

Calendar No. 483

116TH CONGRESS }
2d Session }

SENATE

{ REPORT
{ 116-236

NATIONAL DEFENSE AUTHORIZATION ACT
FOR FISCAL YEAR 2021

R E P O R T

[TO ACCOMPANY S. 4049]

ON

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2021 FOR
MILITARY ACTIVITIES OF THE DEPARTMENT OF DEFENSE, FOR
MILITARY CONSTRUCTION, AND FOR DEFENSE ACTIVITIES OF
THE DEPARTMENT OF ENERGY, TO PRESCRIBE MILITARY PER-
SONNEL STRENGTHS FOR SUCH FISCAL YEAR, AND FOR OTHER
PURPOSES

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE



JUNE 24, 2020.—Ordered to be printed

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U.S. GOVERNMENT PUBLISHING OFFICE

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Calendar No. 483

116TH CONGRESS }
2d Session }

SENATE

{ REPORT
{ 116-236

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2021 FOR MILITARY ACTIVITIES OF THE DEPARTMENT OF DEFENSE, FOR MILITARY CONSTRUCTION, AND FOR DEFENSE ACTIVITIES OF THE DEPARTMENT OF ENERGY, TO PRESCRIBE MILITARY PERSONNEL STRENGTHS FOR SUCH FISCAL YEAR, AND FOR OTHER PURPOSES

JUNE 24, 2020.—Ordered to be printed

Mr. INHOFE, from the Committee on Armed Services,
submitted the following

R E P O R T

The Committee on Armed Services reports favorably an original bill (S. 4049) to authorize appropriations for fiscal year 2021 for military activities of the Department of Defense, for military construction, and for defense activities of the Department of Energy, to prescribe military personnel strengths for such fiscal year, an for other purposes, and recommends that the bill does do pass.

PURPOSE OF THE BILL

This bill would:

- (1) Authorize appropriations for (a) procurement, (b) research, development, test and evaluation, (c) operation and maintenance and the revolving and management funds of the Department of Defense for fiscal year 2021;
- (2) Authorize the personnel end strengths for each military active duty component of the Armed Forces for fiscal year 2021;
- (3) Authorize the personnel end strengths for the Selected Reserve of each of the reserve components of the Armed Forces for fiscal year 2021;
- (4) Impose certain reporting requirements;
- (5) Impose certain limitations with regard to specific procurement and research, development, test and evaluation actions and manpower strengths; provide certain additional legislative authority, and make certain changes to existing law;
- (6) Authorize appropriations for military construction programs of the Department of Defense for fiscal year 2021; and

(7) Authorize appropriations for national security programs of the Department of Energy for fiscal year 2021.

COMMITTEE OVERVIEW

This year marks the 60th consecutive year the Senate has fulfilled its constitutional duty to “provide for the Common Defense” by passing the National Defense Authorization Act (NDAA). This annual legislation provides for funding and authorities for the U.S. military and other critical defense priorities, and ensures our troops have what they need to defend our nation. On June 10, 2020, the Senate Armed Services Committee voted in overwhelming bipartisan fashion, 25–2, to advance the National Defense Authorization Act of Fiscal Year 2021 (FY21) to the Senate floor.

Two years ago, the National Defense Strategy (NDS) outlined our nation’s preeminent challenge: strategic competition with authoritarian adversaries that stand firmly against our shared American values of freedom, democracy, and peace—namely, China and Russia. These adversaries seek to shift the global order in their favor, at our expense. In pursuit of this goal, these nations have increased military and economic aggression, worked to develop advanced technologies, expanded their influence around the world, and undermined our own influence. The nature of warfare is changing, and America’s military superiority is in decline or in danger of declining in many areas. Nowhere is this more evident than in the Indo-Pacific. At the same time, threats from other aggressors—rogue states like Iran and North Korea, which seek to destabilize and antagonize, and terrorist organizations, which threaten to re-emerge or expand not just in the Middle East but in Africa and other parts of the world—persist. As a nation, we must rise to these challenges.

At no time in recent memory has it been more critical to have the personnel, equipment, training, and organization needed to signal to our potential enemies, as former Secretary of Defense Jim Mattis put it, “you, militarily, cannot win it—so don’t even try.” The FY21 NDAA rests on this simple foundation. A credible military deterrent, however, requires more than just having the most planes, ships, and tanks. It requires forces in the right places, at the right time, with the right equipment and capabilities. Posture and logistics are equally as important as fifth-generation aircraft and advanced weapons. Just as necessary to an asymmetric balance of power are our alliances and partnerships, which must be strengthened and solidified. The FY21 NDAA addresses each of these areas, using the National Defense Strategy Commission as a roadmap and building off the authorities and investments provided in both the FY19 and FY20 NDAA. The FY21 NDAA boldly sets policy and prudently aligns resources to achieve irreversible momentum in implementation of the NDS and ensure that America is able to prevent and, if necessary, win the wars not just of today, but tomorrow as well.

With so much at stake, predictable, on-time, and adequate funding remains vital to the success of our military forces, as military leaders have told the Committee time and time again. After years of sustained conflict, underfunding, and budgetary uncertainty, Congress focused on rebuilding the military in the past two

NDAAs. Progress has been made, but the work is not yet done. The National Defense Strategy calls for annual increases of three to five percent above inflation each year, which the Bipartisan Budget Act of 2019 did not provide for FY21. This year's NDAA focused heavily on prioritizing available resources to address the most worrying shortfalls and imminent threats.

Using the National Defense Strategy as a linchpin, the FY21 National Defense Authorization Act advances four priorities:

Supporting Our Troops, Their Families, and the Civilian Workforce

The Committee's top priority is, and always has been, supporting the more than 2.1 million men and women who bravely serve our nation in our Armed Forces. They, along with military families and the civilian workforce, are the backbone of America's national security. The FY21 NDAA prioritizes their health and wellbeing — ensuring our troops have the resources, equipment, and training needed to succeed in their missions. The bill recognizes that family readiness strengthens our force overall, and advocates for military spouses and children. It also ensures previous reforms to the military privatized housing program and to the military health system are implemented to rigorous standards, and reemphasizes a focus on training to ensure our service members can conduct their missions safely.

Charting a Course for the National Defense Strategy Now and Into the Future

The FY21 NDAA continues to reinforce and accelerate implementation of the NDS. In doing so, the bill shifts our focus even more to the Indo-Pacific, our priority theater. Critically, the bill establishes the Pacific Deterrence Initiative to enhance budgetary transparency and oversight, focus resources on capability gaps, reassure allies and partners, and restore the credibility of American deterrence in the region. The bill also emphasizes a combat-credible forward posture, making investments in posture, logistics, and intelligence capabilities, and preserves our nuclear deterrent by supporting our nuclear triad, command and control, and infrastructure. Strategic and steady support for our partners and allies provided for in the bill, including through security cooperation efforts, will strengthen the capabilities of our friends, and ensure the balance of power remains in our favor.

Building a Modern, Innovative, and Lethal Force

Our national security rests on our ability to attain and maintain an asymmetric military advantage. Our supremacy in the seas, in the skies, in space, in cyberspace, and on land must be protected; and as we look to the future of warfare, joint capabilities that ensure the protection of the joint force are essential. The FY21 NDAA ensures the United States fields a force of the optimal size, structure, and strategy, capable of supporting the conflicts envisioned by the NDS. Unfortunately, in key technologies and capabilities, we've fallen behind our near-peer competitors. The FY21 NDAA accelerates innovation so we can compete effectively and regain our comparative advantage over China and Russia.

