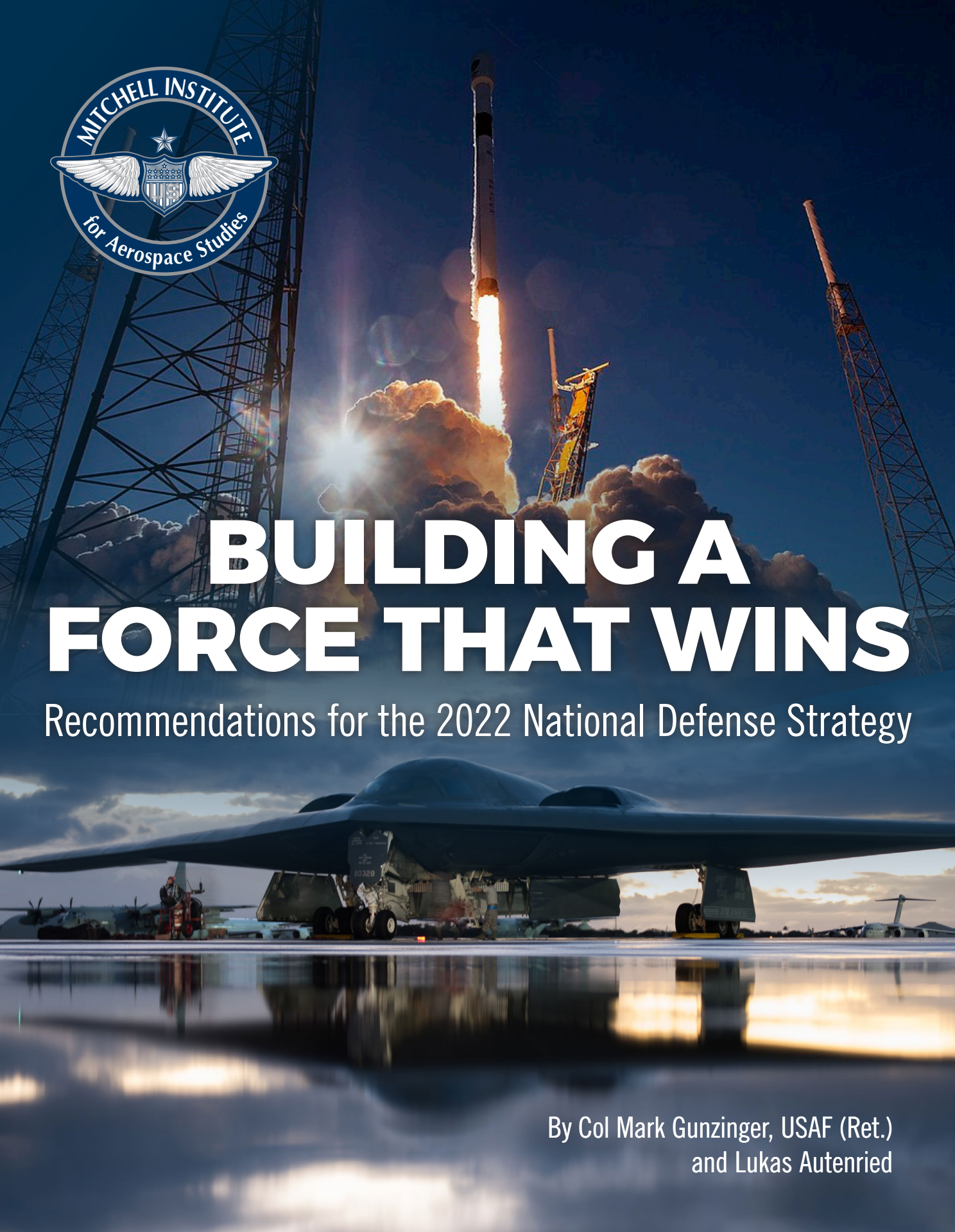

BUILDING A FORCE THAT WINS

Recommendations for the 2022 National Defense Strategy

By Col Mark Gunzinger, USAF (Ret.)
and Lukas Autenried

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Executive Summary

This report addresses three issues with the Department of Defense's (DOD) force planning priorities that could increase the risk of failure during great power conflict. Two of these issues stem from guidance in its *2018 National Defense Strategy* (NDS) on how the services should size and shape their forces. Specifically, the strategy broke with previous post-Cold War guidance by directing the services to organize, train, and equip for a single war instead of two. A one-war requirement could encourage a second opportunistic aggressor to take advantage of the U.S. military's engagement in a separate theater. According to the Congressionally appointed Commission on the National Defense Strategy, this will leave the United States "at risk of being overwhelmed should its military be forced to fight on two or more fronts simultaneously."[1] Moreover, the *2018 NDS* did not direct the services to prepare for an extended-duration conflict with a peer adversary, a fact that fundamentally undermines the credibility of our nation's deterrence posture. The third issue is created by the lack of all-domain warfighting concepts that can help DOD determine capability and force structure tradeoffs that will be necessary given flat or declining defense spending.

Left unaddressed, these three issues will increase the U.S. military's existing capability and capacity gaps, as well as reduce its ability to defeat peer aggression, deter nuclear attacks, and defend the U.S. homeland. The good news is Secretary of Defense Lloyd Austin is leading a review of the *2018 NDS* and has said the next strategy must address "the continued erosion of U.S. military advantage" due to trends such as China's accelerating military modernization, its increasingly belligerent activities, and its growing ability to project power against the U.S. homeland.[2] Checking this erosion will require DOD to selectively increase the size of its forces and rapidly field advanced capabilities such as 5th generation fighters, stealth bombers, unmanned systems, hypersonic weapons, and all-domain command and control networks that will give U.S. forces information dominance. To achieve this as defense budgets flatten or decline, DOD must seek the most cost-effective solutions instead of allowing the services to invest in excessively redundant programs.

Risk: The *2018 NDS* Adopted a Limited Theory of Victory for Great Power War

The *2022 NDS* should direct the services to size and shape their forces to sustain an extended-duration conflict with China. The failure to do so would undermine deterrence and create the opportunity for China to adopt a strategy precisely to take advantage of this and wage an extended-duration conflict designed to exhaust America's ability to fight.

The *2018 NDS* succeeded in reorienting DOD's planning and resource priorities toward great power competition and conflict. This was a major departure from previous post-Cold War defense strategies that focused on preparing for conventional operations to defeat lesser regional aggressors and, after September 2001, conduct a large-scale counterterror and counterinsurgency campaign. Instead, the *2018 NDS* called for the services to optimize their forces to defeat a Chinese or Russian invasion of a U.S. ally or friend before they can achieve a *fait accompli*. In this context, a *fait accompli* refers to a peer adversary rapidly seizing territory before the U.S. military can effectively respond and then presenting an escalation dilemma

that would coerce the United States and its allies into accepting the new status quo.[3] Russia's rapid seizure of Crimea is a recent example of a *fait accompli* that, once achieved, would be extremely difficult for NATO to muster the political will and capabilities to roll back.[4] DOD *fait accompli* scenarios include a Chinese invasion to occupy Taiwan and a Russian invasion of NATO states in the Baltic Sea region. A peer aggressor that rapidly achieves its objectives in these scenarios—possibly within days or a couple of weeks—would leave the United States and its allies with the choice of accepting the new status quo or mounting a major counteroffensive to evict occupying enemy forces. A counteroffensive against forces that have occupied and reinforced their objectives would require a level of effort so massive that it could be seen as highly escalatory by a peer opponent capable of threatening a nuclear response.

The *2018 NDS* concluded a better choice would be to deny China or Russia from achieving a *fait accompli* in the first place. Critically, the *2018 NDS* also assumed that defeating a peer adversary's *fait accompli* campaign would likely cause it to seek an offramp from conflict rather than escalate a war with the United States. However, this theory of victory downplays the potential that an enemy could choose to continue operations to eventually exhaust the U.S. military. As former Secretary of Defense James Mattis was fond of saying, "The enemy gets a vote during a conflict." An enemy might vote to continue fighting if it believes it could eventually prevail instead of suffering a strategic defeat that threatens domestic support for its regime or leads to other consequences that it considers unacceptable.

Optimizing the U.S. military to defeat China or Russia's *fait accompli* strategy and failing to provide for the possibility of a longer war fundamentally undermines deterrence. It creates an option for an enemy to win by continuing to fight until America's will or capabilities to fight are exhausted. Existing force structure shortfalls in advanced weapon systems such as 5th generation fighters and precision-guided munitions (PGM)—DOD is already acquiring both at suboptimal rates—and deficits in logistics infrastructure have already eroded DOD's ability to deter peer conflict. Assuming that China or Russia would **not** take advantage of a U.S. military that lacks staying power could lead to a defeat that has a devastating impact on America's future ability to defend its security interests.[5]

Risk: The *2018 NDS* Adopted a One-War Force Planning Construct

The *2022 NDS* should include a new force planning construct that restores the requirement to size and shape the U.S. military to defeat two aggressors. This would enhance America's ability to deter challenges to its security and hedge against the possibility that a second opportunistic aggressor would take advantage of U.S. forces that are fully engaged in another theater.

DOD includes a force planning construct as part of its National Defense Strategy to provide guidance to the services for sizing their forces and shaping their future mix of capabilities. Force planning constructs describe the type, number, and frequency of major conflict scenarios and other assumptions the services must use to determine requirements. The *2018 NDS* construct requires the services to organize, train, and equip to fight a **single** war with China or Russia, sustain nuclear deterrence, defend the homeland, and deter a second lessor aggressor or rogue state, such as North Korea or Iran.[6]

This single war requirement is a major break from DOD's other post-Cold War strategies that sized the U.S. military to fight two medium-sized conflicts nearly simultaneously. Until the *2018 NDS*, the capacity to fight two wars was considered critical to deterring a second opportunistic aggressor from taking advantage of a U.S. military engaged in combat in another theater. During its comprehensive 1993 Bottom-Up Review (BUR), DOD concluded a two-war force was needed to prevent "a potential aggressor in one region to be tempted to take advantage if we are already engaged in halting aggression in another," and to provide a hedge "against the possibility that a future adversary might one day confront us with a larger-than-expected threat."[7] This logic is as sound today as when it was written in 1993 to deter lesser regional aggressors—and the threat today is from two peer adversaries plus Iran, North Korea, and non-state actors. So why the change?

Hal Brands, Evan Braden Montgomery, and other national security strategists have suggested that budget constraints and concerns over the cost of modernizing the U.S. military for high-end warfare may have something to do with it.[8] Although this change may be rooted in a presumption that a two-war force is not affordable, it also increases the risk that a second adversary—including a peer competitor—could launch a major military operation that threatens America's vital interests. This should be a significant concern given China and Russia's strengthening defense ties and continued sharing of advanced military technologies.

Risk: DOD Has Failed to Optimize Cross-Service Tradeoffs

Finally, DOD leaders have failed to discipline the services' plans and programs to ensure they invest in the most cost-effective capabilities that will also maximize the combat effectiveness of future joint force operations. This has resulted in the services wasting resources on redundant programs (e.g., programs for new long-range strike weapons) and doing so at the expense of capabilities needed for other critical missions such as theater air and missile defense.

DOD needs new joint warfighting concepts for defeating peer aggression that will provide it with a foundation for making tradeoffs that maximize future combat power for joint operations instead of service-by-service contributions. Operating concepts that help link DOD's top-level strategic goals with the means—forces and capabilities—needed to achieve them are critical to determining its future requirements.[9] They also provide a foundation for assessing cross-service force structure and capability tradeoffs that will be essential as defense budgets decline in real purchasing power. As such, they are a key element of DOD's future force planning, programming, and budgeting processes.

Nearly two years after the *2018 NDS* was released, the Secretary of Defense directed the Joint Staff to lead the development of a new Joint Warfighting Concept that defines how the U.S. military will conduct all-domain operations to defeat great power aggression. While this was a much-needed initiative, the services have submitted three separate budget requests between publication of the *2018 NDS* and completion of the Joint Staff's initial concept. It also appears the concept could support the ambitions of some of the services to invest in new capabilities that may prove excessively redundant. For example, Vice Chairman of the Joint Chiefs of Staff General John Hyten has said the Joint Staff's draft all-domain Joint Warfighting

Concept would help create a future Army, Air Force, Navy, and Marine Corps that has the capability to "defend itself or strike deep…everybody."[10] Hyten further clarified that the concept "is aspiration, not cost-informed. You don't want it to be."[11] This approach would do little to stem investments on redundant programs that will waste defense dollars instead of allocating them to higher-payoff capabilities.

To cite one example, the Army's procurement of ground-launched missiles that cost multiple millions of dollars each could reduce resources available for far less expensive air-delivered weapons that are capable against the same kinds of targets as well as others. Additionally, these investments could come at the expense of other Army capabilities, such as those that are needed to defend U.S. airbases from large-scale Chinese or Russian missile attacks. U.S. airbases and other installations critical to generating combat power forward are now nearly undefended against salvos of ballistic missiles, cruise missiles, and armed drones. U.S. airbases can generate offensive power far more effectively and efficiently than long-range surface-to-surface ballistic missile batteries. Leaving these bases vulnerable to attacks would deny U.S. commanders with the offensive capacity they would need to defeat a *fait accompli* campaign—plus it would threaten communication networks, downlinks for space-based C4ISR systems, and other systems actual joint force operations depend upon. An Army decision to continue to neglect a core mission that benefits all joint forces would be like the Air Force walking away from providing close air support to U.S. and allied ground forces—which it has not.[12]

Recommendations

The *2022 NDS* should adopt a theory of victory that requires the U.S. military to deny a Chinese *fait accompli* and then conduct a follow-on punishment operation if necessary. The next NDS should reduce the risk that China would choose to engage in an extended-duration conflict with the United States—this is fundamental to maintaining a credible deterrent. A U.S. military with the capacity to deny a Chinese *fait accompli* plus conduct a follow-on operation such as a punishment campaign would improve deterrence and hedge against a Chinese decision to engage the United States in a prolonged conflict.[13]

A punishment operation threatens to raise the costs of continued aggression beyond the point that an adversary considers acceptable or exceeds the benefits it might expect to gain from continuing hostilities. A punishment campaign against China could entail attacks on, among other targets, its naval forces, ballistic missile batteries, and the bomber forces it relies on to project power over long ranges. Some may argue this would require a larger U.S. military that is not sustainable given pressures on defense spending. Such criticism fails to acknowledge that preventing war is far cheaper than fighting one—plus, pointed investments in key capabilities could yield significant benefits for an Indo-Pacific punishment operation with limited relative outlays. Due to the characteristics of the theater and likely nature of a conflict with China, a punishment campaign after a thwarted PLA *fait accompli* would not require large-scale combat operations on land. This eliminates the need to use a massive force of hundreds of thousands of ground troops to seize and occupy terrain as DOD did during Operation Desert Storm and Operation Iraqi Freedom. Simply put, the preponderance of operations in a punishment campaign against China would occur in the air, sea, space, and cyberspace domains, it would not be a large-scale "boots on the ground"

operation. Depending on a U.S. theater commander's operating concept, key offensive systems needed for this could include:

- 5th generation stealth combat aircraft to counter advanced air and missile threats.
- Long-range ISR and strike platforms capable of penetrating contested environments to strike high-value and challenging targets, including Chinese naval, bomber, and fighter bases.
- Long-range air-launched, ship-launched, and shore-based anti-ship weapons to cripple PLA Navy aircraft carriers and other surface combatants.
- A next-generation counterair family-of-systems to support allied operations and deny China control of the air, especially over critical areas such as the Taiwan Strait.
- Multi-mission unmanned capabilities, including unmanned surface vehicles, unmanned aerial vehicles (UAV), and low-cost expendable UAVs capable of teaming with manned systems that increase DOD's capacity to project combat mass into contested areas.
- Electromagnetic warfare capabilities to suppress advanced area-denial threats, including integrated air defense systems (IADS).
- Offensive cyber capabilities.
- Space domain awareness and offensive space capabilities.
- Sufficient stores of precision-guided munitions prepositioned in forward locations to sustain high tempo combat operations.

Investments that improve the resiliency of the U.S. military's Indo-Pacific basing posture and the U.S. ability to conduct logistics under attack should also be a high priority. The administration should assess these and other potential requirements to support a punishment operation of some duration, particularly against China.

DOD should adopt a two-war force planning construct that specifies pacing scenarios for each service. The *2022 NDS* should include a force planning construct that sizes and shapes the U.S. military to defeat a peer adversary and a second act of aggression in a different theater. This would enhance America's ability to deter peer aggression and hedge against the possibility that China, Russia, or even a rogue state would choose to take advantage of a U.S. military that is fully engaged in another theater.

From a resource perspective, it is unrealistic to allow each service to develop individual "requirements" for forces and capabilities that can be more cost effectively provided by another service.

Critically, a two-war force planning construct should differentiate pacing scenarios for each service to reduce wasteful redundancy. From a resource perspective, it is unrealistic to allow each service to develop individual "requirements" for forces and capabilities that can be more cost-effectively provided by another service. A prominent example of this redundancy is the Army's intent to develop new capabilities for long-range strikes in the Indo-Pacific instead of focusing on core missions where it can provide the best, most cost-effective solutions, such as defending U.S. theater bases against missile salvos. Instead of a homogenous

force planning construct, the *2022 NDS* should define the different pacing scenarios that each service should use to determine its requirements. These pacing scenarios should be based on assessments of the predominant forces U.S. commanders will need for each.

For instance, the Navy, Marine Corps, Air Force, and Space Force would be the predominant providers of forces needed to defeat a Chinese invasion of Taiwan or aggression in the South China Sea due to the theater's geographic characteristics and the nature of operations required by a U.S. commander.[14] For similar reasons, the Army, Air Force, and Space Force would be the predominant force providers for a campaign to defeat a Russian invasion of a NATO ally in Europe. The Air Force should have sufficient resources to counter both Chinese and Russian aggression, since it will be asked to immediately surge its forces to both theaters, and it is the only service that can do so in days instead of weeks or even months.[15] Differentiating between pacing scenarios and then conducting assessments to determine the most effective and efficient force mix for each would reduce the cost of a two-war military that allows all services to pursue its own desired capabilities.

DOD's senior civilian and military leadership should guide the development of these concepts instead of relying on processes that seek consensus across the services or kludge together multiple concepts developed in a stove-piped fashion by each service.

DOD should develop concepts for all-domain warfare that help maximize its future combat power on a cost-per-effect basis. To complement its new force planning concept, DOD should create all-domain operating concepts that optimize its combat power on a cost-per-effect basis. Failing to do this will increase the risk that the services will spend money on solutions that cost more and deliver less. DOD's senior civilian and military leadership should guide the development of these concepts instead of relying on processes that seek consensus across the services or kludge together multiple concepts developed in a stove-piped fashion by each service. The latter process invariably leads to costly duplication of effort, unintended capability gaps, and suboptimal investments that leave combatant commanders lacking necessary tools.

The *2018 NDS* was not complemented by new operating concepts that explain how the U.S. military should conduct all-domain warfare to defeat peer aggression. Recognizing this, Secretary of Defense Mark Esper directed the Joint Staff and the services to create a new Joint Warfighting Concept for all-domain warfare. While the mandate to develop such a concept is laudable, the Joint Staff's doctrine development process is notorious for seeking consensus across the services. Relying on this process increases the likelihood that concepts for all domain warfare will be ladened with each of the services' equities rather than emphasizing that "jointness" is using the right force at the right place at the right time—not using every force every place all the time. Allowing all services to develop long-range strike solutions for the Pacific theater independently, instead of determining what solutions will yield maximum combat effectiveness and efficiency for the U.S. military as a whole, stands as a cautionary example in this regard.

A better concept development approach would be for the Secretary of Defense to direct a rigorous examination of the services' current roles and responsibilities and then make decisions to reallocate them to create a more effective and efficient joint force. As Air Force Chief of Staff General CQ Brown recently suggested, this should be a *targeted* roles and missions review that addresses "gaps, seams, and overlaps in capability" relevant to the development of DOD's new operating concepts.[16] A front-end resolution of enduring debates over service roles and responsibilities—including responsibilities for conducting long-range strikes and defending U.S. theater bases against missile attacks—would help DOD create new operating concepts that maximize its future combat power on a cost-per-effect basis. This process would require the Secretary of Defense and OSD staff to be deeply involved in the development and approval of warfighting concepts used for DOD force planning.

