The Heritage Foundation

SPECIAL REPORT
No. 257 | MARCH 10, 2022

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Edited by Frederico Bartels

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CENTER FOR NATIONAL DEFENSE

Editor

Frederico Bartels is Senior Policy Analyst for Defense Budgeting Policy 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

Ted R. Bromund, PhD, is Senior Research Fellow in Anglo-American Relations and Counter Proliferation 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.

Maiya Clark is a Research Associate in the Center for National Defense.

James DiPane is Policy Analyst for Defense Policy in the Center for National Defense.

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

Mateo Haydar is Research Assistant for Latin America in the Douglas and Sarah Allison Center for Foreign Policy, of the Davis Institute.

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

Walter Lohman is Director of the Asian Studies Center, of the Davis Institute.

Nicole Robinson is Research Associate for the Middle East in the Allison Center.

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

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

This paper, in its entirety, can be found at **http://report.heritage.org/sr257**

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The National Defense Authorization Act (NDAA) and the defense appropriations bill function as Congress's yearly shaping mechanism for the Department of Defense (DOD). Because it is one of the few authorization bills reliably passed every year, the NDAA assumes oversized importance for both Congress and the DOD. In an increasingly more threatening global security environment, where China and Russia are actively challenging U.S. interests, the NDAA gains even more importance. Given the importance of this legislation, Congress needs to use the NDAA to help the DOD transform toward great-power competition while ensuring that the nation spends its defense dollars wisely.

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The American Armed Forces of 2022 are incredibly capable and, at the same time, have substantial shortcomings. As The Heritage Foundation's *2022 Index of U.S. Military Strength* concluded:

> [T]he current U.S. military force is likely capable of meeting the demands of a single major regional conflict while also attending to various presence and engagement activities but that it would be very hard-pressed to do more and

> certainly would be ill-equipped to handle two nearly simultaneous [major regional contingencies]—a situation that is made more difficult by the generally weak condition of key military allies.[1]

As the recent war in Ukraine indicates, the United States may not have the luxury of downplaying hard power.[2] The Russian invasion of Ukraine on February 24, 2022, demonstrated to the world the continued relevance and importance of military assets and their capability, capacity, and readiness.[3] America must have the capability to protect U.S. interests on short notice and in multiple theaters simultaneously. All this raises the stakes for lawmakers tasked with crafting and passing the yearly NDAA.

Fiscal Year 2022's Choppy Waters

The first year of the Biden Administration has led to few legislative accomplishments and high-profile fumbles that will affect the nation's finances and its defense dollars. The problems that presage the work involved for fiscal year (FY) 2023 are the continuing resolution (CR) and the lack of full-year appropriations, the lingering effects of the botched evacuation from Afghanistan, the rising level of inflation, and the increased levels of government debt.

Fiscal year 2022 started on October 1, 2021, with a CR lasting until December 3, 2021.[4] It was followed with a second CR set to last until February 18, 2022.[5] Then it was followed by a third one due to expire on March 11.[6] Just these two CRs represent over four-and-a-half months lost in the 12 months that make up the fiscal year, leading to costly delays and constraints throughout the Armed Forces.[7] The challenges in reaching a compromise in the appropriations bills for FY 2022 were exacerbated by the historic lateness of the Biden Administration's late initial budget request. Biden's budget proposal irresponsibly proposed to substantially grow the budgets of all federal departments—except for the DOD and Homeland Security—and included controversial policy proposals, such as taxpayer funding of abortion.[8]

This situation has contributed to the current uncertainty and management challenges at the DOD that come from operating under the limits of CRs.

The rising level of inflation that has affected the whole country is also already taking its toll on the Armed Forces. The current Pentagon comptroller, Secretary Mike McCord, highlighted that "inflation is also eating into our resources as our funding remains on hold." He went on to further

stress that fuel prices alone have already claimed an additional unplanned $1.5 billion of the Pentagon's budget.[9] Additionally, the United States has experienced substantially increased labor costs, which will undoubtedly impact the DOD, especially when it comes to recruiting new staff and annual salary increases.[10] Taking into account that the Pentagon allocates close to $200 billion to paying its personnel—civilian, military, and retired military[11]—even a 1 percent increase would amount to substantial gaps that will have to be covered.

Further adding to the challenging fiscal picture of the country—and consequently of the DOD—is the current debt binge that the federal government is partaking of. In the past five years, the federal government added close to $10 trillion to its total outstanding public debt.[12] In total, the federal government's outstanding public debt is now $30 trillion, while the entire economy is a little under $22 trillion.[13] This heavy debt burden will impact the future resources that are available to the DOD. As interest rates rise, the debt burden will become heavier within the federal budget, further squeezing other priorities, such as national defense.[14]

All in all, FY 2022 has, thus far, been filled with uncertainty and fiscal challenges that make the defense budget picture murkier. It is not a good foundation to begin the debate and deliberations for FY 2023.

Future Defense Budget's Dollars

With that extremely blurred budgetary picture for defense, it is more difficult than normal to establish a recommended defense budget level for FY 2023. The NDAA for FY 2022 established a good foundation for addressing important needs of U.S. Armed Forces by authorizing more dollars than were requested by the Biden Administration and proposed to invest those resources in important areas, such as shipbuilding and increased research of emerging technologies.[15] The 2022 NDAA authorized a national defense topline for FY 2022 at $777 billion, including the expenditures in the Department of Energy for the maintenance of the nuclear arsenal.

The Heritage Foundation recommends a nominal—without considering any impacts of inflation—increase of 3 percent from FY 2022 to FY 2023.[16] However, that recommendation also does not account for the effects of inflation eroding the purchasing power that the DOD has at its disposal, and any future defense budget will have to account for the effects of inflation. That recommendation also does not account for the

changes in NATO deterrence that will be necessary after Russia's war of aggression. Within that recommended number are many recommended cuts to projects and programs that are not tied toward advancing U.S. national defense as well as increases to areas that are paramount to a strong military.

Congress should build on its work from the NDAA FY 2022 and increase the defense topline by an amount that can cover the increased costs of operation caused by inflation. The Administration submitted a budget request in FY 2022 that was clearly short of what is necessary for the DOD to properly execute its mission.[17] In this upcoming fiscal year, Congress will have to, once again, investigate the likely shortcomings of the budget submitted by the Administration and address them.

Russia's war of aggression against Ukraine is going to have a defining role in determining the composition and level of the defense budget in the coming fiscal year. Odds are that there will be a substantial drive to increase the current levels of expenditure.[18] The main question is how to make the best use of those resources to generate effective deterrence against Russia, China, and other actors that have the will and the capacity to threaten American national interests.

Further, Congress should exercise its oversight function to shield the military from divisive social engineering efforts, such as incorporating race essentialism in the military academia curricula and ensure that the Pentagon is not over-investing in programs to reduce carbon emissions to the detriment of other missions.

This *Special Report* will outline Heritage's recommendations for how Congress can construct the NDAA and the defense appropriations bill for FY 2023 in such a way that strengthens U.S. Armed Forces and national security.

Armed Services

The armed services are still transitioning toward the strategy of great-power competition and restoring their readiness after the decades of engagement in the war on terrorism. As described by The Heritage Foundation's *2022 Index of U.S. Military Strength*, "In general, the military services continue to prioritize readiness and have seen some improvement over the past few years, but modernization programs, especially in shipbuilding, continue to suffer as resources are committed to preparing for the future and recovering from 20 years of operations."[19] Each of the armed services has its unique challenges with these changes.

Army

The Army has been hammered by three years of successively lower budgets that have failed to keep pace with inflation. In response, the Army has been forced to slash procurement quantities for new equipment, except for those that fall within their "31+4" priorities, reduce training standards, and cut back on military construction.[20] Further losses in buying power will push the Army into strategic insolvency. Arguments that China is primarily a maritime problem—and thus the United States can afford a smaller, less capable Army—ignore the history of the United States and the nation's sustained need for capable and sufficient land power.

