

56 Recommendations for Congress: Shaping the FY 2022 National Defense Authorization Act and Defense Appropriations to Enhance the National Defense

Edited by Frederico Bartels

KEY TAKEAWAYS

The NDAA and defense appropriations bill shape the national defense and serve as pivotal guides for the direction of the military in the coming year.

The military is facing challenges in preparing to meet the requirements of the National Defense Strategy. Congress should provide resources to meet these needs.

In crafting these bills, policymakers should look to the *Index of U.S. Military Strength* as a guidepost and indicator of the health and needs of the military.

The National Defense Authorization Act (NDAA) has been a significant element of congressional legislation for the past six decades, having become law every year since 1962.¹ The legislation has evolved and changed since it was first passed, and its importance has increased with time. The NDAA is the focus of the annual calendar of the Committees on Armed Services in the House and in the Senate. It represents the bulk of congressional input on how the Armed Forces ought to work and how the United States military should position itself in the international arena.

Additionally, defense appropriations bills have funded the nation's military since its origins. Both bills are vital to shaping the nation's national defense. They serve as pivotal markers delineating the direction that the military will take in the coming year.

This paper, in its entirety, can be found at <http://report.heritage.org/bg3590>

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The Heritage Foundation's *Index of U.S. Military Strength* serves as a guidepost and as indicator of the health of the military services. The *Index* reflects a frank assessment of the state of the Armed Forces and the work that lies ahead. As *Index* editor Dakota Wood explains:

In 2014, when The Heritage Foundation began tracking the status of the U.S. military with the "Index of U.S. Military Strength," the services were consistently deferring maintenance, postponing modernization programs, and not even considering force expansion. Job No. 1 was as basic as it gets: to improve readiness to assure the success of ongoing operations...

From 2018 onward, gains were made in unit and personnel readiness, maintenance backlogs were reduced, and major acquisition programs were stabilized. Meanwhile, policy decisions to reduce operations in the Middle East and South Asia brought much needed relief to the force, allowing the Pentagon to assess and begin adjusting to the reorientation demanded by the new National Defense Strategy. That strategy adopted a marked shift from counter-terrorism and counter-insurgency operations to meeting the rapidly evolving challenges posed by major powers such as China and Russia.²

The 2021 edition of the *Index of U.S. Military Strength* finds that,

[i]n the aggregate, the United States' military posture is rated "marginal" and features both positive and negative trends: progress in bringing some new equipment into the force, filling gaps in manpower, and rebuilding stocks of munitions and repair parts alongside worrisome trends in force readiness, declining strength in key areas like trained pilots, and continued uncertainty across the defense budget.³

The task of lessening that uncertainty in the defense budget falls to lawmakers in crafting both the NDAA and the defense appropriations bill. In this fashion, this *Backgrounder* outlines recommendations on how to craft these bills in a way that strengthens the national defense.

The Biden Administration and the 117th Congress

The defense budget for fiscal year (FY) 2022 will be determined by a new Administration and a new Congress. Because of the inauguration of a new President, it is certain that the President's budget request will be delayed past its statutory deadline of early February. Further, because the final

makeup of the Senate was determined by runoff elections in early January, the organization of the new Senate was delayed.

The changes in Administration and the makeup of Congress make it quite likely that the Department of Defense (DOD) will fall into its “old normal” of starting the fiscal year under a continuing resolution. Given this situation, Congress should be as expedient and as bipartisan as possible in its crafting of the defense budget for FY 2022.⁴

The Fiscal Environment Created by the Government’s Response to the Coronavirus Pandemic. The coronavirus global pandemic brought many economies to a near-halt through the implementation of physical-distancing measures in a bid to slow down the spread of the virus. The federal government responded with multiple debt-fueled emergency aid packages. From early March 2020 to early January 2021, the federal government’s debt increased by \$4.3 trillion, from \$23.4 trillion to \$27.7 trillion.⁵ As stated by The Heritage Foundation’s David Ditch, “[f]ederal spending was already unsustainable before the outbreak of COVID-19 and its economic fallout. The public health crisis, its economic and societal ramifications, legislative relief packages, and extended lockdowns of entire communities and industries have driven federal spending, deficits, and debt to levels not seen since World War II.”⁶

The 117th Congress should find ways to tackle the unsustainability of the federal budget to put the government on a stable financial footing. The primary drivers of the government’s unsustainable spending—Social Security and health care entitlements—need significant reforms and will continue to add to the debt load if unchanged.⁷ However, it is also true that the spending on any program, including defense, cannot continue to grow faster than the economy for a sustained period of time without straining the fiscal position of the U.S. government.⁸ The fiscal realities are such that recent growth in spending on defense and other non-entitlement programs will also need to keep pace with the growth of the economy. It is for this reason that the growth projected as necessary in the defense budget be bounded.

Early actions of the Biden Administration to push for a \$1.9 trillion stimulus package reflect the reality that the fiscal situation of the country will be even more challenging in the future.⁹ It will fall on Congress to reduce spending in the face of the increasing national debt.

Ensuring Sufficient Resources

The bipartisan Commission on the National Defense Strategy of the United States, tasked with evaluating the 2018 National Defense Strategy (NDS), reached the consensus that:

In accordance with the testimony of Secretary Mattis and Chairman Dunford in 2017, this Commission recommends that Congress increase the base defense budget at an average rate of three to five percent above inflation through the Future Years Defense Program and perhaps beyond. Although this number is more illustrative than definitive, and although these estimates were provided prior to the conclusion of the process that produced the current defense strategy, it is nonetheless indicative of the level of investment needed to meet the ends the NDS establishes.¹⁰

This consensus was shaped by testimony from both the civilian and military leaders of the DOD at the time, and has since been validated by other department leaders.¹¹ Then-Secretary of Defense Mark Esper also expressed the need to increase the defense budget by 3 percent to 5 percent above inflation until FY 2023.¹² Ranking Member of the Armed Services Committee Senator Jim Inhofe (R-OK) has also called for this increase as necessary for meeting the challenges outlined in the NDS.¹³

The *Index of U.S. Military Strength* details the challenges that the military faces today in meeting the requirements of the NDS.¹⁴

It is beyond the scope of this *Backgrounder* to conduct a zero-based assessment of the defense budget to justify the necessity for real growth. But there are numerous unequivocal indicators that point to a military that is struggling to accomplish its missions under its current funding levels.

Specifically, the Navy has the smallest number of ships it has had since World War II, and the Air Force struggles to maintain a sufficient number of ready aircraft. Air Force aircraft are on average 30 years old. Primary Army items of equipment were designed in the 1970s and fielded in the 1980s.

Adding to these facts, this *Backgrounder* provides multiple recommendations that require additional funding beyond that which is currently budgeted:

- Recommendation #2 calls for the Army to increase its end strength by 2,000 soldiers. To resource that number of soldiers, for instance organized as an active armored brigade team, would cost approximately \$250 million.¹⁵
- Recommendation #8 calls for increasing the size of the Navy to 400 ships, which represents a demand of around \$30 billion annually in addition to the current shipbuilding account.¹⁶

- Recommendation #10 on advancing the Navy's Shipyard Infrastructure Optimization Plan also carries a price tag of around an additional \$600 million annually for the next 30 years.
- Recommendation #12, calling for the maintenance of the current size of the Marine Corps, amounts to roughly \$740 million a year if discussing an entire battalion.¹⁷
- Recommendation #15 calls for the acceleration of the F-35 acquisition procurement from the planned annual 48 to 100, which would require close to an additional \$6 billion annually.¹⁸
- Recommendation #24 highlights the challenge of modernizing all three legs of the nuclear triad and its nuclear command, control, and communications systems; modernizing plus sustaining current systems is estimated to cost around \$50 billion annually.¹⁹

While Heritage analysts do not have the ability to examine every element of the current defense budget, the preponderance of evidence above suggests that increasing the defense budget in the amounts recommended by a series of leaders and commissions is necessary at least until FY 2023 in order to prepare the military for the renewed great-power competition.

In the past two fiscal years, the goal of reaching between 3 percent and 5 percent above inflation growth was hampered by the Budget Control Act (BCA) of 2011. In the coming fiscal years, it will be hampered by the vastly increased amount of national debt that the country has assumed. In this context, Congress will have to prioritize the national defense within the broader federal budget.

A 3 percent real growth rate from the \$740.5 billion budget for FY 2021 would be a FY 2022 budget of \$778 billion. A 5 percent real growth rate would equal \$793 billion. Given the extraordinary fiscal pressures in 2021, DOD growth should be constrained to the lower end of the recommendations from military leaders. However, Congress should also plan on reducing spending growth over the next few years to prevent defense spending from putting additional pressure on the long-term financial position of the government.