Reshaping Pentagon Management to Maximize Performance, Accountability, and Lethality

For too long, the Pentagon has operated as a lethargic bureaucracy. Since the FY15 NDAA, Congress has implemented numerous reforms to make the Pentagon more efficient, responsive, and agile. This year, the NDAA prioritizes accountability, with flexibility, for the Department of Defense—setting up management structure and processes that better harness innovation, operate at the speed of relevance, and effectively steward taxpayer dollars. The FY21 NDAA improves the Pentagon’s budget process; adjusts hiring practices to recruit and retain top talent in critical fields like advanced technology, acquisition, health care, management, and more; strengthens the defense acquisition system; and reshapes the Defense Industrial Base as a more resilient, advanced National Security Innovation Base. The COVID–19 pandemic exposed and exacerbated supply chain deficiencies across the government, and the FY21 NDAA takes numerous steps to secure the supply chain—both from overreliance on foreign nations and from infiltration by our adversaries.

Achieving the aims of the NDS is a long game, and the Committee takes a long view. The FY21 NDAA sets us up for success in the long term, putting our nation on an irreversible, confident, and steady course to achieve a peaceful, free, and prosperous world—not only for us, but for our children and grandchildren.

BUDGETARY EFFECTS OF THIS ACT (SEC. 4)

The committee recommends a provision that would require that the budgetary effects of this Act be determined in accordance with the procedures established in the Statutory Pay-As-You-Go Act of 2010 (title I of Public Law 111–139).

SUMMARY OF DISCRETIONARY AUTHORIZATIONS AND BUDGET AUTHORITY IMPLICATION

The administration’s budget request for national defense discretionary programs within the jurisdiction of the Senate Committee on Armed Services for fiscal year 2020 was \$731.3 billion. Of this amount, \$628.5 billion was requested for base Department of Defense (DOD) programs, \$26.0 billion was requested for national security programs in the Department of Energy (DOE), and \$69.0 billion was requested for Overseas Contingency Operations (OCO).

The committee recommends an overall discretionary authorization of \$731.3 billion in fiscal year 2020, including \$628.6 billion for base DOD programs, \$25.9 billion for national security programs in the DOE, and \$69.0 billion for OCO.

The two tables preceding the detailed program adjustments in Division D of this bill summarize the direct discretionary authorizations in the committee recommendation and the equivalent budget authority levels for fiscal year 2020 defense programs. The first table summarizes the committee’s recommended discretionary authorizations by appropriation account for fiscal year 2020 and compares these amounts to the request. The table following those summary tables provides a consolidated display of the committee’s recommended authorizations relating to the Pacific Deterrence Initiative, established in Sec. 1251 of this bill.

The second table summarizes the total budget authority implication for national defense by including national defense funding for items that are not in the jurisdiction of the defense committees or are already authorized.

DIVISION A—DEPARTMENT OF DEFENSE AUTHORIZATIONS

TITLE I—PROCUREMENT

Subtitle A—Authorization of Appropriations

Authorization of appropriations (sec. 101)

The committee recommends a provision that would authorize the appropriations for procurement activities at the levels identified in section 4101 of division D of this Act.

Subtitle B—Army Programs

Integrated Air and Missile Defense assessment (sec. 111)

The committee recommends a provision that would require the Secretary of the Army to carry out an assessment of Integrated Air and Missile Defense (IAMD) capabilities and capacity to address existing and emerging air, missile, and other indirect fire threats in support of combatant command requirements. The provision would require a classified report of the assessment to be delivered to the Committees on Armed Services of the Senate and the House of Representatives no later than February 15, 2021.

The committee notes that recent attacks on deployed U.S. forces, as well as advanced capabilities emerging from China and Russia, demonstrate the increasing sophistication and proliferation of threats from missiles, unmanned aircraft systems, and rockets. Great-power competitors have invested heavily in long range missiles, both in quantity and in advanced technologies such as hypersonics, and rockets and mortars remain weapons of choice against U.S. and partner security forces in non-conventional operations.

The committee notes that the Army is responsible for “conduct[ing] air and missile defense to support joint campaigns,” per Department of Defense directive 5100.01, and operates the majority of the ground-based air and missile defense capabilities in the Joint Force. Additionally, the Army was designated Executive Agent for Counter Small Unmanned Aircraft Systems (C-sUAS) in November 2019, and stood up the Joint C-sUAS Office in January 2020.

Report and limitation on Integrated Visual Augmentation System acquisition (sec. 112)

The committee recommends a provision that would require the Secretary of the Army to submit a report to the congressional defense committees, no later than August 15, 2021, on the Integrated Visual Augmentation System (IVAS). The report would certify the

acquisition strategy, system technology level, production model cost, operational suitability, and soldier acceptability, subsequent to completion of operational testing. The provision would prohibit the obligation of expenditure of more than 50 percent of fiscal year 2021 funds authorized for the procurement of IVAS until the required report is submitted.

The committee commends the Army for the developmental approach that it is pursuing and its effective collaboration with non-traditional contractors. Furthermore, the Army has prioritized the use of rapid prototyping, rapid fielding, and a soldier-centered design approach that has facilitated the delivery of cutting-edge solutions necessary to ensure that the Army maintains its technological superiority and achieves overmatch in future conflicts.

The committee is encouraged by the results of previous soldier touch point events and is optimistic that those successes will be further realized in future user evaluations. The committee also notes that operational testing that is essential to ensuring operational suitability and soldier acceptability in operational conditions has not yet occurred. Certification of the acquisition strategy subsequent to operational testing will validate the acquisition approach, the full rate production decision, and the commitment of substantial resources. A successful IVAS program can serve as a model for Army modernization efforts going forward.

Modifications to requirement for an interim cruise missile defense capability (sec. 113)

The committee recommends a provision that would require the Secretary of Army to submit to the congressional defense committees the plan to operationally deploy or forward station in an operational theater or theaters the two batteries of interim cruise missile defense capability required by section 112(b)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232). The provision would also modify the terms of the waiver for the requirement for two additional batteries by September 30, 2023.

The committee notes that the Secretary of the Army has exercised the waiver for the first two batteries since the Army will not meet the deployment deadline of September 30, 2020. While the committee understands the requirements for testing and training prior to deployment, the committee still expects the Secretary to meet the original intent of section 112—forward stationing an interim cruise missile defense capability to protect fixed sites from cruise missile threats with prioritization to locations in Europe and Asia.

Subtitle C—Navy Programs

Contract authority for *Columbia*-class submarine program (sec. 121)

The committee recommends a provision that would permit the Secretary of the Navy to enter into one contract for up to two *Columbia*-class submarines (SSBN–826 and SSBN–827) and incrementally fund such submarines.

Limitation on Navy medium and large unmanned surface vessels (sec. 122)

The committee recommends a provision that would require that certain technical conditions be met prior to Milestone B approval for medium and large unmanned surface vessels.

The committee notes that the budget request provides for the prototyping and testing of Medium and Large Unmanned Surface Vessels (MUSVs and LUSVs), including procurement of up to two additional LUSVs in conjunction with a Strategic Capabilities Office (SCO) initiative. The committee understands that the four LUSVs procured by the SCO beginning in fiscal year 2018, at a cost of more than \$510 million, are sufficient to achieve the objectives of the SCO initiative, which is scheduled to be completed in the fourth quarter of fiscal year 2021.

The committee further notes that the budget request includes plans to award the LUSV Detail Design and Construction (DD&C) contract in fiscal year 2022 and transition LUSV to a program of record in fiscal year 2023.

The committee remains concerned that the budget request's concurrent approach to LUSV design, technology development, and integration as well as a limited understanding of the LUSV concept of employment, requirements, and reliability for envisioned missions pose excessive acquisition risk for additional LUSV procurement in fiscal year 2021. The committee is also concerned by the unclear policy implications of LUSVs, including ill-defined international unmanned surface vessel standards and the legal status of armed or potentially armed LUSVs.

Additionally, the committee notes that the Navy's most recent shipbuilding plan, "Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2020," acknowledges similar issues: "Unmanned and optionally-manned systems are not accounted for in the overall battle force[.] . . . The physical challenges of extended operations at sea across the spectrum of competition and conflict, the concepts of operations for these platforms, and the policy challenges associated with employing deadly force from autonomous vehicles must be well understood prior to replacing accountable battle force ships."

The committee believes that further procurement of MUSVs and LUSVs should occur only after the lessons learned from the current SCO initiative have been incorporated into the system specification and additional risk reduction actions are taken.