Defining Cost-Per-Effect

Cost-per-effect looks at the total cost involved with achieving a specific mission outcome. For air operations, this can include aircraft, mission systems, and weapons to execute the actual task, as well as direct support assets such as aerial refueling tankers, electronic jamming platforms, surface-to-air missile suppression efforts, and support equipment. It also includes aircrews and requisite infrastructure like basing and related maintenance support.

DOD should also develop separate all-domain warfighting concepts for multiple potential conflicts with China and Russia instead of a single, overarching concept. Separate concepts would help account for the different characteristics and geographic features of the Indo-Pacific and European theaters, including their physical dimensions, geographic chokepoints, the different strengths and weaknesses of the Chinese and Russian militaries, and the capabilities of America's regional allies and partners. Finally, these concepts should focus on future all-domain warfare instead of an incorrect notion of homogenous "joint" operations. This would help stress that the priority is to integrate the U.S. military's operations across all domains instead of emphasizing the organizations that provide forces to combatant commanders.

Introduction

In 2018, the Department of Defense released a *National Defense Strategy* that shifted its planning and resource priorities toward preparing for great power competition and conflict. This strategic refocus precipitated a long-overdue assessment of DOD's ability to meet an unprecedented array of challenges to the security of the United States and its allies and friends, including Chinese and Russian gray zone actions to expand their influence and control over their respective regions.

Like DOD's previous defense strategies, the *2018 NDS* included top-level guidance known as a "force planning construct" that defined how the services should size and shape their forces to win America's wars and perform enduring missions, such as nuclear deterrence and homeland defense.[17] They are also useful for revectoring DOD's plans and programs to address fundamental changes in the operational environment. For instance, after the Cold War, DOD shifted toward preparing to defeat two lesser regional aggressors such as Iraq and North Korea nearly simultaneously instead of for a global conflict with the Soviet Union.[18] This force planning construct led to significant cuts to the U.S. military's size and modernization programs.[19] DOD added homeland defense as a critical planning requirement after the September 2001 terrorist attacks on the United States, and in 2006 it determined that one of the two major wars the services must plan for should include a large-scale counterterror/counterinsurgency operation similar to the one then underway in Iraq.[20] An unclassified summary of the *2018 NDS* outlined why the U.S. military must now be sized and shaped to "deter aggression in three key regions—the Indo-Pacific, Europe, and Middle East; degrade terrorist and WMD threats; and defend U.S. interests from challenges below the level of armed conflict" in peacetime.[21] In wartime, "The fully mobilized Joint Force will be capable of defeating aggression by a major power; deterring opportunistic aggression elsewhere; and disrupting imminent terrorist and WMD threats." Finally, the strategy required the U.S. military to remain prepared to "deter nuclear and non-nuclear strategic attacks and defend the homeland" in both peace and in war.

The Air Force created the following graphic to illustrate the *2018 NDS* force planning construct. The left-hand column in Figure 1 shows major steady-state operational demands for forces in peacetime, and the right-hand column represents requirements for forces to defeat aggression by a major power plus defend the homeland, deter nuclear attacks, and other operations.[22]

The *2018 NDS* also implemented a new global operating model for projecting military power that consists of four layers of forces: "contact," "blunt," "surge," and "homeland defense." Contact layer forces conduct theater operations that fall below the threshold of armed conflict, which DOD calls the gray zone. These include activities short of war that assure U.S. allies, augment allied defenses, and counter Chinese or Russian gray zone activities such as military incursions into allied airspace and harassment of allied shipping in international waters or disputed maritime areas.[23] Blunt layer forces are intended to have the capacity and capability needed to conduct operations to deter, delay, degrade, or deny great power aggression. The key idea of the blunting function is to "prevent China or Russia from achieving a *fait accompli*" by employing forward-deployed forces, augmented by long-range strikes, as first responders at the outset of

<table>
<tr><th>Competition</th><th>War</th></tr>
<tr><td>Defend the Homeland</td><td>Defend the Homeland</td></tr>
<tr><td>Deter Nuclear & Non-Nuclear Strategic Attack</td><td>Deter Nuclear & Non-Nuclear Strategic Attack</td></tr>
<tr><td>Deter Aggression in Three Regions</td><td rowspan="2">Defeat Aggression by a Major Power</td></tr>
<tr><td>Degrade Terror & WMD Threats</td></tr>
<tr><td rowspan="2">Defend U.S. Interests before Armed Conflict</td><td>Deter Opportunistic Aggression in Second Theater</td></tr>
<tr><td>Disrupt Terror & WMD Threats</td></tr>
</table>

Figure 1: Force planning construct used to develop the USAF's "The Air Force We Need" planning force

Source: U.S. Air Force (See endnote 22)

a conflict.[24] Surge layer forces would then deploy to a theater as necessary to defeat a Chinese or Russian invasion and "induce them to end the conflict on terms we prefer."[25] Finally, homeland defense layer forces continue to deter and defeat attacks against the U.S. homeland during a peer conflict.

The *2018 NDS* also adopted a theory of victory that assumes China or Russia would likely seek an end to conflict after the U.S. military successfully defeated their *fait accompli* strategies. Sizing joint forces based on this assumption could leave a future theater commander without recourse should a peer adversary choose to continue to fight. The *2018 NDS* further increased risk by eliminating the two-war planning requirement, which seemingly ignores DOD's own assessment that America is now facing an unprecedented number of threats to its security, including two peer adversaries and more. The consequences of this could be disastrous considering DOD already has major shortfalls in capabilities that are critical to defeating peer aggression, including long-range surveillance and strike weapon systems, precision-guided munitions, resilient communications, and logistics. Finally, DOD needs new operating concepts for all-domain warfare that will inform cross-service and cross-domain capability tradeoffs that help close existing gaps between its strategy and resources. The administration should address all of these issues as it develops the *2022 National Defense Strategy*. A failure to do so will not check trends at home and abroad that the Commission on the National Defense Strategy warned are "diminishing U.S. military advantages and threatening vital U.S. interests."[26]

Assuming a Great Power Conflict Will Be Short Creates Risk

DOD is ill-prepared to engage in an extended-duration conflict with China or Russia. This is the result of serial force structure cuts over the past 30 years that were intended to yield post-Cold War peace dividends, as well as DOD's post-9/11 focus on investments in capabilities for counterterror and counterinsurgency operations that are not suitable for high-end warfare.[27] Although the *2018 NDS* shifted DOD's planning priorities back toward defeating peer aggression, it also assumed that denying a Chinese or Russian *fait accompli* in a relatively short war would result in a favorable conflict termination. Sizing the U.S. military for short wars could result in force structure and capability shortfalls should a peer adversary choose to continue to fight after a *fait accompli* failure. As history has proven time and again, predicting the duration of a future conflict is nigh impossible. It is exceedingly dangerous to make optimistic planning assumptions that cede the advantage to an adversary and give it a pathway to win by continuing combat operations past what U.S. forces are sized to sustain.

Sizing the U.S. military for short wars could result in force structure and capability shortfalls should a peer adversary choose to continue to fight after a *fait accompli* failure.

This section provides examples of the risk of sizing the U.S. military for short conflicts. It recommends the *2022 NDS* hedge against this risk by adopting a theory of victory that requires the U.S. military to organize, train, and equip to deny a *fait accompli* **and** conduct follow-on operations that compel an enemy to seek an end to conflict. Actualizing this force planning guidance will also require DOD to request a level of resources that ensure the U.S. military is prepared for a prolonged high-intensity war.

Defining a Theory of Victory is Critical to Determining DOD's Resource Priorities

In plain English, a theory of victory is an explanation of how a combatant can force an adversary to a point where it believes the cost of continuing to fight would exceed its potential gains. After the Cold War, DOD adopted a force planning construct that required the services to prepare to defeat two nearly simultaneous invasions of U.S. allies or friends by rogue states such as Iran or North Korea and, if necessary, continue operations to overthrow hostile regimes.[28] This theory of victory persisted well past DOD's 2001 Quadrennial Defense Review (QDR), which concluded DOD should size forces to "swiftly defeat aggression in overlapping major conflicts while preserving for the President the option to call for a decisive victory in one of those conflicts—including the possibility of regime change or occupation."[29]

DOD force planning constructs for much of the 2000s and 2010s included a requirement to size the U.S. military for long-term counterinsurgency and counterterrorism operations. However, it did not define a clear theory of victory for this requirement, a failure that complicated the services' planning and programming efforts. DOD's counterterrorism and counterinsurgency fixation also diverted resources away from buying next-generation capabilities, which helps explain why it is now playing catch-up with China and Russia in some advanced technologies including hypersonic weapons. Bluntly stated by a

Congressional bi-partisan defense task force, "The United States has failed to keep pace with China's and Russia's military modernization."[30]

DOD's Theory of Victory: Defeat a Chinese or Russian *Fait Accompli*

The *2018 NDS* finally succeeded in shifting DOD's focus toward sizing and shaping its forces to defeat peer aggression. Force planning guidance in the *2018 NDS* also included a new theory of victory for great power conflict. Instead of seizing an adversary's territory and perhaps changing a hostile regime, as a U.S.-led coalition did during Operation Iraqi Freedom, the *2018 NDS* directed the services to prepare to fight a limited war that defeats China or Russia's "theory of victory, and particularly the *fait accompli* strategy."[31]

According to the *2018 NDS*, both China and Russia are modernizing their militaries to prepare to seize geographic areas or states on their periphery quickly and then consolidate their gains to deter the United States and its allies from mounting an effective counteroffensive. A Chinese or Russian invasion could combine information operations, gray zone aggression, rapidly deployable maneuver forces, long-range strikes, and other access denial systems to achieve a *fait accompli* before U.S. forces can intervene.[32] Apparently, this is "the most severely challenging of the theories of victory the Chinese or Russians could employ—especially against Taiwan in the Indo-Pacific or the Baltics and Eastern Poland in Europe."[33]

The *2018 NDS* also directed the U.S. military to adopt a different approach to fighting a high-end conflict. After the Cold War, DOD's force planning concept required the services to organize, train, and equip their crisis response forces to halt an invasion by a rogue state such as Iran or North Korea, then build up a massive force in theater before launching a decisive combined arms counteroffensive. This force build-up could require many months, as in Operation Desert Shield, which would be a recipe for disaster in a future fight with China or Russia.

China and Russia learned from the U.S. military's post-Cold War operational successes that giving a U.S.-led alliance the uncontested access and time needed to mass forces near their borders would assure their defeat. Both changed their warfighting models and invested in capabilities to win a quick victory before the United States could deploy enough forces to prevent it. These capabilities include anti-access/area-denial (A2/AD) systems such as long-range weapons capable of striking U.S. and allied bases, anti-ship missiles to deny access to critical maritime areas, and advanced IADS to deny freedom of action in the air.

Given these challenges, the *2018 NDS* called for the U.S. military to prepare to immediately engage Chinese or Russian forces that are operating under the protection of their A2/AD complexes. U.S. forward-postured "contact layer forces" would be the first responders to a crisis in a theater, which would be rapidly augmented by "blunt layer" forces. Blunt layer forces would operate from long ranges and inside a theater to degrade, delay, and deny an adversary from achieving its objectives. Follow-on "surge layer" forces from the United States or other theaters would then deploy to provide the capacity needed to "defeat China or Russia's invasion and induce them to end the conflict on terms we prefer."[34] Ultimately, operational success would be measured by the U.S. military's ability to deny a Chinese or Russian *fait accompli* while using a level of force that avoids escalation to an all-out war.

China or Russia Could Choose Another Course of Action

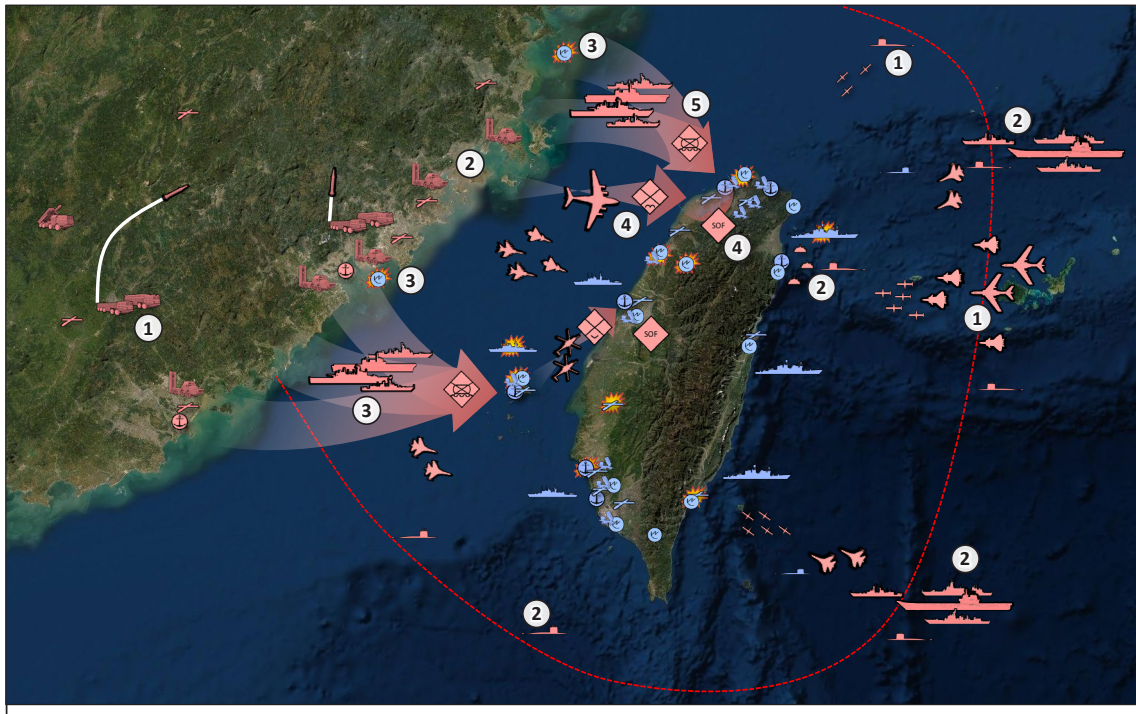
The theory of victory embedded in DOD's 2018 force planning construct assumes a failed *fait accompli* would leave China or Russia with the choice of expanding the conflict or "settling on terms the United States can accept."[35] The *2018 NDS* asserts a peer adversary would prefer the latter option and seek an off-ramp from conflict.[36] This assumption risks minimizing the potential that China or Russia could choose to prolong a conflict with the intent to exhaust a U.S. military that is sized for a short war. Handing a peer adversary a war-winning option that simply requires it to not lose and run the clock out is exceedingly risky. This does not require a high order strategy on an adversary's part; the U.S. military's capacity and capability limitations are well understood. Rather than intensify a conflict, a peer adversary could choose to conduct a carefully calculated campaign to take advantage of DOD's lack of high-end forces and critical warfighting materials, including PGMs.[37] The objective in this case could be to irrevocably change the regional balance of power in China or Russia's favor—both aspire to eliminate the U.S. military's presence in their near-abroad.

China or Russia could choose to prolong a conflict with the intent to exhaust a U.S. military that is sized for a short war. Handing a peer adversary a war-winning option that simply requires it to not lose and run the clock out is exceedingly risky.

China in particular could opt for extending a conflict instead of accepting an end state where the United States has defeated its campaign to reunify Taiwan or control other disputed areas China claims as its own.[38] The Chinese Communist Party's (CCP) leadership has long sought to expand China's dominance inside the Pacific's First Island Chain, erode confidence in America's ability to meet its regional security commitments, and establish China as the preeminent Indo-Pacific power.[39] A U.S.-led defeat of a PLA *fait accompli* campaign against Taiwan may be a red line for Xi Jinping and the CCP.[40] Moreover, the CCP has steadily reinforced its message that China has historically emerged as the victor in long-term struggles against foreign powers.[41] To mark the 70th anniversary of China's entry into the Korean War, Xi Jinping stressed the need for China to mirror the efforts and resilience shown against foreign aggression by heroes of the "Aiding North Korea and Resisting America" campaign. He then doubled down by saying that China has a history of prevailing against much larger and more developed adversaries through sheer willpower, and that Chinese citizens will need to adopt a similar mindset in the long-term struggle for China's rejuvenation.[42] These messages could be intended to prepare China's population to support a prolonged conflict against the United States.

Sizing the Force for a Short War Would Increase Risk

This reality heightens the need for a credible deterrent that is based upon a U.S. military with war-winning capabilities **and** capacity. A force that is based on overly optimistic planning assumptions can incentivize and present an adversary with a reasonable path to victory. This is understood by many in the U.S. defense policy community. A 2020 report from the U.S.-China Economic and Security Review Commission concluded that DOD "must be prepared for the possibility of a costly and protracted conflict" if it "comes to the defense of an ally or partner in the wake of a PLA attack." The Commission also warned the PLA's growing capacity to project power will "enable it to harm U.S. forces and assets deployed to East or Southeast Asia, developments that could drain the United States' coffers, erode public morale, and cost U.S. lives."[43]



1. PLA launches ballistic missiles and cruise missiles, armed drones, and non-kinetic attacks against Taiwan's airfields, air defenses, C2 facilities, supply depots, key government buildings, other infrastructure
2. PLAAF and PLAN try to create no-fly and maritime exclusion zones around Taiwan to deter a U.S. intervention
3. PLA amphibious assault to seize or suppress Taiwanese occupied islands such as Kinmen, Matsu, and Penghu
4. PLA SOF reinforced by airborne assault forces secure airfields near targeted landing beaches
5. PLA amphibious assault forces create lodgments on Taiwan, secure harbors to enable landings of heavier follow-on forces, which then push inland to seize major cities

Figure 2: Illustration of a notional PLA assault on Taiwan

Source: Mitchell Institute, derived from multiple unclassified sources (see endnote 45)

The following examples help illustrate this risk. They are based on a scenario where China launches a campaign to seize Taiwan and then continues fighting to exhaust the U.S. military.

Example: Potential conflict with China over Taiwan. A PLA assault on Taiwan could begin with long-range air and missile strikes coordinated with cyber and electronic warfare attacks to paralyze Taiwan's defenses and decapitate its national leadership.[44] After an air and naval campaign to seize control of the Taiwan Strait, the PLA could launch a massive cross-Strait amphibious invasion supported by large-scale airborne assaults. China would continue to strike high-value targets in Taiwan throughout these operations, taking advantage of their huge inventory of short-range and medium-range ballistic missiles and combat aircraft postured in China's Eastern and Southern Military Command areas.[45]

Should U.S. and allied forces defeat a PLA attack on Taiwan, China could choose to take advantage of a U.S. military that is sized for a short war and continue operations to steadily attrit U.S. forces and erode allied support for continuing hostilities.

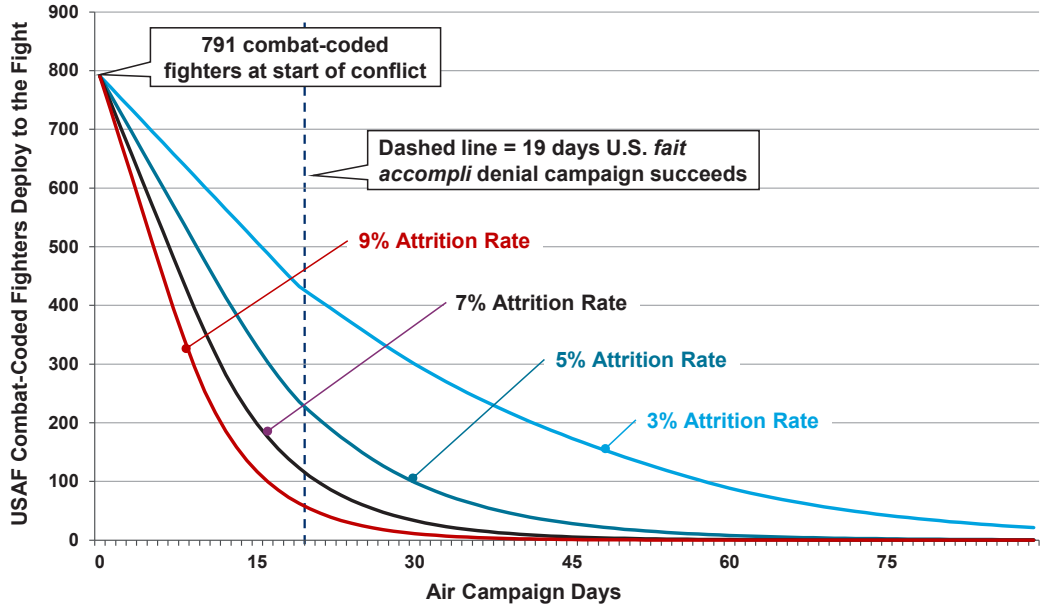


Figure 3: Attrition in a conflict with China could quickly deplete the USAF's undersized fighter force

Source: Mitchell Institute. (see endnote 46)

Figure 3 illustrates how attrition over time in a high-end operation against the PLA could deplete USAF fighters deployed to the theater.[46] After day 19, about 430 combat-coded fighters from the original force would remain available for operations assuming it suffered 3 percent attrition per day during combat operations. This would drop to 236 of the original 791 fighters at a 5 percent attrition rate, 123 fighters at 7 percent attrition, and so on.