56 Recommendations for Congress

In order to strengthen the national defense in the FY 2022 NDAA and defense appropriations bill, Congress should implement the following recommendations.

In order to increase transparency in the budget, Congress should:

Recommendation 1: Reduce the DOD's overseas contingency operations (OCO) account for the DOD to zero. Over the past decade, besides funding contingencies overseas, the OCO became an escape valve for military requirements that did not fit under the BCA-imposed cap.²⁰ It even got to the point where the DOD designated a portion of the OCO resources for base-budget requirements.²¹ Now that budget caps are no longer the law, the non-war-related resources denominated under OCO should be incorporated back into the base budget.

The Army

The Army enters 2021 with momentum. With its re-imagined modernization organization and programs the Army is poised to start fielding a new generation of equipment in 2022. The Army is contending with a budget topline that has remained flat at around \$179 billion for the past three fiscal years, which has resulted in the loss of approximately \$13 billion in buying power. To accommodate that loss, the Army has made hard decisions to constrain end-strength growth, and it has curtailed all but the most essential procurement programs.

After years of effort to pull the Army's brigade combat teams out of the depths they were in around 2016, their current readiness is excellent.²² Continued funding will be essential if the Army is to be able to successfully navigate the transition from counterinsurgency operations to a force able to compete in great-power rivalry as called for in the NDS.

In order to allow the Army to continue to modernize, Congress should:

Recommendation 2: Continue to rebuild the Army's active-duty end strength to the level recommended by military leaders. Army leaders have consistently stated that the Army is too small to execute the NDS without significant risk. In 2017, in perhaps the clearest of these statements, General Mark Milley, then Chief of Staff of the Army, testified that the numbers should be between 540,000 and 550,000 for the Regular Army, between 350,000 and 355,000 for the National Guard, and between 205,000 and 209,000 for the Army Reserve.²³ That was before the 2018 NDS was published, which is more demanding than the previous strategy focused on

counterterrorism. Former Army Secretary Ryan McCarthy has said that the nation needs a Regular Army of at least 500,000. The Army is currently planning on adding between 1,000 and 2,000 soldiers a year, so it would take between seven years and 15 years to reach the goal.²⁴ Army-authorized active end strength for FY 2021 is 485,000.²⁵ Congress should authorize an increase in the active-duty end strength to 487,000 for FY 2022 to continue the measured deliberate growth.

Recommendation 3: Ensure continued success of military recruiting. Military recruiting trends are going in the wrong direction.²⁶ The services, the Army in particular, have recently struggled to make their recruiting goals.²⁷ Long-term U.S. trends are all pointing in the wrong direction: fertility rates are declining, the percentage of veterans in society is dropping, youth obesity is increasing, and American awareness of civics is dropping. Other countries, such as Taiwan, South Korea, Germany, and Norway are already experiencing recruiting crises. If the U.S. hopes to avoid this situation, it will have to act quickly. Most of the National Commission on Military, National, and Public Service's recommendations from March 2020 were useful and some should be adopted.²⁸ Congress should convene a hearing on military recruiting in 2021 and ask both military and civilian experts for their recommendations on how to take action to ensure long-term recruiting success.

Recommendation 4: Continue to invest in the modernization of the Army. In 2018, the Army re-imagined its organization and priorities for modernization with an eye toward great-power competition.²⁹ Army Futures Command and eight cross-functional teams were activated and 31 new programs were initiated. All of these actions were taken to restore the technological advantage to the Army that had been steadily forfeited by three decades of neglect and the harmful BCA of 2011 and focus on counterinsurgency operations. Today, much of the Army relies on equipment fielded in the early 1980s and is in desperate need of upgrades.

Now, two years after reprioritizing, Army modernization efforts are bearing fruit. Key items, such as the Integrated Visual Augmentation System (IVAS) and the Mobile Short-Range Air Defense system (M-SHORAD), are now being fielded. Many more systems are expected in 2023 and depend on an uninterrupted funding stream to continue. In FY 2021, the Army requested \$34.3 billion for procurement, research and development, and testing and evaluation to continue this effort.³⁰ For FY 2022, Congress should authorize and fund these same accounts to the level of at least \$35 billion, while at the same time resisting the urge to add items not requested by the Army.

The Navy

Congress can take select but vigorous action in the next NDAA to positively affect great-power competition and tangibly uphold the rules-based international order. The action of greatest impact would be signaling its commitment in building an invigorated, forward-deployed Navy. As former Navy Secretary John Lehman testified before Congress on the topic of increasing the size of the Navy, the first year of unequivocal sustained resources and strategic focus can yield 90 percent of strategic effects.³¹

In order to prepare the Navy for great-power competition, Congress should:

Recommendation 5: Seek a comprehensive 10-year plan for developing future carrier air wings and strategic reserves and implement an associated resourcing plan. The FY 2021 NDAA included a requirement for a Naval fighter force structure acquisition strategy.³² The provision requires the Secretary of the Navy to establish a minimum number of F-35 and Next Generation Air Dominance aircraft for the Navy and Marine Corps that would be required to mitigate current strike-fighter shortfalls. This provision is too narrowly focused and should be expanded to include important strike-fighter enablers, such as tankers and electronic warfare aircraft, as well as including additional roles of future unmanned aircraft, such as the MQ-25 and MQ-8C.³³ There is persistent concern that ceasing procurement of F/A-18E/F Super Hornet aircraft from FY 2022 to FY 2025 may exacerbate carrier-air-wing-capacity gaps.

Congress should fund a plan to be provided by the Navy that includes aircraft inventory excesses to mitigate unplanned or contingency losses. Congress has addressed this challenge only regarding strike-fighter inventory, stating that the Navy should plan and budget for 54 strike-fighter aircraft per carrier air wing, instead of the current 44 strike-fighter aircraft.

Additionally, as the Navy's current fleet of EA-18G electronic warfare aircraft are retired in the coming decade, a replacement will be critical. The NDAA-required report, due on July 30, 2021, on a next-generation jammer to ensure full-spectrum electromagnetic superiority will be important. However, the report should be included as part of a comprehensive air-wing plan that additionally includes sustainment, modernization, and eventual replacement of E-2D air early warning aircraft that will figure in controlling of unmanned aircraft. A strategic reserve and expanded training fleet of aircraft should continue to be a priority in future budgets across all platforms of a future carrier air wing.

Recommendation 6: Prioritize field testing of unmanned Naval systems in realistic settings instead of pursuing limitations based on legal constraints or sub-system reliability. The FY 2021 NDAA included a provision for Program Executive Officers (PEOs) dedicated to furthering development of autonomous systems in the Navy.³⁴ Adding this responsibility to an existing PEO is more likely to complicate efforts to develop a family of unmanned platforms able to operate in unity across multiple domains. An existing PEO should instead be designated as overall responsible for comprehensively furthering the Navy's surface, subsurface and air autonomous systems.

Another provision in the FY 2021 NDAA prohibits procurement of any large unmanned surface vessels in FY 2021 until reliability is certified to Congress.³⁵ Also prohibited is inclusion of offensive weapons systems in such vessels until certified that these systems will comply with the Law of Armed Conflict. These prohibitions ignore existing DOD legal reviews and unnecessarily constrain important field testing at scale and in meaningful numbers of large unmanned surface vessels.

Congress should instead stipulate a cap to procurement of unmanned vessels as planned through FY 2026 in the current 30-year shipbuilding plan released in December 2020. Further, Congress must hold the Navy accountable for delivering tangible progress, and periodic reports to Congress after fleet experiments should become routine, such as that planned by the Pacific Fleet's Surface Development Squadron One in the first half of 2021.³⁶

Recommendation 7: Congress must request the development of a comprehensive national maritime program. The program should be developed by the Department of the Navy in concert with the U.S. Coast Guard and the Maritime Administration and aim to restore commercial maritime competitiveness, Naval shipbuilding capacity, and expand the workforce to build and sustain the Navy's future fleet.³⁷ This is a stop-gap effort until construction of a new U.S.-built logistics ship. This ship is mandated by Congress to begin no later than 2028, and the Secretary of the Navy is to develop an associated acquisition strategy by July 1, 2021. In conjunction with this effort, Congress has authorized, as appropriations allow, increased payments up to \$6 million per ship, per year to contract commercial tanker ships through the existing Maritime Security Program (MSP).

