetic and non-kinetic; reversible and non-reversible; incl. cyber, EMS, missiles, on-orbit, etc.)	--	Resilient (proliferated and/or resistant): -ISR -Communications -PNT
CYBER	-Offensive cyber (Cyber Combat Mission Teams, Cyber National Mission Teams)	--	Defensive cyber and DODIN operations (Combat Support Teams, Cyber Protection Teams, Cyber National Mission Teams)
NUCLEAR	-Nuclear arsenal with the size, sophistication, and tailoring to deter both China and Russia -This includes both strategic triad and theater-level nuclear forces -Strategic platforms: Columbia SSBN, B-21, B-2, B-52 -Theater platforms: SSGN, SSN, F-35	-Strategic munitions: GBSD and Minuteman III ICBM, Trident II SLBM, LRSO -Theater munitions: LRSO, SLCM-N, B-61	--
SPECIAL OPERATIONS	-UW and FID forces -SR / IPOE and OPOE forces to shape battlespace	-ATGM (esp. Javelin) -MANPADS (e.g., Stinger) -Small arms	-Language and regional expertise

This table is certainly not exhaustive, but it is illustrative of the type of forces and capabilities that should be prioritized in resourcing a strategy of denial.

Further, not all of the capabilities depicted here are equally important to a denial defense along the First Island Chain. For example, undersea capabilities like attack submarines and unmanned undersea vessels (UUVs) are far more valuable to such a strategy than large surface combatants like cruisers, primarily due to the former's higher survivability against anticipated PLA threats. An example of this in the air domain would be that long-range, long-endurance aircraft like bombers are more valuable than short-range fighter aircraft (even 5th-generation fighters like F-35s and F-22s) due to the much greater flexibility afforded in basing and employment.

Additionally, there are some capabilities that would objectively hold considerable utility in a military strategy of denial, but which for various reasons the U.S. military may be unlikely to pursue. Smaller, diesel-electric hunter-killer submarines (SSKs) could offer advantages over larger, nuclear-powered attack submarines (SSNs) in the comparatively shallow waters and defined maritime geography inside the First Island Chain.¹⁸ These advantages are several but center on the relative capability of conventional SSKs over SSNs to operate in littoral waters, conduct sea denial of maritime chokepoints, their relative per-unit cost compared to larger nuclear-powered boats, and their interoperability with key Asian allied navies like the Japan Maritime Self-Defense Force.¹⁹ However, there are service cultural and naval industrial base considerations that will likely preclude U.S. Navy procurement of SSKs for the foreseeable future.

Another example of such a capability is conventional missiles.²⁰ The U.S. military is currently focusing on developing an assortment of short-range and medium-range conventional missiles of ballistic, cruise, and boost-glide/hypersonic types. Investing in an arsenal of intermediate-range conventional missiles would provide significant value-add for the INDOPACOM area of responsibility (AOR). This would provide a stand-off, persistent conventional strike option to hold at risk targets along the First Island Chain and even inside mainland China from U.S. territory, obviating the need for access and basing rights with allies and partners that may be vulnerable to Chinese coercion or

¹⁸ Michael Walker and Austin Krusz, "There's a Case for Diesels," *Proceedings*, June 2018, <https://www.usni.org/magazines/proceedings/2018/june/theres-case-diesels>.

¹⁹ I am grateful to Toshi Yoshihara for this insight. See also, *inter alia*: James Holmes, "Diesel Submarines Can Help Resist China," *The National Interest*, <https://nationalinterest.org/blog/reboot/diesel-submarines-can-help-resist-china-197196>.

²⁰ Eric Edelman, Chris Bassler, Toshi Yoshihara, and Tyler Hacker, "Rings of Fire: A Conventional Missile Strategy for a Post-INF Treaty World," Center for Strategic and Budgetary Assessments, August 24, 2022, <https://csbaonline.org/research/publications/rings-of-fire-a-conventional-missile-strategy-for-a-post-inf-treaty-world>.

have domestic political obstacles to such basing.²¹ Such missiles were previously limited by U.S. participation in the Intermediate-Range Nuclear Forces (INF) Treaty, but not since 2019. Yet significant investment in and acceleration of developing these forces and capabilities would need to be made for them to have an impact in this decade.

Finally, seaplanes such as the Japanese-manufactured US-2 are an example of a maneuver enabler for “stand-in forces” that would have a high degree of utility in the maritime geography of the First Island Chain.²² The last U.S. military seaplane flew in 1967, and although the U.S. Air Force is investing in a developmental seaplane program it appears to be a modified C-130 for niche special operations forces rather than for larger scale littoral stand-in forces like the U.S. Marine Corps.

There are also a number of implied capabilities that enable the generation of sufficient massed fires to actually deny an invading force. Importantly, the sensing and targeting network that enables command and control (C2) over these all-domain forces would need to 1) be composed of sensors across all domains, 2) fuse data from multi-domain sensors to generate a common operational picture, and 3) be resilient to cyber, electronic warfare, and other forms of attack or degradation.²³ In the future, it may also need to be capable of autonomous prioritization and nomination of targets given the enormous amount of data involved.²⁴

Additionally, as the Russo-Ukrainian War continues to demonstrate, much deeper magazines of munitions are needed to sustain modern warfare than previously anticipated.²⁵ This is a key area in which Congress could add value through funding

²¹ For example, conventional IRBMs could be employed from Alaska or Guam and range targets inside China. This would mitigate potential conventional-nuclear issues due to point of origin and missile type. Additionally, northern Australia and Diego Garcia (United Kingdom) could be other basing options. This would only partially undermine the logic for procuring conventional IRBMs, especially as Australia and the U.K. are two of the most reliable U.S. allies. Multiple independently-targetable reentry vehicles (MIRVs) and maneuverable reentry vehicles (MARVs) could be ways to maximize military utility per unit cost given the relatively high costs of developing and fielding IRBMs.

²² David Alman, “A Japanese Seaplane Could Be the Difference-Maker for the U.S. Military,” *War on the Rocks*, November 4, 2021, <https://warontherocks.com/2021/11/a-japanese-seaplane-could-be-the-difference-maker-for-the-u-s-military/>.

²³ David A. Ochmanek, “Determining the Military Capabilities Most Needed to Counter China and Russia: A Strategy-Driven Approach,” RAND Corporation, June 2022, <https://www.rand.org/pubs/perspectives/PEA1984-1.html>.

²⁴ Ibid.

²⁵ Alex Vershinin, “The Return of Industrial Warfare,” RUSI, June 17, 2022, <https://www.rusi.org/explore-our-research/publications/commentary/return-industrial-warfare>.

multi-year contracts to the defense industrial base providing stability of demand for taxing production lines.²⁶

Access, basing, and overflight rights in allied and partner states in the region are also critical to support many of these forces and capabilities, as well as adequate funding for infrastructure improvement efforts such as airfield and fuel storage hardening like those envisioned in the Pacific Deterrence Initiative (PDI). Complementing this, the intelligence networks that would provide strategic warning to policymakers and military commanders are critical to this strategy, particularly human and signals intelligence that provides exquisite insight into adversary intent and timelines.