A specific area of technical concern for the committee is the Navy requirement for MUSVs and LUSVs to operate continuously at sea for at least 30 days without preventative maintenance, corrective maintenance, or emergent repairs. The committee is unaware of any unmanned vessel of the size or complexity envisioned for MUSV or LUSV that has demonstrated at least 30 days of such operation.

The committee understands that the SCO prototype vessels that are intended to provide risk reduction for this program have demonstrated between 2 to 3 days of continuous operation. The committee also understands that the SCO vessels are approximately 25 percent the size by tonnage of a LUSV, which may limit the applicability of lessons learned and risk reduction from the SCO vessels

to the MUSV and LUSV programs. Among other critical subsystems, the committee views the main engines and electrical generators as key USV mechanical and electrical subsystems whose reliability is critical to ensuring successful operations at sea for at least 30 continuous days.

Accordingly, this provision would require at least two main engines and electrical generators, including ancillary equipment, to be formally qualified by the Navy, including a successful demonstration of at least 30 days of continuous operation prior to the LUSV or MUSV Milestone B approval and would require the use of such engines and generators in future USVs. The provision would also require the Senior Technical Authority and Milestone Decision Authority to take additional actions related to reducing the technical risk of these programs prior to a Milestone B approval.

The committee views the qualification of these critical subsystems as an essential prototyping step necessary to provide a solid technical foundation for the MUSV and LUSV programs. Rather than delaying these programs, the committee believes that qualified engines and generators will enable the delivery of capable, reliable, and sustainable USVs that meet the needs of fleet commanders faster than the plan contained in the budget request.

Extension of prohibition on availability of funds for Navy waterborne security barriers (sec. 123)

The committee recommends a provision that would extend the prohibition on availability of funds for Navy waterborne security barriers.

Procurement authorities for certain amphibious shipbuilding programs (sec. 124)

The committee recommends a provision that would allow the Secretary of the Navy to enter into one or more contracts for the procurement of three *San Antonio*-class amphibious ships and one *America*-class amphibious ship.

The committee notes that the Assistant Secretary of the Navy for Research, Development, and Acquisition testified on March 4, 2020, that the authorities provided in this provision would be “tremendously beneficial” and added, “[W]e will look forward to those authorities, should they come in the [National Defense Authorization Act for Fiscal Year 2021].”

The committee further notes that the Navy is estimating savings of 8 to 12 percent, or roughly \$1 billion, for the multiple ship procurement of these 4 ships as compared to 4 separate ship procurement contracts.

Accordingly, this provision would provide the necessary authorities for implementing such an approach.

Fighter force structure acquisition strategy (sec. 125)

The committee recommends a provision that would require the Secretary of the Navy to align the Department’s fighter force structure acquisition strategy with the results of the various independent studies required by section 1064 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), and

not later than March 1, 2021, to transmit the new strategy in a report to the congressional defense committees. The committee commends the Navy on transitioning to a strategy focused on the acquisition of 5th generation aircraft but remains concerned that the current strike fighter shortage data demand an increase in the annual total acquisition of fighter aircraft. The provision would establish a minimum number of F-35 and Next Generation Air Dominance (NGAD) aircraft that the Navy and Marine Corps would be required to purchase each year to mitigate or manage strike fighter shortfalls. Finally, the provision would also prohibit the Department of the Navy's deviation from this strategy in its acquisition programs and related force structure until the Secretary of the Navy receives a waiver and justification from the Secretary of Defense and until 30 days after notifying the congressional defense committees of the proposed deviation.

Treatment of weapon systems added by Congress in future President's budget requests (sec. 126)

The committee recommends a provision that would preclude the inclusion in future annual budget requests of a procurement quantity of a system previously authorized and appropriated by the Congress that was greater than the quantity of such system requested in the President's budget request.

The committee is concerned that by presenting CVN-81 as a ship that was procured in fiscal year 2020 (instead of as a ship that was procured in fiscal year 2019), LPD-31 as a ship requested for procurement in fiscal year 2021 (instead of as a ship that was procured in fiscal year 2020), and LHA-9 as a ship projected for procurement in fiscal year 2023 (instead of as a ship that was procured in fiscal year 2020), the Department of Defense, in its fiscal year 2021 budget submission, is disregarding or mischaracterizing the actions of Congress regarding the procurement dates of these three ships.

Report on carrier wing composition (sec. 127)

The committee recommends a provision that would direct the Secretary of the Navy, in consultation with the Chief of Naval Operations and Commandant of the Marine Corps, to submit a report to the congressional defense committees, not later than May 1, 2021, on the optimal compositions of the carrier air wing in 2030 and 2040 as well as alternative force design concepts. In conjunction with completing the report required by this provision, the Secretary shall provide a briefing on the report's findings to the congressional defense committees, not later than March 1, 2021.

The committee is encouraged by the Department of Defense's recent decision to cease the procurement of legacy strike fighters but remains concerned, based on a number of independent analyses, that the Navy's current stated goal of a 50-50 mix of 4th and 5th generation aircraft for the future carrier air wing will not be sufficient to meet the requirements of the National Defense Strategy. Additionally, the committee is concerned that the Navy lacks a strategy on the use of unmanned aircraft and manned-unmanned teaming.

Therefore, the report required by this provision would include: (1) The analysis and justification used by the Navy to reach the 50–50 mix of 4th and 5th generation aircraft for 2030; (2) Analysis and justification for the optimal mix of carrier aircraft for 2040; and (3) A plan for incorporating unmanned aerial vehicles and associated communication capabilities to effectively implement the future force design.

Report on strategy to use ALQ–249 Next Generation Jammer to ensure full spectrum electromagnetic superiority (sec. 128)

The committee recommends a provision that would require the Secretary of the Navy, in consultation with the Vice Chairman of the Joint Chiefs, to provide a report to the congressional defense committees, no later than July 30, 2021, defining a strategy to ensure full spectrum electromagnetic superiority using the ALQ–249 Next Generation Jammer.

The committee notes that the ALQ–249 is the only standoff jamming capability in the Joint Force that is capable of providing electronic warfare support in a conflict envisioned by the National Defense Strategy (NDS). The committee is concerned that the current strategy and force structure of naval electronic warfare forces will not be sufficient to meeting the needs of the joint warfighting concept.

Therefore, the committee directs the Secretary, using analysis provided by the Joint Staff and in consultation with the Vice Chairman, to provide a report detailing: (1) The current procurement strategy of the ALQ–249 and an analysis of its capability to meet the radio frequency ranges required in a NDS conflict; (2) Its compatibility and ability to synchronize non-kinetic fires with other joint electronic warfare platforms; (3) A future model of an interlinked/interdependent electronic warfare menu of options for commanders at the tactical, operational, and strategic levels.

Subtitle D—Air Force Programs

Economic order quantity contracting authority for F–35 Joint Strike Fighter program (sec. 141)

The committee recommends a provision that would authorize the Secretary of Defense to award F–35 contracts to procure material and equipment in economic order quantities for fiscal year 2021 (Lot 15) through fiscal year 2023 (Lot 17).

Minimum aircraft levels for major mission areas (sec. 142)

The committee recommends a provision that would establish a minimum number of aircraft for each major mission area in the United States Air Force and prohibit divestment of aircraft such that these minima are breached. The committee understands that the Air Force is divesting legacy aircraft in order to modernize its various fleets with modern aircraft relevant to the National Defense Strategy. The committee remains concerned that, historically, the divestment of legacy aircraft has not yielded additional resources to fund modernization. As such, the committee cautions the

Air Force in taking near-term risk with capacity and seeks the establishment of these aircraft floors to mitigate its concern.

Minimum operational squadron level (sec. 143)

The committee recommends a provision that would require the Air Force to seek to achieve, as soon as practicable after the date of the enactment of this Act and subject to the availability of appropriations, no fewer than 386 available operational squadrons, or equivalent organizational units, within the Air Force.