However, based on analysis conducted by Bryan Clark while he was at the Center for Strategic and Budgetary Assessments, in order to be effective, such a stipend would need to be up to \$7.5 million in additional government-contracted fuel business to be viable.³⁸ Without additional funds

allocated specifically for the above purposes, it is questionable whether ships in the numbers needed can be secured. Congress has expanded limited exceptions for the repair of Navy vessels overseas to mitigate maintenance costs and delays.³⁹ This can, in part, address the backlog of Navy vessel maintenance as documented by the Government Accountability Office (GAO).⁴⁰ However, not addressing market distortions caused by the Jones Act and *ad valorem* duties imposed on maintenance conducted overseas on U.S.-flagged vessels is unlikely to result in building a competitive commercial maritime industry, nor expand needed maintenance capacities.

Lastly, Congress and the Department of Transportation, acting through the Administrator of the Maritime Administration, have increased investment in maritime human capital. Despite this consensus, unless a clear goal of overall work force and specific skills is stated, it is unlikely to pace the growth in demand. To address this, the forthcoming five-year plan to recruit, train, and retain merchant mariners must clearly articulate the end strength needed by skill set.

As the Navy grows to keep pace with a growing Chinese navy, a comprehensive national effort is required to ensure adequate sea lift and logistics support during times of war. Congress should insist on a comprehensive program by the Departments of Defense, Homeland Security (that is, the U.S. Coast Guard), and Transportation that addresses these capacity shortfalls. Additionally, the sense of Congress that the domestic maritime industry is a national security asset is helpful and should be acted on with additional resources to enact a national maritime initiative that meets the needs of the Navy and restores U.S. international commercial competitiveness.⁴¹

Recommendation 8: Commit resources to realizing a manned fleet of no less than 400 ships by 2045. Today, to meet the demands of great-power competition, the Navy maintains approximately 100 ships at sea with a total fleet of only 298 ships. Russia's navy has remained focused on maintaining a dangerous submarine fleet and has added lethal *Kalibr* cruise missiles to its smaller surface ships.⁴² China's navy has grown and modernized at a remarkable rate: more than 300 ships today, and on track for more than 425 by 2030.⁴³ In fact, the growth of the People's Liberation Army Navy has exceeded all analysts' expectations, and its remarkable modernization is likely to continue.⁴⁴

In this environment, the sense of Congress to deliver as soon as practicable not fewer than 355 battle force ships should be revisited and included in the FY 2022 NDAA. On December 9, 2020, the Chief of Naval Operations delivered to Congress the much-delayed Annual Long-Range Plan for Construction of Naval Vessels.⁴⁵ That plan accelerates timelines for achieving

the previous goal of 355 battle force ships by three years to 2031, and phases in unmanned platforms. Significant additional budget resources are needed to deliver on this plan.

Established with the FY 2015 budget, the National Sea-based Deterrence Fund provides the Navy an account for holding appropriated funds for up to five years and grants several authorities within one budgetary package: advanced procurement, incremental funding, advanced construction, and cross-class common-component purchasing.⁴⁶ As the name implies, it is a Navy-only funding mechanism focused on delivery of the critically needed follow-on strategic deterrent *Columbia*-class submarines. Congress should allow the same authorities be provided across the Navy's shipbuilding accounts while repurposing the current fund to a department-wide Battle Force 2045 Fund. This would enable department-wide savings to be applied to achieving the above number of ships. Such an account should enable savings from outside the Navy to be directed to the 30-year shipbuilding program.

Congress and the Secretary of Defense must commit to sustained shipbuilding budgets to ensure sustained resourcing of this long-term shipbuilding program. The near-term shipbuilding goal should be no less than \$30 billion a year with matching operations and support funds. Any unused funds must be directed to recapitalizing and expanding the Navy's shipyard capacities, through such efforts as the Shipyard Infrastructure Optimization Plan (SIOP) and the Department of Transportation's forthcoming implementation plan for the "Goals and Objectives for a Stronger Maritime Nation" strategy.⁴⁷

Recommendation 9: Pursue a global Naval-posture investment plan that enhances resilience to attack, responsiveness to crises, and sustained readiness while forward deployed. Current investment in Naval construction and land acquisition is small and focused on existing Naval infrastructure. For example, the FY 2021 NDAA authorizes appropriations of \$2 billion for Navy and Marine Corps military construction, and \$414 million for Navy and Marine Corps family housing.⁴⁸ An additional authorization for the Navy's overseas contingency operations military construction stands at \$349 million with that investment focusing on projects in El Salvador, Greece, Guam, Japan, and Spain.⁴⁹ Such investment alone will not achieve the rebalancing of force posture needed to enhance resilience to Chinese threats in the Western Pacific.

Since 2013, Pacific Command (PACOM) has sought to rebalance its posture from Northeast Asia across the Indo-Pacific. In 2020, the Commander of the Indo-Pacific Command (INDOPACOM) provided a six-year \$20

billion plan titled “Regain the Advantage.”⁵⁰ This plan has informed Congress’s investments in the Pacific Deterrence Initiative (PDI), responding by authorizing \$2.2 billion in FY 2021.⁵¹ Looking to FY 2022, the Secretary of Defense is required to provide infrastructure, military construction investments, and logistics needs for the region in a report by February 1, 2021.

Congress should insist that this report include increases in investment in Southeast Asia and the Pacific Islands to enhance resilience in the face of Chinese ballistic and cruise missile threats. Additionally, Congress should request the Secretary of the Navy to provide a list of readiness investments (such as instrumented training ranges) that can sustain and enhance forward-deployed Naval forces’ readiness while offering opportunity to build interoperability in combined long-range fires with regional Allies.

Investments in PDI should be sustained but will be inadequate without similar efforts at home that enhance Naval infrastructure resilience. Thus, Congress should request the Secretary of Defense to conduct a global posture review to ascertain options for investment that enhance sustainability of the Navy’s access to homeland and global refueling, repair, and training facilities.

Recommendation 10: Continue to fund efforts to rebuild the Navy’s public shipyards. The Navy needs its four public shipyards to maintain submarines and aircraft carriers on schedule. But these shipyards—located in Hawaii, Maine, Virginia, and Washington State—suffer from decades of underinvestment. They have too few functional dry docks, and their facilities and capital equipment are old and poorly configured. These issues have caused maintenance backlogs across the nuclear fleet, and the Navy predicts that 68 maintenance availabilities will be missed if the shipyards’ problems are not remedied.⁵²

The Navy’s SIOP is the best plan for addressing decades of infrastructure neglect at the four shipyards. The plan outlines improvements to the shipyards’ dry docks, facilities, and capital equipment.⁵³ Costing a roughly estimated \$20 billion over 30 years, the SIOP represents a relatively small piece of the defense budget, yet Navy shipyards have an outsized impact on national defense because they keep the attack submarines, aircraft carriers, and the submarine side of the nuclear triad afloat.⁵⁴ Congress should continue to fully fund the SIOP and should make the reconstruction of Navy shipyards a top priority.

However, the SIOP is not perfect: The Navy predicts it would recover 67 of the 68 predicted missed maintenance availabilities, which is a huge improvement over the status quo, but leaves no margin for a potentially larger nuclear fleet or for emergent work. In this new era of great-power

competition, and especially of maritime competition with China, Congress should also work with the Navy to explore the possibility of opening a fifth public shipyard on the West Coast of the continental U.S. Building another West Coast shipyard, whether by rebuilding one of the former Navy shipyards there or building a new shipyard from scratch, would be an expensive undertaking, but it would solve the Navy's grave maintenance capacity issue.

The Marine Corps

The U.S. Marine Corps is moving into the second year of a dramatic redesign of its force, deemed necessary to shift from a focus on sustained land operations against smaller, non-state enemies of the type in which it engaged in Iraq and Afghanistan for the past two decades to the much larger challenge of major state competitors like China. General David Berger, Commandant of the Marine Corps, made the case for these changes in his planning guidance issued in July 2019 shortly after he became Commandant.⁵⁵ He provided details for the redesign eight months later in Force Design 2030.⁵⁶

Driven by substantial differences in the expected operating conditions and the more sophisticated capabilities of peer competitors able to conduct military operations across the broadest range of domains (such as air, sea, and space), the Corps is aggressively shedding some capabilities and platforms seen to be less relevant—such as tanks and conventional artillery—while investing in new capabilities more relevant to naval warfare—such as anti-ship cruise missiles and long-range rocket artillery.

The Corps is also investing in unmanned systems that will enhance the combat power and sustainability of small tactical units that will need to minimize their signature while at the same time increasing their mobility, lessening their dependence on logistical systems, and improving their overall situational awareness. But this must all be done in a fiscal environment that has come under extraordinary pressure from government efforts to mitigate the economic damage of the COVID-19 pandemic. Consequently, General Berger has made clear that the Corps is willing to trade force capacity and, potentially, some expensive major platforms to make related funding available for new capabilities, more experimentation, development of new formations, and investments in the myriad activities necessary to evolve new employment concepts.