To improve the current posture of the Army, Congress should:

Recommendation 1: Reverse the trend of declining budgets for the Army. The Army's budget has declined 10.9 percent in real terms since FY 2018—assuming the Army's budget is appropriated at the level of the President's budget request. These cuts have forced the service to pare back its modernization programs, caused the reduction of training standards, and forced military construction budgets down to their lowest level in modern history.

In FY 2018 the Army's goal was to train Brigade Combat Teams to a level approaching full readiness (94 percent).[21] By FY 2022 intense downward budget pressure had forced the Army to abandon that goal, and it now describes its goal as to "focus on squad, platoon and company level training to achieve highly trained companies."[22] This change reflects a clear lowering of standards and training ambitions.

Army modernization programs such as the Joint Lightweight Tactical Vehicle, the Paladin howitzer, and helicopter modernization programs have all been slashed by at least half in recent years due to budget cuts. This trend is pushing the Army toward strategic insolvency.[23]

If the money authorized in the FY 2022 NDAA comes to be reflected in the FY 2022 DOD Appropriations Act, then the Army topline for FY 2022 would be around $178.5 billion.[24] In order for the Army to continue its essential modernization program and maintain its basic readiness levels, its FY 2023 budget should grow in real terms. This should include realistic assumptions about inflation.

Recommendation 2: Reject any proposal to reduce the size of the U.S. Army. Army leaders have consistently stated that the Army is too small to execute the National Defense Strategy (NDS) at less than significant risk. At his confirmation hearing in 2019, the current Army chief of staff, General James McConville, was asked whether the Army is "sized, structured, and

resourced to implement the 2018 NDS." He responded that "the total Army needs to be larger and fully resourced with timely, adequate, predictable, and sustainable funding to reduce the risk."[25]

Since 2019, with aggressive action from both China and Russia, the world has grown more dangerous. President Vladimir Putin has invaded Ukraine with over 100,000 troops and is conducting wide-scale attacks. The U.S. Army would be hard-pressed to deploy 100,000 troops anywhere in a reasonable amount of time, especially given a high operational tempo and nearly the smallest active force that has been authorized since 1939. The Army's currently authorized active end strength for FY 2022 is 485,000.[26]

As an example of the pressure the Army is facing, Infantry Brigade Combat Teams and Division Headquarters are currently deploying at a rate that exceeds the Army's desired ratio of Boots-on-the-Ground to Deployed of 1:2.[27] Any objective assessment of the required Army size would cause the DOD to request to grow the Army. Downward budgetary pressure will likely forestall such a request from the Army for the FY 2023 NDAA, but Congress should reject any proposals to shrink the active-duty Army below 485,000.

Navy

Congress can take select but vigorous action in the next NDAA to positively improve the Navy's shortcomings relative to the military threat from China and Russia. This is not possible with the recent budgets and necessitates a larger topline given the growth in adversary fleets and arsenals. Additionally, a larger budget is required to address lost purchasing power and contractual obligations triggered by higher-than-anticipated inflation. Contractual obligations triggered by inflation alone could result in a 2 percent to 3 percent burden for the Navy's procurement budget. Committing to building an invigorated, forward-deployed Navy would be extremely impactful for the country, the naval services, and the defense industrial base.

To equip the Navy for great-power competition, Congress should:

Recommendation 3: Stop the shrinkage in the Navy's fleet. Congress ought to pay close attention to the effects of shipbuilding and operational tempo in the overall fleet firepower. In recent congressional testimony, the Indo–Pacific commander clearly articulated the threat that the Chinese pose and specifically stated that "Taiwan is clearly one of their [Chinese] ambitions...and I think the threat is manifest during this decade, in fact, in the next six years."[28]

Despite this, the President's proposed FY 2022 budget would have reduced the Navy's overall surface ship firepower 9 percent by decommissioning seven *Ticonderoga*-class cruisers without any offsets from new platforms.[29]

Congress mitigated some of this by adding in funding to sustain at least two of these cruisers in the NDAA.[30] To prevent a repeat, Congress should require that future long-range shipbuilding plans match or be greater than associated loss of firepower from decommissioning. This alone would ensure the Navy is resourced to sustain today's warfighting capacity.

Recommendation 4: Sustain annual procurement of no fewer than 15 new warships through 2028. Both outgoing and current Indo–Pacific commanders, Admirals Philip Davidson and John Aquilino, testified before Congress in 2021 that China is preparing for conflict to resolve its dispute with Taiwan by 2027.[31] At the same time, a quarter of the Navy's fleet will reach the end of its service life this decade, accelerating the diminishment of it as a viable conventional deterrent.[32]

Sustaining a procurement of no fewer than 15 manned warships through 2028 is required at a minimum to course correct and reach the current congressionally mandated goal of 355 manned ships by 2035.[33] Given the dangers of this decade, warship procurement should be shifted towards a fleet ready in the near term, which, after decades of anemic shipbuilding, is a cost that can no longer be deferred.[34]

Recommendation 5: Move funds for the *Columbia*-class strategic missile submarine to the National Sea-Based Deterrence Fund. Chief of Naval Operations Admiral Mike Gilday told Congress on January 12 that the current CR "provides insufficient funding for our first *Columbia*-class ballistic missile submarine and number one modernization priority... increasing delivery risk to this critical system and threatening our ability to meet U.S. Strategic Command requirements. This is a program with zero margin for delays."[35]

Despite Congress's establishment of the National Sea-Based Deterrence Fund, this critical submarine program is not immune to the harmful effects of a CR.[36] Congress, in concert with the Department of the Navy, should immediately direct movement of appropriated funds—even under a CR—to ensure that the *Columbia*-class submarine arrives on time. Additionally, Congress should add language to the National Sea-Based Deterrence Fund to explicitly enable such movement of funds under a CR required for on-time delivery of the first *Columbia*-class submarine.

Recommendation 6: Direct the Navy and the U.S. Coast Guard to assess joint warfighting capacity. In accordance with law, "the President is authorized to place the Coast Guard under the Navy in time of emergency, which could be in time of peace."[37] This authority was famously used in the critical months leading up to the U.S. entry into World War II and saw the Coast Guard play a critical role in convoy duty in the Atlantic and support amphibious invasions in all theaters of the war, among other missions.

In a long-war scenario, likely against China, the Coast Guard would certainly be called on to support the war effort. As in past major conflicts, the next one will be global and require defending U.S. coastlines and critical shipping lanes once again. There is less certainty concerning the readiness of the Navy and the Coast Guard to operate under wartime conditions—as well as the speed and effectiveness in which the Coast Guard cutter and aircraft could be armed and ready for combat.

Congress should request a report from the Department of the Navy and the Coast Guard on the adequacy of ships, aircraft, training, and planning for a transition from peace to war. This report should explicitly study the preparations required for Coast Guard cutters to support anti-submarine missions, the extent of current Coast Guard exercises practicing these skills at sea, and the adequacy of munitions inventory to support the Coast Guard's wartime role.

Marine Corps

The U.S. Marine Corps is well into a dramatic redesign of its force to account for operations against a major state competitor such as China.[38] Indeed, Marine Commandant General David Berger has explicitly stated that China is the country's pacing threat and that if the United States intends to secure its interests in the Indo–Pacific region, the Corps must be able to contribute to the projection of naval power in the most heavily contested operating environments.

Given China's dramatic advances in reorienting its own military from an inward-looking, domestic security force to an outward-looking, power-projection force that is increasingly equipped with latest-generation ships, missiles, aircraft, and sensors, the Marines should reduce their physical and electromagnetic footprint, be able to conduct distributed operations, and still employ weapons that pose substantial threats to China's forces.

Over the past two years, the Corps has divested substantial conventional capabilities, such as tanks and conventional tube artillery, that it deemed less relevant for combat operations in the contested maritime environment of the Indo–Pacific in order to free up related funding to redesign the force.

This was done with the assumptions that significant new funding was not likely to be available and that the funding provided would be relatively stable. While the first assumption has generally held true, CRs have threatened to upend the second by creating a seesawing effect on likely available resources. CRs prevent the Marines from acquiring new platforms, weapons, and various supporting items; conducting necessary exercises; and ensuring that readiness is maintained at a time of increasing rates of inflation and cost of manpower.