Minimum Air Force bomber aircraft level (sec. 144)

The committee recommends a provision that would require the Secretary of Defense to submit to the congressional defense committees, no later than 1 December, 2020, recommendations for a minimum number of bomber aircraft, including penetrating bombers in addition to B-52H aircraft to enable the Air Force to carry out its long-range penetrating strike mission. The Department should determine this floor, in part, based on what the Air Force can uniquely provide in future conflicts—long-range penetrating strike capability that cannot be matched by other military services' standoff strike systems.

Despite the significant increase in individual bomber capability, the committee remains concerned about the Nation's overall bomber capacity shortfall. The Air Force has a total inventory of 157 bombers, the smallest and oldest fleet of bomber aircraft in its history. Three 2019 independent studies of future Air Force aircraft inventory requirements, conducted pursuant to section 1064 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), determined that increases in the size of the bomber fleet are needed to support the National Defense Strategy (NDS). The Air Force's own assessment concluded: "We require a larger proportional increase for bombers," with a 56 percent increase in the number of Air Force bomber squadrons, to execute the NDS. The Commander of Air Force Global Strike Command has said that the future bomber force inventory should be greater than 225.

Additionally, while Air Force standoff strike capabilities support the NDS, the committee believes that the Department of Defense needs to carefully assess alternatives and the cost effectiveness of relative numbers of such standoff systems and procuring a larger penetrating bomber force with its capacity to carry more and less costly weapons per sortie.

F-35 gun system (sec. 145)

The committee recommends a provision that would require the Secretary of the Air Force to begin the acquisition process for an alternate 25mm ammunition solution that provides a true full-spectrum target engagement capability for the F-35A. The committee is aware of known deficiencies with the system as well as ongoing efforts to improve the accuracy and lethality of the gun. However, the anticipated hardware and software solutions do not adequately address the lethality limitation of the F-35A gun. Improvements are necessary in ammunition performance, including the ability to penetrate hard targets as well as the ability to achieve combined explosive, fragmentation, and incendiary effects. The committee

further understands that the currently qualified 25mm ammunition effectively penetrates semi-hardened armor; however, the ammunition has limited capability against a broader range of target sets. Additionally, the limited carriage capacity of the F-35A gun system ammunition magazine strongly suggests that improved performance ammunition is required for mission success, both in air-to-ground as well as air-to-air missions. Consequently, the committee is concerned that the current 25mm ammunition is not effective enough to allow for successful engagement of the full spectrum of target sets anticipated on a typical F-35A mission.

Prohibition on funding for Close Air Support Integration Group (sec. 146)

The committee recommends a provision that would prohibit the obligation or expenditure of funds for the Close Air Support Integration Group (CIG) or its subordinate units at Nellis Air Force Base, Nevada. The committee is aware that the CIG was an attempt to establish a center of excellence for close air support at a time when the A-10 was being considered for divestment. Given the Air Force's strategy for the long-term retention of the A-10, the CIG's mission is unclear and its resources, both in manpower and aircraft currently assigned to the CIG and its subordinate units, are better utilized elsewhere.

Limitation on divestment of KC-10 and KC-135 aircraft (sec. 147)

The committee recommends a provision that would prohibit the divestment of KC-10 and KC-135 aircraft in excess of the following: in fiscal year 2021, 6 KC-10s; in fiscal year 2022, 12 KC-10s; and, in fiscal year 2023, 12 KC-10s and 14 KC-135s.

Limitation on retirement of U-2 and RQ-4 aircraft (sec. 148)

The committee recommends a provision that would limit the retirement of any U-2 or RQ-4 aircraft until the Chairman of the Joint Requirements Oversight Council certifies to the congressional defense and intelligence committees that the operational capabilities available to the combatant commanders would not be affected by such a decision.

Limitation on divestment of F-15C aircraft in the European theater (sec. 149)

The committee recommends a provision that would restrict the divestment of F-15Cs in the European theater until the F-15EX is integrated into the Air Force and has begun bed down actions in the theater. The provision would also provide a waiver from the limitation if the Secretary of Defense notifies the congressional defense committees with appropriate justification.

Air base defense development and acquisition strategy (sec. 150)

The committee recommends a provision that would require the Chief of Staff of the Air Force (CSAF), in consultation with the Chief of Staff of the Army (CSA), to produce a development and acquisition strategy to procure a capability to protect air bases and

prepositioned sites in the contested environments highlighted in the National Defense Strategy. The strategy should ensure a solution that is effective against current and emerging cruise missiles and advanced hypersonic missiles. The provision would require the CSAF to submit the strategy to the congressional defense committees no later than March 1, 2021.

Additionally, the provision would limit the obligation or expenditure of fiscal year 2021 funds for operation and maintenance for the Office of the Secretary of the Air Force and the Office of the Secretary of the Army to 50 percent of those funds until 15 days after submission of the strategy required by the provision.

Required solution for KC-46 aircraft remote visual system limitations (sec. 151)

The committee recommends a provision that would require the Secretary of the Air Force to develop and implement a solution to the KC-46 remote visual system (RVS) operational limitations. The committee is aware that the manufacturer and the Air Force have developed a complete solution for the KC-46 RVS issue that would remove all operational limitations for refueling operations of the aircraft. However, the committee is concerned about the duration of time that has already elapsed and the lack of an implementation strategy. Furthermore, the committee is concerned regarding the potential of implementing a phased approach to solving the RVS issue. This approach would put unnecessary delays in a final fix and delay full operation of the KC-46 fleet until after 2025. Therefore, the committee directs the Secretary of the Air Force to reach an agreement with the manufacturer for a complete, one-time solution to the KC-46 RVS issue, and to present an accompanying implementation strategy to the congressional defense committees no later than October 1, 2020.

Analysis of requirements and Advanced Battle Management System capabilities (sec. 152)

The committee recommends a provision regarding the applicability of the Advanced Battle Management System (ABMS) to the broader Joint All-Domain Command and Control (JADC2) effort. The committee is encouraged by the Air Force's effort to link disaggregated sensors into a network of survivable and persistent intelligence, surveillance, and reconnaissance capabilities. The committee also commends the Air Force for leading the Department of Defense in the development of an architecture for the broader JADC2 effort.

However, the committee remains concerned regarding the progress of the ABMS effort and the speed at which the ground moving target indicator capability of the E-8 is being replaced. Therefore, the committee recommends a provision that would require the Secretary of the Air Force to develop an analysis of current ground moving target indicator requirements across the combatant commands and the capability that the ABMS will require when fielded.

Studies on measures to assess cost-per-effect for key mission areas (sec. 153)

The committee recommends a provision that would require the Secretary of the Air Force to conduct, or provide for the conduct of, two studies no later than January 1, 2021, to provide a better understanding of the cost of sustainment of aircraft based on combat effects.

Plan for operational test and utility evaluation of systems for Low-Cost Attributable Aircraft Technology program (sec. 154)

The committee recommends a provision that would require the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics to provide to the congressional defense committees an executable plan for the operational test and utility evaluation of the Low-Cost Attributable Aircraft Technology (LCAAT) systems no later than October 1, 2020, and to brief the committees on the plan by the same date. The committee intends for this provision to support the Assistant Secretary's intent to accelerate the LCAAT program for collaborative pairing with manned platforms, potentially including the F-35. The committee views the combined application of commercial technology, autonomy, and artificial intelligence as an innovative solution to meeting the demands of the National Defense Strategy.

Prohibition on retirement or divestment of A-10 aircraft (sec. 155)

The committee recommends a provision that would prohibit the divestment of A-10 aircraft for fiscal year 2021. The committee is aware that there is a growing demand for low cost, survivable aircraft to support disaggregated operations in support of efforts in countering violent extremism (CVE) and to provide close air support and combat search and rescue capability in accordance with the National Defense Strategy. The A-10 aircraft appears to meet all the requirements set forth in various requests to industry. The committee understands the fiscal need to divest legacy aircraft as new aircraft are integrated into the Air Force but supports a 1-year suspension on plans to retire or divest A-10s to ensure that these aircraft support ongoing CVE efforts and provide close air support and combat search and rescue capability.