To ensure that U.S. Naval power can be applied against a major state like China or that the Joint Force has new ways of conducting operations against technologically advanced opponents even on land, like Russia, Congress

should take every opportunity to support the Corps' efforts to modernize its force by careful divestment, investment, and reorganization. Congress should not make the Corps' transition harder.

To do so, Congress should:

Recommendation 11: Restore funding for the Marine Corps' long-range precision fires programs. To contribute to the projection of U.S. Naval power and to help the Navy to deny the use of the sea by an enemy navy, the Corps is trying to introduce long-range weapons that are effective against ships and supporting land forces. To this end, the Corps requested funding in its FY 2021 budget to purchase a version of the Tomahawk cruise missile, a ground-based anti-ship missile (GBASM), and a range of efforts collectively known as long-range precision fires (LRPF). Congress provided no funding for the Tomahawk and only provided 50 percent and 75 percent of requested funding for GBASM and LRPF, respectively.⁵⁷ If the Corps is to have the means to contribute to sea control and sea denial, it must have the wherewithal to do so. Congress should remedy this shortfall in FY 2022.

Recommendation 12: Provide sufficient funding to preserve the Corps' end strength while also supporting the acquisition and introduction of new capabilities that are essential to conducting operations on China's first island chain. At present, the Corps is sacrificing manpower to afford equipment. In any major conflict with a power like China or Russia, both people and material will be essential. More units will be needed in more places, combat losses will need to be replaced, and a sufficiently large force will be necessary to sustain operations over time. Already too small to engage in major operations in more than one theater at a time, the Corps will reduce its size by 5,000 Marines during FY 2021—from 186,200 to 181,200⁵⁸—and plans to shrink to 174,000 by 2030. These cuts have been sought because the Corps' budget will not support both a larger end strength and the modernization it must pursue.

Recommendation 13: Sustain verbal and programmatic support for the Corps' organizational redesign. In FY 2021, the Corps will start reorganizing various existing infantry regiments into new Marine Littoral Regiments (MLRs) that are structured to conduct the type of small-unit, distributed operations described in its operational concepts.⁵⁹ The III Marine Expeditionary Force, headquartered in Okinawa, Japan, will stand up three MLRs and initiate a three-year program of experimentation. The Marine Corps will need the support of Congress as new expenses, potentially new authorities, and basing requirements are identified along the way.

The Air Force

The main challenge facing the Air Force is crafting and executing a plan to increase readiness levels, refresh and increase the service's fleet of aircraft, achieve commensurate funding, and leadership focus on making it happen. Creating an Air Force ready to fight a peer competitor requires an increase in the number of operational squadrons. Thus, the Air Force must stop scheduled retirements of legacy platforms, it must increase the rate at which it acquires fifth-generation systems, and it must increase the readiness of those weapons systems in FY 2022.

In order to improve the Air Force's posture for great-power competition, Congress should:

Recommendation 14: Not allow the Air Force to divest viable legacy platforms. Current scheduled retirements of viable legacy combat and combat support platforms all but offset the Air Force's modest acquisition strategy. Divestments of A-10, KC-10, and KC-135 aircraft, as well as most of the B-1 fleet, should end until the platforms in the current inventory, coupled with new acquisitions, bring the number of fighter, bomber, and air-refueling squadrons to the total number of 386 operational squadrons mandated by the FY 2021 NDAA.⁶⁰

Recommendation 15: Truncate the acquisition of fourth-generation F-15EXs to 74 aircraft and move to accelerate the acquisition of fifth-generation F-35A fighters to at least 100 jets per year. The Air Force should acquire the most technologically advanced, cost-effective platforms available to ensure that its capability well exceeds that of Chinese and Russian air forces, both of which are numerically superior to the U.S. Air Force.⁶¹ The Air Force's current plan to acquire F-15EX fighters will deliver markedly less capability, will cost \$27 million more per aircraft to acquire, and will cost more to operate than the F-35. The Air Force could acquire 183 F-35As—43 more fifth-generation fighters for the same price than it will pay for 140 fourth-generation F-15EXs.

Recommendation 16: Direct the Air Force to bring its primary combat aircraft platforms up to an 80 percent mission-capable rate by the end of 2021. In 2018, the Secretary of Defense directed the Air Force to increase the mission-capable rates of its F-16, F-22, and F-35 aircraft to 80 percent by the end of September 2019.⁶² Mission capable rates measure how much of a certain fleet is "ready to go" at a given time, and the Secretary's direction was to maximize the readiness of an all-too-small fleet of combat aircraft that could deter or defeat a peer adversary.

Following the same directive, the Navy's fleet of F/A-18s went from a mission-capable rate below 50 percent in 2017 to above 80 percent in August 2019. In early 2019, the Air Force Chief of Staff stated that the service would not meet the 80 percent mission-capable threshold directive until 2020. In May 2020, having increased the 2019 F-16C/D rate by just 2 percent to 72.5 percent, the F-22 by 2 percent to 51 percent, and the F-35 by 7.3 percent to 62 percent over the rates for 2017,⁶³ the service completely backed away from an 80 percent mission-capable rate. The service chose instead to highlight the deployability of "lead force elements" within its fleet.⁶⁴ While important for responding to a regional disturbance, the ability to rapidly deploy small packages of combat aircraft is not an effective measure of a service's ability to meet and defeat a peer competitor.

Recommendation 17: Direct the Air Force to increase fly hours and sortie rates to a minimum of 17 hours a month and three sorties a week by the end of FY 2021. Fighter pilot combat capability is generally measured in the number of flying hours and sorties its operational fighter pilots receive, and both markers fell from 2018 to 2019. The training the average combat-mission-ready pilot received fell from 16.1 hours and 8.3 sorties a month in 2018 to 14.6 hours and 7.5 sorties a month in 2019.⁶⁵

Recommendation 18: Mandate the immediate establishment of standing operational readiness inspection (ORI) teams trained to evaluate the ability of units to rapidly mobilize, generate, and fly combat sorties. ORI teams should assess wing combat readiness on a recurring two-year cycle. Individual squadron readiness assessments throughout the Air Force are now made by the squadron commanders of the units themselves. Those assessments are based on the additive metrics of aircraft mission-capable rates, aircrew and maintenance personnel qualifications, spare parts, and other readiness factors.⁶⁶ While those metrics certainly add up what units possess, they in no way convey how ready those squadrons are to fight, and few commanders are willing to step beyond those metrics to declare that they are not ready for a peer-level conflict.⁶⁷ Assessments from within the service should be made by independent teams trained for that specific purpose.

Recommendation 19: Require the Secretary of the Air Force to revise the bed down of the F-35A to prioritize forward-based, active-duty units in the Pacific, Europe, and then in the United States before it returns to fielding the F-35A in the Air National Guard. The demands of the 2018 NDS require sufficient combat power that is positioned to thwart a move by either China or Russia with little or no warning. In 1987, at the height of preparations for the Cold War, U.S. Air Forces Europe

(USAFE) and Pacific Air Force (PACAF) had a total of 43 combat-coded fighter squadrons—11 more than the 32 (total) active-duty squadrons that the Air Force has on its books today, and just seven squadrons short of the number in today's total force (50).

The lack of forward basing, coupled with low stateside readiness levels, would prevent a rapid response, much less a timely reinforcement with follow-on deployments. Today's "total force" Air Force would likely be able to deploy just 30 of its 50 available total force fighter squadron equivalents to fight a peer competitor. In order to bolster the capability of forward-based units and stateside units that could rapidly meet an emergency deployment, the Air Force should prioritize active units to transition to the F-35A.

Recommendation 20: Require the Air Force to return the Air Reserve Component (ARC) to its critical role as strategic reserve for the United States and allow the Air National Guard and Air Force Reserve to reset the health of their respective force structures. The Air Force has a shortfall of more than 2,000 pilots, and the majority of those empty billets are in the ARC (the combined forces of the Air National guard and Air Force Reserve). The operational tempo is largely to blame on the pilot shortfall in the ARC, and the Air Force needs to curtail Air National Guard and Air Force Reserve deployments to rebuild and strengthen that force. As it recovers manpower, Air National Guard operational fighter squadrons should be plussed up from an average of 18 primary assigned aircraft to 24.