Furthermore, although U.S. defense strategy rightly ought to be optimized for a denial defense, the Joint Force should be prepared to execute elements of a punishment or cost imposition approach to enable de-escalation and war termination in the event that the proximate campaign on Taiwan, for example, becomes protracted and Beijing seeks horizontal or vertical escalation.²⁷ Many of the forces and capabilities required for such a denial-cum-cost imposition approach are similar to the capabilities for a denial defense listed above.²⁸ Some capabilities that would be less relevant in the immediate denial scenario may have a higher degree of utility in a more distant or standoff component of cost imposition operations, such as surface combatants, aircraft carriers, short-range strike aircraft, or perhaps even some land forces depending on the context.

The next section proposes areas for potential divestment based on the strategy of denial. It is important to note that many of the aforementioned priority forces and capabilities for the strategy of denial are exactly the type of “globally fungible forces and capabilities” that would achieve the “strategic imperative of concurrency while avoiding the costs of a large force.”²⁹ Although the priority forces and capabilities are optimized for a denial defense along the First Island Chain, long-range stealthy ISR and strike

²⁶ The FY2023 NDAA did authorize multi-year contracts for some munitions. This practice should be sustained. Ashley Roque, “House, Senate defense authorizers agree to multi-year munitions buys,” *Breaking Defense*, December 7, 2022, <https://breakingdefense.com/2022/12/house-senate-defense-authorizers-agree-to-multi-year-munition-buys/>; Mackenzie Eaglen and Bill Greenwalt, “Multiyear contracts could solve plenty of Pentagon problems,” *DefenseNews*, September 28, 2022, <https://www.defensenews.com/opinion/commentary/2022/09/28/multiyear-contracts-could-solve-plenty-of-pentagon-problems/>.

²⁷ For more on such an approach, see Elbridge A. Colby and Yashar Parsie, “Building a Strategy for Escalation and War Termination,” *The Marathon Initiative*, November 2022, <https://themarathoninitiative.org/wp-content/uploads/2022/11/TMI-Building-a-Strategy-for-Escalation-and-War-Termination-FINAL-1.pdf>, 15-23.

²⁸ Colby and Parsie, “Building a Strategy for Escalation and War Termination,” 23.

²⁹ Jim Thomas, “Testimony Before the House Armed Services Committee,” January 30, 2018, <https://docs.house.gov/meetings/AS/AS00/20180130/106813/HHRG-115-AS00-Wstate-ThomasJ-20180130.pdf>.

aircraft, cyber capabilities, space capabilities, and deep reservoirs of precision-guided munitions in the air, sea, and land domains actually provide prodigious strategic flexibility.³⁰

DIVESTMENTS

These critical capabilities for the strategy of denial—even accounting for other additional capabilities that could contribute to a denial-cum-cost imposition campaign as well as other necessary but peripheral functions like counterterrorism—do not include many forces and platforms which DOD currently acquires or is projected to in the future. While it is infeasible and indeed probably inadvisable to completely excise these from the defense budget for a number of reasons, resourcing for them could be reduced, especially if a considerable reduction in topline funding is imposed. These would thus be the “bill payers” for increases in the more important areas outlined above or in an alternative future of greater fiscal austerity. The primary bill payers are U.S. Army force structure (including brigade combat teams (BCTs) and aviation brigades), procurement of modernized Army ground vehicles and aircraft, operations and maintenance funds for some forward deployed or rotational forces, the European Deterrence Initiative (EDI), legacy Air Force aircraft (especially short-range fighter aircraft), DOD civilian personnel, and DOD contractor personnel.

One of the largest bill payers in resourcing the strategy of denial should be the Army. This is because the size of the Army’s large-scale land maneuver forces is principally scaled to the threat of Russian invasion of NATO territory in the EUCOM AOR as blunt and surge layer forces, and to several other defense planning scenarios as surge layer or war-winning forces. Large-scale land maneuver forces are of much less utility in the vast maritime and littoral theater of the Western Pacific/INDOPACOM AOR. The necessity of prioritization and burden shifting in secondary theaters necessitated by the reality of the rise of China and the need for a strategy of denial to deal with it impel hard force planning and budgetary choices. Moreover, given the revelation of relative Russian military ineffectiveness as well as the considerable degradation of Russian combat power in Ukraine, the threat of Russian invasion of NATO territory in the EUCOM AOR (and some of the demand for large-scale land maneuver forces) is considerably reduced, especially when increased contributions from European states to deal with the Russian threat are accounted for. Of course, the present Russian national mobilization effort may change this calculus further, but the strategic imperatives for the United States of burden shifting in Europe remain.

³⁰ I am grateful to Wess Mitchell for this observation.

This presents an opportunity for reductions in Army force structure, force posture, and in modernization and procurement programs. These would allow investments in more critical capabilities in consonance with the threat environment, and would provide real savings to the American taxpayer. These reductions would have cascading effects, producing savings across accounts, most notably procurement and personnel. In each scenario, these reductions were programmed in the near term in order to maximize savings over the FYDP, but were still staggered slightly in order to feasibly mitigate the opportunity costs of these divestments. The specifics of reductions are discussed in each respective budget scenario.

By similar logic, procurement of modernized ground combat and other tactical vehicles could likely be reduced with little additional risk. Under Secretary of Defense for Policy Colin Kahl even admitted in September 2022 that Russia is the threat that is driving continued investment in Army ground combat and tactical vehicle modernization.³¹ Certainly under the rubric of the strategy of denial, and very likely under even a less focused defense strategy, this logic does not obtain given the aforementioned relative Russian ineffectiveness displayed and the degradations in their ground combat power. It is more likely that these ground vehicle programs are continuations of legacy capabilities-based force planning rather than threat-based force planning, and are now programs searching for a threat to justify their budgets.³² This is a poor basis for defense acquisitions in an era of a manifest great power threat to the United States: force planning and defense budgeting should follow logically from a realistic appraisal of the geopolitical environment and a serious defense strategy.

Procurement of new Army ground combat and other tactical vehicles that are not surface-to-surface strike or surface-to-air systems must therefore be targeted for cuts. Terminating the Armored Multi-Purpose Vehicle (AMPV), Optionally Manned Fighting Vehicle (OMFV), and Paladin Integrated Management (PIM) programs, reducing the Abrams upgrade, and reducing and eventually terminating the Stryker procurement program would be rich sources of savings.

Similarly, Army aviation mostly does not contribute directly to the strategy of denial (or at least not to the extent it is currently resourced). Reducing procurement of AH-64 and H-60 variant helicopters would be another potential source of bill payers. Add to this the A-10C ground attack aircraft, as the Air Force has consistently attempted to divest

³¹ “China has the ‘aspiration to fundamentally reshape the international order,’” *DefenseNews*, September 8, 2022, <https://www.defensenews.com/video/2022/09/08/china-has-the-aspiration-to-fundamentally-reshape-the-international-order/>.

³² Michael W. Pietrucha, “Essay: Capability-Based Planning and the Death of Military Strategy,” *USNI News*, August 5, 2015, <https://news.usni.org/2015/08/05/essay-capability-based-planning-and-the-death-of-military-strategy>.

its A-10 inventory in recent years, but Congress has reliably rebuffed these attempts.³³ Although the FY23 NDAA appears to have allowed the divestment of 21 A-10 aircraft, the entire inventory should be retired in the interest of modernization.³⁴ The A-10 played a key role in the permissive airspace of Afghanistan and Iraq, but it is simply not survivable on the modern battlefield.