Figure 3 illustrates how seemingly small attrition rates can result in very large losses over the duration of a campaign. After a month of combat, losses could greatly reduce the USAF's sortie generation potential, not to mention the impact of China's anti-ship (particularly anti-aircraft carrier) strikes on U.S. sea-based power projection capabilities.[47] It should also be noted that Figure 3 does not include fighter attrition that could result from Chinese attacks on U.S. and allied airbases in the Indo-Pacific. Large salvos of Chinese air-launched cruise missiles combined with medium-range ballistic missiles and other weapons could crater runways, destroy airbase facilities needed to generate sorties, and attrit hundreds of aircraft that are not dispersed or protected in shelters.[48] Figure 3 does not illustrate potential long-term effects of these combat losses. It is equally important to ensure the U.S. military has sufficient forces after an operation to deter another adversary and meet other operational commitments. Bottom line, U.S. forces must have the survivability and numbers to fight today, tomorrow, and in the next war.

Preparing for an extended-duration conflict is not just about fielding enough platforms like planes and ships—running out of munitions can also lead to defeat.[49] While limited inventories associated with weapons and other expendable systems are always an issue, the exquisite weapons that are significantly limited in numbers would likely be consumed in a high-end fight. Figure 4 shows how air-to-air weapons like the Advanced Medium-Range Air-to-Air Missile (AMRAAM) launched by USAF fighters to defend friendly forces from Chinese air attacks could quickly be depleted during a conflict with China.

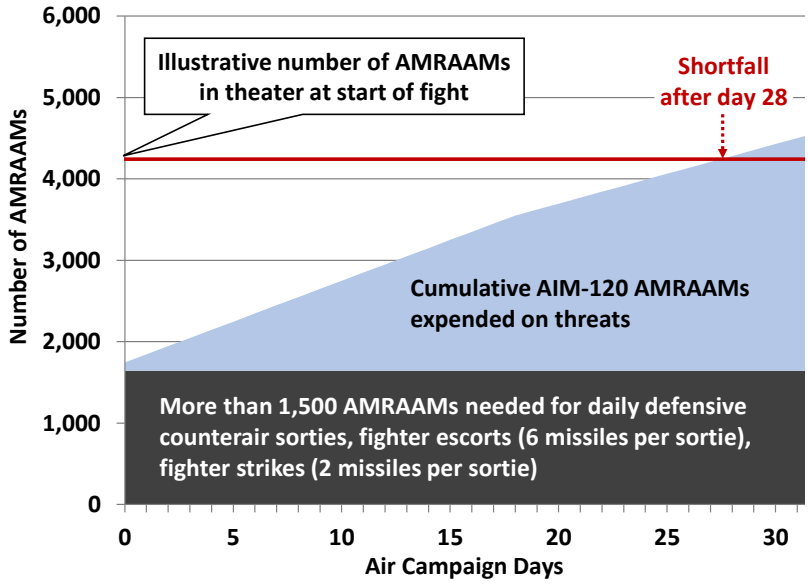


Figure 4: Air-to-air munitions critical to the fight could also be quickly expended

Source: Mitchell Institute

Shortfalls in PGMs of all types could reduce offensive and defensive sorties the USAF can generate, which would affect the survivability of all allied forces in theater that depend on airpower to defeat Chinese air and missile attacks. Basic campaign analysis can illustrate this. Figure 5 shows how two of the USAF's advanced long-range strike munitions—the Joint Air-to-Surface Standoff Missile (JASSM) and its anti-ship derivative, the Long-Range Anti-Ship Missile (LRASM)—could be expended in a little over a week during a high-intensity clash with China.[50]

Figure 5 assumes roughly half of the USAF's JASSM inventory and most of its LRASMs are allocated to the campaign, and only B-52s are tasked to launch them against targets.[51] In reality, other USAF bombers and fighters would also launch JASSMs and LRASMs, which would greatly accelerate their inventory burn-down rates. The Air Force is expected to procure about of 6,700 JASSMs, JASSM-ERs, and LRASMs

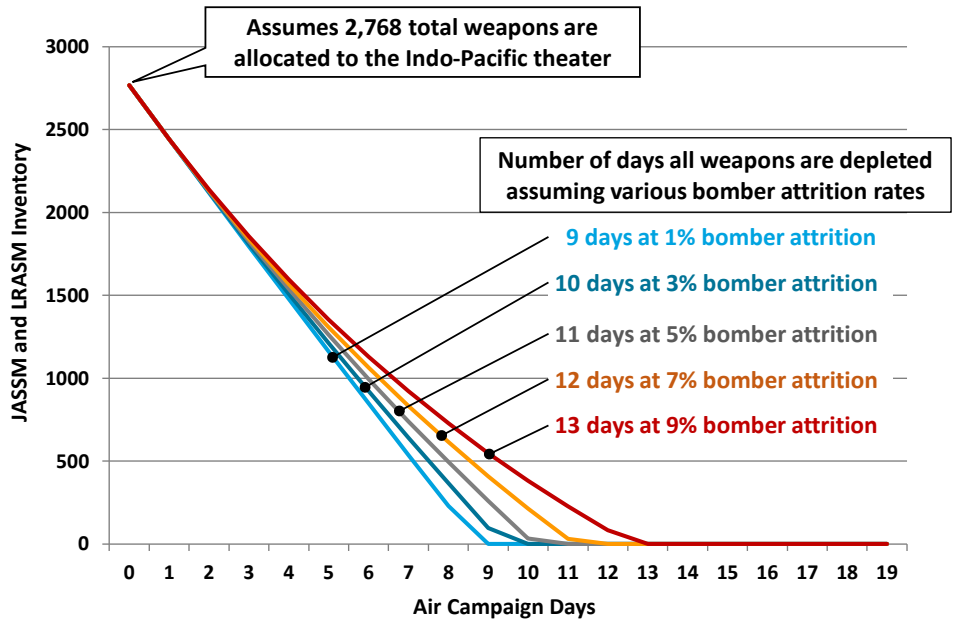
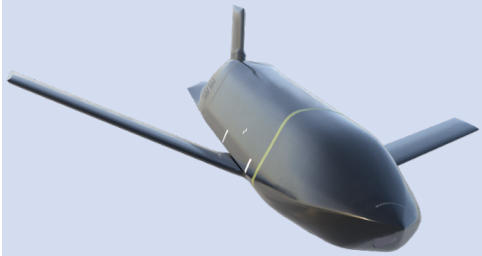


Figure 5: Notional depletion of USAF JASSMs and LRASMs expended in a South China Sea conflict with China assuming plausible utilization rates

Source: Mitchell Institute (see endnote 51)

Why JASSM and LRASM?



JASSM and LRASM are low observable, highly survivable munitions equipped with GPS-aided INS for guidance, imaging infrared seekers, and a pattern-matching autonomous target recognition capability designed to strike high-value, heavily defended fixed and relocatable targets. One of the principal authors of the 2018 NDS identified JASSMs and LRASMs as examples of munitions that "are must-buys to increase the defensibility of Taiwan and the Baltics." (see endnote 50).

Image courtesy of Lockheed Martin.

through the year 2025.[52] In reality, only a portion of these will be allocated to the Indo-Pacific, and quickly replenishing them would require DOD to deplete weapon stores allocated to Europe and the Middle East. This would impact DOD's ability to deter other aggressors. In the near-term, the alternative would be to use legacy non-stealth standoff weapons or short-range Joint Direct Attack Munitions (JDAM) that were not designed to survive in contested environments. The latter option would also require bombers and fighters to attack targets from very short ranges, which would increase the risk that enemy defenses would intercept them—especially non-stealth strike aircraft. Over time, high PGM use rates could reduce the U.S. military's operational tempo to the point where the PLA gains the initiative.

Assumptions on Conflict Duration Also Affect Future Capability Mix Requirements

Assumptions on the nature and length of plausible conflict scenarios also affect a military's *capability mix* requirements. It all comes down to having the right tools to meet a theater commander's mission requirements. This is particularly true when it comes to modern weapons like 5th generation aircraft, long range strike bombers, and advanced munitions.

The USAF's 2015 future operating concept said it planned to "retain tailored numbers of high-end assets to operate against adversaries that pose advanced threats to joint/multinational force efforts in any domain" and then use lower-cost, lower-capability systems for follow-on operations and other requirements such as counterterror missions "in a permissive or semi-permissive environment."[53] It now appears the Air Force is on the path toward building this "high-low" force mix. Instead of ramping up to 80 F-35As per year as it once intended, the Air Force has requested only 48 F-35As per year in its last three budgets. At that rate, it will be the mid-2040s before the Air Force fully fields its planned F-35A force.[54] Rather than quickly building out a 5th generation fighter force needed for high-end conflicts, the Air Force is replacing a significant portion of its aging fighters with new-old F-15EXs and possibly hundreds of newly designed non-stealth aircraft with capabilities that will

Assumptions on the nature and length of plausible conflict scenarios also affect a military's capability mix requirements. It all comes down to having the right tools to meet a theater commander's mission requirements.

fall well short of the F-22 and F-35A.[55] Continuing down this path would perpetuate a force that is overly weighted toward non-stealth aircraft that are simply not survivable in contested environments. Today, the Air Force has a fighter force consisting of 80 percent non-stealth and 20 percent stealth aircraft. If the Air Force is to be aligned to succeed in peer fights of the future, that ratio needs to be reversed.

As Figure 3 illustrates, a smaller high-end force would be unable to meet theater commander requirements should China or Russia decide to continue fighting after a failed *fait accompli*. Moreover, skewing the U.S. military's force mix toward more low-end systems in pursuit of arbitrary defense budgets not aligned to the demands of the National Defense Strategy would ultimately be the far more expensive choice in terms of human and material costs in wartime. As mentioned, the Air Force now has a mix of about 80 percent non-stealth fighters and 20 percent 5th generation F-22s and F-35As; Figure 3 optimistically assumed this would improve to 44 percent 5th generation fighters by 2030.[56] Attrition rates could be much higher than shown in the example if the Air Force buys more new-old capabilities. During the 1973 Yom Kippur War, the Israeli Air Force (IAF) lost 102 of its 390 aircraft in 19 days of operations against a peer adversary and suffered a total aircraft lost or damaged rate of 4.8 percent during the first week of fighting.[57] The USAF could experience similar loss rates if it decides to further skew its combat forces toward the low-end.

Some skeptics have argued that stealth is a "waning" advantage since air defenses continue to improve their ability to detect stealth aircraft. Both China and Russia continue to invest in advanced IADS that have multiple layers of active and passive sensors, long-range surface-to-air missiles, and short-range defenses augmented by electronic warfare systems. These systems are highly capable against all U.S. military non-stealth bombers and fighters. Sensors that are characterized as "stealth killers" or threats to low-observable aircraft pose a vastly greater threat to non-stealth aircraft, at longer ranges and over wider areas. However, the *only* aircraft that can operate in these environments today are F-22s, B-2 bombers, and operational F-35s. Their ability to survive inside the range of advanced IADS is the result of a multi-pronged approach that includes minimizing their signatures in multiple bands of the electromagnetic spectrum (low observability), combined with smart mission planning to avoid enemy defenses; onboard sensors and increased processing power to manage an aircraft's position relative to enemy sensors; and datalinks to receive threat updates during missions.

A key point to understand is that **stealth denies enemy defenses information they need to launch a successful intercept.** Stealth does not make aircraft invulnerable or invisible, but it does significantly increase the probability that aircraft will both survive and successfully penetrate enemy defenses to accomplish their missions. As warfare becomes more "informationized," and as sensors and battle networks proliferate, the enduring ability of stealth aircraft to deny information to adversaries will only grow more important. Moreover, DOD's development of new stealth technologies and other countermeasures continue to outpace Chinese and Russian air defenses—F-35As and the future B-21 have advanced stealth and other capabilities that will allow them to penetrate IADS decades into the future.

Other skeptics hold that multi-domain operations that include the use of a small stealth aircraft force and long-range surface-to-surface fires could quickly suppress enemy air defenses, allowing older, non-

stealth aircraft to operate at acceptable risk levels. This is exactly what happened to the B-2 stealth bomber program in 1998 when DOD used similar logic to justify ending production at 21 aircraft instead of buying the USAF's required force of 132 B-2s. The Office of the Secretary of Defense used results from the joint 1997 Deep Attack Weapons Mix Study (DAWMS) to conclude a small force of stealth aircraft could quickly suppress the air defenses of rogue states such as Iraq and North Korea.[58] Such assumptions led to massive capability imbalances within the bomber inventory, which will not be reset until the 2030s. The United States cannot afford to repeat such mistakes.

This "knock down the door" operating concept is grossly outdated given Chinese and Russian IADS are far more extensive, dynamic, and capable than defenses allied forces encountered during Operation Desert Storm and Operation Iraqi Freedom.

This "knock down the door" operating concept is grossly outdated given Chinese and Russian IADS are far more extensive, dynamic, and capable than defenses allied forces encountered during Operation Desert Storm and Operation Iraqi Freedom. Advanced IADS have layers of sensors and surface-to-air missile (SAM) systems that are highly mobile and are themselves defended by multiple active and passive countermeasures against U.S. attacks. Suppressing these layered defenses is not a job for legacy combat aircraft and weapons. As DOD and independent studies have shown, 4th generation fighters cannot survive against advanced IADs, which is why they would be relegated to non-penetrating "standoff" roles. Their loss would be too severe, and the loss of their highly trained pilots would be even more devastating and difficult to backfill given the Air Force already has a major pilot shortage. The cost of these combat losses would far exceed potential peacetime savings that may accrue from the lower operating and support costs of a 4th generation force. This makes 4th generation fighters—based on cost-per-effect analysis—extraordinarily more expensive than stealth aircraft.

Accordingly, DOD's combat aircraft programs must center on 5th generation stealth capabilities that can project power into contested environments during a campaign against China, Russia, or adversaries equipped by them. The enduring nature of these environments is exactly the reason Gen James McConville has said that, given a choice, the Army must prioritize buying next-generation weapon systems: "We can't buy old 'new stuff'…A lot of people are very comfortable, they want to buy…really 40-, 50-, 60-year-old capabilities. And those are wonderful systems, but we can't afford both."[59] The same logic must apply to the Air Force.

Other Alternatives to Sustain a Fight May Not Be Viable

DOD could attempt to sustain a fight against China by calling on high-end forces and stockpiles of munitions postured in Europe and the Middle East. However, this would be a high-risk option that degrades our ability to deter opportunistic aggressors in other theaters. There are multiple concurrent challenges facing the United States—China's actions to increase its control inside the First Island Chain, instability in Europe fomented by Russia, Iran and North Korea's rogue regimes, and persistent terrorism. Overlapping warfighter operational demands is the standard expectation in the modern era, and DOD's force structure decisions must reflect this.

It is also unrealistic to assume that DOD could buy additional aircraft, PGMs, and other sophisticated capabilities quickly enough to replace its combat losses.[60] Studies of the U.S. defense industrial base have determined it cannot rapidly surge production of major weapon systems, missiles, and munitions.[61] During World War II, the U.S. industrial base was known as the "arsenal of democracy," but even then, it took two full years, 1942 and 1943, for the nation's industrial capacity to surge to meet wartime demands.

Today's weapons systems are far more complex, and the number of their viable producers far smaller. Despite this, DOD has structured its Major Defense Acquisition Programs (MDAP) to gain efficiencies and reduce acquisition costs instead of preparing for large-scale wartime production "because maintaining unused capacity for mobilization is expensive."[62] A recent independent study determined it would require an average of 8.4 years at projected surge production rates for DOD to replace its current inventories of combat aircraft, armored vehicles, and other major weapon systems. The USAF would have the longest average time to replace its current inventory—an average of 8.1 years—compared to 5.2 years for the Navy, 4.7 years for the Army, and 2.0 years for the Marine Corps.[63] To a large extent this is due to the advanced technologies and complexity of many Air Force weapon systems. The problems become even more pronounced when it comes to replacing highly trained human capital like combat pilots given the dramatic drawdown of training infrastructure.

Change DOD's Theory of Victory to Deter China and Hedge Against a Long War

Planning for an extended-duration conflict with China should be a foundational requirement for DOD. The *2022 NDS* should include guidance to size forces to defeat a Chinese *fait accompli* and, if required, conduct follow-on punishment operations to compel a successful conflict termination. If backed up by a U.S. military that is appropriately sized and resourced, this revised theory of victory would significantly improve DOD's ability to deter Chinese aggression and assure U.S. allies.

As a 2016 RAND Corporation assessment concluded, "Planning for a prolonged high-intensity war and to make this emphasis known to China" would be "far better for stability and at least as good for deterrence for the U.S. military to emphasize."[64]

Planning for an extended-duration conflict with China should be a foundational requirement for DOD.

While some defense experts will voice their concerns over the cost to procure additional capabilities needed for an extended-duration operation against China, it is crucial to remember that fighting a war is far more costly than preventing one. This cost compounds considering the United States is at extreme risk of seeing its interests erode precipitously in the Indo-Pacific and other regions due to peer adversary actions. Addressing the resource challenge is manageable if DOD makes smart decisions to grow the right forces and capabilities instead of surging all its accounts.

A first step would be to establish a pacing goal of preparing for a follow-on punishment operation of some duration against China. Given Russia's lack of military capacity and an economy incapable of sustaining long-term, high-intensity operations against NATO, planning for an extended-duration operation in Europe should be a lesser priority.

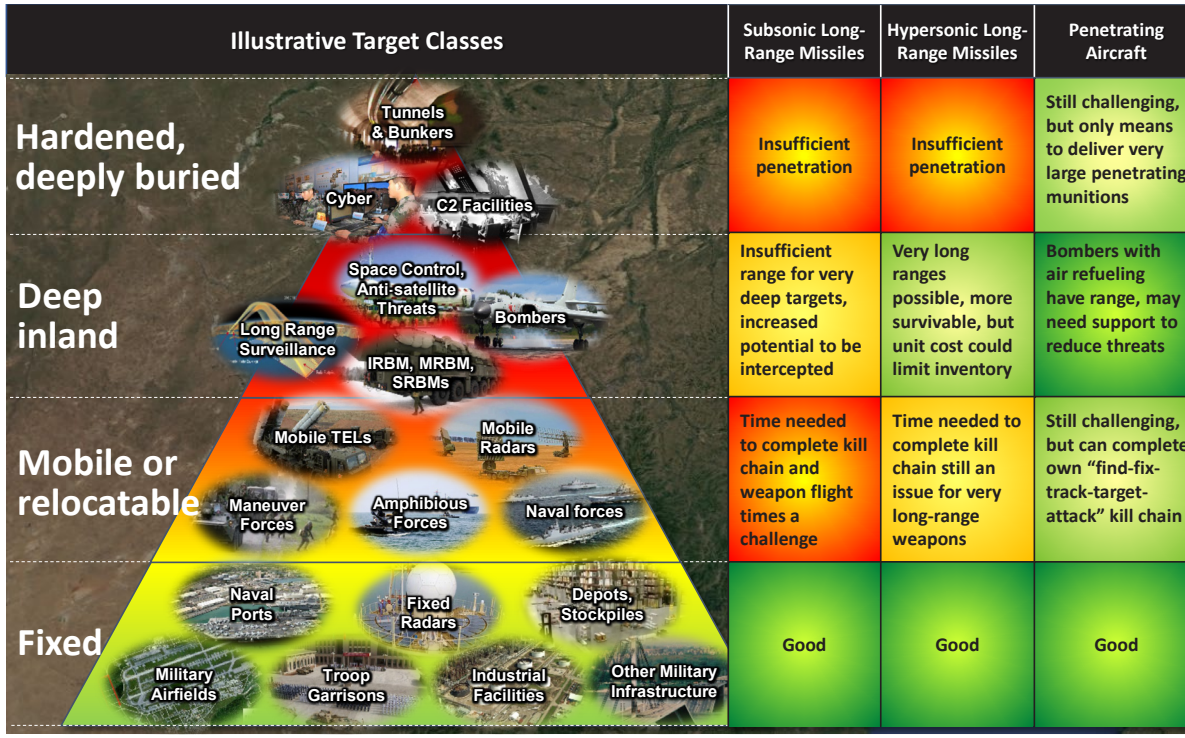


Figure 6: The optimal mix of long-range strike capabilities for a punishment campaign must consider the effectiveness of different weapons against challenging target sets and the potential that targets will number in the tens of thousands

Source: Mitchell Institute (see endnote 65)

Next, a punishment campaign against the PLA would not require a significantly larger U.S. land force since the air, sea, and space domains dominate the characteristics of the Indo-Pacific theater. Operations could entail systematically defeating the capabilities China would need to project conventional power outside its borders, including its blue-water naval forces, long-range ballistic missile batteries, bomber and fighter forces that can launch long-range cruise missiles, and anti-satellite threats. A candidate target set could also include military command and control nodes and other key infrastructure such as power generation facilities that are critical to sustaining the PLA's offensive military operations.