Recommendation 21: Mandate the Air Force to continue to increase its pilot production capacity to handle 1,700 annual pilot candidates. This will allow the service to fill the growing number of empty billets and to raise the quality of the graduates through increased screening. The pilot shortfall that the service is now experiencing is significant and will likely grow over time. In 2019, projected increases for 2020 flight school graduates estimated that 1,480 pilots would complete flight school—201 more than had graduated in 2019.⁶⁸ However, the impact of COVID-19 reduced those projections back to 1,200.⁶⁹

Pilot retention increased slightly, primarily due to the commercial carrier hiring freeze; however, airline pilot retirements are continuing apace, and as the industry recovers, the demand for pilots and the associated salaries will grow precipitously. To compound that issue, increasing the number of operational squadrons to 386 will create need for more than 900 additional pilot billets that are currently not on the Air Force books. Those collective factors will compound the pilot shortfall, and the Air Force must increase its pilot production pipeline accordingly.

The Space Force

The newest military service is going through its initial tasks. The main task is to move toward consolidating the space assets and staff that are currently dispersed in the different services. The young service needs to carve out its niche and determine how it will operate in the context of the Joint Force.

In order to help the Space Force establish itself, Congress should:

Recommendation 22: Accelerate the pace of transfer of both military and civilian personnel from the Air Force to the new service. The FY 2020 NDAA that authorized the Space Force limited the new service to the personnel, space systems, and installations that could be pulled from the Air Force alone. While the Space Force has methodically assimilated Air Force personnel, as of December 2020, fewer than 3,000 Airmen have transferred to the Space Force.⁷⁰ The FY 2021 NDAA authorized 6,434 military personnel, 3,545 civilian personnel, and a total end strength of 9,979 for the Space Force by September 30, 2021.

Recommendation 23: Direct the transfer of Army, Navy, and National Reconnaissance Office space professionals, operational systems, and other assets into the Space Force. The transfer should begin on the first day of FY 2022 and be completed no later than the end of FY 2025. There are an estimated 21,000 space professionals, 36 acknowledged satellites,⁷¹ and over 60 unacknowledged satellites resident in the Army, Navy, and the National Reconnaissance Office.⁷² The consolidation and streamlining of space command and control, culture, and doctrine will not be complete until every person and asset compatible with employment under title 10 authorities has been transferred into the Space Force. Arguments that only same-service personnel can support that service (for instance, only Army personnel can support Army space needs) are unconvincing.

Nuclear Forces

America's nuclear forces underpin U.S. strategic deterrence, the number one priority for national defense. So long as adversaries continue to possess and advance their nuclear arsenals, the United States must work to maintain modern, flexible, and resilient nuclear capabilities.

In order to sustain a viable nuclear deterrent, Congress should:

Recommendation 24: Robustly fund DOD nuclear modernization programs to accelerate their schedules rather than provide the bare

minimum needed. These programs include the Ground-Based Strategic Deterrent, the B-21 bomber, the Long-Range Standoff Weapon (LRSO), the *Columbia*-class submarine, as well as nuclear command, control, and communications (NC3) systems. Legacy U.S. nuclear delivery platforms are old and need to be replaced without further delay to avoid gaps in the U.S. strategic deterrent as the threat to the United States becomes increasingly complex. Additionally, most NC3 systems are extremely outdated and need to be upgraded to feature 21st-century technology. According to U.S. Strategic Command Commander Admiral Charles Richard, “If we do not invest smartly in our nuclear enterprise now, we may begin to reach points of no return.”⁷³

To ensure that these critical programs remain on schedule, Congress must move away from the mindset of paring back nuclear modernization programs to the lowest levels of funding possible. Last year, for example, Congress cut funding for the LRSO after the Air Force awarded its contract early and moved ahead of schedule, missing an opportunity to reduce the risk of delays in the delivery schedule.⁷⁴ Congress should instead seek to advance nuclear modernization programs as quickly as possible, as deferring costs does not avoid them.

Recommendation 25: Increase funding for the National Nuclear Security Administration (NNSA). After underfunding and neglect of the NNSA since the end of the Cold War, Congress in recent years has begun to fund the NNSA at levels needed to restore the infrastructure and capabilities used to maintain a credible nuclear deterrent. For FY 2021, Congress agreed to a funding boost of about \$3 billion to match the NNSA’s strategy-driven budget.⁷⁵ This trend must continue in FY 2022.

Not only is Congress finally investing in the NNSA’s decades-old infrastructure—ceilings in some facilities are literally crumbling—it also has multiple programs underway to extend the life of, or modernize, U.S. warheads to arm the DOD’s new nuclear delivery systems under development.⁷⁶ Congress must authorize the funding necessary for these programs (such as the W87-1 Modification program, the W80-4 Life Extension Program, and plutonium-pit production) to ensure that these programs can deliver on time to meet military requirements.

Recommendation 26: Reject any attempt to support a change to U.S. nuclear policy that would endorse a no-first-use (NFU) or sole-purpose policy. House Armed Services Committee Chairman Representative Adam Smith (D-WA) and others have proposed that the United States adopt a nuclear declaratory NFU policy, also known as sole purpose, meaning that the United States would pledge never to use nuclear weapons against its adversaries first, as their sole purpose would be retaliation for a nuclear attack.⁷⁷

Such a policy would undermine the credibility of the nuclear umbrella that the U.S. provides to its allies, as well as the United States' nuclear deterrence posture against its adversaries, who might become emboldened by perceived weakened U.S. resolve. NFU could invite aggression from adversaries, who would be assured that the United States would not use nuclear weapons no matter how deadly a non-nuclear (chemical, biological, conventional, or cyber) attack on the United States or its allies.⁷⁸ For these reasons, President Barack Obama, Congress, senior military leaders, and U.S. allies have all opposed an NFU policy.⁷⁹ Congress should reject any attempts to legislate an NFU or sole-purpose policy.

Recommendation 27: Continue to authorize funding for the W93/Mk7 warhead program. The NNSA initiated the W93 nuclear warhead and its Mark 7 (Mk7) re-entry vehicle to replace the W76 and W88 warheads carried by the Navy's Trident II D5 submarine-launched ballistic missiles with a safer, modernized design. Congress first provided initial funds for the W93/Mk7 program in FY 2021, despite pushback as some question the need for another warhead. But as the nuclear arsenal continues to age, existing warheads will eventually all need to be replaced.⁸⁰ Adding the W93/Mk7 warhead to the U.S. arsenal will minimize technical risk to the sea leg of the U.S. deterrent while contributing to the United Kingdom's parallel warhead replacement program.⁸¹ In FY 2022, Congress must reject attempts to underfund or cancel the W93/Mk7 program.

Recommendation 28: Authorize research and development funding for a nuclear-armed, submarine-launched cruise missile (SLCM-N). The *2018 Nuclear Posture Review* called for developing a SLCM-N as one of two supplemental capabilities to boost deterrence against advancing nuclear powers.⁸² For the past two years, the DOD has been conducting an Analysis of Alternatives for the SLCM-N, which will be completed this year.

A SLCM-N would provide a non-strategic capability that can likely be deployed overseas helping to restore deterrence against rising Russian and Chinese non-strategic nuclear weapon capabilities as well as contributing to extended deterrence for U.S. allies.⁸³ As the strategic environment is projected to worsen, it is critical that Congress avoid dilatory maneuvers in the form of further analysis, and instead support initial research and development for a SLCM-N.

Missile Defense

Missile defense has remained a top defense priority not only for its role in protecting Americans from attack, but from its utility in deterring

adversaries by denial and enabling U.S. freedom of action overseas. Improving missile defense of both the homeland and U.S. and allied assets abroad only continues to increase in importance as advanced missile technology proliferates around the world.

In order to improve U.S. missile defenses, Congress should:

Recommendation 29: Authorize robust funding for the Next Generation Interceptor (NGI) to accelerate the program as much as possible. The United States' current 44 ground-based interceptors will eventually cease to suffice against North Korea's increasingly sophisticated and numerous missiles. While ongoing service upgrades will help to extend the lifetimes of U.S. ground-based interceptors, a long-term solution to defending the homeland lies in the NGI. Fielding the NGI will bring interceptor capacity up to 64 and vastly improve interceptor capability to better respond to, and deter, the rogue state threat.⁸⁴ Congress must continue to fully support this program and authorize the funding needed to proceed with NGI development in a timely manner.

Recommendation 30: Provide resources to begin to operationalize the Standard Missile-3 (SM-3) Block IIA as a homeland defense underlay. In November 2020, the Missile Defense Agency (MDA) successfully tested the SM-3 Block IIA interceptor against a simple intercontinental ballistic missile (ICBM) to demonstrate the feasibility of using the interceptor as a homeland defense underlay.⁸⁵ The next step, as required by the NDAA for FY 2018, is for the MDA to test the interceptor against a more complex ICBM target; however, Congress reduced funding for this test in last year's NDAA. Instead of allowing further testing and development, Congress required the Secretary of Defense to submit a report that answers several questions regarding the scale and architecture of the DOD's proposal for the underlay.⁸⁶

If the answers are satisfactory, the FY 2022 NDAA should use the results of this report to provide the authorizations needed to advance underlay development. Such authorizations would likely include restoring the funding needed to test the SM-3 IIA against a complex ICBM and perhaps funding to adjust the software of more SM-3 IIA interceptors to make them workable against ICBMs.