Another potential bill payer is through limiting ongoing rotational deployments. The Army currently has or has announced the permanent or rotational presence of a considerable array of ground combat power to the EUCOM AOR, including a cavalry regiment, an aviation brigade, a field artillery brigade, an airborne brigade, a new multi-domain task force, a rotational maneuver brigade, corps and division headquarters, and other large formations.³⁵ As with Army ground vehicle procurement, the prioritization necessitated by the strategy of denial along with the reduced conventional threat to NATO territory necessitates a reappraisal of these large-scale maneuver deployments to the EUCOM AOR. However, Washington has actually increased its presence there since the Russian invasion. Reducing this rotational presence could provide real cost savings.

By similar logic, funding for the EDI could be considerably reduced if not totally eliminated. The FY23 EDI budget request totals over \$4 billion spread over various defense appropriations accounts (mostly in operations and maintenance).³⁶ EDI funds five lines of effort: increased rotational presence of U.S. forces in the EUCOM AOR, training and exercises, enhanced prepositioned stocks, infrastructure improvements, and security assistance for NATO allies.³⁷ Of the roughly \$4.2 billion in the FY2023 EDI request, about \$1.4 billion is for increased presence.

DOD civilian and contractor work forces represent another potential source of bill payers. According to the Department's FY23 budget materials, it estimates it will employ 819,027 civilian employees across DOD requiring over \$106 billion in FY23.³⁸ The total

³³ Connor O'Brien and Lee Hudson, "Battle over A-10: Lawmakers seek to break perennial deadlock on retiring aging warplanes," *Politico*, June 14, 2022, <https://www.politico.com/news/2022/06/14/battle-over-a-10-lawmakers-seek-to-break-perennial-deadlock-on-retiring-aging-warplanes-00039642>.

³⁴ Thomas Novelly, "After years of arguing, Congress is finally letting the US Air Force send some A-10 Warthogs to the boneyard," *Business Insider*, December 12, 2022, <https://www.businessinsider.com/congress-is-letting-us-air-force-retire-a10-warthogs-2022-12>.

³⁵ "Profile of the United States Army: A Reference Handbook," Association of the United States Army, 2022, <https://www.ausa.org/sites/default/files/Profile-of-the-United-States-Army-2022.pdf>; and Thomas W. Spoehr, "U.S. Army," in *2023 Index of U.S. Military Strength*, The Heritage Foundation, October 18, 2022, <https://www.heritage.org/military-strength/assessment-us-military-power/us-army>.

³⁶ Office of the Under Secretary of Defense (Comptroller), "European Deterrence Initiative: Department of Defense Budget Fiscal Year (FY) 2023," April 2022, https://comptroller.defense.gov/Portals/45/Documents/defbudget/FY2023/FY2023_EDI_JBook.pdf.

³⁷ *Ibid.*

³⁸ OUSD(C), "Defense Operation & Maintenance Overview."

DOD civilian workforce has grown by 112,000 personnel since 2008 while the active component military has actually declined by 73,700 over the same period.³⁹ Funding for these civilian employees come from a variety of defense budget accounts, with over 50 percent of full-time equivalents (FTE) from the operations and maintenance accounts, and roughly 25 percent of FTEs from the Defense Working Capital Fund.⁴⁰

With respect to the DOD contractor workforce, it is difficult to assess with any precision the size of the workforce or its budgetary burden because DOD itself does not have an accurate estimate for this data. The way DOD tracks its contractors has changed in recent years, and DOD still does not possess an estimate of contractor FTEs as of the submission of its FY23 budget request.⁴¹ According to its FY16 report, DOD contracted approximately 210,000 FTEs, but a Government Accountability Office report of the same year found it employed approximately 641,000 FTEs.⁴² The DOD Comptroller estimates contracted services will cost \$165 billion in FY23, but this admittedly does not include the military construction or RDT&E accounts.⁴³ The majority of this funding comes from the various operations and maintenance accounts (about \$151 billion of the \$165 billion for FY23).⁴⁴ Broader reforms to the federal employment system notwithstanding, arresting and reducing this seemingly uncontrolled expansion of the DOD civilian bureaucracy could provide a rich source of savings.

Other smaller bill payers could include eliminating the commissary program inside the continental United States and personnel reform for the U.S. Space Force. The Space Force is the only “top heavy” service in that it has more officers than enlisted personnel. Bringing the Space Force’s officer and enlisted personnel ratio at least much closer to the other services would provide at least modest savings in the military personnel account.

³⁹ Todd Harrison, “DOD’s Three-FYDP Challenge,” Metrea Strategic Insights, October 2022, <https://metrea.aero/wp-content/uploads/2022/10/Three-FYDP-Challenge-1.pdf>.

⁴⁰ OUSD(C), “Defense Operation & Maintenance Overview.”

⁴¹ Ibid.

⁴² Congressional Research Service, “Defense Primer: Department of Defense Contractors,” December 19, 2018, <https://crsreports.congress.gov/product/pdf/IF/IF10600/4>; United States Government Accountability Office, “DOD Civilian and Contractor Workforces: Additional Cost Savings Data and Efficiencies Plan Are Needed,” October 2016, <https://www.gao.gov/assets/gao-17-128.pdf>.

⁴³ OUSD(C), “Defense Operation & Maintenance Overview.”

⁴⁴ Ibid.

OPTIMIZING THE DEFENSE BUDGET IN THREE ALTERNATIVE FUTURES

ALTERNATIVE FUTURE 1: CURRENT FYDP TOPLINE

This first alternative future assumes a roughly stable level of defense appropriations within the current FYDP. While the overall level of funding over the FYDP is basically stable, the topline funding within particular fiscal years does change somewhat from the current projection. Within this overall level of appropriations, however, major changes have been made across all the military services and appropriations accounts according to the analysis above.

The major adjustments from the baseline FYDP are reflected in the table below. Notable additions include adding additional Air Defense Artillery (Patriot) and Security Force Assistance Brigade (SFAB) force structure, 3 *Virginia*-class SSNs and 2 *Constellation*-class guided missile frigates (FFG) following a naval industrial base investment to expand throughput,⁴⁵ extending the service life of 17 *Ticonderoga*-class guided missile cruisers (CG) and 3 *Ohio*-class nuclear-powered guided missile submarines (SSGN) to preserve surface combatant and vertical launch system capacity during the FYDP before naval shipbuilding can expand, accelerating procurement of Marine Corps long-range fires and anti-air systems as well as the conversion of some legacy Marine infantry regiments to Marine Littoral Regiments, accelerating development and procurement of the B-21 Raider, adding or extending F-35A and F-22, accelerating development of Joint All-Domain Command and Control (JADC2), adding Cyber Command (CYBERCOM) teams, INDOPACOM infrastructure investment, and stockpiling of critical munitions for all the services.

Major divestments for resourcing the strategy of denial in this scenario include deactivating 4 Stryker BCTs (2 active component and 2 National Guard), 6 infantry BCTs (1 active component and 5 National Guard), and 2 National Guard aviation brigades; reducing or terminating a number of Army ground vehicle and aviation modernization and procurement programs; retiring all A-10C aircraft; reducing EDI funding; reducing rotational deployments (especially Army in EUCOM AOR); and a 5 percent cut to civilian personnel and contractor services across the military service departments and the Defense-wide account.