The size of this potential target set, combined with countermeasures China has implemented to complicate U.S. targeting, means that airstrikes are the only practical and cost-effective means to attack it.[65] The Navy's limited sea-based fires would be most effective if used against naval targets, and Army missile batteries optimistically deployed to Japan would still be located hundreds of miles from mainland China, precluding them from significantly contributing to a punishment operation in a cost-effective manner. A punishment

Punishment Operations

Punishment operations threaten to raise the costs of continuing to fight beyond the point an enemy believes is acceptable or exceeds the benefits it might expect to gain. In other words, the objective is to coerce an enemy to end a conflict because it considers it a better choice than continuing to fight.

operation to degrade China's means to project military power would require the U.S. military to increase its capacity to dominate the space and cyberspace domains as well as the electromagnetic spectrum. Depending on a theater commander's CONOPs, high-priority weapon systems could include these additional capabilities:

- 5th generation stealth combat aircraft to counter advanced air and missile threats.
- Long-range ISR and strike platforms capable of penetrating contested environments to strike high-value targets, including Chinese bomber and fighter bases.
- Long-range air-launched and ship-launched anti-ship weapons to cripple PLA Navy aircraft carriers and other surface combatants.
- A next-generation counterair family-of-systems to support allied operations and deny China control of the air, especially over critical areas such as the Taiwan Strait.
- Multi-mission unmanned capabilities, including unmanned surface vehicles, unmanned aerial vehicles (UAV), and low-cost expendable UAVs capable of teaming with manned systems that increase DOD's capacity to project combat mass into contested areas.
- Electromagnetic warfare capabilities to suppress advanced area-denial threats, including Chinese or Russian IADS.
- Offensive cyber capabilities.
- Space domain awareness and offensive space capabilities.
- Sufficient stores of precision-guided munitions prepositioned at forward locations in theater to sustain high-tempo combat operations.

Summary

Developing a sound theory of victory for great power conflict is a crucial step toward defining DOD's future force requirements and informing choices for how it should best allocate its resources. As former Commander of Air Combat Command General Mike Holmes, U.S. Air Force retired, explained, defining this theory of victory should be "the starting point for budget deliberations," not an after-the-fact rationale for why budget decisions were made.[66] In addition to defeating a peer adversary *fait accompli,* the theory of victory prescribed by the *2022 National Defense Strategy* should include prevailing in an extended-duration conflict with China. Even if DOD believes the potential for a protracted war with China is low, the military, political, and economic costs of such a conflict would be so high that the best course of action is to deter it. This will require strategic planning policies and a level of resources that create a U.S. military capable of prevailing in an extended-duration conflict. Resourcing the force for a long-duration conflict would also give U.S. commanders more options to simultaneously deter or respond to aggression by an opportunistic rogue state or peer adversary in a separate theater.

A One-War Strategy Increases Risk

The next National Defense Strategy should establish a requirement to build U.S. military forces that have the capacity to defeat an opportunistic aggressor in a second region. Returning to a two-war force planning construct would reduce the risk that China, Russia, or a lesser power would choose to take advantage of a U.S. military that is engaged against a peer adversary in another theater. The result of not doing so will be a force that lacks critical capabilities and capacity required by U.S. commanders to defeat threats to our nation's vital interests.

DOD, not every service, should have sufficient forces for two conflicts. The *2022 NDS* should define and differentiate between the peer conflicts that each service uses as its pacing challenge for sizing and shaping its future force.

The break from this long-standing requirement was likely motivated by DOD's desire to reduce the cost of rebuilding a U.S. military that has been drastically cut in size over the last 30 years. There is another approach that would reduce this cost: DOD, not every service, should have sufficient forces for two conflicts. The *2022 NDS* should define and differentiate between the peer conflicts that each service uses as its pacing challenge for sizing and shaping its future force. This would reduce excessive capability and program redundancies. These pacing scenarios should be determined by the predominant forces U.S. commanders will need to defeat peer aggression in their theaters. Sizing the Army primarily to deny a Russian *fait accompli* in Europe and the Navy and Marine Corps to defeat Chinese aggression in the Indo-Pacific would reduce wasteful overlaps. The Air Force should be sized for conflicts in both theaters, since it is the only service capable of rapidly providing the forces needed to blunt Chinese and Russian invasions. This USAF dual-theater planning requirement is consistent with the National Defense Strategy Commission's finding:

> Regardless of where the next conflict occurs or which adversary it features, the Air Force will be at the forefront. It will need more stealthy long-range fighters and bombers to penetrate advanced enemy air defenses, as well as more tankers to refuel them and allow them to operate at longer ranges.[67]

DOD Shifted to a One-War Force Planning Construct in the *2018 NDS*

The bi-partisan National Defense Strategy Commission concluded the *2018 NDS* "largely abandoned the longstanding two war construct for a 'one major war' sizing and shaping construct."[68] DOD's decision to abandon planning for two wars is puzzling, given it occurred at the very time that the possibility of it happening was growing. The services are now required to organize, train, and equip to defeat a single peer adversary, defend the U.S. homeland, sustain nuclear deterrence, deter a second lessor adversary like North Korea or Iran, and disrupt terror and weapons of mass destruction (WMD) threats. The red-colored block in the "war" column in Figure 7 illustrates this one-war requirement.[69]

A one-war force sizing requirement—sometimes called a one-war strategy—is a major departure from all of DOD's previous post-Cold War force planning constructs. Before 2018, the services were required to size and shape their forces to defeat two regional aggressors in overlapping timeframes. DOD institutionalized

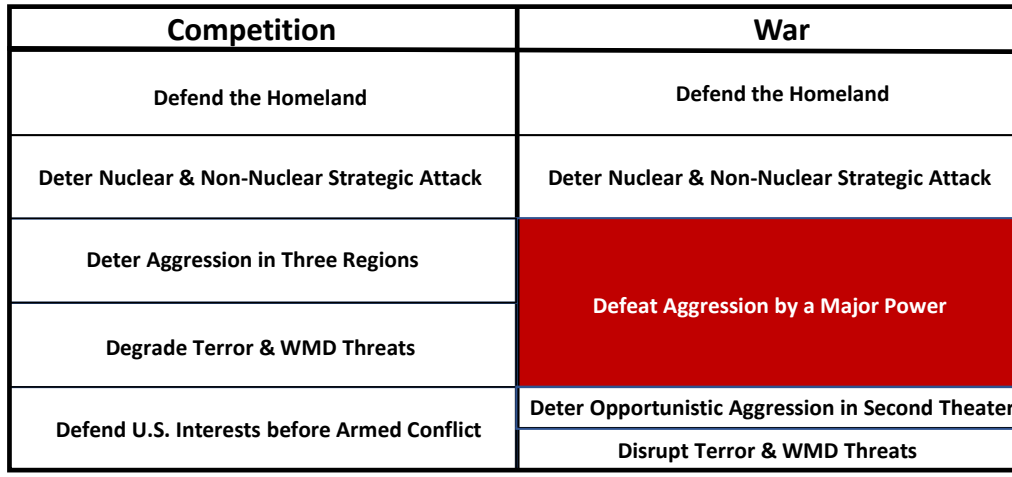


Figure 7: The 2018 NDS force planning construct adopted from an illustration released by the USAF

Source: U.S. Air Force (see endnote 22)

this two-war force requirement during its 1993 Bottom-Up Review and reported to Congress why it did so:

> This capability is important in part because we do not want a potential aggressor in one region to be tempted to take advantage if we are already engaged in halting aggression in another. Further, sizing U.S. forces to fight and win two major regional conflicts provides a hedge against the possibility that a future adversary might one day confront us with a larger-than-expected threat.[70]

Multiple defense experts have warned that a one-war planning standard will erode the U.S. ability to assure its allies and deter an unprecedented array of threats to its security.[71] The National Defense Strategy Commission emphasized this point when it told Congress that "a two-war force sizing construct makes more strategic sense today than at any previous point in the post-Cold War era," since "the United States now faces five credible challengers, including two major-power competitors and three distinctly different geographic and operational environments."[72] A one-war strategy also cuts against evidence that China and Russia continue to improve their security linkages, a fact that should increase DOD's concern that one of them could choose to take advantage of the U.S. military's engagement against the other in a separate theater. Although it is unlikely China and Russia will soon agree to a formal mutual defense pact, their growing cooperation is evident.

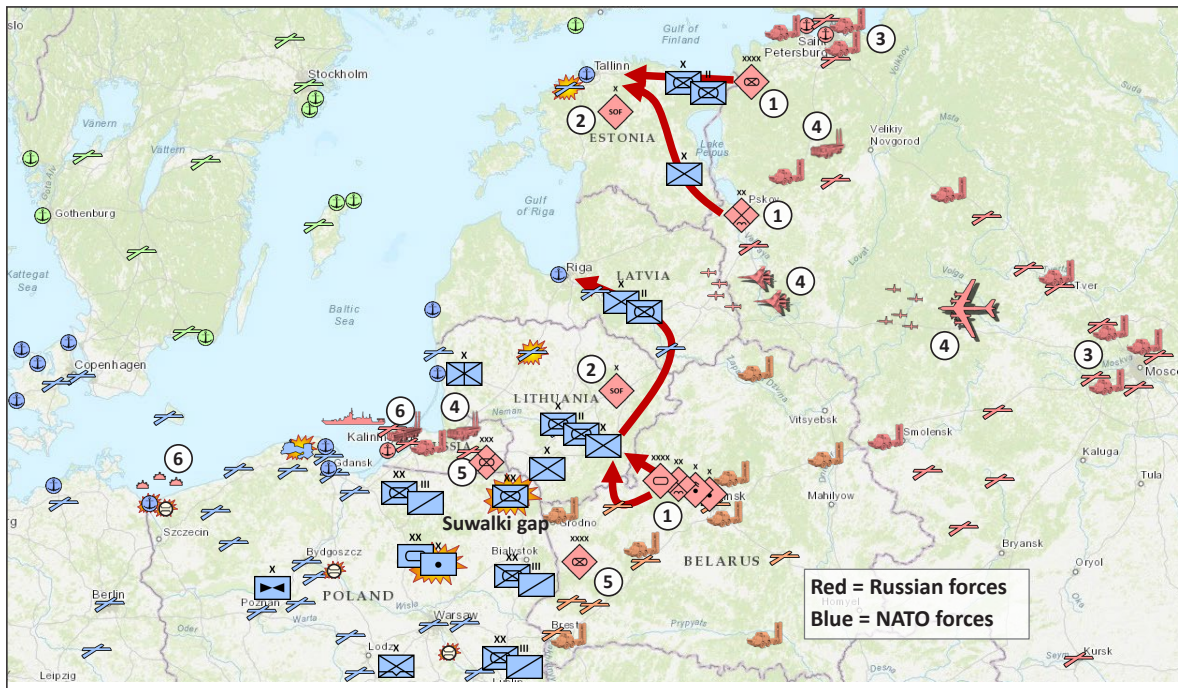
- In June 2017, China's Ministry of Defense announced China and Russia had agreed to a military cooperation roadmap that "makes top-level design and general plan for the military cooperation between China and Russia in 2017–2020. It shows the high-level mutual trust and strategic cooperation; it is conducive for both sides to face new threats and challenges in the security field and to jointly safeguard regional peace and stability."[73]
- In 2019, Russian President Vladimir Putin called Russia's ties with China an "allied relationship in the full sense of a multifaceted strategic partnership."[74]
- China's 2019 Defense White Paper noted that "the military relationship between China and Russia

continues to develop at a high level, enriching the China-Russia comprehensive strategic partnership of coordination for a new era" while also highlighting that in 2018, the PLA participated in Russia's *Vostok* strategic exercise for the first time.[75]

- In early 2020, then-Director of National Intelligence Daniel Coats testified to Congress that China and Russia were "more aligned than at any point since the mid-1950s, and the relationship is likely to strengthen in the coming year as some of their interests and threat perceptions converge."[76] DOD also reported to Congress that Russia and China have "upgraded their relations to a 'comprehensive strategic partnership of coordination in a new era,' pledging closer coordination on global security issues and mutual support."[77]

Illustrating Risks of Sizing for One War

Elbridge Colby was right when he testified to Congress that the *2018 NDS* had "marked implications for the size, shape, and composition of the Joint Force." What DOD leaders have not said is that sizing the U.S. military to defeat a single peer aggressor could have devastating consequences in the event a second



1. **Russian ground forces launch invasion supported by artillery, close air support, cyberattacks, and electronic warfare; force protection for Russian maneuver forces provided by their organic air defense units**
2. **Russian special forces operate behind NATO lines to attack critical nodes and infrastructure**
3. **Russian strategic air defenses protect key military and civilian infrastructure from NATO strikes**
4. **Russian air & missile attacks suppress NATO force generation by targeting NATO airfields, command posts, SAM sites, logistics, ports of debarkation**
5. **Russian forces engage NATO allies in northeast Poland to prevent timely reinforcement of Baltics**
6. **Russian navy & coastal defense batteries defend sea approaches, hinder NATO reinforcement operations**

Figure 8: Notional Russian invasion to cut NATO access to the Baltic states Source: Mitchell Institute, derived from multiple unclassified sources

adversary launches a *fait accompli* campaign in a separate theater. The failure to rebuild a two-theater force would deny combatant commanders the capabilities and capacity they need to defeat peer aggression as well as defend the U.S. homeland and deter nuclear attacks on the United States.

Although a comprehensive analysis of these shortfalls is beyond the scope of this report, it is possible to illustrate their magnitude through basic operational analysis. The following two-war example assumes Russia invades NATO's eastern frontier shortly after the start of a U.S. campaign against China in the Indo-Pacific. One scenario of concern is a Russian invasion of Lithuania that is designed to cut NATO's access to the Baltics through the land gap that lies between Belarus and Russia's Kaliningrad exclave (see Figure 8).[78]

A RAND Corporation report on multiple wargames it led on this and other European scenarios concluded that invading Russian forces could reach the capital cities of Lithuania and Estonia within a matter of days.[79] Preventing this would require NATO to attack Russia's armored forces, long-range artillery, missile launchers, IADS, and other targets within hours of the start of an invasion. The Air Force is the *only* U.S. service that can rapidly respond from inside and outside the theater to strike thousands of these targets in the required timeframe. However, much of this strike capacity will not be available if the USAF is already engaged against China in the Indo-Pacific, as shown in Figure 9.

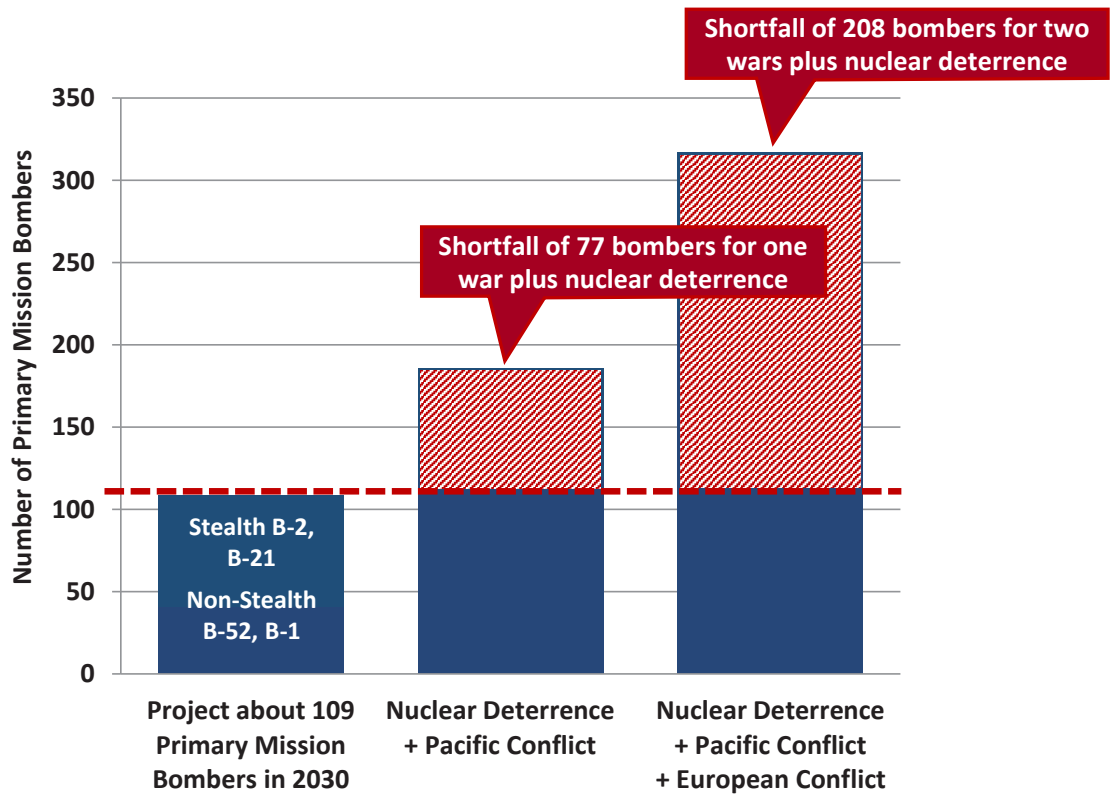


Figure 9: Illustrating potential bomber shortfalls to support two peer conflicts plus nuclear deterrence

Source: Mitchell Institute (see endnote 80)

Example: USAF bomber shortfalls for a second war. Figure 9 illustrates potential requirements for USAF bombers to deny a Chinese *fait accompli*, defeat a Russian invasion of the Baltic states, plus meet nuclear deterrence requirements. The first column represents the 109 primary mission stealth bombers (B-2 and B-21) and non-stealth bombers (B-52 and B-1) the Mitchell Institute projects will be in operational Air Force squadrons by FY 2030.[80] The middle column represents the total number of primary mission bombers that may be needed to sustain nuclear deterrence and respond to a conflict with China, which indicates there may be a shortfall of 77 bombers for these two operations. The right-hand column in Figure 9 then adds bombers needed to counter a Russian invasion of the Baltics that begins about a week after the Indo-Pacific campaign, which shows there could be a combined shortfall of more than 200 aircraft. A shortfall of this magnitude would deny an Allied combined force commander with the capacity to strike thousands of Russian military targets.