Subtitle E—Defense-Wide, Joint, and Multiservice Matters**Budgeting for life-cycle cost of aircraft for the Navy, Army, and Air Force: annual plan and certification (sec. 171)**

The committee recommends a provision that would require the Secretary of Defense to submit an annual plan for the procurement of the aircraft in the Department of the Navy, the Department of the Army, and the Department of the Air Force in order to meet the requirements of the National Defense Strategy.

Authority to use F-35 aircraft withheld from delivery to Government of Turkey (sec. 172)

The committee recommends a provision that would authorize the Air Force to utilize, modify, and operate the 6 Turkish aircraft that were accepted by the Government of Turkey but never delivered because Turkey was suspended from the F-35 program.

Transfer from Commander of United States Strategic Command to Chairman of the Joint Chiefs of Staff of responsibilities and functions relating to electromagnetic spectrum operations (sec. 173)

The committee recommends a provision that would: (1) require the Secretary of Defense to transition to the Chairman of the Joint Chiefs of Staff (CJCS) as a Chairman's Controlled Activity all of the responsibilities and functions of the Commander of United States Strategic Command that are germane to electromagnetic spectrum operations; (2) define additional responsibilities related to EMSO for the VCJCS; and (3) require the combatant commanders and service chiefs to assess their plans and programs for consistency with the Electromagnetic Spectrum Superiority Strategy, the Joint Staff-developed concept of operations, and operational requirements.

The committee's oversight priorities in electronic warfare (EW) to date have been in correcting the Department of Defense's governance gaps and in addressing its acquisition activities. The committee recognizes, however, that the military services and combatant commanders face operational and tactical challenges today that have exposed the inadequacy of the Department's concept of operations, tactics, techniques, and procedures (TTPs), and associated capabilities, forces, and training for electromagnetic spectrum operations (EMSO). These issues, highlighted in a Center for Strategic and Budgetary Assessment study conducted pursuant to section 255 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115-232), demand the formulation of a new way of "maneuvering within the electromagnetic spectrum," to use the Department's terminology—new doctrine, operational plans, training, capabilities, and TTPs for fighting with, against, and through electronic warfare capabilities. This assessment was amplified by the March 2019 report by the Institute for Defense Analysis, "Independent Assessment of EMS Organization Alternatives," which considered a number of options to further the Department's focus on spectrum operations from both military service and joint commander perspectives. This report noted, "The panel judges this crisis [in electromagnetic spectrum operations] to be urgent and enduring—requiring immediate actions from the Department's top leadership to address the urgent problem and a systemic institutional response to address the enduring competitive challenge."

The committee believes that the only appropriate body for managing this modernization is the Joint Staff and thus supports the Department's designation of the Vice Chairman of the Joint Chiefs of Staff (VCJCS) as the senior designated official for EW and EMSO. The VCJCS, as chairman of the Joint Requirements Oversight Council and as a senior advisor to the President and Sec-

retary of Defense, possesses the seniority and vantage point to effectively provide that critical oversight and advocacy. In particular, the committee believes that the VCJCS must lead the development of EMSO concepts of operations and oversee their integration into the joint warfighting concept, the warfighting plans of the combatant commands, and the programs of the military services.

Cryptographic modernization schedules (sec. 174)

The committee recommends a provision that would require each of the Secretaries of the military departments and the heads of relevant defense agencies and field activities to establish and maintain a cryptographic modernization schedule that specifies, for each pertinent weapon system, command and control system, or data link: (1) The expiration date for applicable cryptographic algorithms; (2) Anticipated key extension requests; and (3) The funding and deployment schedule for modernized cryptographic algorithms, keys, and equipment over the future years defense program. The provision would also require the Department of Defense (DOD) Chief Information Officer (CIO) to oversee the implementation of these scheduled investments and amend these plans, should they pose unacceptable risk to military operations. Finally, the provision would require the CIO to annually notify the congressional defense committees of any failures to meet these planned schedules.

The committee is encouraged by the Department's recent focus on cryptographic modernization and, in particular, the priority placed on updating cryptographic equipment, keys, and algorithms by the CIO, the Under Secretary of Defense for Acquisition and Sustainment, and the Joint Staff. For too long, the National Security Agency's warnings about obsolete cryptography have fallen on deaf ears and the military services have been allowed to continuously delay much-needed modernization. The committee seeks to reinforce this priority and ensure that it does not prove to be ephemeral. This provision would do so by forcing the military services to maintain schedules for cryptographic upgrades and establishing DOD and congressional accountability mechanisms to deter and correct schedule slips.

Prohibition on purchase of armed overwatch aircraft (sec. 175)

The committee recommends a provision that would prohibit the purchase of aircraft for the Air Force Special Operations Command used for the purpose of "armed overwatch" until such time as the Chief of Staff of the Air Force certifies to the congressional defense committees that general purpose forces of the Air Force have neither the skill nor the capacity to provide close air support and armed overwatch to U.S. forces deployed operationally.

Special Operations armed overwatch (sec. 176)

The committee recommends a provision that would prohibit the acquisition of armed overwatch aircraft for the United States Special Operations Command (SOCOM) in fiscal year 2021. The provision would require the Secretary of Defense, in coordination with the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict and the Commander, SOCOM, to conduct, not

later than July 1, 2021, an analysis to define the special operations-peculiar requirements for armed overwatch aircraft and determine whether acquisition of a new special operations-peculiar platform is the most effective means of fulfilling such requirements.

The committee is concerned that the acquisition strategy for an armed overwatch aircraft for SOCOM lacks a validated requirement and an appropriate analysis of the cost-effectiveness of acquiring a new special operations-peculiar platform. Furthermore, the committee is concerned that the rapid acquisition timeline being pursued by SOCOM does not allow for adequate consideration of: the cost of operating and sustaining the aircraft; the potential negative impacts on an already stressed community of pilots, aircrews, and maintainers; and how such a costly addition fits into SOCOM's medium-to-long-term airborne intelligence, surveillance and reconnaissance capability roadmap.

Autonomic Logistics Information System redesign strategy (sec. 177)

The committee recommends a provision that would address the lack of strategy for the redesign of the Autonomic Logistics Information System (ALIS) by requiring the Under Secretary of Defense for Acquisition and Sustainment, in consultation with the F-35 Program Executive Officer, no later than October 1, 2020, to: (1) Develop a program-wide process for measuring, collecting, and tracking information on how the ALIS is affecting the performance of the F-35 fleet, to include, but not be limited to, its effects on mission capability rates; and (2) Implement a strategy for the redesign of the ALIS. The strategy should be detailed enough to clearly identify and assess the goals, key risks or uncertainties, and costs of redesigning the system.

The committee is encouraged at the progress that the Joint Program Office has made through various initiatives in improving and redesigning the ALIS and the transition to the Operational Data Integrated Network (ODIN) but is concerned that these initiatives and the transition to ODIN involve differing approaches and that technical and programmatic uncertainties are hindering the redesign effort.

Contract aviation services in a country or in airspace in which a Special Federal Aviation Regulation applies (sec. 178)

The committee recommends a provision that would require the Secretary of Defense, or a designee of the Secretary of Defense, to designate aircraft fulfilling urgent operational needs for the Department of Defense as State Aircraft if there exist Special Federal Aviation Regulations that would impact their ability to perform these missions. These aircraft are performing military functions, and the committee therefore believes that they should be afforded the status of State Aircraft if required to carry out their missions.

F-35 aircraft munitions (sec. 179)

The committee recommends a provision would require the Secretary of the Air Force and Secretary of the Navy to qualify and

certify, for the use by the U.S. military, additional munitions for the F-35 aircraft that are already qualified for North Atlantic Treaty Organization member F-35 partner aircraft.