⁴⁵ The Navy has testified that accelerating submarine procurement from the current 2+1 (*Virginius* plus *Columbias*) to 3+1 would be possible with roughly \$1.5 to 2 billion in industrial base investment. Although some observers have expressed doubts about the feasibility of achieving this 3+1 throughput, this study takes official Navy testimony at face value. See Ronald O'Rourke, "Navy Virginia (SSN-774) Class Attack Submarine Procurement: Background and Issues for Congress," Congressional Research Service, December 21, 2022, RL32418.

National Guard BCTs were targeted for divestments more so than active component BCTs to mitigate the impact on the regular Army as much as possible and thereby limit impacts on defense planning scenarios. The tradeoff in this decision in defense budget terms is that there would not be as many savings, especially in terms of personnel. A compelling counterargument to this logic is that, especially in the case of infantry BCTs (IBCTs), is that National Guard IBCTs would have high utility in homeland defense and Defense Support to Civil Authorities situations that may arise in a potential U.S.-China conflict whereas active component IBCTs might have much less utility in a high-end conflict in the INDOPACOM AOR.⁴⁶

Additionally, it may be possible to reduce Army force structure even further than is programmed in this scenario, primarily due to the imperatives of the strategy of denial, the degradation of Russian combat power in Ukraine, and even the relative military balance between Republic of Korea military forces and the Korean People's Army (North Korean forces). The divestments in this scenario represent about a 10 percent cut to active component Army BCT force structure and about a 17 percent reduction overall (active component and National Guard) in Army BCT force structure. If further savings are desired, additional Army BCTs could be targeted.

Assuming relative parity of civilian and contractor personnel costs over the FYDP as in the FY2023 request, just a 5 percent across-the-board cut of civilian personnel and contractor services would produce a prodigious \$71 billion in savings over the FYDP. These savings are proportionally reflected in this budget by service department and for the Defense-wide account.⁴⁷

⁴⁶ My thanks to William Kim for this insight.

⁴⁷ FY2023 estimates of DOD civilian FTEs: Defense-Wide 216,956 (26.5%); Army 195,475 (23.9%); Navy 225,992 (27.6%); Air Force 180,604 (22.1%). Because of the issues with DOD contractor services reporting, it is difficult to accurately assess the proportionality of contractor services among the service departments and the Defense-Wide account. A 2018 Congressional Research Service (CRS) Report found that in FY2016, the proportion was roughly Defense-Wide 15%, Army 31%, Navy 22%, and Air Force 32%. See CRS, "Defense Primer: Department of Defense Contractors." This paper assumes these ratios for its purposes.

MAJOR ADJUSTMENTS FROM BASELINE FYDP, FORCES AND CAPABILITIES

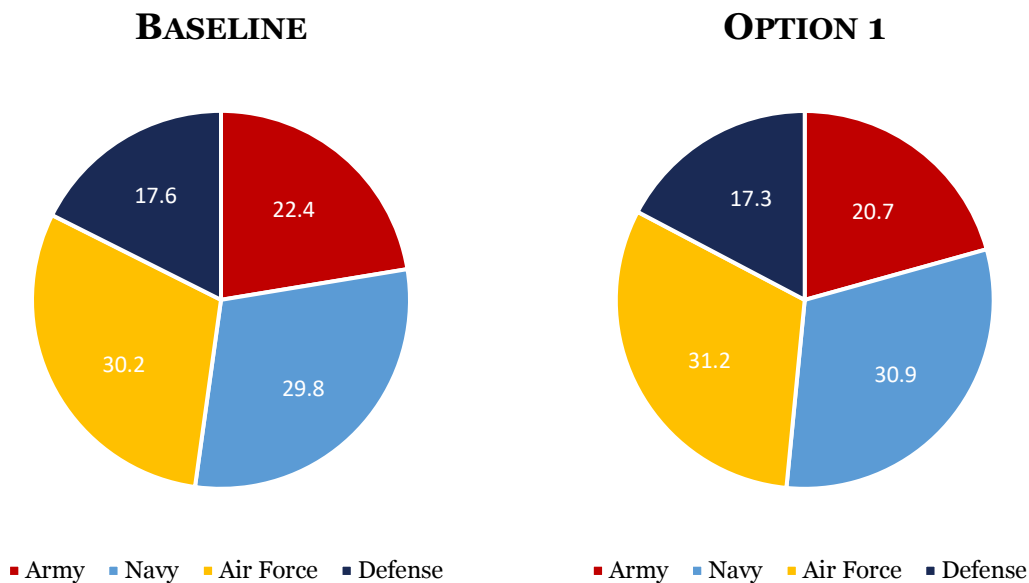
	ARMY	NAVY	MARINE CORPS	AIR FORCE/ SPACE FORCE	DEFENSE-WIDE
ADDS	<ul style="list-style-type: none"> -Add 1 SFAB -Accelerate hypersonic development -Stockpile PrSMs and Javelins -Stockpile PAC-3 / Add Patriot force structure 	<ul style="list-style-type: none"> -Industrial base investment -Accelerate/ procure LAW -Extend 17x CGs, 3x Ohio SSGNs -Add 2 more FFGs, 3 more Virginia SSNs -Convert 1x retiring Ohio SSBN to SSGN -Accelerate development of USVs and hypersonics -Accelerate procurement of UUVs, MQ-25, P-8, MQ-4 -Stockpile LRASM, Tomahawk, SM-6, Stormbreaker, Mk48, Mk54, mines, etc 	<ul style="list-style-type: none"> -Accelerate procurement of NMESIS, ROGUE Fires, LRF, MADIS, and KC-130J -Stockpile Tomahawk, NSM, PrSM, Javelin -Accelerate conversion of 2x infantry regiments to MLRs 	<ul style="list-style-type: none"> -Accelerate B-21 development/ procurement -Add or extend 5th generation fighter capacity -Accelerate development of NGAD, JADC2, hypersonics, LRSO -Add tanker capacity (KC-135 and KC-46) -Stockpile JASSM, LRASM, AMRAAM, Stormbreaker -Additional counterspace systems development/ procurement 	<ul style="list-style-type: none"> -Add THAAD capacity -Add CYBERCOM teams (full spectrum) -INDOPACOM infrastructure investments (PDI)
CUTS	<ul style="list-style-type: none"> -Cut 2x AC SBCTs, 2x NG SBCTs, 1x AC IBCT, 5x NG IBCTs, 2x NG Aviation BDEs -Terminate AMPV, OMFV, PIM -Reduce AH-64, H-60, M-1 upgrade procurement -Reduce Stryker procurement then terminate -Reductions in EDI funding -Reduce rotational deployments -5% reduction in civilian/ contractor personnel 	<ul style="list-style-type: none"> -Reductions in EDI funding -5% reduction in civilian/ contractor personnel 	<ul style="list-style-type: none"> -Reductions in EDI funding -5% reduction in civilian/ contractor personnel 	<ul style="list-style-type: none"> -Divest all A-10Cs -Reductions in EDI funding -5% reduction in civilian/ contractor personnel 	<ul style="list-style-type: none"> -Reductions in EDI funding -5% reduction in civilian/ contractor personnel -Cancel commissary program in CONUS

The adjustments made in this scenario amount to a mere \$243.2 million additional appropriations across the entire FYDP, albeit with additional investment in the nearer-term years of the FYDP but with a savings of \$11.4 billion in FY2027. By service, it amounts to \$68.4 billion less for the Army, \$42.3 billion more for the Department of the Navy (including the Marine Corps), \$41.1 billion more for the Department of the Air Force (including the Space Force), and \$14.7 billion less for the Defense-wide account.