Key to future success for the Marine Corps in combat operations are major platforms such as the amphibious combat vehicle; CH-53K heavy-lift helicopter; various unmanned systems (air, sea surface, and subsurface); and new long-range weapons such as the containerized SM-6, Maritime Strike Tomahawk, and Naval Strike Missile. Most importantly, the Corps's plan for distributed operations should be supported by the Navy's acquisition of the Light Amphibious Warship. All of these will be in jeopardy if adequate and sustained funding is not provided.[39]

To prevent damaging disruptions, Congress should:

Recommendation 7: Sustain funding for all major modernization programs—including the amphibious combat vehicle, F-35B, KC-130J, MQ-9A, and procurement of critical munitions. Marines cannot take for granted that funding for essential programs is assured in the current fiscal environment. The Corps, like the other services, has had to deal with disruptions to programs and force readiness created by CRs for the past decade. The "misalignment of funding" between what was requested for FY 2022 and the amount permitted under the latest CR amounts to nearly 10 percent of the Corps's budget.[40]

The FY 2023 NDAA should acknowledge the importance of these programs to the Corps's wartime viability and the negative impact previous CRs have had on delivering capabilities to the service in a timely and cost-efficient manner. Additionally, underfunding of and disruption to the Corps's budget creates a ripple effect in these programs in future years, across the supporting defense industrial sector, and even within the Corps itself as they affect combat readiness, force morale, and retention of personnel.

Recommendation 8: Provide funding for the Light Amphibious Warship (LAW). Though a Navy program, the LAW is essential to realizing the Corps's Force Design 2030 effort and its concepts for distributed operations. While the Marines can reorganize their forces into smaller units optimized for low-signature, smaller physical footprint operations in an operating environment that is highly contested (e.g., the archipelagic waters of the Pacific within range of China's weapons), they would

be hard-pressed to use those units if they are unable to move and sustain them.[41] This is the driving purpose of the LAW. The Navy's shipbuilding accounts are already strained by mounting costs to modernize the current fleet and introduce new platforms. The LAW is a new demand but is essential to the Corps.[42]

Recommendation 9: Provide requested funding for critical infrastructure projects. As noted by General Berger, "Half of all FY22 major construction projects for the Marine Corps supports funding on Guam. Delays in Guam construction investment will delay the movement of Marines from Okinawa and slow the rebalancing effort in the Pacific."[43] This is another example of how all projects requiring stable and adequate funding are tightly integrated with the Corps's effort to meet the challenge presented by China in the Indo–Pacific region. Absent assured funding from Congress for necessary infrastructure development, the Corps will fall short in its ability to project naval power into the sea and air space increasingly dominated by China.

Air Force

The Air Force requires a plan to increase both readiness levels and its fleet of aircraft. It also needs commensurate funding—and a leadership team dedicated to making it happen—to build and sustain readiness levels. It should stop scheduled retirements of legacy platforms to sustain capacity, increase the rate at which it acquires fifth-generation systems, and increase the readiness of of all combat platforms.

To better prepare the Air Force for great-power competition, Congress should:

Recommendation 10: Reject Any Proposal to Further Reduce the Number of Fighters, Bombers, and Tankers in the U.S. Air Force, the Air National Guard, and Air Force Reserve Inventories. The 2022 presidential budget proposed retiring 147 fighters and 32 tankers and acquiring just 60 fighters and 15 KC-46 tankers.[44] These cuts would have decreased the number of fighter squadrons from 55 to 51 and the number of tanker squadrons from 40 to 38—despite Air Force studies showing that the Air Force is 25 percent too small to execute the NDS.[45]

Air Force Chief of Staff General Charles Brown has stated that the next war will be highly contested and could see "combat attrition rates and risks...that are more akin to the World War II era than the uncontested environment to which we have become accustomed" since the Gulf War.[46] With the exception of 2019, every time the Air Force has

given up capacity, it has permanently lost that capacity. Legacy and new four-plus-generation fighter platforms will not be able to penetrate or safely operate around high-threat areas, and until they are replaced, pilots will have to quickly transition to fifth-generation platforms once they become available.

Divestments of fighter and tanker assets should end until new acquisitions bring the number of fighter, bomber, and air refueling squadrons to 386—the number mandated by the FY 2021 NDAA.[47]

Recommendation 11: Truncate the acquisition of fourth-generation F-15EXs to 74 aircraft (one wing) and accelerate fifth-generation F-35A fighter acquisition to at least 100 jets per year. Congress should stop purchasing additional fourth- or four-plus-generation aircraft and increase fifth-generation acquisition. The Air Force should acquire the most technologically advanced, cost-effective platforms available to ensure that its capability well exceeds that of peer-competitor air forces.

Its current plan to acquire F-15EX fighters will deliver markedly less capability, will cost the Air Force $27 million more per aircraft to acquire, and will cost more to operate than the F-35.[48] The Air Force could acquire 183 F-35A fifth-generation fighters for the same price it will pay for 140 fourth-generation F-15EXs.

Recommendation 12: Direct the Air Force to increase F-15E, F-16C, and F-35A mission-capable (MC) rates to 80 percent and F-22A MC rates to 60 percent by the end of FY 2023. MC rates measure how much of a certain fleet is "ready to go" at a given time. In 2018, the Secretary of Defense directed the Air Force to increase the MC rates of its F-16, F-22, and F-35 aircraft fleets to 80 percent by the end of September 2019.[49]

Following the same directive, the MC rate of the Navy's fleet of F/A-18s went from below 50 percent in 2017 to above 80 percent in August 2019. In early 2019, the Air Force chief of staff stated the service would not meet the 80 percent MC threshold 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—the service completely backed away from the goal of an 80 percent MC rate.[50]

The service chose instead to highlight the deployability of "lead force elements" within its fleet.[51] 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 defeat a peer competitor. Congress should hold the Air Force accountable to its MC fleet rate.

Recommendation 13: Direct the Air Force to increase flight hours and sortie rates to a minimum of 17 hours and 12 sorties a month per pilot by the end of FY 2023. Fighter pilot combat capability is generally measured in the number of flying hours and sorties its operational fighter pilots receive, and both metrics fell considerably in 2020. The monthly per-pilot average fell from 16.1 hours and 8.3 sorties in 2018 to 14.6 hours and 7.5 sorties in 2019[52]—and fell again to 10.9 hours and 5.9 sorties in 2020.[53]

That means the average line fighter pilot flew just over one sortie a week for the duration of 2020. This low number of flying hours in a high-performance jet reduces competency levels to the point where even the best pilots begin to question their execution of very basic tasks.

Recommendation 14: Direct the Air Force to establish permanent operational readiness inspection teams to 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 MC rates, aircrew and maintenance personnel qualifications, spare parts, and other readiness factors.[54] These metrics in no way convey how ready those squadrons are to mobilize, deploy, and fight in a high-threat environment. Few (if any) squadron commanders are willing to declare that they are not ready for a peer-level conflict. Assessments should be made by independent operational readiness inspection teams trained specifically to evaluate the ability of units to rapidly mobilize, generate, and fly combat sorties.

Recommendation 15: Direct the Air Force to revise the beddown plan for the F-35A to prioritize active-duty F-35A units in the Pacific, Europe, and the United States before fielding it to the Air National Guard. The demands of the 2018 NDS require thwarting a move by either China or Russia with little to no warning. In 1987, at the height of the Cold War, the Air Force had 43 combat-coded fighter squadrons in Europe and the Pacific—11 more than the 32 total active-duty squadrons the Air Force currently has and just seven short of today's total force (50).[55]

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 fighter squadron equivalents to fight a peer competitor.[56] In order to rapidly meet an emergency deployment, the Air Force should transition active units to the F-35A.