Airborne intelligence, surveillance, and reconnaissance acquisition roadmap for United States Special Operations Command (sec. 180)

The committee recommends a provision that would require, not later than December 1, 2021, the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD SOLIC) and the Commander, United States Special Operations Command (SOCOM), to jointly submit to the congressional defense committees an acquisition roadmap to meet the manned and unmanned airborne intelligence, surveillance, and reconnaissance (ISR) requirements of United States Special Operations Forces (SOF).

SOCOM's budget request for fiscal year 2021 and the future years defense program includes proposals to modify the composition of its airborne ISR fleet through the acquisition of new platforms and the divestment of platforms currently in its inventory. The committee is concerned that there does not exist an overarching strategy to guide SOCOM's airborne ISR acquisition efforts, particularly one that clearly: identifies current or anticipated special operations-peculiar capability gaps; describes future manned and unmanned ISR requirements, especially those related to the ability to operate in contested environments; describes the anticipated mix of manned and unmanned aircraft and associated manning requirements; and describes the extent to which service-provided manned and unmanned airborne ISR capabilities will be required to support SOF requirements.

The committee strongly believes that clear explanation of the path forward is fundamental to ensuring that SOCOM's airborne ISR capabilities are appropriate for meeting its requirements over the mid- and long-term and to ensuring that such acquisition programs meet the intent of the National Defense Strategy in pursuing a more resource-efficient approach to countering violent extremist organizations. The committee believes that rigorous analysis and the submission of the roadmap required by this section should precede the initiation of any new start acquisition programs for airborne manned and unmanned ISR capabilities for SOCOM.

Requirement to accelerate the fielding and development of counter unmanned aerial system efforts across the Joint Force (sec. 181)

The committee recommends a provision that would require the executive agent of the Joint Counter Small Unmanned Aerial Systems office to prioritize counter-unmanned aerial systems (CUAS) that can be fielded in fiscal year 2021 and develop a near-term plan to effect that fielding. As part of the Secretary of the Army's review of CUAS efforts, the committee encourages the Secretary to consider establishing a CUAS center of excellence for the executive agent to coordinate service research and development for counter-drone technologies.

Joint All-Domain Command and Control requirements (sec. 182)

The committee recommends a provision that would require the Joint Requirements Oversight Council (JROC) to produce Joint All Domain Command and Control (JADC2) requirements no later than October 1, 2020. The provision would also require, immediately after the certification of requirements, the Chief of Staff of the Air Force to provide a certification to the congressional defense committees that the current JADC2 efforts, including programmatic and architecture efforts, being led by the Air Force will meet the requirements laid out by the JROC. Additionally, each service chief would be required to certify to the congressional defense committees that his or her respective service efforts in multi-domain command and control are compatible with the Air Force-led architecture no later than January 1, 2021. Finally, the Secretary of Defense would be required to incorporate the expected costs for full development and implementation across the Department of Defense in the fiscal year 2022 budget request.

The committee commends the Department of Defense on its efforts to date on JADC2. The committee recognizes that, in order for JADC2 to be successful, there must be leadership and alignment from the Office of the Secretary of Defense (OSD), the Joint Staff, and all the military services. The committee is encouraged that the OSD has designated the Air Force as the lead for design and experimentation in order to develop an architecture that will meet the requirements set forth by the Vice Chairman of the Joint Chiefs of Staff in his role as the Chairman of the JROC. The committee remains concerned that the actual requirements are not clear and, as such, that the Air Force will not be able to coordinate with the other military services to ensure that their own multi-domain command and control-relevant capabilities will be compatible with the eventual network and architecture.

Budget Items

Army

MQ-1

The budget request included \$0.0 in line number 2 of Aircraft Procurement, Army (APA), for MQ-1 procurement.

The committee is concerned that the temporary termination of procurement of MQ-1s will result in significantly increased cost in the long run and will delay the Army's meeting of its stated requirements for unmanned fixed wing intelligence, surveillance, and reconnaissance aircraft.

Therefore, the committee recommends an increase of \$165.0 million in line number 2 of APA for the purchase of additional MQ-1 aircraft.

CH-47 Cargo Helicopter Modifications

The budget request included \$15.5 million in line number 22 of Aircraft Procurement, Army (APA), for CH-47 Cargo Helicopter Mods.

The committee recognizes that installation of Improved Vibration Control System on the CH-47 minimizes vibration generated by the rotor system, improving aircraft and crew performance and extending component service life.

Accordingly, the committee recommends an increase of \$20.0 million in line number 22 of APA for CH-47 Cargo Helicopter Mods.

Procurement of PAC-3 MSE missiles

The budget request included \$779.8 million in line number 3 of Missile Procurement, Army (MPA), for MSE Missiles, of which \$603.2 million was included in the Army's base budget account and \$176.6 million was included in the Overseas Contingency Operations account for the European Deterrence Initiative (EDI).

While the committee strongly supports procurement of additional MSE missiles to meet the global requirement, activities funded through EDI should directly support requirements in the U.S. European Command (EUCOM) area of responsibility. The committee understands that the 46 MSE missiles requested in EDI would be subject to global allocation to the combatant commands at the discretion of the Secretary of Defense, just as the 122 missiles requested under the Army's base budget would be so distributed. The committee does not believe that procurement of globally interchangeable assets, like munitions, without a commitment that they would be prepositioned at locations in Europe or otherwise allocated to EUCOM upon delivery, is an appropriate use of EDI funding.

Accordingly, the committee recommends an increase of \$176.6 million, for a total of \$779.8 million, in line number 3 of MPA in the base budget account.

Indirect Fire Protection Capability Increment 2

The budget request included \$106.3 million in Missile Procurement, Army, line number 5 for Indirect Fire Protection Capability Increment 2 (IFPC Inc 2).

The committee understands that a lower level of funding would be sufficient to execute all planned fiscal year 2021 activities for this program.

Accordingly, the committee recommends a decrease of \$40.5 million in Missile Procurement, Army, line number 5 for IFPC Inc 2.

Armored Multi-Purpose Vehicle

The budget request included \$193.0 million in line number 2 of Procurement of Weapons and Tracked Combat Vehicles (WTCV), Army, for the Armored Multi-Purpose Vehicle (AMPV).

The committee supports the AMPV program but notes significant projected carryover from fiscal year 2020 and a delayed full rate production decision.

Accordingly, the committee recommends a reduction of \$20.0 million in line number 2 of Procurement of WTCV, Army, for the AMPV.

Bradley Program Modifications

The budget request included \$40.0 million in line number 5 of Procurement of Weapons and Tracked Combat Vehicle (WTCV), Army, for Bradley Program (MOD 10) Survivability Enhancements.

The committee notes substantial prior year carryover and late fiscal year 2021 live fire testing for Underbelly Interim Solution elements of MOD 10.

Accordingly, the committee recommends a reduction of \$20.0 million in line number 5 of Procurement of WTCV, Army, for Bradley Program (MOD 10) Survivability Enhancements.

M88 Family of Vehicle Modification

The budget request included \$18.4 million in line number 11 of Procurement of Weapons and Tracked Combat Vehicle (WTCV), Army, for M88 FOV Modifications.

The committee notes an unjustified growth of government and contractor program support costs.

Accordingly, the committee recommends a decrease of \$5.0 million in line number 11 of Procurement of WTCV, Army, for M88 FOV Modifications.

Joint Assault Bridge

The budget request included \$72.2 million in line number 12 of Procurement of Weapons and Tracked Combat Vehicle (WTCV), Army, for the Joint Assault Bridge.

The committee notes a 1 year contract slip that will delay execution of fiscal year 2021 funds.

Accordingly, the committee recommends a reduction of \$10.5 million in line number 12 of Procurement of WTCV, Army, for the Joint Assault Bridge.

Multi-Domain Task Force Tactical Network Technology

The budget request included \$360.4 million in line number 23 of Other Procurement, Army (OPA), for Tactical Network Technology Mod in Svc.

The unfunded priorities list of the Chief of Staff of the Army identified non-program of record procurement requirements to enable intelligence, cyber, electronic warfare, and space operations within the Multi-Domain Task Force, including \$5.0 million for scalable network node equipment.