Army	-9.09	-10.99	-15.92	-15.50	-16.90	-68.39
Navy	+4.70	+7.16	+10.34	+10.18	+9.88	+42.26
Air Force	+7.90	+11.41	+12.14	+9.75	-0.14	+41.06
Defense	-1.67	-2.23	-2.87	-3.66	-4.26	-14.69
Total	+1.84	+5.35	+3.70	+0.77	-11.42	+0.24

Numbers may not add due to rounding

This amounts to a modestly different balance among the services than the existing defense budget. In the baseline FYDP, the Army receives roughly 22.4 percent of the total defense budget, the Department of the Navy receives 29.8 percent, the Department of the Air Force receives 30.2 percent (including classified “pass-through” funding), and Defense-wide receives 17.6 percent. In this first option, that balance shifts to 20.7 percent for the Army, 30.9 percent for the Navy, 31.2 percent for the Air Force, and 17.3 percent for Defense-wide.



Of the three alternative futures, this option is assessed to be the most likely. Despite continued calls for increased defense spending from hawks, there are equally new calls for broad-based cuts to federal government spending not only from progressives but also from the House Freedom Caucus along with enduring voices on fiscal discipline.

This budget forthrightly prioritizes the types of forces and capabilities necessitated by this defense strategy to the extent possible, including stockpiling of anti-air and anti-ship missiles, long-range stealthy air power, unmanned air and naval systems, attack

submarines, counterspace capabilities, cyber forces, INDOPACOM infrastructure investments, and others.

However, it must be noted that force levels, especially for naval forces, can only be preserved or increased to a certain level within the FYDP. Substantial industrial base investments are necessary to build the type and size of naval force needed to resource the strategy of denial. Shipbuilding is a long-lead process; the Navy typically forecasts its shipbuilding plans in 30-year increments whereas most of the rest of the Department relies on the 5-year FYDPs. Building the size of the Fleet back up to necessary levels will similarly be a long process, and must start with strengthening the capacity and resilience of the industrial base to produce and sustain it.

This budget option also responsibly hedges risk by maintaining substantial force structure for other forces and capabilities not as suitable to the strategy of denial, including a large body of Army maneuver BCTs and aviation brigades, aircraft carriers, short-range fighter aircraft, and overseas basing infrastructure in secondary theaters.

ALTERNATIVE FUTURE 2: TEN PERCENT TOPLINE CUT

This second alternative future assumes a 10 percent reduction in the topline level of funding over the current FYDP. While the overall level of funding reduction is assumed, it is assessed for the purposes of this paper that the remaining defense appropriations could be allocated in line with a strategy of denial rather than assuming a proportionate cut to each service department or funding account.

The major adjustments from the baseline FYDP are reflected in the table below. Notable additions include adding additional Air Defense Artillery (Patriot) force structure, 3 *Virginia*-class SSNs and 2 *Constellation*-class FFGs following a naval industrial base investment to expand throughput, extending the service life of 3 *Ohio*-class SSGNs to preserve vertical launch system capacity during the FYDP before naval shipbuilding can expand, accelerating procurement of Marine Corps long-range fires and anti-air systems as well as the conversion of some legacy Marine infantry regiments to Marine Littoral Regiments, INDOPACOM infrastructure investment, and stockpiling of critical munitions for all the services.

Major divestments for resourcing the strategy of denial in this scenario include deactivating 9 Stryker BCTs (7 active component and 2 National Guard), 10 infantry BCTs (2 active component and 8 National Guard), 2 armor BCTs (1 active component and 1 National Guard), 5 aviation brigades (3 active component and 2 National Guard), and 1 National Guard Special Forces Group; retiring 2 *Nimitz*-class nuclear-powered aircraft carriers (CVN) and 2 *Wasp*-class landing helicopter docks (LHD), and 1 carrier air wing; retiring all AV-8B and A-10C aircraft, as well as some older F/A-18, F-15, F-16, and other short-range aircraft; reducing or terminating a number of Army ground vehicle and aviation modernization and procurement programs; reductions in RDT&E

funding; reducing EDI funding; reducing rotational deployments (especially Army in EUCOM AOR); and a sharp 15 percent cut to civilian personnel and contractor services across the military service departments and the Defense-wide account.

MAJOR ADJUSTMENTS FROM BASELINE FYDP, FORCES AND CAPABILITIES

	ARMY	NAVY	MARINE CORPS	AIR FORCE/ SPACE FORCE	DEFENSE-WIDE
ADDS	<ul style="list-style-type: none"> -Stockpile PrSMs and Javelins -Stockpile PAC-3 / Add Patriot force structure 	<ul style="list-style-type: none"> -Industrial base investment -Accelerate/ procure LAW -Extend 3x Ohio SSGNs -Add 2 more FFGs, 3 more Virginia SSNs -Accelerate development of USVs -Accelerate procurement of UUVs, MQ-25 -Stockpile LRASM, Tomahawk, SM-6, Stormbreaker, Mk48, Mk54, mines, etc 	<ul style="list-style-type: none"> -Accelerate procurement of NMESIS, ROGUE Fires, LRF, MADIS -Stockpile Tomahawk, NSM, PrSM, Javelin -Accelerate conversion of 2x infantry regiments to MLRs 	<ul style="list-style-type: none"> -Stockpile JASSM, LRASM, AMRAAM, Stormbreaker 	<ul style="list-style-type: none"> -INDOPACOM infrastructure investments (PDI)
CUTS	<ul style="list-style-type: none"> -Retire 7x AC SBCTs,⁴⁸ 2x NG SBCTs, 2x AC IBCT, 8x NG IBCTs, 1x AC ABCT, 1x NG ABCT, 3x AC Aviation BDEs, 2x NG Aviation BDEs, 1x NG SFG -Terminate AMPV, OMFV, PIM, Stryker, M-1 upgrade, FLRAA, FARA, NGSW -Reduce AH-64, H-60, JLTV, GMV, 	<ul style="list-style-type: none"> -Retire 2x Nimitz CVNs, 2x Wasp LHDs, 1x CVW, some F/A-18 -Reduce EDI funding -15% reduction in civilian/ contractor personnel 	<ul style="list-style-type: none"> -Retire all AV-8B, some F/A-18, some H-1 -Reduce EDI funding -15% reduction in civilian/ contractor personnel (reflected in Navy) 	<ul style="list-style-type: none"> -Retire all A-10Cs, some F-15, F-16, U-2 -Retire 1x ANG or USAFR AFSOC wing -Terminate pLEO missile sensing, pLEO data transport, H-139 -Reduce H-60, H-1 procurement -Reduce EDI funding 	<ul style="list-style-type: none"> -Reductions in RDT&E (basic and applied research) -Reduce EDI funding -15% reduction in civilian/ contractor personnel -Cancel commissary program completely -Cancel DOD school program

⁴⁸ The number of SBCTs is still at 7 in FY2023 Department of the Army budget justification documents, despite the apparent conversion of one SBCT to an IBCT as part of the transfer of 25th Infantry Division units to the re-activated 11th Airborne Division in Alaska. See “Fiscal Year (FY) 2023 Budget Estimates: Volume I, Operations and Maintenance, Army,” Department of the Army, April 2022, https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2023/Base%20Budget/Operation%20and%20Maintenance/OMA_Volume_1.pdf. I am grateful to William Kim for this observation.