Recommendation 16: Direct the Air Force to return the Air Reserve to its strategic reserve role and allow the Guard and 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 Air National Guard and Air Force Reserve. The operational tempo is largely to blame for the pilot shortfall, and the Air Force needs to curtail Air National Guard and Reserve deployments to rebuild and strengthen that force. As it recovers manpower, Air National Guard operational fighter squadrons should be increased from an average of 18 primary assigned aircraft to 24.

Recommendation 17: Direct the Air Force to grow its pilot production capacity to allow 1,700 annual pilot candidates and allow more screening to grow the quality of the graduates. The pilot shortfall is significant and will likely grow again as world travel increases. In 2019 the Air Force estimated that 1,480 pilots would complete flight school in 2020—201 more than in 2019.[57] COVID-19 reduced those projections back to 1,200.[58]

Retention increased slightly, primarily due to the commercial carrier hiring freeze. However, airline pilot retirements will continue 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 a need for more than 900 additional pilot billets. Those collective factors will compound the pilot shortfall, and the Air Force should increase its pilot production pipeline accordingly.

Space Force

The Space Force is experiencing the growing pains of setting up a new service within a military department. It will take time to establish its unique culture and properly differentiate from the other services. However, one of the biggest obstacles is bringing all the space assets and personnel from the other services under its roof. For that reason, Congress should:

Recommendation 18: Direct the other organizations to transfer assets into the Space Force by the end of FY 2024. The FY 2022 NDAA authorized the Space Force to have 8,400 active-duty military personnel,[59] 4,364 civilian personnel,[60] and a total end strength of 12,764 by September 30, 2022. There are an estimated 21,000 space professionals, 36 acknowledged satellites,[61] and more than 60 unacknowledged satellites in the Army, the Navy, and the National Reconnaissance Office.[62] The consolidation of space command and control, culture, and doctrine will not be complete until every appropriate person and asset has been transferred into the Space Force.

Strategic Assets

The DOD is also responsible for important assets in national defense that do not necessarily reside with the military services. These are very important to a strong national defense and are traditionally addressed by the NDAA.

Cyber Assets

As cyber becomes a bigger and more important part of daily lives and military operations, the United States needs to have the proper people and resources. To ensure a strong defense in cyber, Congress should:

Recommendation 19: Support U.S. Cyber Command budget requests to ensure the continued growth and effectiveness of the command. U.S. Cyber Command has grown a great deal in size and effectiveness over the past 10 years. However, sustained investment will be needed to ensure that the capacity and readiness of the command will be able to meet the growing demands of the cyber domain. As mission sets such as election security and the defense of critical infrastructure are added to the traditional missions of defending DOD networks and conducting cyber operations, ensuring that U.S. Cyber Command can invest in the manpower and resources it needs is essential for long-term success.[63]

Recommendation 20: Mandate an annual report on the state of the DOD's cybersecurity, with both a classified and unclassified version for release. While secrecy is important in cyber affairs, oversight by Congress and the American people is also important to ensure that resources are being allocated and used effectively. This report could serve as the basis for briefing materials and should be based on some form of consistent metrics, especially at the classified level. The unclassified version would educate the public on the broad state of cybersecurity and the possible need for increased capability or funding.[64] Providing more information to the public on the results of successful offensive operations could also strengthen deterrence, as adversaries would be more aware of select U.S. capabilities and examples of them being used.[65]

Nuclear Forces

America's nuclear forces underpin U.S. strategic deterrence, the number-one priority for national defense. As China pursues a strategic breakout of its nuclear forces, Russia continues to expand its nuclear arsenal, North

Korea advances its nuclear forces, and Iran becomes closer to obtaining the nuclear bomb, maintaining a strong nuclear deterrent remains as important as ever. In order to sustain a viable nuclear deterrent, Congress should:

Recommendation 21: Authorize funding for the sea-launched cruise missile-nuclear (SLCM-N). The Trump Administration's *2018 Nuclear Posture Review* proposed developing the SLCM-N to address a growing gap in non-strategic nuclear capabilities between the United States and its adversaries. As Russia and China continue to advance their stockpiles of theater nuclear weapons that could be used in conventional conflicts (for instance, over Ukraine or Taiwan), the need for SLCM-N has become more pronounced.

Because the SLCM-N can be deployed on attack submarines directly to the Indo–Pacific or European theaters of conflict, it would provide the President with a regionally present, proportional nuclear option to more credibly deter limited nuclear use. Regardless of whether Biden's *Nuclear Posture Review* continues the SLCM-N, Congress should keep funding the program to ensure that the United States has capacity and capability to deter nuclear employment at all levels of escalation.[66]

Recommendation 22: Robustly fund DOD nuclear modernization programs to ensure they remain on schedule. These programs include the Ground-Based Strategic Deterrent, the B-21 bomber, the Long-Range Standoff Weapon, and 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 as the threat to the United States becomes increasingly complex. Additionally, most NC3 systems are extremely outdated and need to be upgraded to 21st-century technology.

The NDAA should reject any life extensions of systems that were built during the Cold War, such as the Minuteman III intercontinental ballistic missile.[67] While such proposals may have been debatable over a decade ago, with recent revelations about Russia's and China's nuclear expansion, America is well past that point now. The United States needs nuclear forces built with 21st-century technology to deter increasingly sophisticated threats far into the future.

Recommendation 23: Require a study on future capabilities and posture adjustments needed beyond the current modernization program to account for China's strategic breakout. The current U.S. nuclear force posture, on which the modernization program is based, dates to 2010, when Russia was the only near-peer nuclear competitor and the overall nuclear threat environment was expected to lessen over time.[68] With China's nuclear breakout and Russia's continued nuclear expansion,

the United States should reconsider whether the current modernization program will deter the growing threat and how to account for a more threatening future. Since additional capabilities and posture changes take a long time to develop, the DOD should begin studying how to deter two nuclear peer threats simultaneously and differently.

Recommendation 24: Continue funding the B83 gravity bomb life extension program and maintain the capabilities to hold at risk hard and deeply buried targets (HDBTs) into the future. Russia and China are improving their hardening and tunneling capabilities over time to protect critical assets, such as command-and-control nodes. Maintaining the ability to hold these HDBTs at risk remains necessary for deterrence.[69] Therefore, Congress should keep the B83 gravity bomb in the current stockpile, as it is the best weapon currently available for holding HDBTs at risk. Congress should also require the DOD to study how the United States will be able to hold at risk HDBTs into the future, including studying modern warhead designs.

Recommendation 25: Prohibit the use of funds to reduce the size of the U.S. nuclear arsenal external to any treaty approved by the Senate. Any unilateral reductions in U.S. nuclear forces would only cede an advantage to Russia and China while reducing their incentive to negotiate meaningful arms control. Congress should ensure that the Administration cannot make significant cuts to the nuclear arsenal below New START levels unless as part of a treaty approved by the Senate.

Recommendation 26: Require an assessment of the current nuclear stockpile's deterrence requirements beyond 2030 and modern warhead designs. The U.S. nuclear stockpile is based on Cold War–era warhead designs. Yet as the nuclear threat from Russia and China increases, the United States might require new weapons designs. Warheads with greater accuracy and precision yet lower yield—taking advantage of scientific advancements since the Cold War—would likely better meet the deterrence requirements of the 21st century.[70] U.S. Strategic Command, in conjunction with the National Nuclear Security Administration, should assess modern warhead designs and the required timeline for their development.