Recommendation 31: Direct the Secretary of the Navy to develop a plan to surge Aegis ships armed with SM-3 Block IIA interceptors for the purpose of homeland missile defense during periods of high tension. The DOD has suggested that as part of its proposal to develop a homeland missile defense underlay, Aegis ships armed with SM-3 Block IIA interceptors could be temporarily deployed to the Pacific coast of the United

States if needed for additional defense against North Korea. Last year's NDAA required the DOD to report on its requirements for the underlay, including the weapon systems required for its proposal and an assessment of the impact to the Navy's Aegis destroyers should they be required for the proposed underlay.⁸⁷

As a next step following the results of this report, Congress should require the Navy to report on a potential plan for deploying Aegis ships for the purpose of homeland defense should it receive the command to do so. Until the MDA can field and deploy the NGI, which will likely not be before the end of the decade, the United States should utilize the SM-3 IIA in times of increased tensions to bolster U.S. homeland defenses.

Recommendation 32: Authorize funding to initiate work on advanced missile defense of Guam. Last year, the Commander of INDOPACOM included a missile defense system for Guam on his unfunded priorities list, identifying Guam as a critical location for posture and operations in the Indo-Pacific region.⁸⁸ Instead of initiating funding for this project, last year's NDAA required the Secretary of Defense to report on the options available to improve the defense of Guam, and the Senate separately asked for an analysis of current and future systems that could enhance the defense of Guam.⁸⁹ Based on the findings in these reports, Congress should use the results of these studies to authorize funding in the FY 2022 NDAA to begin work on the systems identified to best advance the defense of Guam.

The Cyber Realm

The FY 2021 NDAA included a wide range of provisions from the Cyber-space Solarium Commission report that have enhanced cybersecurity.⁹⁰ Strengthening the Cybersecurity and Infrastructure Security Agency within the Department of Homeland Security, and the creation of a National Cyber Director are just two examples.

However, there are still areas that require improvement and Congress should:

Recommendation 33: Expand recruitment and incentive programs to further attract talented cyber personnel. There is a national shortage of cyber talent, making cyber experts a hot commodity for federal and military service as well as for the private sector.⁹¹ This poses a challenge to the government, since cyberspace is a field where quality personnel have an outsized effect on capabilities in comparison to other aspects of the military. Coders and other skilled personnel are in very high demand both in the

private sector and government because of their value, and the government has historically struggled to compete with the private sector for top talent.

This shortage is exacerbated by the fact that the number of cyber-related job vacancies continues to grow throughout the world. The federal government needs to be as competitive as possible with recruiting and retaining cyber talent.

Recruitment can be enhanced through an expansion of scholarship programs, apprenticeships, and support for academic programs focusing on cybersecurity, as well as increasing hiring incentives. Congress should also increase funding for recruitment programs that target cyber personnel directly to reach and attract a larger number of people, as well as to explore which factors deter cyber personnel from seeking government service and address those issues, as well as streamline onboarding.⁹²

Recommendation 34: Support the growth and development of U.S. Cyber Command. Maintaining the military arm of U.S. cyber capabilities and sustaining a credible threat to adversaries requires a force with sufficient size, training, and equipment. If a major part of cyber deterrence involves the ability to impose costs on adversaries, then resourcing that capability is vital. The Cyber Mission Forces (CMF) were established in 2013 with a force of approximately 6,200 personnel divided among 133 teams and are the operational arm of U.S. Cyber Command.

Since that time, the CMF's mission set has expanded to include election integrity, and the cyber threat landscape has shifted. In congressional testimony, General Paul Nakasone, the commander of Cyber Command and Director of the National Security Agency, commented that the current force has increased its operations with new authorities and that the CMF is currently too small for the tasks it is being asked to perform.⁹³ Congress needs to continue to invest in U.S. Cyber Command as it trains its force and develops the ability to operate independently.

International Posture

Congress uses the NDAA to advance elements of American foreign policy and national defense. Thus, it is appropriate to set markers on how the military should engage international actors to further national interests and national defense. Congress can and should send strong signals to allies as well as adversaries through the NDAA.

In order to strengthen America's posture abroad, Congress should:

Recommendation 35: Refuse to back further European Union defense integration. Decades of tacit support for defense integration of

EU militaries have resulted in little, if any, additional European defense capability. Rather, these efforts have given false credence to policymakers on both sides of the Atlantic who believe that the U.S. can and should disengage from European security. The establishment of an independent EU army will undermine transatlantic security and will decouple the United States from the legitimate interests it retains in a peaceful and secure European continent.⁹⁴

The European Union Commission's "new EU-US agenda for global change" calls for an EU-US Security and Defense Dialogue and a greater EU role in defense.⁹⁵ Nothing would strain the transatlantic bond more and undermine the North Atlantic Treaty Organization (NATO) faster than EU defense integration. Many commentators and analysts have similarly called for a "European pillar" inside NATO. This assertion, however, rests on the mistaken beliefs that the EU would be better able to convince European national governments to spend more on defense, of which there is no evidence, and the mistaken assumption that European-pillar capabilities inside NATO would always be made available.⁹⁶

Congress should not be taken in by the EU's plans for strategic autonomy in defense, nor its vague promises of benefitting NATO.⁹⁷ EU strategic autonomy in defense is a chimera not a panacea. A robust U.S.-led NATO alliance remains the only guarantor of transatlantic security. The U.S. should continue to focus on advancing a "NATO first" agenda, one that ensures that American engagement and influence in European defense matters. NATO has been the cornerstone of transatlantic security for almost seven decades. It affords the U.S. a level of influence in the region commensurate with the number of troops, equipment, and funding the U.S. commits to Europe.

Recommendation 36: Establish a permanent military presence in Eastern Europe. U.S. basing structures in Europe harken back to a time when Denmark, West Germany, and Greece represented the front lines of the Cold War. Yet, the security situation in Europe has changed, and the U.S. should account for this shift by establishing a permanent military presence in allied nations further east, notably in the Baltic and Black Sea regions. As the threat from Russia to U.S. allies in these critical regions will remain for the foreseeable future, a robust, permanent presence is essential for displaying the U.S.'s long-term resolve to live up to its NATO commitments.

Recommendation 37: Include a sense of Congress rejecting the Anti-Personnel Mine Ban Convention (Ottawa Convention), the Convention on Cluster Munitions (CMC), and the Arms Trade Treaty (ATT). Congress should push the Administration to reject the Ottawa

Convention and the CMC, both of which could have significant harmful effects on U.S. national security. The Senate has not provided its advice and consent to either of these treaties, they have not been transmitted to the Senate, and neither of them is in the U.S. national interest.⁹⁸

The Senate should also end its formal consideration of the ATT. The ATT is a failed treaty that would do serious damage to U.S. national security. On July 18, 2019, the Trump Administration rightly notified the treaty depositary—in a process informally known as “unsigning” the treaty—that the U.S. would not become a party to the ATT, but the ATT had already been transmitted to the Senate by the Obama Administration in 2016, and the Senate is the master of its own treaty processes.⁹⁹

Recommendation 38: Protect and renew the U.S. landmine stockpile. U.S. anti-personnel landmines meet or exceed all relevant international standards, and the U.S. employs such landmines responsibly. Studies by NATO and other organizations confirm their military utility, and in 2014, the Chairman of the Joint Chiefs of Staff stated that anti-personnel landmines remain “an important tool in the arsenal of the armed forces of the United States.”¹⁰⁰ But in June 2014, the Obama Administration banned the use of anti-personnel landmines outside the Korean Peninsula. On January 31, 2020, the Trump Administration correctly canceled the Obama Administration’s policy and authorized Combatant Commanders in all theaters to employ advanced, non-persistent anti-personnel landmines in exceptional circumstances.¹⁰¹

To support this policy, Congress should require the DOD to assess the size and reliability of the existing U.S. stockpile of anti-personnel landmines. Congress should ban funding for the destruction of this stockpile, unless such destruction is required for storage safety reasons, or until the DOD certifies that the replacement of these anti-personnel landmines with new munitions will not endanger U.S. or allied forces or pose any operational challenges. Finally, Congress should require the DOD to develop, produce, and acquire advanced, non-persistent anti-personnel landmines in sufficient numbers to make the 2020 policy effective in practice.