	ARMY	NAVY	MARINE CORPS	AIR FORCE/ SPACE FORCE	DEFENSE-WIDE
CUTS	FHTV, FMTV procurement -Reduce EDI funding -Reduce rotational deployments -15% reduction in civilian/ contractor personnel			-15% reduction in civilian/ contractor personnel	

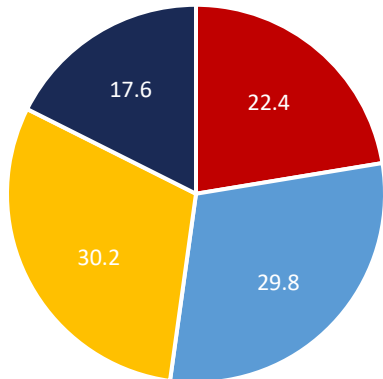
The adjustments made in this scenario amount to a substantial \$402.9 billion less over the FYDP, increasing from \$66.9 billion in FY2023 to \$90.3 billion in FY2027. By service department, this amounts to \$212.8 billion less for the Army, \$25.8 billion less for the Department of the Navy, \$92.8 billion less for the Department of the Air Force, and \$71.5 billion less for the Defense-wide account.

MAJOR ADJUSTMENTS FROM BASELINE FYDP, IN BILLIONS OF USD						
	FY23	FY24	FY25	FY26	FY27	FY23-27
Army	-31.8	-39.8	-45.7	-47.6	-47.9	-212.8
Navy	-7.1	-6.8	-4.0	-3.0	-5.0	-25.8
Air Force	-14.9	-17.1	-18.1	-20.3	-22.2	-92.8
Defense	-13.1	-14.0	-15.1	-14.2	-15.2	-71.5
Total	-66.9	-77.8	-82.9	-85.1	-90.3	-402.9

Numbers may not add due to rounding

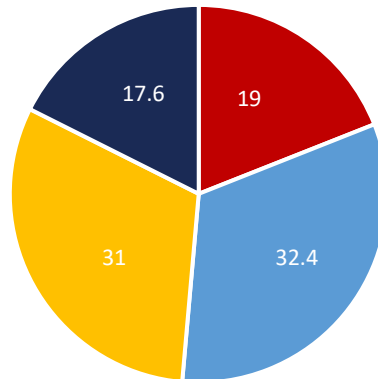
This amounts to a somewhat different balance among the services than the existing defense budget. The baseline FYDP is again reproduced in the pie chart below. In this second defense budget option, that balance shifts slightly more than in the first budget option to 19.98 percent for the Army, 32.43 percent for the Navy, 30.97 percent for the Air Force, and 17.62 percent for Defense-wide.

BASELINE



■ Army ■ Navy ■ Air Force ■ Defense

OPTION 2



■ Army ■ Navy ■ Air Force ■ Defense

Strategically, while this budget option does prioritize forces and capabilities for the strategy of denial, the magnitude of the topline cut required by this scenario limits the scale and pace of the required changes. A number of additions to the baseline FYDP that were made in the first alternative future were unable to be programmed in this scenario due to the severe fiscal constraints, including extending the service life of 17 *Ticonderoga*-class CGs, accelerating development and procurement of the B-21 and JADC2, and adding CYBERCOM teams.

More acutely, the scope of the divestments required under this scenario necessitates the assumption of significant additional geopolitical risk and would compel an urgency in burden shifting to allies in secondary and tertiary theaters. Specifically, defense planning scenarios in EUCOM (e.g., Baltics) and likely in INDOPACOM (e.g., Korean peninsula) would need to be revised to account for significantly reduced U.S. conventional land power. Reductions of some Special Operations Command force structure may also necessitate the assumption of additional risk in counterterrorism efforts. Reduced aircraft carrier and large amphibious ship capacity could add risk in a number of areas, including contingency operations such as U.S. embassy reinforcements, noncombatant evacuation operations, recovery of aircraft and personnel, counterterrorism operations, counter-piracy operations, and others.

ALTERNATIVE FUTURE 3: ATTEMPT TO RESOURCE GLOBAL PRIMACY

This third and final alternative future assumes a much different political appetite in Washington for a radically increased level of defense appropriations. The intent of this alternative future is not to impose an arbitrary addition to or subtraction from the topline, but to take a more positive-sum approach to the defense budget. In this way, it seeks to resource the types of forces and capabilities necessary for the military component of the strategy of denial, but does not subscribe to the geopolitical and military prioritization necessitated by this defense strategy. It seeks to provide budgetary rigor to calls for resourcing a strategy of global primacy, at least for defense.⁴⁹

The major adjustments from the baseline FYDP are manifold and are reflected in the table below. They include 11 additional Army BCTs, 4 additional aviation brigades, additional SFAB and Patriot force structure, preserving 17 CGs and 3 *Ohio* SSGNs, 3 additional *Virginia* SSNs, 2 more *Constellation* FFGs, adding additional USMC force structure, accelerating development and procurement of a multitude of modernization programs, adding CYBERCOM teams, industrial base investments, broad-based training and readiness investments for all the services, funding for heightened forward deployments across theaters, and more.

No major divestments were made in this defense budget option.

⁴⁹ Many of the ideas for the number and type of additional force structure to add in this case came from relevant studies from traditionally primacist defense analysis centers. See, *inter alia*: Dakota L. Wood, ed. “2023 Index of Military Strength,” The Heritage Foundation, October 2022, https://www.heritage.org/sites/default/files/2022-10/2023_IndexOfUSMilitaryStrength.pdf; Jacob Cohn, Ryan Boone, Thomas G. Mahnken, ed. “How Much is Enough? Alternative Defense Strategies,” Center for Strategic and Budgetary Assessments, November 28, 2016, <https://csbaonline.org/research/publications/how-much-is-enough-alternative-defense-strategies> (see especially the contribution from the American Enterprise Institute team for the CSBA-led exercise).