Recommendation 27: Increase funding for the National Nuclear Security Administration's Stockpile Responsiveness Program (SRP). The SRP enables scientists to exercise the critical nuclear weapons design and development skills that have not been fully exercised since the Cold War. As the number of scientists and engineers who have actually designed and tested nuclear weapons dwindles and as the stockpile continues to age,

preparing the current generation of scientists to support modern warhead development increases in importance. The budget request for the SRP has remained flat at $70 million for the past three years. Funding for SRP should rise at minimum with inflation if not larger to reflect the growing importance of weapons design, assessment, and manufacturing.[71]

Missile Defense

Missile defense not only protects Americans from attack but deters adversaries and enables 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 28: Accelerate the Guam Defense System (GDS). As China continues to improve its arsenal of dual-capable missiles capable of striking Guam with precision and ramps up aggression in the region, the need to develop an advanced defense system on Guam has become apparent. However, progress on the GDS has moved too slowly. Last year's budget request included $118 million for GDS, which is less than half of the $350 million requested by U.S. Indo–Pacific Command in early 2021.[72] Thankfully, Congress added $100 million in the FY 2022 NDAA, but that still fell short of the $350 million request. This year, Congress should accelerate GDS funding to reflect the urgency of the Chinese threat to Guam and the priority of building defenses as quickly as possible.[73]

Recommendation 29: Invest in advanced missile defense technologies such as directed energy. Prioritizing innovation in missile defense capabilities is critical to ensuring future defenses. For example, former vice chairman of the Joint Chiefs of Staff General John Hyten recently explained that directed energy can intercept cruise and ballistic missiles at a lower cost than ground-based interceptors.[74] Such a capability would be particularly useful to compete with China's numerous missile arsenal in the Indo–Pacific. Last year's NDAA rightly moved authority for directed energy back to the Missile Defense Agency with instruction to prioritize directed energy research.[75] The FY 2023 NDAA should continue this effort.

Recommendation 30: Require a plan with a timeline for deploying and maintaining at least 64 interceptors for the Ground-Based Midcourse Defense system. The *2019 Missile Defense Review* proposed growing U.S. ground-based interceptor capacity from 44 to 64 to keep pace with the North Korean missile threat, which could outgrow current

interceptor capacity during this decade.[76] The DOD plans to deploy 20 Next Generation Interceptors (NGIs) beginning in 2028 in Fort Greely, Alaska.

The current inventory of 44 interceptors should be upgraded as they are increasingly obsolete. The DOD should reach 64 deployed interceptors at the earliest possible date and maintain that level commensurate with the growing threat to the homeland. This should include examining the need for more than 20 NGIs to account for attrition.

Recommendation 31: Accelerate the development of hypersonic missile defense. Russia and China are both deploying new hypersonic missiles capable of penetrating existing U.S. missile defenses. While the United States can intercept hypersonic missiles in their terminal phases, the Missile Defense Agency's Glide Phase Interceptor program, currently in the research and development stage, would enable intercept earlier in flight.[77] This capability would be particularly useful for GDS. Congress authorized additional funding for hypersonic defense in the FY 2022 NDAA and should continue to do so.

The DOD's Internal Management

The 2018 NDS correctly identified improving how the DOD conducts its business as an important area for investment and concern.78 From how the DOD organizes its recruitment efforts to its physical infrastructure and how it educates civilians and military personnel, there are many issues that Congress needs to address, and they affect more than just one individual service. To improve the Pentagon's management, Congress should:

Recommendation 32: Shore up military recruiting efforts for 2022 and beyond. Military officials are already sounding the alarm regarding recruiting efforts in 2022. Major General Kevin Vereen, the commander of Army Recruiting Command, said recruiters are being forced to offer record-high bonuses to prospective volunteers.[79] The Air Force also has "warning lights flashing" on recruiting and has half the pool of qualified applicants than at this point last year.[80] The services—the Army in particular—have recently struggled to make their recruiting goals.

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. Taiwan, South Korea, Germany, and Norway are already experiencing recruiting crises.[81] If the United States 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.[82] Congress should convene an early hearing on military recruiting in 2022 and ask military and civilian experts for their recommendations.

Congress should also provide for after-hours physical fitness training and Armed Services Vocational Aptitude Battery (ASVAB) preparation, re-imagine the Junior ROTC program to help make America's youth aware of military opportunities, and normalize the ASVAB Career Exploration Program (ASVAB CEP) for America's youth.

Recommendation 33: Dismantle the Selective Service System. Last year, Congress discussed and almost passed an expansion that would have forced women to register with the Selective Service System. It would have been a mistake. The likelihood of the Selective Service being used is zero, and the system as currently constructed *detracts* from military readiness. As explained by James Jay Carafano, vice president of The Heritage Foundation's Davis Institute, because of the need to train the draftees who would join the Armed Forces, "the Selective Service System actively damages current readiness and capabilities."[83]

Further, the draft "is an anachronism masquerading as something that's still relevant. The draft contributes nothing to deterring the likes of China, Russia, Iran, or North Korea. The draft does nothing to build better citizens or patriotism, since other than filling out a form, it requires nothing from our youths."[84] The best path forward is to improve military readiness and recruitment. Congress could also look at expanding volunteer opportunities in the military—or even a voluntary registry. The compulsory nature of the Selective Service does not improve readiness or recruiting efforts.

Recommendation 34: Require a report on the impact of new military justice provisions in the FY 2022 NDAA. The FY 2022 NDAA established an entirely new parallel system of military justice for sexual assault and harassment offenses despite the complete lack of evidence that such changes would reduce the number of such crimes or their prosecution.[85] The new system requires special trial counsel and a supporting bureaucracy, which are the only ones empowered to refer sexual-related crimes to a court martial.

There is evidence to suggest that such a change will lead to less, not more, charges being brought in these cases.[86] Congress should require specific reporting on the impact of these changes on the military justice system, and if—as is likely—the changes do not lead to improvements, the changes made in FY 2022 should be repealed.

Recommendation 35: Forbid any materials or instruction that promote identity politics and critical race theory. Advocates for critical race theory and gender or sexual identity preferences have made progress in imposing their agenda on the U.S. military. America's military draws young men and women from all backgrounds and all walks of life, integrating them into teams united in common identity and shared purpose: to serve the country. They should not be taught that the country they have sworn to serve is structurally prejudiced to favor one group over another or that someone has gained a position because of race or gender rather than from hard work, competence, and meeting or exceeding standards.

The chain of command in any military organization can retain its legitimacy only if those within it believe that it is fair, just, and not inherently biased. Success in combat depends on cohesion and competence. These, in turn, derive from teamwork and standards, which are built on trust, mutual respect, merit, shared experience, and a belief in service to a higher purpose. Critical race theory and other such divisive concepts destroy all of this.

The U.S. military is the epitome of opportunity, shared purpose, and constructive idealism—the very things that America was built on and have driven it to become the best example of what is possible.[87] Congress should deny attempts to undermine this cornerstone of America.

Recommendation 36: Require contractors to disclose their training materials. The Senate version of the FY 2022 NDAA would have required contractors to make available

> diversity, equal opportunity, equity, inclusion, or tolerance training materials or internal policies, including syllabi, online sources, suggested reading lists, guest speakers and lecturers, instructor lists, internal policy memos, workshop descriptions, outside organizational funding, or other educational or professional materials for review and identification of Critical Race Theory or similar theoretical instruction in a timely manner.

This valid requirement would inform both the American public and Congress how the training resources and educational funding is being allocated, especially in the case of destructive and false theories of how the world operates. Congress should establish this disclosure requirement.[88]

Recommendation 37: Require a report on the impact of the change in policy regarding individuals with gender dysphoria. In his first week in office, President Joe Biden overturned the existing policy on military service by transgender individuals. Former Secretary of

Defense James Mattis devised the existing policy on the advice of medical professionals, senior military leaders, and other experts over the course of six months.

Mattis's task force found that transgender servicemembers with gender dysphoria attempt suicide at eight times the rate of the general population and seek mental health help nine times more often.[89] Despite these alarming findings, the President allowed unrestricted service by transgender individuals and, further, resolved to pay for gender reassignment surgery with government funding.[90]

There have been no studies on the impacts on readiness of including servicemembers who are predisposed to severe anxiety, suicide attempts, and increased mental health treatment. Similarly, there has been no study of the absence of these same individuals from their units due to gender reassignment surgery and recovery and the number of transgender servicemembers who are considered "non-deployable" for these reasons. Congress should require the DOD to provide a report on these readiness impacts.

Recommendation 38: 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 a married military couple to share a single allowance and by requiring all servicemembers to document their housing expenditures. These changes would reduce costs and are completely appropriate. Congress should phase in a more accurate housing allowance, since servicemembers are not entitled to any BAH money they receive in excess of what they pay for housing as extra compensation—nor should they have any such expectation.