Accordingly, the committee recommends an increase of \$5.0 million in line number 23 of OPA for Tactical Network Technology Mod in Svc.

U.S. Africa Command force protection upgrades transportable tactical command communications

The budget request included \$75.2 million in line number 30 of Other Procurement, Army (OPA), for Transportable Tactical Command Communications.

The committee notes that U.S. Africa Command (AFRICOM) identified as an unfunded requirement the need for emergent force protection upgrades following the terrorist attack against U.S. personnel in Manda Bay, Kenya, and after a theater-wide review of force protection at multiple locations in Africa. AFRICOM identi-

fied the most immediate priorities as establishing and upgrading fencing, communications systems, and shelters to provide protection for Department of Defense personnel.

Therefore, the committee recommends an increase of \$1.0 million in line number 30 of OPA for Transportable Tactical Command Communications.

Multi-Domain Task Force Tactical Command Communications

The budget request included \$72.5 million in line number 30 of Other Procurement, Army (OPA), for Transportable Tactical Command Communications.

The unfunded priorities list of the Chief of Staff of the Army identified non-program of record procurement requirements to enable intelligence, cyber, electronic warfare, and space operations within the Multi-Domain Task Force, including \$1.4 million for scalable network node equipment.

Accordingly, the committee recommends an increase of \$1.4 million in line number 30 of OPA for Transportable Tactical Command Communications.

U.S. Africa Command force protection upgrades combat communications

The budget request included \$550.8 million in line number 37 of Other Procurement, Army (OPA), for Combat Communications Handheld Manpack Small Form Fit.

The committee notes that U.S. Africa Command (AFRICOM) identified as an unfunded requirement the need for emergent force protection upgrades following the terrorist attack against U.S. personnel in Manda Bay, Kenya, and after a theater-wide review of force protection at multiple locations in Africa. AFRICOM identified the most immediate priorities as establishing and upgrading fencing, communications systems, and shelters to provide protection for Department of Defense personnel serving in select locations.

The committee recommends an increase of \$1.5 million in line number 37 of OPA for Combat Communications Handheld Manpack Small Form Fit.

Spider Anti-Personnel Munition

The budget request included \$14.0 million in line number 41 of Other Procurement, Army (OPA), for the Spider Family of Networked Munitions.

The committee notes the Army's cancellation of the program subsequent to preparation and submission of the budget request.

Accordingly, the committee recommends a reduction of \$14.0 million in line number 41 of OPA for the Spider Family of Networked Munitions.

Multi-Domain Task Force Defensive Cyber Operations

The budget request included \$54.8 million in line number 53 of Other Procurement, Army (OPA), for Defensive Cyber Operations.

The unfunded priorities list of the Chief of Staff of the Army identified non-program of record procurement requirements to en-

able intelligence, cyber, electronic warfare, and space operations within the Multi-Domain Task Force, including \$900,000 for cyber defense and electronic warfare tools.

Accordingly, the committee recommends an increase of \$900,000 in line number 53 of OPA for Defensive Cyber Operations.

U.S. Africa Command unfunded requirement force protection upgrades long haul communications

The budget request included \$29.8 million in line number 57 of Other Procurement, Army (OPA), for Long Haul Communications Base Support Communications.

The committee notes that U.S. Africa Command (AFRICOM) identified as an unfunded requirement the need for emergent force protection upgrades following the terrorist attack against U.S. personnel in Manda Bay, Kenya, and after a theater-wide review of force protection at multiple locations in Africa. AFRICOM identified the most immediate priorities as establishing and upgrading fencing, communications systems, and shelters to provide protection for Department of Defense personnel serving in select locations.

Therefore, the committee recommends an increase of \$1.0 million in line number 57 of OPA for Long Haul Communications Base Support Communications.

Multi-Domain Task Force Counterintelligence/Security Countermeasures

The budget request included \$360.4 million in line number 81 of Other Procurement, Army (OPA), for Counterintelligence/Security Countermeasures.

The unfunded priorities list of the Chief of Staff of the Army identified non-program of record procurement requirements to enable intelligence, cyber, electronic warfare, and space operations within the Multi-Domain Task Force, including \$13.4 million for advanced intelligence systems for remote collection.

Accordingly, the committee recommends an increase of \$13.4 million in line number 81 of OPA for Counterintelligence/Security Countermeasures.

U.S. Africa Command force protection upgrades indirect fire protection

The budget request included \$37.0 million in line number 88 of Other Procurement, Army (OPA), for Indirect Fire Protection Family of Systems.

The committee notes that U.S. Africa Command (AFRICOM) identified as an unfunded requirement the need for emergent force protection upgrades following the terrorist attack against U.S. personnel in Manda Bay, Kenya, and after a theater-wide review of force protection at multiple locations in Africa. AFRICOM identified the most immediate priorities as establishing and upgrading fencing, communications systems, and shelters to provide protection for Department of Defense personnel serving in select locations.

Therefore, the committee recommends an increase of \$4.0 million in line number 88 of OPA for Indirect Fire Protection Family of Systems.

Multi-Domain Task Force Electronic Warfare Tools

The budget request included \$17.0 million in line number 119 of Other Procurement, Army (OPA), for BCT Emerging Technologies.

The unfunded priorities list of the Chief of Staff of the Army identified non-program of record procurement requirements to enable intelligence, cyber, electronic warfare, and space operations within the Multi-Domain Task Force, including \$3.9 million for electronic warfare tools and cyber defense.

Accordingly, the committee recommends an increase of \$3.9 million in line number 119 of OPA for BCT Emerging Technologies.

WMD Civil Support Team Equipping

The budget request included \$28.5 million in line number 123 of Other Procurement, Army (OPA), for Chemical, Biological, Radiological, and Nuclear (CBRN) defense.

The committee recognizes the critical role that Weapons of Mass Destruction Civil Support Teams (CSTs) play in both homeland defense and overseas contingency operations and the importance of equipping CSTs for radiological and nuclear hazards detection and identification.

Accordingly, the committee recommends an increase of \$14.0 million in line number 123 of OPA for CBRN defense.

U.S. Africa Command force protection upgrades physical security systems

The budget request included \$75.5 million in line number 181 of Other Procurement, Army (OPA), for Physical Security Systems (OPA3).

The committee notes that U.S. Africa Command (AFRICOM) identified as an unfunded requirement the need for emergent force protection upgrades following the terrorist attack against U.S. personnel in Manda Bay, Kenya, and after a theater-wide review of force protection at multiple locations in Africa. AFRICOM identified the most immediate priorities as establishing and upgrading fencing, communications systems, and shelters to provide protection for Department of Defense personnel serving in select locations.

Therefore, the committee recommends an increase of \$12.0 million in line number 181 of OPA for Physical Security Systems (OPA3).

Expeditionary Solid Waste Disposal System

The budget request included \$32.4 million in line number 183 of Other Procurement, Army (OPA), for Other Support Equipment for modification of in-service equipment (OPA-3).

The committee concurs with the Army's budget justification documents, which stated that the Expeditionary Solid Waste Disposal System (ESWDS) "will reduce the use of burn pits by providing a cleaner solution for onsite disposal of 1,000 pounds of solid waste per day. The ESWDS will also reduce Soldier, civilian, and local

population exposure to pollutants from open air burn pits; reduce the amount of trash that must be backhauled, reducing Soldiers' exposure and attacks during convoy operations; reduce the waste held onsite [which] also deters potential vermin that could spread disease and disrupt mission[;] and eliminate the security risk from uncontrolled access to trash." However, despite this justification, the Army requested no funds for ESWDS. The committee notes that ESWDS could also provide a capability during pandemics to rapidly incinerate contaminated personal protective equipment, thereby decreasing exposure to servicemembers.

Accordingly, the committee recommends an increase of \$15.9 million in line number 183 of OPA for ESWDS in OPA-3.

Navy

F-35C

The budget request included \$2.2 billion in line number 3 of Aircraft Procurement, Navy (APN), for F-35C procurement.