MAJOR ADJUSTMENTS FROM BASELINE FYDP, FORCES AND CAPABILITIES

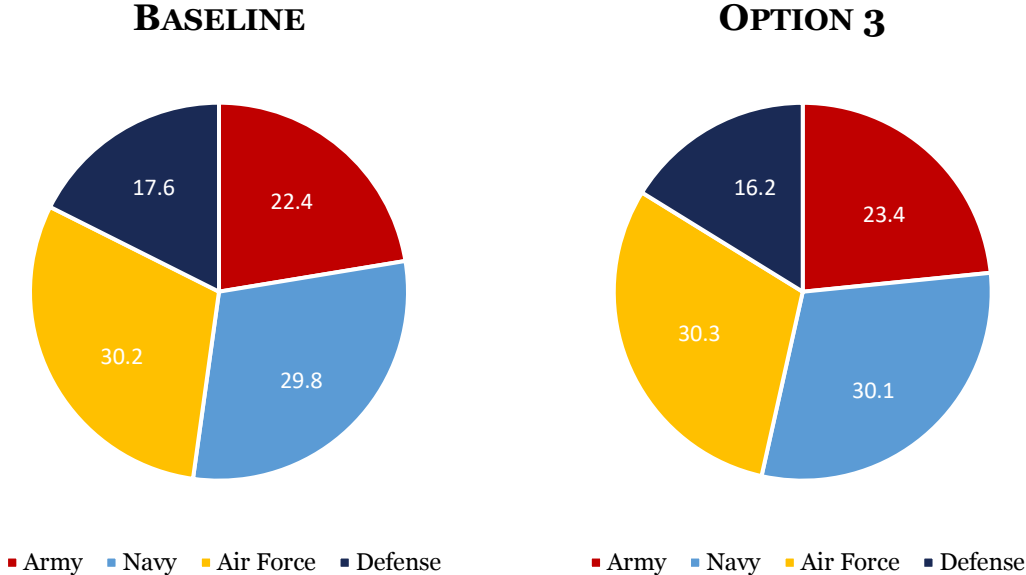
	ARMY	NAVY	MARINE CORPS	AIR FORCE/ SPACE FORCE	DEFENSE- WIDE
ADDS	-Add 4x AC ABCT, 2x AC SBCT, 5x AC IBCT, 1x SFAB, 4x AC aviation BDEs -Accelerate hypersonic development -Stockpile PrSMs and Javelins -Stockpile PAC-3 / Add Patriot force structure -Training and readiness investment -Added rotational/forward presence	-Industrial base investment -Accelerate/procure LAW -Extend 17x CGs, 3x Ohio SSGNs, 11x LCS -Add 2 more FFGs, 3 more Virginia SSNs -Convert 1x retiring Ohio SSBN to SSGN -Accelerate development of USVs, hypersonics, F/A-XX -Accelerate procurement of UUVs, MQ-25, P-8, MQ-4 -Stockpile LRASM, Tomahawk, SM-6, Stormbreaker, Mk48, Mk54, mines, etc -Training and readiness investment	-Add 5x infantry BNs -Accelerate procurement of NMESIS, ROGUE Fires, LRF, MADIS, F-35, KC-130J -Stockpile Tomahawk, NSM, PrSM, Javelin -Accelerate conversion of 2x infantry regiments to MLRs -Training and readiness investment	-Accelerate B-21 development/procurement -Add or extend 5th generation fighter capacity -Accelerate development of NGAD, JADC2, hypersonics, LRSO -Add tanker capacity (KC-135 and KC-46) -Stockpile JASSM, LRASM, AMRAAM, Stormbreaker -Additional counterspace systems development/procurement -Training and readiness investment	-Add THAAD capacity -Add CYBERCOM teams (full spectrum) -INDOPACOM infrastructure investments (PDI)
CUTS	--	--	--	--	--

The adjustments made in this scenario total over \$382.4 billion over the FYDP, or approximately a 9.5 percent increase in the topline, with substantial investment upfront but with costs building over the FYDP as personnel costs mount, shipbuilding throughput expands, and platform retirements are delayed. The Army is the biggest winner in this scenario, both in real and proportional terms, but all accounts grew substantially.

MAJOR ADJUSTMENTS FROM BASELINE FYDP, IN BILLIONS OF USD						
	FY23	FY24	FY25	FY26	FY27	FY23-27
Army	+15.1	+22.1	+27.1	+32.7	+33.7	+130.6
Navy	+17.3	+24.1	+28.9	+29.6	+27.3	+127.1
Air Force	+21.0	+25.8	+27.4	+27.2	+18.4	+119.9
Defense	+0.4	+0.7	+1.0	+1.1	+1.4	+4.7
Total	+53.8	+72.7	+84.3	+90.7	+80.8	+382.4

Numbers may not add due to rounding

This amounts to only a modest difference in the proportion of funding among the services than the current FYDP. The baseline FYDP is once again reproduced in the pie chart below. In this third and final defense budget option, the balance shifts only slightly from the baseline to 23.4 percent for the Army, 30.1 percent for the Navy, 30.3 percent for the Air Force, and 16.2 percent for Defense-wide.



Strategically, while this budget option does add the forces and capabilities necessary for executing the military operational elements of the strategy of denial, it also programs a staggering array of other forces and capabilities that are not strategically necessary under the rubric of the strategy. Therefore, while it assumes the least amount of strategic risk of all the defense budget options, it carries other significant political and economic costs.

In this sense, even adding significant additional force structure to the Department of Defense in line with primacists’ advocacy does not adequately resources a strategy of global primacy. Many of the same limitations, including with respect to the industrial

base, remain. Therefore, adequately resourcing a strategy of global primacy likely cannot be achieved within the FYDP, and would almost certainly entail much greater levels of investment over much longer time periods. This would likely be economically and politically unsustainable.

At most, this level of additional spending buys down some strategic risk in secondary and tertiary theaters in addition to resourcing the strategy of denial. It does not resource a strategy of global primacy, and may even incentivize continued allied free-riding, especially in Europe.

KEY FINDINGS

1. Even if the Department of Defense and Congress forthrightly prioritize military preparedness for a denial defense along the First Island Chain, there are considerable limitations to what can actually be done within the FYDP or even this “decisive decade.”
2. The most that can be done within the FYDP is to stockpile critical munitions, invest in the capacity and resilience of the industrial base, improve INDOPACOM infrastructure and basing, and add or preserve force structure in some key areas (such as attack submarines, long-range stealthy strike aircraft, anti-air and anti-ship forces, cyber forces, and some space forces).
3. The principal limiting factor to developing a Joint Force optimized for the strategy of denial is the U.S. defense industrial base, especially for surface ships, submarines, and precision-guided munitions. This can and should be improved, but it will take time. Progress thus far has been limited.
4. The Joint Force can be developed, to the extent possible within the FYDP, under the rubric of the strategy of denial under the currently programmed appropriations topline.
5. In order to optimize the Joint Force for the strategy of denial under this current topline, however, politically and bureaucratically difficult budgetary choices must be made.
6. The most difficult of these is the extent of civilian and contractor personnel reductions and Army force structure cuts.
7. The necessary additional spending for the priority forces and capabilities for the strategy of denial, without programming any divestments or “bill payers,” amounts to approximately \$143.5 billion over the FYDP (ranging from \$22.2 to

\$33.6 billion more per fiscal year), or roughly 3.6 percent of total spending. (This is *in addition to* the currently programmed increases in spending over the FYDP.)

8. The strategy of denial cannot be adequately resourced if a 10 percent topline cut is imposed, even accounting for sharp reductions to de-prioritized force structure like Army land maneuver forces, aircraft carriers, and short-range aircraft.
9. A strategy of global primacy cannot be adequately resourced within the FYDP, even accounting for another 9.5 percent *additional* spending in line with recommendations from traditionally primacist defense analysis centers.
10. Far from adequately resourcing global primacy, significant additional spending leading to much more force structure buys down some geopolitical risk but may also incentivize continued or further allied free-riding, especially in Europe.