Example: USAF fighter shortfalls for a second war. There would also be a shortfall in Air Force fighter aircraft for the same two-war scenario. The left-hand column in Figure 10 represents 1,212 primary mission fighters the Mitchell Institute projects could be in the force in FY 2030, which equates to a total inventory of about 2,000 total fighters after adding test, training, backup inventory, and other categories of aircraft. The middle column shows the FY 2030 force may fall 90 fighters short of requirements for the Indo-Pacific conflict plus other operational needs, including defending the U.S. homeland from air and missile attacks.[81] The right-hand column in Figure 10 adds blunt and surge fighters to deny a Russian *fait accompli*. This shows the total requirement for the two wars plus homeland defense would exceed the

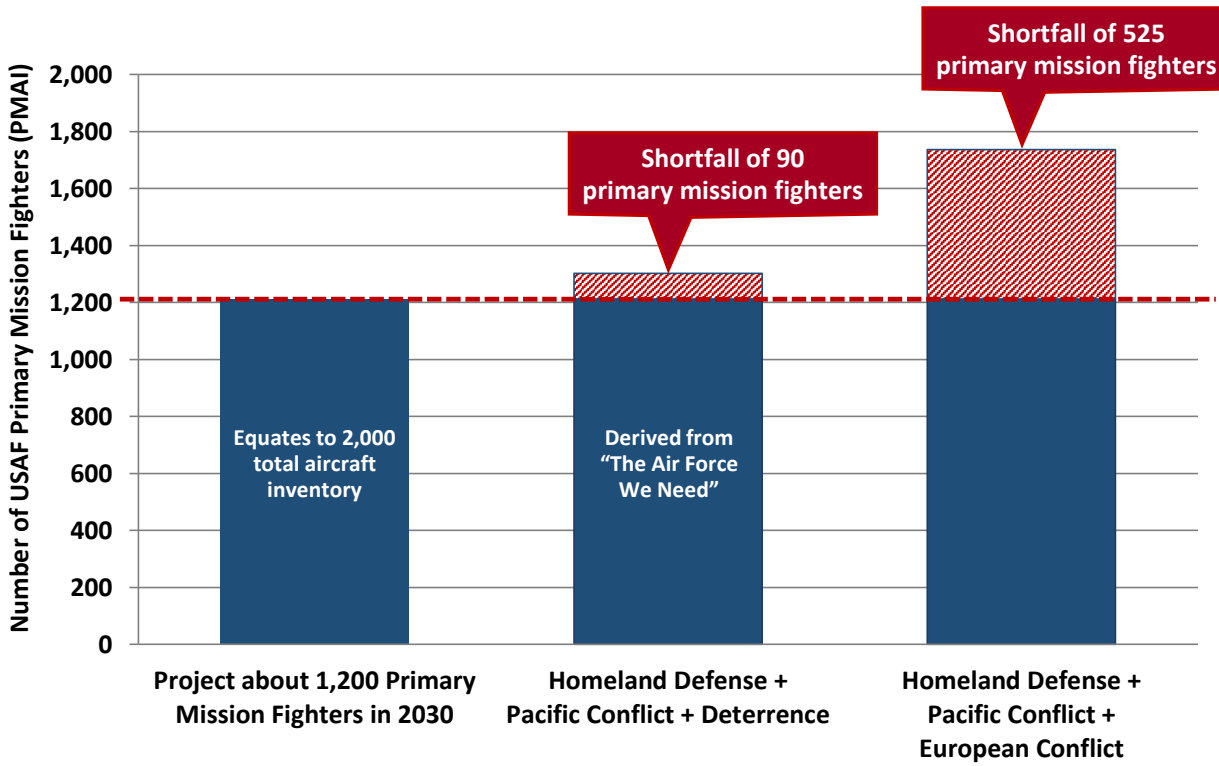


Figure 10: Illustrative operational shortfalls in USAF primary mission fighters

Source: Mitchell Institute (see endnote 82)

USAF's projected FY 2030 inventory by approximately 525 fighters.[82] A shortfall of this magnitude would affect nearly every NATO operation, including the ability of allied ground forces to maneuver relatively free from Russian air attacks. Worse yet, the reduction in USAF air superiority sorties, precision strikes, close air support to friendly forces, and other missions early in the conflict would give Russia the time it needs to achieve a *fait accompli*.

Should DOD plan on "swinging" bombers and fighters to a second conflict? Some might argue the USAF could redeploy or swing some of its bombers and fighters engaged in an Indo-Pacific campaign to a second fight in Europe or another theater if necessary. For force sizing purposes, this could decrease the Air Force's overall combat aircraft requirements since the same aircraft could be used again to meet demands in a second theater. This is exactly what DOD assumed in the 1990s to rationalize force cuts that were also intended to yield a so-called defense budget peace dividend:

> In the event of two nearly simultaneous major theater wars, certain specialized, high leverage units or unique assets that the United States fields in limited numbers—such as bombers, F-117s, standoff jamming aircraft, AWACS, JSTARS, and other C4ISR platforms, selected special operations forces, and some amphibious assault forces—would very likely "swing" or be redeployed from one theater of conflict or another.[83]

This assumption was understandable in the 1990s given DOD's focus on defeating the lesser militaries of rogue states such as Iraq and North Korea. However, redeploying USAF forces that are already engaged in a high-intensity conflict with China or Russia to a second operation would deprive the first theater commander with critical combat capacity and increase the risk of mission failure. Furthermore, a series of force cuts over the last 30 years eliminated the swing force capacity the Air Force once had.[84] The USAF's 140 B-2s, B-1s, and B-52s is a shadow of the force of 411 bombers it operated at the end of the Cold War, and its fighter squadrons have been cut by about half as well. A better approach for the *2022 NDS* would be to assume that USAF combat, ISR, air refueling, and other mobility aircraft already engaged in a peer conflict will *not* be able to swing to a second war.

Example: Potential USAF PGM expenditures. The availability of advanced PGMs will be just as critical to the U.S. military's lethality as the forces that deliver them. Absent sufficient munitions, U.S. forces will not be able to sustain combat operations regardless of how many delivery platforms are in the force. Figure 11 shows how the inventories of JASSMs and LRASMs the USAF is buying for strikes into contested environments could be quickly depleted during operations to defeat Chinese and Russian *fait accompli* campaigns. This example assumes only half of the USAF's non-stealth B-52s and B-1s—41 aircraft—are used to launch JASSMs and LRASMs.[85] At this modest tempo, the USAF's entire inventory of these weapons could be exhausted in a little over a week. This burn-down rate is optimistic since the USAF's stealth bombers and fighter force would also employ JASSM-ERs and LRASMs. This could easily exhaust their inventories in just a few days.[86] The consequences of a lack of these and other PGMs would be immediate and severe, since no other U.S. service or NATO force can provide the precision strike capacity needed to defeat peer aggression.

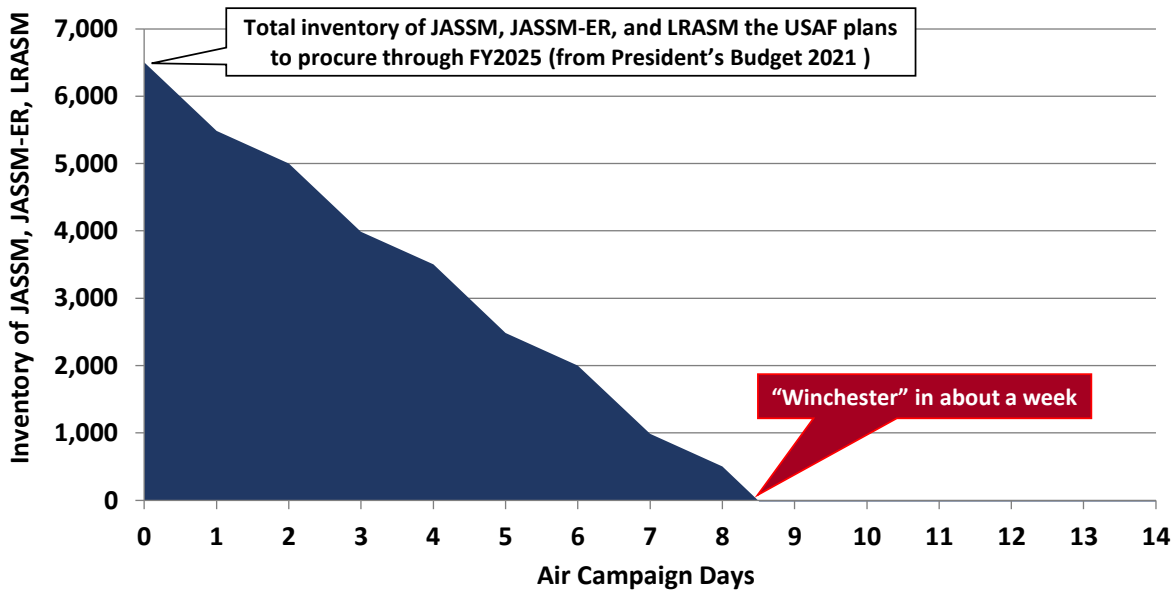


Figure 11: Notional depletion of USAF precision strike munitions in peer conflicts assuming plausible utilization rates

Source: Michell Institute (see endnote 85)

Revise DOD's Force Planning Construct to Reduce Risk and Hedge Against an Opportunistic Peer Adversary

From operational and resource perspectives, it is unrealistic to require the Army, Air Force, Space Force, Navy, and Marine Corps to plan to support the same conflict scenarios equally. Instead of a one-size-fits-all force planning construct, the *2022 NDS* should clearly define scenarios that should be the pacing challenges for each of the services. DOD should determine these scenarios by assessing the predominant mix of forces needed to defeat Chinese and Russian aggression instead of attempting to achieve homogeneity or following "Little League" rules where every service gets to play to equal degrees. Real jointness is the product of using the most effective, efficient, and prudent forces at the right places and times to achieve decisive effects. Differentiating between the services in this manner is consistent with the views of Chairman of the Joint Chiefs of Staff General Mark Milley who said, "The defense of the United States depends on air power and sea power primarily. People can say what they want and argue what they want, but that's a reality."[87]

It is unrealistic to require the Army, Air Force, Space Force, Navy, and Marine Corps to plan to support the same conflict scenarios equally. Instead of a one-size-fits-all force planning construct, the *2022 NDS* should clearly define scenarios that should be the pacing challenges for each of the services.

Peer conflict pacing scenarios for sizing the Navy, Marine Corps, and Army. A two-war force planning construct should require the Navy and Marine Corps to size and shape its forces primarily to deter and defeat Chinese aggression in the Indo-Pacific region. It should likewise require the Army to do the same for a conflict with Russia in Europe.

Due to the nature of the threat and the Indo-Pacific operational environment, U.S. forces to defeat a Chinese invasion of Taiwan or other act of aggression would predominately involve operations in the air, sea, space, and cyberspace domains.[88] A future war in the Indo-Pacific between China and the United States "is unlikely to involve large land combat" due to the geographic characteristics of the theater and nature of plausible conflicts.[89]

Given Europe's geography, the Army, Air Force, and Space Force would be the predominant providers of U.S. blunt and surge combat forces needed to defeat a Russian invasion of NATO's northeastern front. The Baltic Sea is too shallow for manned undersea warfare and too confined a maneuver space for large-scale U.S. surface warfare operations. Furthermore, the flight distances for fighters launched from Navy aircraft carriers operating in the North Sea are too great to allow them more than a few minutes of time over the Baltics, and the large-scale air refueling operations needed to support them would be better used to support land-based NATO aircraft that can each fly multiple sorties per day. Instead, U.S. Navy forces should prepare to conduct missions such as bottling up Russia's Northern Fleet and launching long-range standoff cruise missile strikes from the North Sea and other areas.

Size the Air Force for both theaters. By contrast, the Air Force should size and shape its forces to defeat peer aggression in both theaters. Compared to the other services, the Air Force possesses unique, indispensable capabilities that combatant commanders in the Indo-Pacific and Europe will both require. This includes long-range ISR and strike systems with the capacity to strike tens of thousands of targets, an aerial refueling force with a fuel offload capacity unmatched by any other military, and 5th generation stealth aircraft to dominate the air domain. Moreover, USAF fighters can fly multiple sorties per day from U.S. and allied airbases, and its bombers can strike from in theater or more remote bases—including directly from the United States—against Chinese and Russian forces.

The Army in the Indo-Pacific. This is not meant to imply that a future conflict with China would be isolated to the air, sea, space, and cyberspace domains—far from it. But "all-domain operations" does not mean there must be an equal level of effort by all the services in all domains. Instead, theater commanders will require force mixes that are optimized to defeat Chinese threats and other challenges to the United States and its allies.

For the Army in the Indo-Pacific, this should include maintaining forces in theater to train and otherwise build the ground force capacity of regional allies and partners and help protect host nations from terrorism and other threats. Army electronic warfare capabilities could help counter the PLA's growing capacity to control the electromagnetic spectrum, and Army forces will be needed to for logistics operations and to defend U.S. airbases and other theater installations from Chinese air and missile attacks.

China's ability to strike U.S. bases throughout the Indo-Pacific is the greatest threat to the ability of joint force operations to generate combat power, which is why air and missile defense is one of USINDOPACOM's highest priorities. However, the Army has indicated it does not intend to increase funding or its efforts to defend Air Force airbases, Space Force and Navy installations, and other theater

infrastructure against missile attacks.[90] Instead, it wants to acquire new long-range weapons to strike Chinese targets on land and at sea. Many of these weapons would be used against the exact same targets that can be attacked at a higher tempo and at less cost by Air Force and Navy capabilities. For instance, the Army's boost-glide Long-Range Hypersonic Weapon could cost $40 million or more each. Two of these missiles is about the price of an F-35A that can fly multiple sorties per day to deliver JASSM-ERs—$1.17 million each—against similar targets, and F-35s have the advantage of being reusable. The Army's long-range missiles will have significant operational limitations against challenging targets such as Chinese mobile missile launchers, and they will not be immune to Chinese counterstrikes.[91]

The Army's long-range strike ambitions are contrary to the Commission on the *2018 National Defense Strategy's* recommendation that it should grow its air and missile defense capacity and logistical forces "necessary to support Air Force operations" during a conflict with China.[92] It simply does not make sense to leave Indo-Pacific bases required for joint force operations at risk in order to acquire Army long-range strike weapons that are very costly, offer little marginal increase to the strike capacity provided by bombers and fighters, and pose significant additional logistical demands.

Summary

The military, political, and economic costs of failing to build a two-war force are so high that it must not be assumed away by DOD's next National Defense Strategy. From the end of the Cold War until 2018, DOD believed this was a fundamental requirement for sizing the U.S. military. Today, the magnitude of challenges facing DOD is unprecedented: two great power competitors, threats of terrorism, proliferating weapons of mass destruction, and multiple rogue states that continue to threaten regional stability. Given these threats, it simply makes sense to maintain a two-war military. The risks incurred by failing to do this vastly outweigh the costs. DOD can moderate additional resources needed to rebuild a two-war force by reducing excessive overlap across the services' forces and programs. Doing so will require it to determine the predominant mix of forces and capabilities needed for future peer-on-peer conflicts in Europe and the Indo-Pacific. Completing a review of the services' roles and responsibilities would be an advantageous step toward this end.

All-Domain Warfighting Concepts that Enable Cross-Service Tradeoffs are Critical to Reducing Risk

DOD must procure the right mix of capabilities and selectively grow the capacity of some of its forces if it is to maintain an unquestioned advantage over peer competitors. As defense spending plateaus, this will require DOD to depart from its usual practice of allocating relatively static shares of its budget to the services and then assessing compliance with the National Defense Strategy at the back end of its budget development process. This has yielded a force that is out of balance with the capabilities and capacity required to address modern threats.[93] Additionally, Air Force plans to recapitalize its aging forces in the early 2000s were truncated by OSD leadership to increase Army force structure and counterinsurgency capabilities. DOD simply cannot afford to protect capabilities in one service that cost more and deliver less, while cutting more effective options in other branches simply because budget calculations are easier to resolve in silos. For example, the Air Force just retired 17 B-1Bs to sustain its remaining bombers and help fund its modernization programs even as the other services pursue new, more costly options to address DOD's long-range strike shortfall. The truth is no other service can replace the long-range strike capacity lost by cutting these bombers. A better approach would be to determine the right mix of capabilities and forces at the front-end of DOD's planning process and then make tradeoffs across the services that maximize the U.S. military's combat power. New all-domain operating concepts linked to conflict scenarios prioritized by the *2022 NDS* would provide a foundation for determining these tradeoffs.

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Candidate Areas for a Targeted Roles & Missions Review

- Consolidating space roles and missions from other services into the U.S. Space Force.
- Future mix of long-range strike force providers.
- Responsibility for defending theater installation against air and missile attacks.

Although the Joint Staff is creating a Joint Warfighting Concept (JWC), it is doing so by relying on its bottom-up, consensus-driven doctrine development process. This will reduce its value as a tool to determine DOD's priorities. The fact that the concept is "not cost-informed" further undermines its utility as a forcing function to evaluate difficult capability tradeoffs.[94] DOD's civilian and military leadership should cooperatively develop a series of all-domain operating concepts for potential conflicts with China and Russia that optimize the U.S.

military's combat power instead of reinforcing the services' equities. A first step toward this end would be for the Secretary of Defense to direct a rigorous, targeted examination of service roles and missions. The goal should be to reallocate them as necessary to reduce critical capability gaps and minimize excessively redundant forces and capabilities. Without this guidance, the services will continue to iterate their individual warfighting concepts with limited interservice coordination. This practice is wholly unsustainable given declining DOD budgets, the scale of the challenges, the consequences of operational failures, and the need to best apply finite resources to modernize the U.S. military.

Service-specific Operating Concepts for Peer Conflict Are Not Enough

Since the *2018 NDS* was approved, each of the services have developed individual strategies and operating concepts for great power conflict to guide development of their forces, programs, and annual budget requests. Although promising in some respects, these individual efforts tend to reinforce service equities and result in budget requests that are unfeasible in the current fiscal environment. Depending on concepts developed in this stove-piped fashion increases the potential that DOD will waste resources on programs that are excessively redundant—including new long-range strike systems—and do so at the expense of neglecting shortfalls in critical mission areas such as theater missile defense. Furthermore, in the face of declining defense budgets, optimizing warfighting capability *across* the services is the only way to achieve greater warfighting capacity.

Operating Concepts Link DOD's Planning Guidance to its Resource Requirements

Operating concepts seek to solve operational challenges by describing objectives military forces should achieve and how they should be organized and employed to achieve them in the smartest possible fashion. These concepts inform DOD's requirements and provide a foundation for assessing trade-offs that are essential to maximizing the U.S. military's effectiveness. Notable examples include the 1980s-era AirLand Battle concept designed by the Army and Air Force to defeat a Russian attack against NATO in Central Europe, and the USAF and Navy's more recent Air-Sea Battle concept to defeat Chinese A2/AD threats.

Navy and Marine Corps

In late 2020, the Navy, Marine Corps, and Coast Guard released a tri-service strategy that explains how they will integrate their efforts to produce a more competitive and lethal maritime force.[95] The strategy is focused on how the sea services will compete with China—their pacing challenge—across the entire continuum of competition and conflict.[96] In the event of a major conflict with China, the strategy prioritizes using naval forces to control the seas, which is a shift in focus away from the Navy and Marine Corps' previous emphasis on projecting maritime power ashore. The strategy also notes that future U.S. naval operations will be guided by three operating concepts: Distributed Maritime Operations (DMO), Littoral Operations in a Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO).

Distributed Maritime Operations. DMO is focused on fleet-level operations to gain and maintain sea control in a conflict with a peer. DMO's central idea is to leverage "distribution, integration, and maneuver

to ensure sea control and maritime access in highly contested environments."[97] Distributed naval forces that can conduct highly integrated, multi-domain operations will enable theater commanders to mass combat power and hold at risk enemy forces from multiple azimuths of attack. At the same time, the combination of distributing U.S. naval forces, increasing naval assets engaged in the fight, improving force mobility and shipborne defenses, and electromagnetic warfare operations will complicate an adversary's targeting and improve the U.S. fleet's survivability.[98]

Navy	Current		2045
Aircraft carriers	11	=	11
Big deck amphibious ships	10	↓	9
Other amphibious ships	23	↑	57
Large surface combatants	91	↓	74
Small surface combatants	30	↑	66
Attack submarines	54	↑	72
Ballistic missile submarines	14	↓	12
Combat logistics force	29	↑	69
Support vessels	34	↓	33
Unmanned surface vehicles	0	↑	119
Unmanned underwater vehicles	0	↑	24

Figure 12: Navy planning force Source: Mitchell Institute (See endnote 99)

The force envisioned by the Navy to support DMO could eventually number well over 500 ships. This fleet would combine smaller, lower-signature, and more risk-acceptant platforms that can operate inside contested areas with more traditional multi-mission vessels that must operate in more permissive environments. It is the former class of platforms where the Navy now lacks the most capacity. The Navy's 30-year shipbuilding plan calls for increasing production of attack submarines and developing and fielding new guided-missile frigates, next-generation logistics ships, and multiple classes of unmanned vessels while deemphasizing large surface combatants (see Figure 12).[99] The plan also addresses the need to procure specialized amphibious ships to support the Marine Corps' new operating concepts.

Littoral Operations in a Contested Environment. The Navy and Marine Corps are developing several concepts for future operations in littoral environments. A theme shared by these concepts is that the increasing range of modern military sensors and weapons has blurred traditional distinctions between operations at sea and on land. This blurring requires Navy and Marine Corps forces to tightly integrate their future operations instead of operating as nearly separate entities as they have for decades. The LOCE concept provides a framework for greater naval integration that treats the littorals as a singular, unified battlespace.[100] It also explains how modular, scalable, and networked multi-domain Littoral Combat Groups, managed by new command and control structures and processes, will improve the Navy and Marine Corps' ability to integrate their operations, again with an emphasis on establishing sea control.