Recommendation 39: Protect and renew the U.S. cluster munitions stockpile. Congress should support the November 2017 policy by prohibiting the destruction of U.S. cluster munitions stockpiles, except if required for storage safety reasons, until the DOD completes a study of these munitions and Congress explicitly authorizes the DOD to resume de-milling. This study should assess the military utility of cluster munitions; provide an inventory of current stockpiles; study past U.S. patterns of cluster munitions use; assess the effects of the closure of Textron’s Sensor Fuzed

Weapon line; and appraise the current state of research, production, and deployment of alternatives to conventional cluster munitions.

In November 2017, the Trump Administration announced that the U.S. “will retain cluster munitions currently in active inventories until the capabilities they provide are replaced with enhanced and more reliable munitions.”¹⁰² In late 2017, the U.S. announced that it was testing the Israeli M999, an anti-personnel weapon with nine explosive sub-munitions, and had purchased Swedish Bonus 115-millimeter artillery projectiles, which use two sub-munitions containing explosively formed penetrator warheads to attack enemy vehicles.¹⁰³ The U.S. has also deployed the Guided Multiple Launch Rocket System Alternative Warhead, which replaces the explosive sub-munitions in conventional cluster munitions with 160,000 tungsten fragments.¹⁰⁴

None of these weapons systems are cluster munitions as defined by the CMC, but that has not stopped activists from objecting to the use of these projectiles, which the U.S. needs to meet the threat posed by North Korea and other adversaries—such as Russia—that deploy what the U.S. Army describes as “large formations of...armored vehicles.”¹⁰⁵ These weapons play an important role in the U.S. commitment to defend its NATO allies, especially in Eastern Europe.

Recommendation 40: Continue to strengthen Georgia’s readiness and defense capabilities. The United States should continue strengthening Georgia’s readiness and defense capabilities, selling arms to Georgia in support against Russian aggression, offering military assistance, and improving Georgia’s interoperability with NATO. Since the 2008 war in which Georgia fought back against Russia’s invasion, the U.S. has provided Georgia with more than \$730 million in military assistance.¹⁰⁶ The Trump Administration, specifically, was a strong advocate for Georgia. In 2017, the State Department approved a sale of over 400 Javelin anti-tank missiles, and in 2018, a sale of Stinger anti-aircraft missiles. In addition, the U.S. launched a three-year bilateral Georgia Defense Readiness Program in 2017, and U.S. Army advisors began advising Georgian military personnel in 2018.¹⁰⁷

Recommendation 41: Improve the quality of non-lethal support to Ukraine. The war between Russia and Ukraine has been going on since 2014, when Russia occupied Ukraine’s Crimean Peninsula. More than 13,000 lives have been lost; 30,000 have been wounded; and almost 2 million have been internally displaced.¹⁰⁸ Since the earliest days of the war, the U.S. has demonstrated strong support for Ukraine. It has contributed approximately \$1.75 billion in security assistance.¹⁰⁹ Under the Obama Administration, aid was restricted to non-lethal assistance. The Trump Administration has broadened support to include weaponry.

The U.S. sold Kyiv more than 200 Javelin anti-tank missiles in December 2017 and approved a sale of an additional 150 in November 2019. Ukraine has also purchased two U.S. Coast Guard patrol boats¹¹⁰ and two Mark VI patrol boats.¹¹¹ While the sales of Javelins and patrol boats are welcome, the U.S. also needs to improve the quality of non-lethal equipment. This could be in terms of secure communications, more capable unmanned aerial vehicles, and maritime domain awareness capability. These capabilities remain important as the war continues in eastern Ukraine.¹¹²

Recommendation 42: Direct the Defense Intelligence Agency (DIA) to produce an unclassified report within 180 days for the appropriate congressional committees on the current and projected state of the North Korean, Iranian, and Chinese nuclear programs. Chinese, Iranian, and North Korean strategic programs potentially pose a significant national security threat to the United States’ homeland as well as U.S. interests in the Asia–Pacific and the Middle East. As applicable, the DIA report should provide unclassified judgments on the developments in each state’s nuclear programs, an evaluation of the current and future nuclear threat posed by them, as well as the status of their nuclear doctrines.

Recommendation 43: Ban procurement of commercial off-the-shelf drones or unmanned aircraft systems manufactured or assembled by a covered foreign entity.¹¹³ In December 2020, the federal government placed the world’s largest maker of drones, China’s Da-Jiang Innovations (DJI), on the Bureau of Industry and Security’s “Entity List.” That move followed warnings from independent research firms and federal agencies, as well as those from National Intelligence Director John Ratcliffe on the threat that China and its data-collection capabilities pose to the United States and its allies.¹¹⁴ Chinese corporations are legally obligated to serve the purposes of the Chinese Communist Party, which has used every collection method and form of technology at its disposal to collect or even steal government, corporate, and private data.¹¹⁵

The Department of Defense

The 2018 NDS correctly indicates that reforming the way that the DOD operates is paramount to engaging in great-power competition. Thus, it is important for Congress to provide oversight and ideas on how the DOD should operate more efficiently and be a better steward of taxpayers’ dollars.

In order to help the DOD to operate more efficiently, Congress should:

Recommendation 44: Direct the DOD to establish an independent, bipartisan commission to provide a report within 180 days to the

appropriate congressional committees on the DOD's pandemic preparedness and response to the coronavirus pandemic. The coronavirus pandemic is an event of historic proportions, which deeply affected government operations. The commission's report should include an assessment of the DOD's preparedness level for the pandemic; the pandemic's effect on the Armed Forces' readiness, operations, and acquisitions; its challenges in its interactions with the public and private health sectors; and the pandemic's effect on the department's international relations, including alliance and host nations relations.¹¹⁶ The report should also include a section on lessons learned and recommendations for improving the DOD response to, and readiness for, a future pandemic.

Recommendation 45: Direct the DOD to provide a report within 180 days to the appropriate congressional committees on the effects of the coronavirus pandemic on defense acquisition and the defense industrial base. The coronavirus pandemic deeply affected government and private-sector operations, including defense acquisition and production.¹¹⁷ The report should include, among other germane topics, the effect of the pandemic on major defense system acquisition, defense readiness, defense industrial base operations, and the supply chain. The report should also include lessons learned and recommendations for improving the DOD's and the defense industrial base's response to, and readiness for, a future pandemic.

Recommendation 46: Direct the DOD to provide a report within 180 days to the appropriate congressional committees on the state of the DOD's readiness for addressing biological and chemical threats. Within the past several years, the world has witnessed the use of chemical weapons in warfare and attempted assassinations as well as experienced a global pandemic from a biological pathogen. These events have national security implications that must make chemical and biological warfare (CBW) readiness a top priority of the U.S. and its allies. As such, the DOD report should provide an assessment of the CBW readiness of U.S. forces and European and Asian allies, considering potential CBW threats to them from likely adversaries.

Recommendation 47: Authorize full pay raises as determined by the Employment Cost Index to assist in recruiting from a shrinking candidate pool. Demographic trends and lower unemployment rates mean that the DOD will have a more difficult time recruiting for the Armed Forces. Adding to this problem is a growing number of individuals between the ages of 17 and 24 who are physically or mentally ineligible for military service.¹¹⁸ The Center for Naval Analyses estimates that only 29 percent

of Americans in this age group are eligible for military service, based on recruitment practices and demographic trends.¹¹⁹ Full pay raises help to alleviate the recruiting problem.

Recommendation 48: Reform the Basic Allowance for Housing (BAH). The BAH needs to be restored to its proper role of an allowance—as opposed to a main source of income—by requiring married military couples to share a single allowance, and by requiring all service members to document their housing expenditures to receive the allowance. These changes would reduce costs and are completely appropriate. Congress should phase in a more accurate housing allowance, since it is solely designed to help service members pay for accommodation. Service members are not entitled to, nor should they have any expectation that, any BAH money they receive in excess of what they pay for housing can be retained as extra compensation.