RECOMMENDATIONS

Given the imperatives of the strategy of denial and the analysis in this report, it is recommended that Congress, the White House, and the Department of Defense:

1. Urgently begin stockpiling critical munitions across the services. The highest priority munitions are:
 - a. LRASM
 - b. JASSM-ER⁵⁰
 - c. SM-6
 - d. Mk 48 torpedoes
 - e. PrSM
 - f. NSM
 - g. Patriot/PAC-3
 - h. Mk 54 torpedoes and naval mines (e.g., SLMM, Hammerhead, CDM)
 - i. Tomahawk (including Maritime Strike Tomahawks)
 - j. MANPADS and man-portable ATGMs (e.g., Stinger, Javelin)

⁵⁰ And ensuring that the JASSM-ER has maritime strike capability. See Mark F. Cancian et al, “The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan,” Center for Strategic and International Studies, January 2023, <https://www.csis.org/analysis/first-battle-next-war-wargaming-chinese-invasion-taiwan>, 136-138.

To the extent that this can be accomplished before industrial base investments (see Recommendation 2), maximizing stockpiling of these munitions is relatively inexpensive. The projected costs in one fiscal year for such stockpiling across the services is approximately \$4.5 billion, far less than 1 percent of the defense budget.

2. Invest in the defense industrial base in order to expand its capacity and enhance its resilience. The comparatively meager present capacity of the industrial base relative to prior eras is chiefly due to broader socio-economic trends in globalization and de-industrialization, as well as supply chain brittleness and specific trends in the defense industry toward corporate consolidation. In the present era of great power competition with China, which boasts an enormous defense industrial base of its own, this courts disaster if left unaddressed. Investing in the capacity and resilience of the defense industrial base ought to include:
 - a. Expansion of production capacity/throughput, especially for precision munitions, submarines, advanced aircraft, and surface ships
 - b. Expansion of ship and submarine repair facilities
 - c. Skilled industrial labor force expansion
 - d. Supply chain reshoring, including for subcomponents and materials like semiconductors and rare earth minerals
 - e. Geographic distribution of production capacity
3. Especially before industrial base expansion and stockpiling can be realized, maximize/preserve capacity in priority capability areas for the strategy of denial, including:
 - a. Attack and guided missile submarines
 - b. Long-range, long endurance, stealthy strike aircraft
 - c. Ground-based long-range precision fires, especially anti-air and anti-ship but also surface-to-surface strike
 - d. Offensive cyber
 - e. Small surface combatants
 - f. Counterspace capabilities
 - g. Theater nuclear options
 - h. Modernized strategic nuclear forces
 - i. Munitions and enablers for the above (e.g., logistics ships, tanker aircraft, multi-domain ISR, C2, littoral maneuver enablers)
4. Invest in a range of improvements to infrastructure and basing in the INDOPACOM AOR, including:

- a. Airfield enhancements and hardening
- b. Fuel storage infrastructure and hardening
- c. Airfield repair capabilities
- d. Other base/C2 node hardening and dispersion
- e. Prepositioned equipment and munition stocks
- f. Preplanned operating locations, including for advanced naval bases, forward arming and refueling points, expeditionary airfields, etc.

APPENDIX: ACRONYMS

AARGM-ER—Advanced Anti-Radiation Guided Missile-Extended Range
 ABCT—armor brigade combat team
 ASCM—anti-ship cruise missile
 ATACMS—Army Tactical Missile System
 ATGM—anti-tank guided missile
 BCT—brigade combat team
 BDE—brigade
 BN—battalion
 C2—command and control
 CDM—Clandestine Delivered Mine
 CG—guided missile cruiser
 CM—cruise missile
 CPS—Conventional Prompt Strike
 CVN—nuclear-powered aircraft carrier
 CYBERCOM—Cyber Command
 DDG—guided missile destroyer
 EDI—European Deterrence Initiative
 EMS—electro-magnetic spectrum
 EUCOM—European Command
 FFG—guided missile frigate
 FID—foreign internal defense
 FY—fiscal year
 FYDP—Future Years Defense Program
 G/ATOR—Ground/Air Task Oriented Radar
 GBSD—Ground Based Strategic Deterrent
 DODIN—Department of Defense Information Network
 GDP—gross domestic product
 HAAWC—High Altitude Anti-Submarine Warfare Weapon Capability
 UAV—unmanned aerial vehicle
 HACM—Hypersonic Attack Cruise Missile
 HIMARS—High Mobility Artillery Rocket System
 IBCT—infantry brigade combat team

ICBM—intercontinental ballistic missile
INDOPACOM—Indo-Pacific Command
IPOE—Intelligence preparation of the operational environment
IRBM—intermediate range ballistic missile
ISR—intelligence, surveillance, and reconnaissance
JADC2—Joint All-Domain Command and Control
JASSM-ER—Joint Air-to-Surface Standoff Missile-Extended Range
LACM—land attack cruise missile
LAW—Light Amphibious Warship
LHA—landing helicopter assault ship
LHD—landing helicopter dock ship
LPD—landing transport dock ship
LRASM—Long Range Anti-Ship Missile
LRF—Long Range Fires Launcher
LRHW—Long Range Hypersonic Weapon
LRSO—Long-Range Standoff Weapon
MADIS—Marine Air Defense Integrated System
MANPADS—man-portable air defense system
MDTF—Multi-Domain Task Force
MILPERS—military personnel (appropriations account)
MILCON—military construction (appropriations account)
MLR—Marine Littoral Regiment
MLRS—Multiple Launch Rocket System
MRIC—Medium Range Intercept Capability
M-SHORAD—Maneuver-Short Range Air Defense
NASAMS—National Advanced Surface-to-Air Missile System
NGAD—Next Generation Air Dominance
NSM—Naval Strike Missile
O&M—operations and maintenance (appropriations account)
OPOE—Operational preparation of the operational environment
PAC-3—Patriot Advanced Capability-3
PDI—Pacific Deterrence Initiative
PLA—People’s Liberation Army (China)
PNT—positioning, navigation, and timing
PrSM—Precision Strike Missile
RDT&E—research, development, test, and evaluation (appropriations account)
ROGUE Fires—Remotely Operated Ground Unit for Expeditionary Fires
SBCT—Stryker brigade combat team
SDB II—Small Diameter Bomb II
SFAB—Security Force Assistance Brigade
SLAM-ER—Standoff Land Attack Missile-Extended Range
SLBM—submarine-launched ballistic missile
SLCM-N—nuclear-armed sea-launched cruise missile

SLMM—Submarine-Launched Mobile Mine
SM—Standard Missile
SR—special reconnaissance
SSBN—nuclear-powered ballistic missile submarine
SSGN— nuclear-powered guided missile submarine
SSK—hunter-killer submarine (often diesel-electric propulsion)
SSN— nuclear-powered attack submarine
THAAD—Terminal High Altitude Area Defense
USV—unmanned surface vessel
UUV—unmanned underwater vessel
UW—unconventional warfare
XLUUV—extra-large unmanned underwater vessel