Recommendation 39: Combine the commissary and exchanges systems into one. The DOD operates two parallel, but similar, organizations for providing servicemembers and their families with goods and groceries. The commissaries provide groceries at cost plus 5 percent, which is sustainable only 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 servicemembers, particularly those stationed overseas or in remote locations. Congress should combine the two systems and determine the best business model for the future. The Government Accountability Office has found that the DOD does not properly measure the recruiting and retention benefits created by the systems.[91]

Recommendation 40: 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.[92]

These unnecessary costs could be better allocated elsewhere in the budget. The DOD estimates that a new round of BRAC would save $2 billion in fixed costs.[93] Congress should determine the percentage by which a new round of BRAC would reduce infrastructure. There are multiple ways in which Congress can allay concerns that lawmakers might have,[94] from establishing different criteria for installation assessments to dedicating full-time staff to BRAC and its studies. Furthermore, a new round of BRAC would assess how the current infrastructure is adapted to the changed goals of the military.[95]

Recommendation 41: 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.[96] Even critics will admit that "competition is the greatest single driver of performance and cost improvement."[97] The RAND Corporation has estimated that private competition could save between 30 percent and 60 percent of current funds.[98] 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.[99] This is more reason for Congress to update and implement Circular A-76.[100]

Recommendation 42: Create a pilot program to roll over unused funds. Congress should allow 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 of less funding the following year. This, in turn, creates a "use it or lose it" mentality, which leads to unnecessary purchases to use up the funds. DOD agencies spend up to 31 percent of their annual funds in the fourth quarter. September sees spending twice as high as the other months of the year.[101]

As Mercatus Center economists Jason Fichtner and Robert Greene determined, this acceleration of federal spending decreases the quality of spending, as poor choices are made in the interest of quickly using funds.[102] So long as the entities do not benefit from saving funds, there is no incentive for them to spend more efficiently. A pilot program enabling specific DOD agencies to roll over 5 percent of their operating budget could demonstrate a solution across the entire department. This program could also help the DOD cope with the constant CRs that erode spending authorities.

Recommendation 43: 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 can and should be sped up.[103] 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 evaluate the common characteristics of the reprogramming requests approved without modifications.

Recommendation 44: Remove non-defense research funding from the NDAA. Congress has habitually inserted non-defense research projects into the NDAA and appropriations bills that do not directly contribute to the national defense or the better functioning of the Armed Forces. These tend to concentrate around medical research, such as the Army's Congressionally Directed Medical Research Programs.[104] 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 45: Evaluate energy projects for effectiveness and efficiency, not carbon emissions. The current Pentagon leadership has stated that climate change will touch every aspect of the department's planning.[105] While energy and electricity are paramount to every aspect of the DOD, the reliability of energy sources is more important than their carbon emissions. In many of the environments where the Pentagon operates, such as Alaska, having energy is a matter of life and death that should not be taken lightly. Congress should prioritize mission needs when evaluating incoming energy proposals from the Administration.

Defense Industrial Base

The COVID-19 pandemic illustrated the fragility of the American supply chain: There were shortages of everything from semi-conductors to toilet paper. This highlights the need to pay attention to the defense industrial base and to the areas where it needs improvement. To strengthen the defense industrial base, Congress should:

Recommendation 46: Restore commercial maritime competitiveness and bolster naval shipbuilding. Outgoing Maritime Administrator Admiral Mark H. Buzby has commented, "My concerns are in the quantity of ships that we have, the reliability of the ships that we have and resilience of the force: in other words, the ability either repair it or to replace it if we need to due to combat loss.... The obvious answer is it needs to be enlarged

across the board both on the commercial side and the government side."[106] As the Navy attempts to pace a growing Chinese navy, adequate sealift and logistics support during times of war is required.

To this end, the Navy has been authorized to purchase used foreign-built ships to address critical shortfalls in sealift and tanker capacity.[107] This is a stop-gap effort, and more is needed. Congress and the Department of Transportation, acting through the Maritime Administration, need resources to attract, train, and retain merchant mariners to meet wartime shipping needs. Congress should insist on a comprehensive assessment by the Departments of Defense, Homeland Security (specifically, the U.S. Coast Guard), and Transportation on sustaining a prolonged (two years or more) wartime economy. Lastly, the sense of Congress that the domestic maritime industry is a national security asset should be backed with additional resources and agencies.

Recommendation 47: Establish a fifth public shipyard for nuclear maintenance. The Navy uses its four existing public shipyards in Hawaii, Maine, Virginia, and Washington State. All these shipyards suffer from decades of underinvestment, and the Navy predicts that 68 maintenance availabilities will be missed and deployments forgone if problems are not remedied.[108] The Navy's Shipyard Infrastructure Optimization Plan (SIOP) is the current plan outlining improvements to dry docks, facilities, and capital equipment.[109]

Congress should continue fully funding SIOP, but this alone is inadequate, as the Navy predicts it would still miss maintenance availabilities. In an era of great-power competition, and especially of maritime competition with China, added shipyard capacity is a pressing need. The DOD has consistently made the case for a larger fleet since at least 2016 and reaffirmed it with the June 2021 long-range shipbuilding plan.[110]

Recommendation 48: Rebuild the Navy's public shipyards. SIOP is the best plan for addressing decades of infrastructure neglect at the four shipyards. Costing a roughly estimated $20 billion over 30 years, SIOP represents a relatively small piece of the defense budget, yet Navy shipyards keep attack submarines, aircraft carriers, and the submarine side of the nuclear triad afloat.[111]

Congress should make the reconstruction of Navy shipyards a top priority. Congress should also consider using alternative funding structures, rather than annual appropriations, to ensure that the varied and complex SIOP projects stay on schedule.

Recommendation 49: Require more robust cost estimates on SIOP. Lawmakers should pay attention to the growing costs of SIOP. The Navy's original cost estimates for the plan were not adjusted for inflation. Some

of the specific projects have already been much larger than their estimated costs. For example, the saltwater cooling upgrades at Norfolk Naval Shipyard (which will allow service to the *Ford*-class carrier) were estimated to cost $55 million but will actually cost $156 million.[112] The dry dock extension project at Portsmouth Navy Shipyard was initially estimated to cost $381 million but is now expected to cost $715 million.[113]

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 it leaves no margin for a potentially larger nuclear fleet or for emergent work.

Recommendation 50: Require a report on a vaccine mandate for defense contractors. Federal courts have halted enforcement of the Biden Administration's order requiring government contractors to be fully vaccinated against COVID-19.[114] However, there has been no final decision whether such a mandate can or will be enforced. If enforced, it would create instability in the defense industrial base as highly skilled workers choose to quit rather than be vaccinated. Many of these employees would be difficult, if not impossible, for defense firms to replace.[115]

Congress should stop implementation of the vaccine mandate for government contractors and require an independent report, to be delivered within 180 days to relevant congressional committees, on the predicted impacts of the vaccine mandate to defense production.

Recommendation 51: Ban procurement of commercial off-the-shelf drones or unmanned aircraft systems manufactured or assembled by entities on the Entity List. In December 2020, the federal government placed the world's largest maker of drones, D-Mada Jiang Innovations (DJI), on the Entity List, a list of foreign entities subject to trade restrictions due to national security concerns.

That move followed warnings from independent research firms, federal agencies, and National Intelligence Director John Ratcliffe on the threat China and its collection capabilities pose to the United States and its allies. Chinese corporations are legally obligated to serve 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.[116]

While placement on the Entity List sends a strong signal, it still allows federal agencies and departments to purchase and employ DJI drones manufactured in China. The government should ban both.

Recommendation 52: Avoid sweeping domestic content requirements for defense items. The DOD is currently required to buy products made by American companies of at least 50 percent American-made

components.[117] In recent years, lawmakers have tried to increase this percentage to 75 percent or even 100 percent for defense end items. Other members have pushed higher domestic content requirements for particular sectors or even specific items (for example, anchor chains for Navy ships).[118] These laws are intended to protect the domestic defense industry, often for both national security and political purposes.