Expeditionary Advanced Base Operations. Over time, the Marine Corps optimized its forces to operate as a second land army, including forces that it tailored for a Korean Peninsula conflict.[101] It is now changing how it organizes, trains, and equips its forces to meet *2018 National Defense Strategy* requirements. EABO explains how future USMC forces equipped with mobile, smaller footprint, and relatively low-

cost capabilities will be capable of deploying to austere temporary forward locations to provide cross-domain fires, maritime ISR, electronic warfare, and ground support to naval forces conducting sea control missions. As part of the integrated naval force, Marines operating from expeditionary advanced bases could occupy and defend key maritime terrain within range of adversary long-range precision fires.[102] This would increase the number and distribution of friendly sensors and shooters for persistent sea control and sea denial operations beyond what could be provided by sea-based platforms alone. It would also create additional threat vectors an adversary would have to defend against and complicate an adversary's counter-targeting operations.[103]

The Marine Corps is developing an expeditionary combat formation called the Marine Littoral Regiment (MLR) to support EABO.[104] Smaller than a traditional Marine regiment, MLRs will be equipped with low-signature, largely unmanned, and more affordable systems capable of attacking enemy ships over long ranges, conducting ISR and air-defense, supporting the forward arming and refueling of aircraft, and executing other missions.

USMC	Current		2030
Active component infantry battalions	24	↓	21
Cannon artillery batteries	21	↓	5
Rocket/missile artillery batteries	7	↑	21
Tank companies	7	↓	0
Light armored recon companies	9	↑	12
Assault amphibian companies	6	↓	4
Fighter/attack squadrons	18	=	18
Medium tiltrotor squadrons	17	↓	14
Heavy lift helicopter squadrons	8	↓	5
Light attack helicopter squadrons	7	↓	5
Aerial refueler transport squadrons	3	↑	4
Unmanned aerial vehicle squadrons	3	↑	6
Bridging companies	3	↓	0

Figure 13: USMC planning force

Source: Mitchell Institute (See endnote 105)

Consistent with its new operating concepts, the Marine Corps is divesting legacy forces such as its armor and tube artillery units that are better suited to operations as a second land army to help resource its transformation (see Figure 13).[105] As Marine Corps Commandant Gen David Berger recently put it, "We're too big, we're too heavy, we're not expeditionary, we're too concentrated in certain areas of the globe and at certain sites that really lack resilience. We're too ground-centric."[106] From a joint perspective, these decisions are sensible because much of the force structure the Marine Corps is divesting is additive, supplementary, and in some cases redundant to what the Army brings to the fight ashore. The fact that the Army can provide similar capabilities in far greater numbers also helps to explain why the Marine Corps feels comfortable acting unilaterally to cut these forces. Lacking a similar insurance policy, it is understandable why the Air Force should be more hesitant to assume the risk of cutting forces that another U.S. service or allied military cannot bring to the fight. This underscores the point that strong DOD leadership is going to be necessary to compel the services to make tradeoffs that prioritize the most cost-effective mix of forces and maximize capacity provided to theater commanders.

Army

Multi-Domain Operations (MDO) is the Army's evolving concept for how its forces, as part of the joint force, "can counter and defeat a near-peer adversary capable of contesting the U.S. in all domains, in both competition and armed conflict."[107] Using Russia as the initial pacing challenge, the concept focuses on degrading A2/AD threats and exploiting the resultant freedom of maneuver to achieve a theater commander's objectives. To accomplish this, MDO prescribes the application of three mutually reinforcing tenets: calibrated force posture, multi-domain formations, and convergence.

"Calibrated force posture" is about creating forward postures and rapidly deployable forces that set the conditions to compete with peer adversaries and quickly transition when needed to combat operations. Future Army "multi-domain formations" will have more lethal and resilient forces with the capacity, capability, and endurance to operate across multiple domains within an adversary's A2/AD threat envelope early in a conflict. Finally, "convergence" involves the rapid and continuous integration of capabilities across all domains to provide commanders with multiple, redundant options to achieve their objectives and present an adversary with multiple, simultaneous dilemmas across different domains, rather than relying on overmatch with any single capability or in any single domain.

In 2019, the Army released its *Army Modernization Strategy* (*2019 AMS*) that outlined how it plans to transform itself to conduct MDO as part of an integrated joint force.[108] Similar to the Big Five programs the Army pursued beginning in the 1970s to actualize its AirLand Battle doctrine, the *2019 AMS* outlines six force modernization priorities: long-range precision fires, next-generation combat vehicles, future vertical lift, network, air and missile defense, and soldier lethality.[109] Another aspect of transforming the Army for MDO is called the AimPoint Force Structure Initiative, which is focused primarily on redesigning and rebuilding its echelons above brigade (EAB) formations.[110] Largely relegated to supporting roles over the past two decades of brigade combat team-centric counterinsurgency operations, EAB formations will be tailored for large-scale campaigns against great power adversaries. The Army is experimenting with EAB formations such as Multi-Domain Task Forces, a Theater Fires Command to coordinate long-range fires, and new fires and air defense units. Having stood up its first Multi-Domain Task Force in the continental United States, Army leaders have said that they intend to stand up a second task force in Europe and a third in the Indo-Pacific that are tailored for the different operating environments of their respective theaters.[111]

It should be of concern that forming "Multi-Domain Task Forces," is a prerogative—at least according to joint doctrine—of joint task force commanders, not individual services. Additionally, standing up a "Theater Fires Command," is duplicative to the responsibilities and authorities of the Joint Force Air Component Commander (JFACC). Army component forces that can contribute to deep strike operations are best integrated into any theater campaign by allocating those assets to the JFACC for incorporation into unified joint operations.

Air Force

Although the Air Force has not released a new strategy or operating concept to the public, it also believes the rapid, seamless, and continuous integration of actions across all domains will maximize the effectiveness of U.S. power-projection operations and impose multiple, simultaneous dilemmas that collectively confound

and paralyze an enemy's ability to respond. This is core to the four imperatives that are guiding its investment priorities: connect the force, dominate space, generate combat power, and conduct logistics under attack.[112]

Air Force	Current		2030
Airlift squadrons	53	↑	54
Bomber squadrons	9	↑	14
Combat search & rescue squadrons	27	↑	36
C2ISR squadrons	40	↑	62
Cyber squadrons	18	=	18
Fighter squadrons	55	↑	62
Missile squadrons	9	=	9
Remotely piloted aircraft squadrons	25	↑	27
Space squadrons	16	↑	23
Special operations forces squadrons	20	↑	27
Tanker squadrons	40	↑	54

Figure 12: Air Force planning force Source: Mitchell Institute (see endnote 22)

Connect the force. Air Force efforts to connect the force center on developing an Advanced Battle Management System (ABMS), which the service is using as its technical engine to develop concepts and capabilities for Joint All-Domain Command and Control (JADC2). The Air Force has made JADC2 the centerpiece of its efforts to enable all-domain operations. The U.S. military's legacy command and control systems and processes were not designed for the speed and complexity that information age all-domain operations demand. To overcome these limitations, the USAF's JADC2 vision "calls for connecting distributed sensors, shooters, and data from all domains to joint forces, enabling the coordinated exercise of authority to integrate planning and synchronize convergence in time, space, and purpose."[113]

Dominate space. The need to dominate space during a great power conflict was borne out in thousands of USAF wargames.[114] The U.S. military's reliance on space operations to project power globally and the increasingly contested nature of the domain were part of the rationale for standing up a separate service and unified combatant command for space.

Generate combat power. Generating combat power begins with creating the right mix of USAF forces that can operate from inside and outside a peer adversary's A2/AD threat envelope. This force mix includes a combination of advanced aircraft and munitions capable of conducting stand-off and stand-in strikes, weapon systems capable of operating from a highly distributed posture within a theater, high-capacity airbase missile defenses, and low-cost attritable UAVs that can launch and recover without using fixed runways.[115]

Logistics under attack. Lastly, the Air Force is investing in capabilities that will improve its ability to conduct logistics operations while under attack. These include additional distributed prepositioned stocks, new tactical mobility systems, improved supply chain security, and other capabilities to sustain USAF theater operations during high-end conflicts.

In terms of its future force capacity, the Department of the Air Force (DAF) believes it must aggressively modernize and grow by about 24 percent—from 312 to 386 operational squadrons.[116] Three independent studies, conducted as required by the 2018 NDAA, concluded the USAF is too old, has capacity shortfalls that cut across most of its mission areas, and lacks the survivability and lethality needed to defeat a single peer aggressor and simultaneously meet other *2018 NDS* requirements.[117]

Despite its diminished state, without additional resources it is likely the DAF will be forced to repeat what it has tried in the past, which is to retire some of its oldest aircraft to help sustain its remaining forces and fund modernization. This will not yield enough savings to fill the capability and capacity gaps created by decades of insufficient budgets. Furthermore, the current DAF force structure predicament was not of the Air Force's doing—it was a result of DOD leadership decisions not to recapitalize the Air Force fighter force structure as it had planned in the first decade of the 2000s. DOD leadership must recognize that this is a DOD-wide challenge, not just an Air Force concern.

Stove-piped Service Operating Concepts Increase Risk of Wasting Resources

The good news is there is a significant degree of overlap across all the services' new operating concepts. They all share the same appreciation of the challenges posed by Chinese and Russian A2/AD complexes, and they stress the need to break from legacy operating concepts that are better suited for the more permissive threat environments of the past.[118] The bad news is the services share another objective as they plan for great power competition and conflict: most desire additional resources to develop and field capabilities they believe are essential to their new warfighting approaches. If enacted, all of the services' "wants and wishes" will result in a defense budget topline that is simply unaffordable. In particular, the Navy has openly advocated for a massive increase of resources to support its Battle Force 2045 plan. As Chief of Naval Operations Admiral Michael Gilday put it, "If you believe that we require overmatch in the maritime domain, if you believe that in order to execute distributed maritime operations and to operate forward in numbers now that we need more iron, then, yes, we need more top line."[119] The Navy's most recently released 30-year shipbuilding plan would require a more than 40 percent funding increase to its shipbuilding and conversion account over the next five years and a doubling of its fleet operations and support funding.[120]

The Army has also argued it cannot meet current operational demands and simultaneously develop its future force. According to General McConville, Army end strength must grow to "reduce the stress of deployments for our troops."[121] At the same time, the Army has 35 signature programs that are aligned with its six modernization priorities. The cost of these programs will rise dramatically as they transition from development to full-scale production.[122] As the Army experiences this cost growth, it will be forced to make cuts to "non-priority" programs through additional rounds of its Night Court internal reviews. Whereas these reviews have successfully reallocated some modernization funding toward its highest priority programs, it has done so at a high cost to its other programs and capabilities, netting diminishing returns.[123] The Army maintains that, without additional funding, it will need to decide between cutting its current force structure, reducing readiness, or scaling back its modernization ambitions. As then-Secretary of

Conduct Cost-Per-Effect Analysis

To inform future force planning, DOD should conduct cost-per-effect analysis that assesses the comparative business cases behind candidate approaches and prioritizes those that promise to maximize the U.S. military's future mission effectiveness. This is particularly important given that multiple services offer different solutions to achieve similar effects. Failing to do this will see the services spending money on solutions that cost more but deliver less.

Instead of using a highly stove-piped, service-centric process to develop its budgets, DOD should conduct cost-per-effect analyses to determine cross-service tradeoffs that will maximize its future combat potential.

the Army Ryan McCarthy put it, "If we don't get 3 to 5 percent growth in the out-years, there is a collision course if you keep growing the force and start bringing in all these capabilities."[124]

Although the services say their modernization plans are critical to fight as they believe they must in the future, some funding requests appear to be informed more by the "needs" of a particular service rather than what would reduce risk for the U.S. military writ large. Instead of using a highly stove-piped, service-centric process to develop its budgets, DOD should conduct cost-per-effect analyses to determine cross-service tradeoffs that will maximize its future combat potential.

Example: Long-Range Precision Strike

Future conventional long-range strike capabilities may be the best example of why DOD should conduct cost-per-effect analyses to inform its investments.[125] All the services' new operating concepts emphasize the need for a new generation of long-range strike systems to counter A2/AD threats and create other effects in contested battlespaces. Most notably, the Army intends to begin fielding an entire portfolio of new long-range strike capabilities by 2023.[126] On the one hand, it is sensible for the Army to rebuild tactical and operational indirect fires that are tailored to counter Russian aggression in Europe, especially since Russian ground fires now generally out-range their U.S. counterparts at all echelons.[127] On the other hand, the Army's case for buying some of its very long-range missiles is dubious given the USAF's more cost-effective long-range strike capabilities.

The Army argues there are "enough targets are out there for all of us," and it can complement USAF and Navy operations by using its future long-range precision fires to degrade an adversary's IADS and make it easier for friendly aircraft to penetrate and survive in contested airspace.[128] Although theater commanders who do not have to pay for these systems would welcome them, failing to consider their cost-effectiveness compared to other alternatives could actually decrease the overall long-range strike capacity available for future operations. As Lt Gen Joseph Guastella noted, "I welcome any service that comes to the long-range fires club…[but] efforts to provide long-range fires have to be cost-effective."[129] This imperative becomes more critical in an era defined by flat or declining defense budgets.

The truth is that some Army long-range surface-to-surface missiles will be exorbitantly expensive compared to air-launched weapons that can create similar effects on the same targets. Figure 15 illustrates this by comparing the cost to operate and support a B-52 bomber over a 30-year period and the hypersonic weapons it employs (light blue line) with the cost to acquire, operate, and support a notional Army missile battery and two kinds of missiles they launch (green lines)—including its Long-range Hypersonic Weapon (LRHW), with an estimated unit price of $40 million. The comparison shows just a handful of Army missile launches would exceed the cost of the B-52 option. For context, a B-52 can carry up to 20 JASSMs in a single sortie, and the cost of one LRHW could buy about 35 JASSMs. The dark blue line in Figure 15, which represents

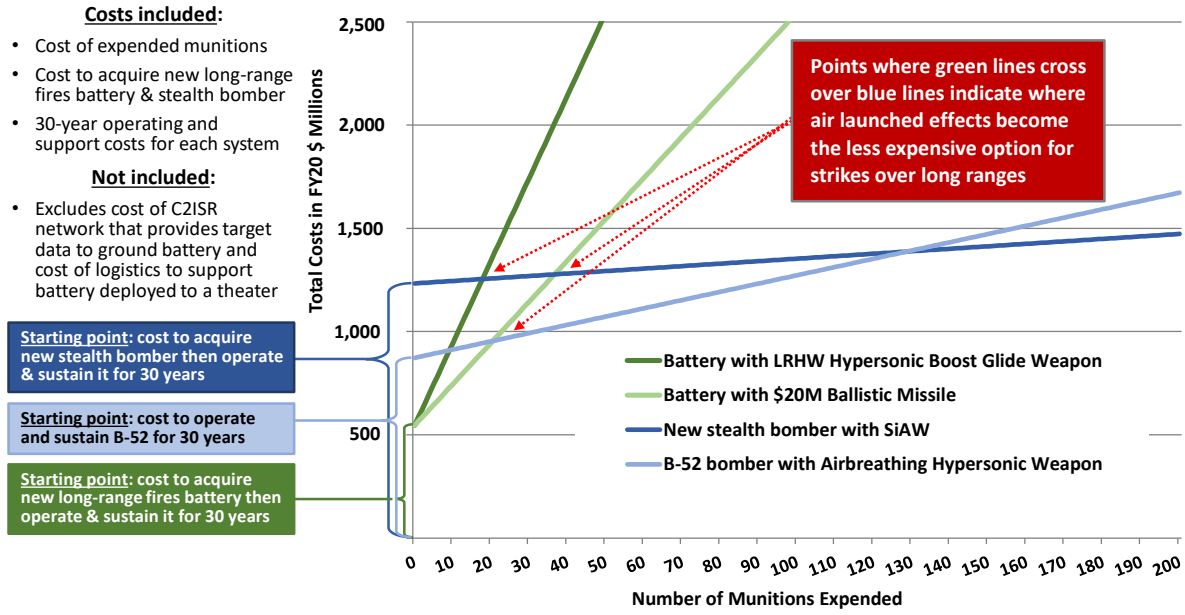

Figure 15: Comparing the 30-year operating and support costs of a B-52 (including estimated modification costs) and the munitions it delivers with the cost to acquire and operate a new stealth bomber or missile battery and the weapons they launch

Source: Mitchell Institute

the estimated cost to acquire a new B-21 bomber, operate and support it over a 30-year period, and procure its payloads of next-generation Stand-in Attack Weapon (SiAW) missiles, is similarly favorable.

DOD's force planners must consider the number of targets that they might need to hold at risk or strike in conflicts over the next 30 years. In particular, DOD should consider that the number of targets in a single war with a peer adversary could easily run into the high tens of thousands, with hundreds or thousands of targets being attacked every day. This comparison would suggest that ground-launched long-range strike systems with a higher cost per shot could quickly exceed the cost of airborne platforms and their weapons. Buying more than a handful of expensive LRHWs to strike extremely high-value, time-sensitive targets will likely not be cost-effective.

It is important to qualify that the comparison in Figure 15 is limited to the cost of the three different strike platforms and the weapons they expend. This creates bias within the comparison in favor of standoff systems such as the missile battery and B-52. For example, Figure 15 excludes the cost of additional systems needed to provide targeting support to the Army battery, and it does not account for the cost of its theater support facilities. The Army is pursuing a range of ISR capabilities—space-based, air, and terrestrial—to locate beyond-line-of-sight targets and deliver accurate targeting data to its future strike systems.[130] As Lt Gen Scott Berrier, the Army's then-Deputy Chief of Staff for Intelligence noted, the Army will need these new capabilities because "the intelligence assets that we have right now for the Army cannot see as far as we can shoot."[131] Including these costs in the Figure 15 comparison would further shift results in favor of air-launched weapons, and particularly penetrating systems capable of independently finding, fixing, tracking, and attacking targets.

Needed: All-domain Warfighting Concepts to Inform Cross-Service Tradeoffs

A fundamental problem is that service operating concepts are developed with little participation of other services and DOD's civilian leadership, and they neglect already established joint means and processes for ISR and command and control. For these same reasons, service-centric operating concepts do not provide adequate baselines to assess tradeoffs that will be necessary given flat or declining defense budgets. Recognizing this, then-Secretary of Defense Esper directed the Joint Staff and the services to create a new Joint Warfighting Concept (JWC) for all-domain warfare.[132] However, the Joint Staff's consensus-driven doctrine development process favors assuring bureaucratic service equities instead of making difficult tradeoffs that are part of optimizing combat lethality across the force. Another problem with the Joint Staff's current approach is that each of the services has been tasked to develop a subordinate functional concept for the JWC, which increases the likelihood the concept will be ladened with the services' equities.[133]

This consensus-driven, bottom-up approach could result in a Joint Warfighting Concept that supports, rather than challenges, the ambitions of the services to invest in overlapping capabilities. Long-range strike is a case in point.

Collectively, this consensus-driven, bottom-up approach could result in a Joint Warfighting Concept that supports, rather than challenges, the ambitions of the services to invest in overlapping capabilities. Long-range strike is a case in point—as General John Hyten has said, "The Joint Staff and the JROC will have a role in defining long-range fires, but not in terms of dividing it up between services."[134] That is explicitly the purpose of "joint" leadership in the Pentagon. Zero "joint" discipline by the Joint Staff leadership will not keep service acquisition programs in check. The lack of oversight authority risks creating an excessive level of redundancy in future joint operations that should be designed to achieve synergy. Excessive redundancy will waste defense dollars and reduce resources for other necessary warfighting capabilities such as missile defenses for deployed U.S. forces.

The evolution of DOD's Air-Sea Battle concept offers a cautionary lesson of the risks associated in taking this approach. Air-Sea Battle was initially developed by the Air Force and Navy beginning in 2009 to better integrate their planning, warfighting concepts, and capabilities to counter Chinese anti-access/area-denial threats. The two services also intended to use their integrated Air-Sea Battle approach to reduce efforts they determined were excessively redundant and ensure redundancies that did exist were the result of "conscious decisions to develop capacity in key areas rather than a failure to integrate."[135] Because of petty parochial concerns, Air-Sea Battle eventually expanded to include the other services and became a supporting concept nested under other joint doctrine. In 2016, Air-Sea Battle was replaced by the Joint Staff's "Joint Concept for Access and Maneuver in the Global Commons" (JAM-GC), which focused "on gaining and maintaining operational access to preserve freedom of action in the global commons in an era of increasingly sophisticated and rapidly proliferating military threats."[136] During its evolution to joint doctrine, the core content of Air-Sea Battle became so watered down and inclusive that its value as a tool to assess capability priorities and tradeoffs across the services was considerably reduced.