Recommendation 49: Combine the commissary and exchanges systems into one. The DOD operates two parallel, but similar, organizations for providing service members and their families with access to goods and groceries. The commissaries provide groceries at cost plus 5 percent, which is only sustainable through an annual subsidy. On the other hand, the military post and base exchanges operate largely without subsidies by passing appropriate costs on to the consumers. Maintaining access to affordable groceries and goods is important for service members, particularly those stationed overseas or in remote locations. Congress should revisit the proposals to combine the two systems and determine the best business model for the future. This is especially important at a time when the GAO has found that the DOD does not properly measure the recruiting and retention benefits created by the systems.¹²⁰

Recommendation 50: Authorize a new round of Base Realignment and Closure (BRAC). In 2017, the DOD assessed that it has more than 19 percent excess infrastructure that could be reduced through a BRAC.¹²¹ The excess capacity burdens taxpayers and the DOD with unnecessary costs that would be better allocated elsewhere in the budget. The DOD estimates that a new round of BRAC would save \$2 billion in fixed costs.¹²² Congress should determine the percentage by which a new round of BRAC will reduce infrastructure. There are multiple ways in which Congress can change how a BRAC round develops to quash questions and doubts that lawmakers might have.¹²³ From establishing different criteria for installation assessments to dedicating full-time staff to BRAC and its studies, Congress and the DOD can work together to mitigate all the problems that have led to the rejection of a new round of BRAC. Furthermore, a new round of BRAC would serve to assess how the current infrastructure is adapted to the goals of the NDS.¹²⁴

Recommendation 51: Lift the moratorium on public–private competition. Under pressure from federal employee unions since 2012, Congress has prohibited competition between public and private organizations for the most cost-effective services for the U.S. government. This moratorium even extends to public–public competition, which leads to situations, for instance, where the municipality in which a base is located may not offer its services to the base. DOD-specific competition remains prohibited per section 325 of the 2010 NDAA.¹²⁵ Even critics will admit that “competition is the greatest single driver of performance and cost improvement.”¹²⁶ The RAND Corporation has estimated that opening support services for the military to private competition could result in savings of between 30 percent and 60 percent.¹²⁷ The common criticism levied against such competition is that the process has not been updated and has yielded problems for both government and the private sector.¹²⁸ This is more reason for Congress to revisit Circular A-76 and make the necessary updates to allow its implementation.¹²⁹

Recommendation 52: Seek insights on the Biden Administration’s decision to overturn the DOD policy prohibiting service by transgender individuals suffering from gender dysphoria. The 2018 Trump Administration policy prohibited transgender individuals who are suffering from gender dysphoria from entering service.¹³⁰ In that respect, it was similar to many other medical conditions that prevent a volunteer from serving in the Armed Forces. Medical criteria for military service exists for a purpose: to ensure that volunteers are free of conditions that would result in lost time from duty or hospitalization, and to ensure that individuals are capable of performing duties without aggravating existing conditions.

Both military and civilian medical data unequivocally reflect that transgender individuals diagnosed with gender dysphoria experience “high rates of mental health conditions such as anxiety, depression and substance abuse disorders.” For example, individuals with gender dysphoria attempt suicide at about nine times the rate of the general population.¹³¹ The previous 2018 policy struck the proper balance between allowing as many individuals as possible to serve their country, while protecting those who suffer from gender dysphoria from the dangers of military service, as well as preserving readiness.

On January 25, 2021, President Joe Biden signed an executive order discarding the existing policy and opened military service to transgender individuals without regard to whether they suffer from gender dysphoria.¹³² President Biden made this change on his fifth day of office, while it took six months of deliberate study for the Trump Administration to devise its policy. The new Biden policy also requires the DOD to “provide a process

for individuals to transition” from one gender to another while in military service. This new policy can reasonably be expected to have a negative impact on military readiness and result in additional costs due to the need to provide greater than normal medical care to these members. Congress should investigate the underlying rationale for the Biden Administration’s quick change of policy and the resulting impact on military readiness.

Recommendation 53: Create a pilot program to roll over unused funds. Congress should authorize a program that allows the DOD to roll over unused funding to the next fiscal year. On October 1 of every fiscal year, any Operations and Maintenance funding that remains unused vanishes. This creates the fear among DOD agencies that unused funds could mean less funding the following year. This, in turn, creates a “use it or lose it” mentality, which leads to poor spending choices as unnecessary purchases are made in the interest of using up the funds. DOD agencies tend to spend up to 31 percent of their annual funds in the fourth quarter. September is especially busy, with spending twice as high as during the other months of the year.¹³³

As Jason Fichtner and Robert Greene, economists at the Mercatus Center, determined, this acceleration of federal spending decreases the quality of spending, as poor choices are made in the interest of quickly using funds.¹³⁴ So long as the entities do not benefit from saving funds, there is no incentive for them to spend more efficiently. A pilot program for specific DOD agencies enabling them to roll over 5 percent of their operating budget could go a long way toward finding a solution to this problem across the entire department. This program would have the added benefit of helping the DOD to cope with the constant continuing resolutions that erode spending authorities.

Recommendation 54: Create a fast lane for commonly approved reprogramming requests. The current reprogramming process takes between four and six months within a 12-month fiscal year. Many of these requests reflect the fact of life changes that can and should be sped up.¹³⁵ Further, most reprogramming requests are approved without any congressional modifications to them, indicating that there is room for the process to speed up. At a minimum, Congress can request a study determining and evaluating the common characteristics of the reprogramming requests approved without modifications.

Recommendation 55: Remove non-defense research funding from the NDAA. Congress has the bad habit of inserting non-defense research projects into the NDAA that do not directly contribute to the national defense, nor to the better functioning of the Armed Forces. These tend to concentrate around medical research, such as the Army’s Congressionally Directed Medical Research Programs.¹³⁶ These programs are better suited

elsewhere in the medical community, be it inside or outside government. It is a stretch to argue that the Army is the best institution to conduct research on breast cancer.

Recommendation 56: Establish education savings accounts (ESAs) for children from military families. Military parents' dissatisfaction with education options is a major impediment to retaining a strong military force. To the frustration of many military parents, most military children are required to enroll in whichever public school is closest to the military base, regardless of whether that school is a good fit. More than one-third of families responding to a *Military Times* survey reported that "dissatisfaction with their child's education was a significant factor in their decision to remain in or leave military service."¹³⁷

Congress could also consider piloting a military ESA program on military bases in states where the DOD does not already operate schools. Currently, the DOD operates department-affiliated schools on just 15 of more than 200 military bases in the contiguous United States.¹³⁸ Giving all families who serve school choice would ensure that their children do not face mandatory assignment to the nearest district school. Providing military parents with ESAs would allow them to seek out education options that are the right fit for their children, wherever their next assignment takes them. Indeed, ESAs have garnered support from 75 percent of active-duty military families.¹³⁹ ESAs can improve education options for military children since they meet the unique needs of military families. Military ESAs give parents the ability to make the best education choices for their children.¹⁴⁰

Conclusion

The National Defense Authorization Act for FY 2022 and the defense appropriations bill should punctuate a change of power in Congress while keeping the focus of the U.S. Armed Forces on the challenges of great-power competition. The new Administration has indicated that the refocus on the national defense and of the Department of Defense on great-power competition is appropriate and ought to be continue. This legislation will be the test for both sides of Pennsylvania Avenue. The best way forward for the country and for the military would be to build on the bipartisan consensus on the challenges posed by China and Russia and properly prepare for those.

Frederico Bartels is Senior Policy Analyst for Defense Budgeting in the Center for National Defense, of the Kathryn and Shelby Cullom Davis Institute for National Security and Foreign Policy, at The Heritage Foundation.

Contributors

Frederico Bartels is Senior Policy Analyst for Defense Budgeting in the Center for National Defense, of the Kathryn and Shelby Cullom Davis Institute for National Security and Foreign Policy, at The Heritage Foundation.

Ted R. Bromund, PhD, is Senior Research Fellow in Anglo–American Relations in the Margaret Thatcher Center for Freedom, of the Davis Institute.

Peter Brookes is Senior Research Fellow for Weapons of Mass Destruction and Counter Proliferation in the Center for National Defense.

Lindsey M. Burke, PhD, is Director of the Center for Education Policy and the Mark A. Kolokotronis Fellow in Education, of the Institute for Family, Community, and Opportunity, at The Heritage Foundation.

Maiya Clark is Research Assistant in the Center for National Defense.

James Di Pane is Research Associate and Program Manager for *The Index of U.S. Military Strength* in the Center for National Defense.

Patty-Jane Geller is Policy Analyst for Nuclear Deterrence and Missile Defense in the Center for National Defense.

Daniel Kochis is Senior Policy Analyst in European Affairs in the Margaret Thatcher Center for Freedom.

Alexis Mrachek is Research Associate in the Douglas and Sarah Allison Center for Foreign Policy, of the Davis Institute.

Lora Ries is Director of the Center for Technology Policy, of the Davis Institute.

Brent D. Sadler is Senior Fellow for Naval Warfare and Advanced Technology in the Center for National Defense.

Jude Schwalbach is Research Associate and Project Coordinator in the Center for Education Policy.

Thomas W. Spoehr is Director of the Center for National Defense.

John Venable is Senior Research Fellow for Defense Policy in the Center for National Defense.

Dakota L. Wood is Senior Research Fellow for Defense Programs in the Center for National Defense.

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