Congress should avoid such sweeping domestic content requirements. Firstly, trade agreements with many countries nullify such legislation. Bilateral trade agreements with 26 different countries allow those countries' products to be counted in the same way as domestically produced products in Buy American and other domestic content considerations.[119] As a result, new Buy American legislation would have so many exceptions that defense supply chains would be largely unaffected.

Beyond this, broad protectionist regulations make markets less efficient, especially in the already constrained defense industry. Certain items are simply not available from domestic manufacturers. In others, foreign-sourced items may be cheaper. Eliminating those sources as an option would therefore increase costs.

There are cases where, for national security reasons, components' country of origin should be regulated. For example, highly classified submarine subsystems and components should not be produced overseas except by America's closest allies. China, which has a history of intellectual property theft, should not produce components for emerging U.S. military or dual-use technologies. Congress should increase defense supply-chain visibility, then address specific items whose production needs to be re-shored or countries and actors that should be banned from defense supply chains.[120]

Recommendation 53: Fund the National Defense Stockpile. The National Defense Stockpile is the DOD's stockpile of 42 critical and strategic materials for use in a war or national emergency. The National Defense Stockpile is a relatively small function of the DOD, but it can address some of the concerns surrounding defense supply chains. Thus, it has a role to play in the new era of great-power competition. However, for the National Defense Stockpile to effectively hedge against supply-chain disruptions, it needs adequate stocks of critical materials.

There is reason to worry that the National Defense Stockpile does not meet this requirement. Adjusting for inflation, the value of National Defense Stockpile inventories today is only 4 percent of its value in 1989.[121] Congress used its authorities to sell off large amounts of stockpiled materials, because at the time, the DOD's analysis concluded that there were excess materials in the National Defense Stockpile.

Now, the National Defense Stockpile's fund is shrinking dangerously. The National Defense Stockpile does not receive annual appropriations in the defense budget—either for new purchases or for operational expenses. Instead, it has a revolving fund in the U.S. Treasury called the National Defense Stockpile Transaction Fund, which allows National Defense Stockpile managers to sell materials to generate funds. The funding model is sustainable only when commodity requirements are being reduced. With the transition to great-power competition—especially with China, which has control of much of the world's minerals—the United States is unlikely to find itself with excess materials in the National Defense Stockpile for the foreseeable future. Congress should therefore fund the National Defense Stockpile's operations and material acquisitions.

Recommendation 54: Protect and Renew U.S. Landmine Stockpile. On January 31, 2020, the Trump Administration correctly canceled the Obama Administration's policy banning the use of anti-personnel landmines outside the Korean peninsula and authorized Combatant Commanders in all theaters to employ advanced, non-persistent anti-personnel landmines in exceptional circumstances.

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, until the DOD certifies that the replacement of these anti-personnel landmines by 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 55: Protect and Renew U.S. Cluster Munitions Stockpile. In May 2017, Jim Shields, the Army's Program Executive Officer (PEO) for Ammunition, stated an Obama Administration deadline to stop using cluster munitions by January 2019 creates "capability gaps that we are really concerned about." 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."

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.

International Posture

The DOD plays a very important role in defining and shaping American foreign policy. Congress should make use of the NDAA to send clear messages to both allies and adversaries about American interests abroad. In this fashion, Congress should:

Recommendation 56: Direct the Defense Intelligence Agency to report in an unclassified manner the current and projected state of the North Korean and Iranian nuclear and missile programs. The Iranian and North Korean nuclear and missile programs pose a significant national security threat to the United States' homeland, as well as U.S. interests in the Indo–Pacific and the Middle East. As applicable, the report should provide unclassified judgments on the developments in and status of each state's nuclear and missile programs, an evaluation of the current and future nuclear threats posed by them, and the status of their nuclear doctrines. The report should also address their space programs, hypersonic weapons, armed drone programs, and bilateral North Korean–Iranian cooperation in these fields and identify foreign assistance to these programs.

Recommendation 57: Direct the DOD to report on its readiness against biological and chemical weapons threats. Within the past several years, the world has witnessed chemical weapons in warfare and attempted political assassinations as well as a global pandemic from a biological pathogen. These events have national security implications that should make chemical and biological warfare (CBW) readiness a top priority of the United States and its allies. As such, the DOD report should assess the CBW readiness of U.S. forces and European and Asian allies, considering potential CBW threats to them from likely adversaries.

Recommendation 58: Direct the Defense Intelligence Agency to report in an unclassified manner the novel Russian nuclear and hypersonic weapons. Russia, alongside China, is actively developing new nuclear weapons and delivery systems. With at least six strategic projects unveiled in recent years—including a new intercontinental ballistic missile, three hypersonic vehicles, a nuclear-powered underwater drone, and a nuclear-powered cruise missile—Russia poses several new challenges for the United States, the North Atlantic Treaty Organization (NATO), and

international security. Not only are these weapons potential threats; they are also arguably a signal of Russia's continuing commitment to its nuclear forces, its ongoing drive for military innovation, and its efforts to diversify and deepen its strategic forces and military threat. Considering recent Russian belligerence, a deeper understanding of novel nuclear forces in Moscow's military doctrine and the threat it poses to U.S. and allied security is critical.

Recommendation 59: Oppose the Anti-Personnel Mine Ban Convention (Ottawa Convention) and the Convention on Cluster Munitions (CMC). Congress should push the Administration to reject the Ottawa Convention and the CMC. The Ottawa Convention and the CMC 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.

The Biden Administration has sent mixed signals on the Ottawa Convention and the Arms Trade Treaty. U.N. Ambassador Linda Thomas-Greenfield announced on April 8 that it would "roll back" the Trump Administration's rejection of the Convention, but a Pentagon spokesperson the same month described land mines as "a vital tool in conventional warfare." A State Department official in August stated that the Biden Administration was considering "the proper relationship of the United States to the Arms Trade Treaty," but the Administration has not so far re-signed it.

Recommendation 60: Build on FY 2022 NDAA's Measure to End Interpol Abuse. The abuse of Interpol by autocratic nations—this abuse is part of the wider problem of transnational repression—harms U.S. national security by bringing Interpol into disrepute and making it a less reliable mechanism for combatting terrorism and transnational organized crime. The FY 2022 contained Section 6503 on "Transnational Repression Accountability and Prevention." The landmark provisions in this section declared the sense of Congress that "some INTERPOL member countries have repeated[ly] misused INTERPOL's databases and processes," required the U.S. to support Interpol institutional reforms, and requested the censure of repeatedly abusive member countries. It also requires the Attorney General and the Secretary of State within six months to submit a report determining which countries have repeatedly abused Interpol.

Congress should prohibit any U.S. government department or agency from using in any way any Interpol communication from any country found to have repeatedly abused Interpol to detain or otherwise deprive an individual of freedom, to remove an individual from the United States, or to deny

a visa, asylum, citizenship, other immigration status, or participation in any trusted traveler program of the Transportation Security Administration.

Finally, Congress should prohibit any U.S. government department or agency from arresting any individual who is the subject of any Interpol communication without prior verification of the individual's eligibility for extradition under a valid bilateral extradition treaty for the specified crime or crimes and the issuance of an arrest warrant in compliance with section 3184 of title 18, United States Code.

Recommendation 61: Clarify American opposition to further European Union (EU) 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 that the United States can and should disengage from European security. An independent EU army would undermine transatlantic security and decouple the United States from the legitimate interests it retains in a peaceful and secure European continent.[122]

The European Commission and vocal leaders such as French President Emmanuel Macron have consistently called for a greater EU role in defense.[123] While these efforts have been met by tepid response by allies such as Germany and outright opposition from most eastern European NATO members, their destructiveness and staying power should not be underestimated. The Biden Administration to date has not actively supported EU defense integration, but it has indicated a willingness to pare back U.S. opposition.[124] This would be a mistake. Nothing would strain the transatlantic bond more and undermine NATO faster than EU defense integration.