Three initiatives could improve the value of joint warfighting concepts as means to prioritize DOD's future force structure and capability investments.

1. Conduct a focused review of the services' roles and missions. First, resolving enduring debates over service roles and missions would help DOD to create new operating concepts that maximize its future combat power by capitalizing on the core competencies of each of the services. This need not be a comprehensive review. As General CQ Brown has suggested, DOD leaders should complete a targeted, yet rigorous, examination of the services' roles and missions as a step toward addressing existing capability gaps, clarifying areas of ambiguity, and reducing overlap in forces, capabilities, and programs.[137] In addition to long-range strike, the responsibility to organize, train, and equip forces to defend U.S. ports, airbases and other theater military installations from air and missile attacks needs clarification. China and Russia both understand U.S. bases in the Indo-Pacific and Europe are nearly undefended against air and missile attacks, and both continue to increase their capacity to launch large-scale strikes against them. Without these bases, the USAF and allied forces would have great difficulty in generating the combat power needed to deny a Chinese or Russian *fait accompli*.[138] Although new operating concepts such as Agile Combat Employment will reduce the USAF's reliance on its large, centralized, and highly efficient main operating bases, higher capacity defenses against ballistic missiles, cruise missiles, hypersonic weapons, and other threats are also needed, even for expeditionary operating locations.[139]

DOD has identified the need for these capabilities, but the lack of clarity over which service or organization should accept the primary responsibility for funding them has increased its missile defense shortfalls.[140] DOD's current directive of the services' functions requires each of them to provide their unique capabilities for missile defense without further elaborating what those capabilities are or specifying what assets they are intended to defend.[141] This ambiguity has resulted in decades of defense budgets that under-resourced base defense despite widespread recognition of the growing magnitude of the threat.

Since the U.S. military has largely depended on the Army to organize, train, and equip ground-based air and missile defense forces in the past, it would appear to be the most logical organization to do so in the future. As stated in a recent RAND analysis on air base defense, "It should also be noted that ground-based air and missile defense is an Army mission."[142] However, the Army has, in general, allowed its air and missile defense (AMD) capabilities to atrophy since the end of the Cold War, and in the early 2000s, it used its AMD forces as a bill payer to fund other priorities such as growing its brigade combat teams.[143] Today, the Army continues to resist procuring adequate air and missile defenses for Air Force theater airbases and other joint theater installations critical to generating combat power.[144] Even though missile defense is one of the Army's six modernization priorities, it appears it has prioritized rebuilding AMD capabilities and forces to defend only its maneuver formations rather than fixed joint sites such as airbases.[145] Addressing this growing capability gap will require DOD to conduct a rigorous assessment of the value of investing in new Army very long-range fires compared to procuring capabilities to defend U.S. theater airbases providing joint deep strike capability against Chinese and Russian attacks. The measure of merit for this and similar assessments should be to maximize the U.S. military's power-projection capacity per dollar invested, not the combat potential of an individual service.

2. Conduct cost-per-effect analyses to inform future force planning. All-domain warfighting concepts for peer conflicts would help provide a basis for DOD to conduct cross-service and cross-domain tradeoff

assessments.[146] These concepts should be developed by a process that explores comparative business cases behind candidate approaches and prioritizes those that promise to maximize the U.S. military's future mission effectiveness. This is particularly important given that multiple services offer different solutions to achieve similar effects, as is currently the case for the long-range strike mission area. The Secretary of Defense and senior OSD staff should be directly involved in the oversight and approval of these concepts and related assessments that inform DOD-wide resource decisions.

Emerging service operating concepts offer some candidate metrics to assess different approaches to solve future operational challenges, such as:

- Improvements in the ability to integrate U.S. operations in all domains to create effects required by theater commanders.
- Improvements to the survivability of U.S. forces operating in contested environments.
- The speed and number of dilemmas a concept would impose on an adversary.
- The potential to improve logistics under attack operations and reduce combat support/logistics requirements for forces operating in contested areas.

These assessments should be domain, service, and platform agnostic, focusing instead on how best to achieve mission goals in future operations. Creating *all-domain warfighting concepts* instead of "joint" concepts would be an important step toward reinforcing this mindset. It would also help stress the objective is to integrate the U.S. military's operations across all domains to achieve a synergy of effects instead of continuing to stovepipe resources by individual services, as has traditionally been the case.

3. Develop all-domain operating concepts that are tailored for different challenges. DOD should also develop separate all-domain warfighting concepts for potential conflicts with China and Russia instead of a single, overarching concept. Separate concepts would help account for the different geographic features and geostrategic characteristics of the two regions, including differences in ranges, geographic chokepoints, the strengths and weaknesses of the Chinese and Russian militaries, and capabilities of America's regional allies and partners. A single, overarching concept that fails to account for these differences may lack sufficient specificity to serve as useful guidance to the services, particularly if the services adopt different pacing challenges as the basis for their force planning and development.

Summary

In an era of flat or declining defense budgets, it is imperative for DOD to develop all-domain warfighting concepts to help inform its requirements and determine force structure and capability tradeoffs essential to maximizing the U.S. military's effectiveness. Rather than rely on a bottom-up, consensus-driven process to develop a Joint Warfighting Concept, a better approach would be to start with a rigorous examination of the services' current roles and responsibilities and then make decisions to reallocate them as needed to reduce excessively redundant forces and capabilities. Furthermore, decisions on how to allocate resources across and within the services should be made on a cost-per-effect basis. This is particularly important as multiple services offer alternative solutions to achieve similar effects in future battlespaces. DOD should

also develop separate all-domain warfighting concepts for potential conflicts with China and Russia instead of a single, overarching concept to help account for the different characteristics and geographic features of the Indo-Pacific and European theaters.

Recommendations

To its credit, the *2018 NDS* was the first National Defense Strategy since the end of the Cold War to address the realities of an emerging global security environment that now presents an "array of threats to our national security that is nearly unprecedented in its breadth and pace of change."[147] The *2022 NDS* must build on this recognition of the dangers the United States faces by correcting the flawed assumptions that have created a force that is too small and lacks the capabilities needed to outpace peer competitors. Specifically, the NDS update is an opportunity for DOD to reduce risk by hedging against a prolonged conflict with China and returning to a two-war force planning construct. DOD should complement this updated guidance by creating all-domain operating concepts that help ensure U.S. combatant commanders will have the forces and capabilities they need. Failing to do so would risk further eroding the U.S. military's ability to meet emerging threats and could result in a strategic failure during future great power conflict. The Mitchell Institute offers the following recommendations to help inform the development of the *2022 NDS*.

The NDS should adopt a theory of victory that hedges against prolonged great power conflict. Force planning guidance in the next National Defense Strategy should reduce the risk that a peer adversary would choose to engage in a long-duration conflict with the United States. This would require DOD to adopt a theory of victory that assumes U.S. forces may have to conduct follow-on operations such as a punishment campaign after a denying a Chinese or Russian *fait accompli*. A U.S. military with capabilities and capacity to deny a *fait accompli* plus sustain a punishment operation for some period would also improve deterrence and hedge against the risk that a second adversary would choose to take advantage of a U.S. military engagement in a separate theater.

Depending on a U.S. commander's concept of operations, key air, sea, and cyber offensive systems for a punishment operation against China could include:

- 5th generation stealth combat aircraft to counter advanced air and missile threats.
- Long-range ISR and strike platforms capable of penetrating contested environments to strike high-value targets, including Chinese bomber and fighter bases.
- Long-range air-launched and ship-launched anti-ship weapons to cripple PLA Navy aircraft carriers, other surface combatants, and PLAN shore installations.
- A next-generation counterair family-of-systems to support allied operations and deny China or Russia control of the air, especially over critical areas such as the Strait of Taiwan.
- Multi-mission unmanned capabilities, including unmanned surface vehicles, UAVs, and low-cost expendable UAVs capable of teaming with manned systems that increase DOD's capacity to project combat mass into contested areas.
- Electromagnetic warfare capabilities to suppress advanced area-denial threats, including Chinese or Russian integrated air defense systems (IADS).
- Offensive cyber capabilities.
- Space domain awareness and offensive space capabilities.
- Sufficient stores of precision-guided munitions prepositioned at forward locations in theater to sustain high tempo combat operations.

The next NDS should adopt a two-war force planning construct that differentiates between pacing scenarios for each service. The next NDS should return to a force planning construct that sizes and shapes the U.S. military to defeat a peer adversary and a second act of aggression in a different theater that occurs in an overlapping timeframe. This would hedge against the possibility that China, Russia, or a rogue state would choose to take advantage of U.S. forces that are fully engaged in conflict in another theater.

To avoid excessive redundancy in force structure and program investments to rebuild a two-war force, DOD should define peer conflict scenarios that will be the pacing challenges for each of the services. These pacing scenarios should be determined by assessing the predominant forces U.S. commanders will require to defeat future Chinese or Russian aggression. Due to the geography of the Indo-Pacific theater and the nature of plausible operations, the U.S. forces needed to defeat a Chinese invasion of Taiwan or aggression in the South China or East China Seas would be predominately provided by the Navy, Marine Corps, Air Force, and Space Force. For similar reasons, forces required to defeat a Russian invasion of one or more NATO states in Europe would predominately be provided by the Army, Air Force, and Space Force. Differentiating between pacing scenarios and then conducting assessments of optimal force mixes for each service would help reduce the cost of maintaining a two-war military. DOD as a whole—not every service—should have the capacity to defeat a second aggressor.

DOD should develop all-domain warfighting concepts that will help maximize its combat power on a cost-per-effect basis. To complement its new force planning concept, DOD should create all-domain operating concepts for peer conflict that will optimize its combat power on a cost-per-effect basis. DOD's senior civilian and military leaders should guide the development of these concepts instead of relying on processes that seek consensus across the services or simply combine multiple concepts developed in a stove-piped fashion by each service.

A good starting point would be for the Secretary of Defense to direct a rigorous examination of the services' current roles and responsibilities and then make decisions to reallocate them as needed to reduce excessively redundant forces and capabilities. A front-end resolution of enduring debates over service roles and responsibilities for key mission areas such as long-range precision strike and theater air and missile defense would help DOD create new operating concepts that maximize its future combat power.

DOD should also develop separate all-domain warfighting concepts for potential conflicts with China and Russia instead of a single, overarching concept. Separate concepts would help account for the different characteristics and geographic features of the Indo-Pacific and European theaters. Finally, these concepts should focus on future all-domain warfare instead of joint operations. This would help stress the priority is to integrate the U.S. military's future operations across all domains instead of emphasizing the organizations that provide forces to combatant commanders.

Conclusion

The *2018 National Defense Strategy* rightfully shifted DOD's planning and resource priorities toward preparing for great power competition and conflict. While the strategy began the long-overdue process of rebalancing the U.S. military for an unprecedented array of challenges to the security of the United States, the next NDS must reinforce the need to invest in next-generation capabilities and grow the capacity of some elements of the force to maintain an unmatched advantage over China and Russia.

The services face daunting challenges as they continue to adapt their strategies, operating concepts, and capabilities for prolonged peer competition. In an era of flat or declining defense budgets, responsibly making these decisions will require them to make tradeoffs guided by a National Defense Strategy and complementary all-domain warfighting concepts that reduce the risk of strategic failures. It not too late to get it right before billions of dollars are wasted satisfying individual service requirements. Instead, the DOD and Congress can direct the services to focus on their core competencies that, when combined under the oversight of a joint force commander, result in a synergy of capabilities rather than redundancy. The latter approach has the greatest potential to develop a future force that will prevail against Chinese and/or Russian aggression.

In the end, no number of tradeoffs or cuts to current forces and readiness will create the savings needed to rebuild a military that has been subject to decades of force structure drawdowns and delayed and deferred modernization. Building the next force will require ending the harmful cycle of "smaller but more capable" planning approaches; in the face of modern threats, this outdated rationale is a thinly veiled excuse reducing spending and meeting arbitrary defense budgets uninformed by the Nation's security strategy. Instead, the U.S. military will need years of stable budgets if it is to continue its transformation to a future force that will compete with China and Russia, deter peer aggression, and win America's wars. ✪

Endnotes

1 Eric Edelman and Gary Roughead, *Providing for the Common Defense: The Assessment and Recommendations of the National Defense Strategy Commission* (Washington, DC: U.S. Institute of Peace, 2018), p. vi.

2 Senate Armed Services Committee (SASC), "Senate Armed Services Committee Advance Policy Questions for Lloyd J. Austin, Nominee for Appointment to be Secretary of Defense," January 19, 2021, p. 6. According to Austin, "The Department will prioritize China as our number one pacing challenge and develop the right operational concepts, capabilities, and plans to bolster deterrence and maintain our competitive advantage…we will ensure that we remain fully ready to respond to and effectively deter nation-state threats emanating from Russia, Iran, and North Korea, and disrupt transnational and non-state actor threats from violent extremist organizations. Secretary of Defense Lloyd. J. Austin III, "Message to the Force," March 4, 2021.

3 According to former Deputy Assistant Secretary of Defense Elbridge A. Colby, "Our forces must be exceptionally lethal and capable, optimized to defeat China or Russia. At the same time, however, wars with China or Russia must remain limited because the alternative is apocalypse, which neither side wants—thus we must plan and prepare for them as limited wars. Above all, this requires focusing on defeating the other side's theory of victory, and particularly the *fait accompli* strategy." Elbridge A. Colby, testimony before the Senate Armed Services Committee on "Implementation of the National Defense Strategy," January 29, 2019, p. 5.

4 DOD's focus on denying a *fait accompli* is "a different goal than regime change or changing borders" that formed the basis for its force planning for much of the last 30 years. Colby, "Implementation of the National Defense Strategy," p. 5.

5 Continued erosion in DOD's advantages over peer adversaries "could fundamentally challenge our ability to achieve U.S. national security objectives—and limit DoD's ability to underpin other U.S. instruments of power." SASC, "Senate Armed Services Committee Advance Policy Questions for Lloyd J. Austin, Nominee for Appointment to be Secretary of Defense," p. 6.

6 According to the unclassified summary of the *2018 NDS,* "In wartime, the fully mobilized Joint Force will be capable of: defeating aggression by a major power; deterring opportunistic aggression elsewhere; and disrupting imminent terrorist and WMD threats. During peace or in war, the Joint Force will deter nuclear and non-nuclear strategic attacks and defend the homeland." DOD, Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge (Washington, DC: DOD, January 19, 2018), p. 6.

7 DOD's 1993 *Bottom-Up Review* report explained, "This capability is important in part because we do not want a potential aggressor in one region to be tempted to take advantage if we are already engaged in halting aggression in another. Further, sizing U.S. forces to fight and win two major regional conflicts provides a hedge against the possibility that a future adversary might one day confront us with a larger-than-expected threat." DOD, *Report on the Bottom-Up Review* (Washington, DC: DOD, October 1993), p. iii.

8 For a summary of DOD's one-war strategy and potential alternatives, see Hal Brands and Evan Braden Montgomery, "One war is not enough: Strategy and force planning for great power competition," *Texas National Security Review*, March 1, 2020.

9 Operational concept examples include the Army and Air Force's 1980s-era "AirLand Battle" which was designed to defeat a Russian attack against NATO in Central Europe, and the Air Force and Navy's "Air-Sea Battle" concept that eventually evolved into the Joint Staff's Joint Concept for Access and Maneuver in the Global Commons.

10 Aaron Mehta, "No lines on the battlefield: Pentagon's new war-fighting concept takes shape," *Defense News*, August 14, 2020.

11 Patrick Tucker, "US Army's Not Stupid for Wanting Long-Range Fires — But More Analysis Needed, Hyten Says," *Defense One*, April 6, 2021.

12 For more information on this issue, see Mark Gunzinger, Lukas Autenried, and Bryan Clark, *Understanding the Long-Range Strike Debate* (Arlington, VA: Mitchell Institute for Aerospace Studies, April 2021).

13 Thinking more broadly, it would also provide U.S. commanders with additional options to respond to aggression by a rogue state or a second peer adversary in a different theater. Planning for an extended-duration punishment campaign against Russia may not be necessary given its economic constraints and lack of high-end forces needed for it to sustain a long-term, high-intensity conflict with NATO.

14 For the sake of brevity, this report focuses on the Army, Navy, Air Force, and Marine Corps, and not U.S. Space Force planning. The authors assume the Space Force should size and shape to meet its global requirements.

15 This is consistent with Chairman of the Joint Chiefs of Staff Gen Mark Milley's belief that "the fundamental defense of the United States and the ability to project power forward will always be for America naval and air and space power" and "the defense of the United States depends on air power and sea power primarily." Paul McLeary, "CJCS Milley Predicts DoD Budget 'Bloodletting' To Fund Navy," *Breaking Defense*, December 3, 2020.

16 Theresa Hitchens, "Roles & Missions Scrub Needed for All Domain Ops: CSAF Brown," *Breaking Defense*, February 18, 2021.

17 Force planning constructs also provide a rationale for DOD's annual budget requests to Congress.

18 The regional conflict scenarios that the 1993 *Bottom-Up Review* "focused on most closely…envisioned aggression by a remilitarized Iraq against Kuwait and Saudi Arabia, and by North Korea against the Republic of Korea." DOD, *Report on the Bottom-Up Review*, p. 14.

19 For a summary of these changes, see Mark Gunzinger, *Shaping America's Future Military: Toward A New Force Planning Construct* (Washington, DC: Center for Strategic and Budgetary Assessments, 2013); and Mark Gunzinger, Bryan Clark, David Johnson, and Jesse Sloman, *Force Planning for the Era of Great Power Competition* (Washington, DC: Center for Strategic and Budgetary Assessments, 2017).

20 This 2006 guidance reflected Secretary of Defense Rumsfeld's belief that "in the post-September 11 world, irregular warfare has emerged as the dominant form of warfare confronting the United States, its allies and its partners." DOD, *2001 Quadrennial Defense Review Report* (Washington, DC: DOD, September 30, 2001), p. iv; and Office of the Secretary of Defense (OSD), *2006 Quadrennial Defense Review Report* (Washington, DC: DOD, February 6, 2006), p. 36.

21 DOD, *Summary of the 2018 National Defense Strategy*, p. 6.

22 According to the Air Force, this force planning construct illustration is "based directly on the National Defense Strategy." See U.S. Air Force, Fiscal Year 2018 NDAA, Section 1064, Study: Aircraft Inventories for the Air Force, March 2019, p. 3.

23 For a useful report on competition in the gray zone, see Lyle J. Morris et al., *Gaining Competitive Advantage in the Gray Zone* (Santa Monica, CA: RAND Corporation, 2019).

24 Colby, "Implementation of the National Defense Strategy," p. 11.

25 Colby, "Implementation of the National Defense Strategy," p. 11.

26 Edelman and Roughead, Providing for the Common Defense, p. v.

27 For examples of how these policies affected the Air Force, see Mark Gunzinger, Carl Rehberg, and Lukas Autenried, *Five Priorities for the Air Force's Future Combat Air Force* (Washington, DC: Center for Strategic and Budgetary Assessments, 2020); and Mark Gunzinger and Carl Rehberg, *Moving Toward the Air Force We Need? Assessing Air Force Budget Trends* (Arlington, VA: Mitchell Institute for Aerospace Studies, December 2019).

28 According to DOD's 1993 *Bottom-Up Review* report, "The United States must field forces sufficient to fight and win two major regional conflicts that occur nearly simultaneously." The review assessed force structure requirements to decisively defeat "aggression by a remilitarized Iraq against Kuwait and Saudi Arabia, and by North Korea against the Republic of Korea." DOD, *Report on the Bottom-Up Review*, pp. 14 and 17.

29 DOD, *2001 Quadrennial Defense Review Report*, p. 17.

30 Seth Moulton et al., *Future of Defense Task Force Report 2020* (Washington, DC: House Armed Services Committee, September 23, 2020), p. 5.

31 Colby, "Implementation of the National Defense Strategy," p. 5.

32 "The adept integration of these assets could enable Beijing or Moscow first to overpower U.S. allies and seize their territory while holding off U.S. and other allied combat power. China or Russia could then, by extending their A2/AD and defensive umbrella over these new gains, render the prospect of ejecting their occupying forces too difficult, dangerous, and politically demanding for Washington and its allies to undertake, or undertake successfully. Colby, "Implementation of the National Defense Strategy," pp. 3–4.