Congress should not be taken in by the EU's plans for strategic autonomy in defense or its vague promises of benefitting NATO.[125] 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. Even Vladimir Putin, who has expressed support for an independent EU defense identity, clearly recognizes this reality.[126] The United States should advance a "NATO first" agenda that ensures that American influence in European defense matters. NATO has been the cornerstone of transatlantic security for almost seven decades. It affords the United States influence in the region commensurate with the number of troops, equipment, and funding it commits to Europe.

Recommendation 62: Establish a permanent military presence in Eastern Europe. U.S. basing structures in Europe harken back to a time when Denmark, Greece, and West Germany represented the front lines of the Cold War. Yet the security situation in Europe has changed, and the United States should establish a permanent military presence in the Baltic

and Black Sea regions. The United States has a rotational presence in Poland and frequently rotates troops through Bulgaria, Estonia, Hungary, Latvia, Lithuania, and Romania. However, the United States continues to eschew a permanent deployment in Eastern Europe despite permanent forces providing far greater deterrence value than rotational troops. The threat from Russia to U.S. allies will remain for the foreseeable future. A robust, permanent U.S. presence is essential to live up to NATO commitments and deter future aggression.

Recommendation 63: Further solidify alliances with NATO allies by expanding the Visa Waiver Program (VWP). The VWP pays security dividends, as the 40 nations in the program share information on serious criminals, terrorists, and lost and stolen passports with the United States in exchange for visa-free travel up to 90 days. In addition, the VWP smooths business travel and tourism and further strengthens the transatlantic bond. Recently, the United States expanded membership to Croatia in September 2021. Today, six European NATO allies remain outside the program: Albania, Bulgaria, Montenegro, North Macedonia, Romania, and Turkey.

Congress should expand membership to include key NATO allies.[127] One possibility is to allow the Department of Homeland Security, which oversees the program, to invite nations with a slightly elevated visa-refusal rate—provided that they have a concurrently small visa-overstay rate. Congress could also evaluate alternative eligibility criteria, such as defense spending by NATO members.

Recommendation 64: End Nord Stream II (NS2) once and for all. NS2 is a pipeline between Russia and Europe that is neither economically necessary nor geopolitically prudent. If it becomes operational, NS2 will magnify Moscow's ability to use its European energy dominance as a political trump card, calcify divisions in Europe over energy that NS2 has opened, and undermine U.S. allies in Eastern and Central Europe. It is in America's interest to ensure it never becomes operational, and Russia's recent pressure campaign in Europe has given the United States an opportunity to end the project once and for all.[128] Congress retains tools to prevent the pipeline from becoming operational, which, for the sake of transatlantic security, should be utilized without delay.[129]

Recommendation 65: Do not gift or force on Taiwan new American-taxpayer-funded weapons. Taiwan is a stalwart in the defense of liberty globally and is "critical to the defense of vital US interest in the Indo-Pacific," as recently testified to by Assistant Secretary of Defense Ely Ratner.[130] The U.S. government is obliged by the Taiwan Relations Act to make available to Taiwan defense articles and defense services. It has done so for decades

through a collaborative process that evaluates Taiwan's defense needs against releasability. If there are specific capabilities American officials believe Taiwan should have, this process is the place to settle any differences.

Taiwan does not need to be provided weapons at U.S. taxpayer expense. It is a high-income country that already pays more for its own defense as a proportion of gross domestic product than most American security allies do. And it does not deserve to be leveraged into buying what the United States dictates to it.

Recommendation 66: Bolster U.S. air and missile defense in the Persian Gulf. Iran and its proxies have repeatedly launched missile and drone attacks against Saudi Arabia and the United Arab Emirates in the Persian Gulf, Arabian Sea, and Red Sea.[131] The Pentagon needs to ensure that U.S. air missile defense capabilities are deployed based on continually updated risk assessments. Therefore, Congress should request a detailed assessment in FY 2023 on the missile defense needs for U.S. partners in the Persian Gulf.

Recommendation 67: Direct the DOD to report on ways to foster increased defense cooperation between Israel and the signatories of the Abraham Accords. Since September 15, the United States has hosted only one joint military exercise with Israel, the United Arab Emirates, and Bahrain in the Red Sea.[132] Conducting aerial and naval exercises with American, Israeli, and Arab countries can deter Iranian aggression, safeguard the free flow of trade, and maintain stability in the Middle East. The Pentagon should also include signatories of the Abraham Accords in current American–Israeli missile defense research and development efforts.

Recommendation 68: Direct the DOD to report on the capabilities of the Lebanese armed forces. The Lebanese armed forces may be the only state institution not completely compromised by Hezbollah's destabilizing influence, but it faces challenges of its own. The economic crisis in Lebanon has made it difficult to pay the salaries of soldiers and provide meals for soldiers on duty. As a result, military personnel, including high-level officers, are leaving the force at alarming rates.[133] Congress should direct the DOD to assess the Lebanese armed forces and the degree to which it is penetrated by Hezbollah. If the armed forces were to collapse, Hezbollah could become the lone military force in the country—a development that would not bode well for the United States and its allies in the region.

Recommendation 69: Expand the provision requiring a report on China's activities in Latin America and the Caribbean to include Russia and Iran and update the criteria. The FY 2022 NDAA required the State Department to report (coordinating with the DOD and others)

on China's growing influence in Latin America and the Caribbean.[134] The report is required to identify the numerous formal or informal agreements across investment and trade, security, and diplomacy.[135] It also requires a comparison of arms and defense article sales in the region among the United States, China, and Russia.[136]

There are no other specific reporting requirements on other geostrategic adversaries in the region alongside China. An updated report should evaluate Russian and Iranian incursions, including in-depth study of their military, intelligence, and paramilitary assets in the region. It should also evaluate the continuous efforts of these actors, with China and Turkey, to circumvent U.S. sanctions and pursue illicit trafficking and finance operations. The extent to which these states are engaging with specific regional economic and civil society actors should also be studied. A future report should identify specific violations of international or local standards by Chinese state-affiliated firms and should detail China's efforts to reshape commercial supply chains in the region.

Recommendation 70: Strengthen the Plan for Strategic Competition Initiative and evaluate illicit oil and rare earths trafficking in the Western Hemisphere. The FY 2022 NDAA required the DOD to develop a plan to support strategic competition under U.S. Southern Command (SOUTHCOM) and U.S. Africa Command.[137] The FY 2023 NDAA should include an updated outlook of geostrategic competitors in both regions. In the Western Hemisphere, the DOD should consider the budget-mandated reports on China and geostrategic competitors in the region. A revised plan should evaluate the military resources and strategies under SOUTHCOM and regional partners to counter illicit trafficking of oil and minerals and the extent to which geostrategic competitors assist in these operations. The plan should evaluate efforts to target these illicit operations, consulting with agencies responsible for similar counter-narcotics efforts.

Recommendation 71: Increase support for SOUTHCOM's intelligence, surveillance, and reconnaissance (ISR) and security cooperation capacity. The FY 2022 NDAA allotted $18 million in additional funding to SOUTHCOM's traditional ISR capabilities.[138] This fell below the $40 million originally requested but still signaled the growing ISR-related challenges in the Western Hemisphere. The FY 2023 NDAA should meet SOUTHCOM'S ISR funding requests and expand non-traditional ISR, including artificial intelligence. The option to reincorporate an ISR transfer fund should also be evaluated.[139] As geostrategic competitors and transnational criminal organizations expand operations increasingly out of sight, consistent support for ISR funding should be a priority.

Conclusion

The 2023 NDAA will play a critical role in helping the U.S. Armed Forces continue their transformations to counter great-power aggression and deter conflict. Additionally, this NDAA will have tremendous signaling power to Russia and other potential aggressors in the world. The United States and the rest of the world have taken swift non-military action to punish Russia's war of aggression against Ukraine, but future deterrence of this type of action requires ready military power. The time Congress spends deliberating these issues is time well spent.

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