33 Colby, "Implementation of the National Defense Strategy," p. 4.

34 Colby, "Implementation of the National Defense Strategy," p. 6. DOD's Global Operating Model also includes a "homeland" layer that will "deter and defeat attacks on the homeland in ways that are consistent with the Joint Force's ability to win the forward fight and favorably manage escalation."

35 Colby, "Implementation of the National Defense Strategy," p. 6.

36 "With its invasion blunted or readily reversed, neither China nor Russia would have a way to end the war favorably; rather, Beijing or Moscow would face the awful choice of expanding the war in ways that play to U.S. advantages or swallowing the bitter but tolerable pill of settling on terms the United States can accept. Such a posture should deter a minimally rational adversary from choosing to pursue such a course." Colby, "Implementation of the National Defense Strategy," p. 6.

37 China could also choose to escalate in one or more operational domains, including space and cyberspace. As DOD noted in its 2020 report to Congress on China, "In the event of a protracted conflict, China might choose to escalate cyberspace, space, or nuclear activities in an attempt to end the conflict." OSD, *Military and Security Developments Involving the People's Republic of China 2020*, Annual Report to Congress (Washington, DC: DOD, 2020), p. 113.

38 China's 2019 National Defense White Paper lists "oppose and contain Taiwan independence" as its third priority, right after "deter and resist aggression" and "safeguard national political security, the people's security and social stability." People's Republic of China, State Council of Information Office, *China's National Defense in the New Era* (Beijing, China: Foreign Languages Press Co. Ltd., July 2019), p. 5. Also see Anthony H. Cordesman, *China's New 2019 Defense White Paper: An Open Strategic Challenge to the United States, But One Which Does Not Have to Lead to Conflict* (Washington DC: Center for Strategic and International Studies, July 24, 2019); OSD, *Military and Security Developments Involving the People's Republic of China 2020*, pp. 99, 112; and Eric Heginbotham et al., *The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power 1996-2017* (Santa Monica, CA: RAND Corporation, 2015).

39 Chinese actions to gradually achieve these objectives include declaring an air defense identification zone (ADIZ) in the East China Sea and building and militarizing artificial islands to expand its ability to control disputed areas it claims in the South China Sea. See OSD, *Military and Security Developments Involving the People's Republic of China 2017*, Annual Report to Congress (Washington, DC: DOD, May 15, 2017), pp. i–ii. The First Island Chain in the Western Pacific follows the Japanese island of Kyushu down the Ryukyus to the north of Taiwan, runs west toward Luzon, then south along Palawan to Singapore. The Second Island Chain includes the northern Marianas and the Volcano Islands, runs south to Guam, and then down to Palau and New Guinea.

40 The U.S.-China Economic and Security Review Commission has concluded that the CCP would weigh the political costs of a failed campaign against Taiwan as "prohibitive." U.S.-China Economic and Security Review Commission, *2020 Report to Congress of the U.S.-China Economic and Security Review Commission* (Washington, DC: U.S. Government Printing Office, December 2020), p. 64.

41 In 2017, the CCP officially changed the length of China's "War against Japanese Aggression" during World War II from eight years to fourteen years. Javier C. Hernández, "China, Fanning Patriotism, Adds 6 Years to War with Japan in History Books," *The New York Times*, January 11, 2017.

42 Xi Jinping, "Speech Delivered at the Congress to Commemorate the 70th Anniversary of the War to Resist U.S. Aggression and Aid Korea," *Xinhua.net*, October 23, 2020.

43 U.S.-China Economic and Security Review Commission, *2020 Report to Congress*, p. 418.

44 Writings sourced to the PLA indicate that China's ongoing military buildup "is aimed mainly at fighting in the Taiwan Strait and Western Pacific." Ian Easton, *China's Top Five War Plans* (Washington, DC: Project 2049, January 6, 2019).

45 Figure 2 is based on information from open sources. For a useful condensed description of a notional PLA invasion of Taiwan, see Samson Ellis, "Here's What Could Happen If China Invaded Taiwan," *Bloomberg*, October 8, 2020; and Ian Easton, *The Chinese Invasion Threat: Taiwan's Defense and American Strategy in Asia* (Manchester, UK: Eastbridge Books, 2017). A Chinese campaign against Taiwan could include "kinetic blockades of maritime and air traffic, including a cut-off of Taiwan's vital imports, to force Taiwan's capitulation. Large-scale missile strikes and possible seizures of Taiwan's offshore islands would accompany a Joint Blockade intended to achieve a rapid Taiwan surrender, while at the same time, posturing air and naval forces to conduct weeks or months of blockade operations if necessary." OSD, *Military and Security Developments Involving the People's Republic of China 2020*, p. 112.

46 Data used to create Figure 3 is unclassified and notional. The figure assumes notional attrition rates and a notional number of USAF combat-coded fighters allocated to a conflict with China in the year 2030. For simplicity, attrition rates for fighters performing strikes, counterair, electronic warfare, and other missions were held constant. The 2030 force used was derived from unclassified analysis performed by the authors in support of FY 2018 NDAA Section 1064 requirements. See Mark Gunzinger, Carl Rehberg, Jacob Cohn, Timothy A. Walton, and Lukas Autenried, *An Air Force for an Era of Great Power Competition* (Washington, DC: Center for Strategic and Budgetary Assessments, 2019).

47 Andrew Erickson, "China's DF-21D and DF-26B ASBMs: Is the U.S. Military Ready?" *Real Clear Defense*, November 16, 2020.

48 According to naval analyst Thomas Shugart, "A pre-emptive Chinese missile strike on U.S. bases in Asia could crater every runway and runway-length taxiway at every major U.S. air base in Japan and destroy more than 200 aircraft on the ground." Thomas H. Shugert III, *Trends, Timelines, and Uncertainty: An Assessment of the State of Cross-Strait Deterrence* (Washington, DC: Center for New American Security, February 18, 2021), p. 13.

49 A 2018 U.S. Interagency Task Force report on the U.S. defense industrial base concluded that "gaps in munitions and missiles directly reduce the U.S. capability to deliver kinetic effects against adversaries." Office of the Under Secretary of Defense for Acquisition and Sustainment and Office of the Deputy Assistant Secretary of Defense for Industrial Policy, *Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States* (Washington, DC: DOD, September 2018), p. 42.

50 According to Elbridge Colby, "Procurement of substantial numbers of munitions designed to increase the existing Joint Force's lethality against Chinese invasion or Russian maneuver forces, such as longer-range anti-ship missiles (e.g., the Long Range Anti-Ship Missile), longer-range air-launched cruise missiles (e.g., the Joint Air-to-Surface Standoff Missile-Extended Range), and guided anti-armor weapons for attacks on ground maneuver forces" are needed to rectify "clear, major shortfalls for key scenarios (especially Taiwan and the Baltics)." Colby, "Implementation of the National Defense Strategy," p. 10.

51 The example assumes deployed B-52s have an 80 percent mission capable rate and carry 12 JASSM-ERs or LRASMs on their external pylons.

52 Former Navy submarine commander Thomas Shugart testified to the U.S.-China Economic and Security Review Commission that it is unlikely LRASMs will "be able to be delivered in sufficient numbers to ensure the defeat of a PLA cross-Strait landing" given DOD's current procurement plans. Shugert, *Trends, Timelines, and Uncertainty*.

53 The Air Force has used the term "high-low force mix" to explain its "intent to acquire a limited number of high-cost/high-capability platforms supplemented with many lower-cost/lower-capability platforms." U.S. Air Force, *Future Operating Concept: A View of the Air Force in 2035* (Washington, DC: September 2015), p. 10.

54 John A. Tirpak, "TacAir Study Will Determine If F-35 Production Surge Needed," *Air Force Magazine*, February 25, 2021.

55 Valerie Insinna, "US Air Force eyes budget-conscious, clean-sheet fighter jet to replace the F-16," *Defense News*, February 18, 2021.

56 The ratio is even worse for its bomber force: 13 percent stealth B-2s and 87 percent non-stealth B-1s and B-52s.

57 The loss and damaged rate of 4.8 percent and total number of losses were derived from Tables 2 and 4 of a CIA report on the 1973 conflict. Central Intelligence Agency, "The 1973 Arab-Israeli War: Overview and Analysis of the Conflict," September 1975, approved for release September 4, 2021, pp. 34, 42.

58 The 1998 Defense Science Board's (DSB) report on DAWMS recommended DOD should use caution when making major force structure decisions based on the study's results, since scenarios for theater conflicts used during the study should be expanded to include "two peer competitor scenarios." The DSB also warned "a peer competitor could arise by 2014." These warnings did not affect the Secretary of Defense's budget-driven decision to cancel the stealth B-2 bomber program early. Office of the Under Secretary of Defense for Acquisition and Technology, "Report of the Defense Science Board on Deep Attack Weapons Mix Study," January 1998, pp. 23–24.

59 Sydney J. Freedberg Jr., "Facing Cuts, Army Chief Touts Pacific Role," *Breaking Defense*, January 19, 2021.

60 DOD's inventories of advanced guided weapons lack the resiliency needed to support high-intensity conflicts of long duration. There is a common misperception that the U.S. industrial base can surge its production of air-to-air, surface-to-air, and air-to-surface munitions during a crisis. The truth is, this surge capacity is almost non-existent, especially at the sub-contractor level where many weapon components are manufactured. For why this is so, see DOD, *Fiscal Year 2020 Industrial Capabilities Report to Congress* (Washington, DC: DOD, January 2021), pp. 85–87.

61 According to a Center for Strategic & International Studies (CSIS) report, "With the shift of U.S. strategic focus to great power competition, interest in industrial mobilization for a long-term, high-intensity conflict has returned. However, the highly consolidated and fragile U.S. defense industrial base is not designed to meet this challenge." Mark F. Cancian and Adam Saxton, *Industrial Mobilization: Assessing Surge Capabilities, Wartime Risk, and System Brittleness* (Washington, DC: CSIS, January 2021), p. viii.

62 Cancian and Saxton, *Industrial Mobilization*, p. 2.

63 Reasons for the Air Force's longer average replacement rate include "the complex nature of its weapons and platforms." The Navy's average replacement rate of 5.2 years excluded replacing its ships, since it is "a significant outlier with much longer replacement rates." Cancian and Saxton, *Industrial Mobilization*, p. 43.

64 Scott W. Harold, *Defeat, Not Merely Compete: China's View of Its Military Aerospace Goals and Requirements in Relation to the United States* (Santa Monica, CA: RAND Corporation, 2016).

65 For more information, see Mark Gunzinger, *Long-Range Strike: Resetting the Balance of Stand-in and Stand-off Forces* (Arlington, VA: Mitchell Institute for Aerospace Studies, June 2020). Notional targets in Figure 6 were derived from multiple unclassified sources to support a 2019 study directed by the FY 2018 National Defense Authorization Act Section 1064. See Gunzinger, Rehberg, Cohn, Walton, and Autenried, *An Air Force for an Era of Great Power Competition*, pp. 97–98.

66 Mike Holmes, *Air Force Structure in the Next National Defense Strategy* (Washington, DC: Center for a New American Security, December 7, 2020).

67 The Commission also recommended the USAF "will need additional lift capacity, especially if the United States intends to project power across the Pacific. Above all, it will need more intelligence, surveillance, and reconnaissance platforms to give commanders the information they need to fight and win." Edelman and Roughead, *Providing for the Common Defense*, p. 36.

68 Edelman and Roughead, *Providing for the Common Defense*, p. 20.

69 U.S. Air Force, Fiscal Year 2018 NDAA, Section 1064, Study: Aircraft Inventories for the Air Force, p. 3.

70 DOD, *Report on the Bottom-Up Review*, p. iii.

71 Hal Brands and Evan Braden Montgomery have written, "Pairing a one-war defense standard with America's existing global commitments is a recipe for disaster. Without adequate military muscle to back up its threats and promises, Washington could grow so reluctant to uphold its security commitments that they become nearly worthless. Or it could try to enforce those commitments and fail. In either case, adversaries would have more incentives to challenge the status quo, while allies would have more incentives to look out for themselves." Hal Brands and Evan Braden Montgomery, "One War Is Not Enough: Strategy and Force Planning for Great-Power Competition," *Texas National Security Review*, Spring 2020.

72 Edelman and Roughead, *Providing for the Common Defense*, p. 35.

73 DD Wu, "China and Russia Sign Military Cooperation Roadmap," *The Diplomat*, June 30, 2017.

74 See U.S.-China Economic and Security Review Commission, *2020 Report to Congress*, pp. 352–353.

75 People's Republic of China, State Council of Information Office, *China's National Defense in the New Era*.

76 Daniel R. Coats, "Statement for the Record, Worldwide Threat Assessment of the U.S. Intelligence Community," Senate Select Committee on Intelligence, January 29, 2020, p. 4.

77 OSD, *Military and Security Developments Involving the People's Republic of China 2020*, p. 135.

78 See Sebastien Roblin, "The Suwalki Gap: The 40-Mile Line NATO is Ready to Go to War with Russia Over," *National Interest*, April 13, 2019.

79 David A. Shlapak and Michael Johnson, *Reinforcing Deterrence on NATO's Eastern Flank: Wargaming the Defense of the Baltics* (Santa Monica, CA: RAND Corporation, 2016).

80 Figure 9 was derived from unclassified analyses performed in support of FY 2018 NDAA Section 1064. See Gunzinger, Rehberg, Cohn, Walton, and Autenried, *An Air Force for an Era of Great Power Competition*. The Air Force determined it has a similar deficit for one war plus other requirements, which is why it wants to grow its bomber force by at least five squadrons. See U.S. Air Force, Fiscal Year 2018 NDAA, Section 1064, Study: Aircraft Inventories for the Air Force, p. 5.

81 The Air Force is required to maintain fighters, supporting air refueling tankers, and BMC2 aircraft that can disperse to operating locations across the United States for this mission. The Air Force would be required to provide additional forces to support a heightened posture to defend North American airspace against Russian or Chinese bombers, fighters carrying long-range cruise missiles, and other threats.

82 Figure 10 assumes the Air Force will have a total aircraft inventory of 2,000 fighters by 2030, of which 1,274 would be primary mission aircraft assigned to operational squadrons. Fighters needed for peer conflicts and homeland defense are illustrative and based on unclassified assessments.

83 DOD, *Report of the Quadrennial Defense Review* (Washington, DC: DOD, May 1997), p. 31. Also see DOD, *Report on the Bottom-Up Review*, p. 28: "Selected high-leverage and mobile intelligence, command and control, and air capabilities would be redeployed from the first MRC to the second as circumstances permitted."

84 Worse yet, these force cuts will continue: "In the face of strategic challenges from an increasingly assertive China and destabilizing Russia, we will assess the appropriate structure, capabilities, and sizing of the force, and, working with the Congress, shift our emphasis from unneeded legacy platforms and weapons systems to free up resources for investments in the cutting-edge technologies and capabilities that will determine our military and national security advantage in the future." President Joseph R. Biden Jr., *Interim National Security Strategic Guidance* (Washington, DC: The White House, March 2021).

85 Figure 11 assumes that ten B-52s and six B-1s are forward deployed and each fly a single sortie in a 24-hour period. The remaining bombers each fly a sortie every 48 hours from their mainland U.S. bases. The example also assumes the bombers carry full weapon loads.

86 It should also be noted that this example also assumes all JASSMs and LRASMs the Air Force intends to buy through FY 2025 would be available for strikes. This is an artificiality since the USAF will likely expend some of these weapons in other operations over the years and in peacetime for test and training purposes.

87 Paul McLeary, "CJCS Milley Predicts DoD Budget 'Bloodletting' To Fund Navy," *Breaking Defense*, December 3, 2020.

88 This report assumes that the U.S. Space Force should size and shape its forces to meet its global requirements, including offensive and defensive operations to defeat threats in the space domain.

89 David C. Gompert, Astrid Stuth Cevallos, and Christina L. Garafola, *War with China: Thinking Through the Unthinkable* (Santa Monica, CA: RAND Corporation, 2016), p. x.

90 According to the RAND Corporation, "Although the U.S. Army has been assigned the mission, that mission is not a priority for the Army, as reflected by the lack of dedicated forces for airbase defense." Alan J. Vick, Sean M. Zeigler, Julia Brackup, and John Speed Meyers, *Air Base Defense: Rethinking Army and Air Force Roles and Functions* (Santa Monica, CA: RAND Corporation, 2020).

91 For more in-depth analysis on this issues, see Mark Gunzinger, Lukas Autenried, and Bryan Clark, Understanding the Long-Range Debate (Arlington, VA: Mitchell Institute for Aerospace Studies, April 26, 2021), https://www.mitchellaerospacepower.org/single-post/understanding-the-long-range-strike-debate.

92 Edelman and Roughead, *Providing for the Common Defense*, p. 36.

93 For example, the Air Force and Space Force collectively account for only 24 percent of the defense budget, which helps explain why the Space Force has major capability gaps and the Air Force operates the oldest and smallest aircraft inventory since its founding as a separate service. For more information, see Mark Gunzinger and Carl Rehberg, *Moving Toward the Air Force We Need? Assessing Air Force Budget Trends* (Arlington, VA: Mitchell Institute for Aerospace Studies, 2019).

94 Tucker, "US Army's Not Stupid for Wanting Long-Range Fires."

95 U.S. Navy, *Advantage at Sea: Prevailing with Integrated All-Domain Naval Power* (Washington, DC: U.S. Navy, December 2020), p. 7.

96 For more information, see Joint Chiefs of Staff (JCS), *Competition Continuum* (Washington, DC: JCS, June 3, 2019).

97 ADM Christopher W. Grady, Commander U.S. Fleet Force Command, speech to the Surface Navy Association, January 17, 2019.

98 Christopher H. Popa et al., *Distributed Maritime Operations and Unmanned Systems Tactical Employment* (Monterey, CA: Naval Post Graduate School, June 2018).

99 Deputy Chief of Naval Operations(CNO), *Warfighting Requirements and Capabilities*, Report to Congress (Washington, DC: Office of the CNO, December 9, 2020), pp. 9–10; and Ronald O'Rourke, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress* (Washington, DC: Congressional Research Service, January 26, 2021).

100 U.S. Navy, *Littoral Operations in a Contested Environment* (Washington, DC: U.S. Navy, 2017).

101 U.S. Marine Corps, *Expeditionary Advanced Base Operations (EABO) Handbook: Considerations for Force Development and Employment* (Washington, DC: HQ USMC, June 1, 2018), p. 53; and Michael Fabey, "US Marine Corps Commandant says traditional amphib ships still needed, but service will focus on new smaller fleet," *Janes*, September 25, 2020.

102 General David H. Berger, *Commandant's Planning Guidance* (Washington, DC: HQ USMC, July 16, 2019), p. 11.

103 U.S. Marine Corps, *Expeditionary Advanced Base Operations (EABO) Handbook*.

104 Shawn Snow, "New Marine Littoral Regiment, designed to fight in contested maritime environment, coming to Hawaii," *Marine Times*, May 14, 2020; and Todd South, "Marine Corps looks at building 3 new Pacific regiments to counter China," *Marine Times*, February 4, 2021.

105 The amphibious fleet includes large, multi-purpose warships that are not well suited for Indo-Pacific Expeditionary Advanced Base Operations. The Marine Corps intends to field smaller, lower signature ships that will enable littoral maneuver and provide logistical support in contested environments. General David H. Berger, *Force Design 2030* (Washington, DC: HQ USMC, March 2020), p. 2.

106 Megan Eckstein, "CNO, Commandant: Services Have A Good Idea of How They'll Fight, If Congress Helps Them With the Right Spending Plans," *USNI News*, May 13, 2021.

107 "The concept describes how U.S. ground forces, as part of the joint and multinational team, deter adversaries and defeat highly capable near-peer enemies in the 2025-2050 timeframe." U.S. Army Training and Doctrine Command, "Multi Domain Operations," October 4, 2018.

108 U.S. Army, *2019 Army Modernization Strategy: Investing in the Future* (Washington, DC: U.S. Army, 2019).

109 The Army's "big five" weapon systems were the M1 Abrams main battle tank, Bradley armored fighting vehicle, Black Hawk utility helicopter, AH-64 Apache attack helicopter, and the Patriot missile air defense system. The Army has created Cross-Functional Teams within Army Futures Command that are tasked with shepherding the development of signature systems for each of its "big six" modernization initiatives.

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112 Secretary of the Air Force Barbara Barrett and Air Force Chief of Staff General David L. Goldfein, "United States Air Force Posture Statement Fiscal Year 2021," March 3, 2020, pp. 3–6.

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