The committee commends the Navy and Marine Corps for transitioning to a greater acquisition rate of 5th generation aircraft with the planned purchase of 21 aircraft but still believes that a higher number is required to meet the needs of the National Defense Strategy.

Therefore, the committee recommends an increase of \$200.0 million in line number 3 of APN for the purchase of 2 additional F-35Cs: 1 for the Navy and 1 for the Marine Corps.

F-35B

The budget request included \$1.1 billion in line number 5 of Aircraft Procurement, Navy (APN), for F-35B procurement.

The committee commends the Marine Corps for transitioning to a greater acquisition rate of 5th generation aircraft with the planned purchase of 10 aircraft but still believes that a higher number is required to meet the requirements of the National Defense Strategy.

Therefore, the committee recommends an increase of \$125.5 million in line number 5 of APN for the purchase of 2 additional F-35Bs.

CH-53K

The budget request included \$813.3 million in line number 7 of Aircraft Procurement, Navy (APN), for CH-53K procurement.

The Marine Corps has conducted a force design review that includes plans to reduce the number of heavy lift squadrons by three, and, as such, the committee is concerned that the corresponding reduction in procurement will significantly affect the acquisition program unit cost of the CH-53K. Additionally, the committee is aware of potential program delays and restructuring decisions germane to the CH-53K. Based on the reduced total numbers, the committee is concerned about additional non-recurring engineering costs and cost growth in government furnished equipment.

Therefore, the committee recommends a decrease of \$20.0 million in line number 7 of APN for CH-53K.

CH-53 Advanced Procurement

The budget request included \$201.2 million in line number 8 of Aircraft Procurement, Navy (APN), for CH-53K procurement.

The Marine Corps has conducted a force design review that includes plans to reduce the number of heavy lift squadrons by three, and, as such, the committee is concerned that the corresponding reduction in procurement will significantly affect the acquisition program unit cost of the CH-53K. Additionally, the committee is aware of potential program delays and restructuring decisions germane to the CH-53K and potential acquisition reductions next year.

Therefore, the committee recommends a decrease of \$10.0 million in line number 8 of APN for CH-53K.

MQ-4

The budget request included \$813.3 million in line number 21 of Aircraft Procurement, Navy (APN), for MQ-4 Triton procurement.

The Navy plans to take pause procurement until 2023. While the committee is concerned with that decision, the Navy has articulated the risk and mitigation efforts underway. Given the pause, the committee believes that the current budget request is greater than what it required to meet program requirements.

Therefore, the committee recommends a decrease of \$50.0 million in line number 21 of APN for MQ-4 Triton.

Marine Corps aviator body armor vest

The budget request included \$40.4 million in line number 52 of Aircraft Procurement, Navy (APN), for Aviation Life Support Mods.

The committee is aware that the Marine Corps has a requirement to replace the aviation life support equipment (ALSE) vest system currently worn by MV-22 and CH-53 aircrews with an aviator body armor vest (ABAV) system that improves mobility and performance while enhancing survivability. The committee encourages the Marine Corps to compete both commercial off-the-shelf and government-owned designs of ABAV systems in order to identify a system that fully meets the Marine Corps requirement to enable and protect MV-22 and CH-53 aircrews while minimizing development costs and delays to procurement.

Therefore, the committee recommends an increase of \$5.0 million in line number 52 of APN for Aviation Life Support Mods.

F-35B/C Spares

The budget request included \$2.2 billion in line number 70 of Aircraft Procurement, Navy (APN), for Spares and Repair Parts.

The committee commends the Navy and Marine Corps for acquiring 5th generation aircraft at a higher rate with the planned purchase of 31 aircraft but still believes that a higher number is required to meet the needs of the National Defense Strategy.

Therefore, the committee recommends an increase of \$30.0 million in line number 70 of APN for the purchase of initial spares packages for the F-35B/C aircraft.

Tomahawk

The budget request included \$277.7 million in line number 3 of Weapons Procurement, Navy (WPN), for Tomahawk missiles.

The committee notes that additional funding could be used to procure additional Tomahawk missiles for the Marine Corps in furtherance of the National Defense Strategy.

Therefore, the committee recommends an increase of \$26.0 million in line number 3 of WPN.

LRASM

The budget request included \$168.8 million in line number 17 of Weapons Procurement, Navy (WPN), for 48 Long Range Anti-Ship Missiles (LRASMs).

The committee understands that the LRASM's range, semi-autonomous targeting capability, survivability enhancements, and other unique features will significantly improve the carrier air wing's ability to reach and defeat enemy surface combatants located in contested environments while protecting itself against enemy countermeasures. The LRASM capability will be relevant in multiple theaters, but it will be especially useful in the Indo-Pacific, which the Department of Defense has named its priority theater. The LRASM provides a near-term capability enhancement that will allow the carrier air wing to contribute to blunting a Chinese offensive earlier in conflict, thereby directly advancing the objectives and priorities laid out in the National Defense Strategy.

Therefore, the committee recommends an increase of \$35.0 million in line number 17 of WPN for the purchase of 10 LRASMs.

Surface ship torpedo defense

The budget request included \$5.8 million in line number 28 of Weapons Procurement, Navy (WPN), for surface ship torpedo defense.

The committee notes insufficient justification for acoustic device countermeasure non-recurring costs.

Therefore, the committee recommends a decrease of \$2.2 million in line number 28 of WPN.

MK-54 torpedo modifications

The budget request included \$110.3 million in line number 31 of Weapons Procurement, Navy (WPN), for MK-54 torpedo modifications.

The committee notes Mk 54 Mod 0 production delays.

Therefore, the committee recommends a decrease of \$10.0 million in line number 31 of WPN.

Submarine supplier stability

The budget request included \$1.1 billion in line number 2 of Shipbuilding and Conversion, Navy (SCN), for Columbia-class submarine advance procurement.

The committee believes that expanding the capabilities of the second- and third-tier contractors in the submarine industrial base should lead to greater industrial base stability, cost savings, and improved efficiency as production increases to meet the Columbia-class construction schedule.

Therefore, the committee recommends an increase of \$175.0 million in line number 2 for Columbia-class submarine advance procurement.

The committee directs the Secretary of the Navy to notify the congressional defense committees, in writing, within 30 days of obligating funds provided for submarine supplier stability. The notification shall include: obligation date, contractor name or names, location, description of the shortfall to be addressed, actions to be undertaken, desired end state, usable end items to be procured, period of performance, dollar amount, projected associated savings, including business case analysis, if applicable, contract name, and contract number.

Virginia-class submarines

The budget request included \$2.3 billion in line number 5 of Shipbuilding and Conversion, Navy (SCN), for procurement of *Virginia*-class submarines.

The committee notes unjustified unit cost growth in plans (\$25.0 million), modular mast (\$8.8 million), propulsor (\$25.6 million), and command, control, communications and information (\$15.0 million) systems.

Therefore, the committee recommends a decrease of \$74.4 million in line number 5 of SCN.

Virginia-class submarine advance procurement

The budget request included \$1.9 billion in line number 6 of Shipbuilding and Conversion, Navy (SCN), for *Virginia*-class submarine advance procurement.

The committee notes that on December 2, 2019, the Navy awarded a contract modification to procure 9 *Virginia*-class submarines in fiscal years 2019 through 2023, as authorized by section 124 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91). This contract includes an option for one additional submarine.

The committee supports preserving the option to procure 10 *Virginia*-class attack submarines in fiscal years 2019 through 2023. The committee understands that construction on this additional submarine would not begin until March 2024, that the typical procurement funding profile for *Virginia*-class submarines consists of 2 years of advance procurement followed by 1 year of full funding procurement, and that \$272.0 million is the minimum amount of additional advance procurement funding required in fiscal year 2021.

The committee supports utilizing a typical procurement funding profile and believes doing so would also provide additional time to more fully assess previous concerns of Navy officials regarding the ability of the submarine industrial base to build 10 *Virginia*-class submarines, with 9 having the Virginia Payload Module in this time frame.

Additionally, as noted in the Senate report accompanying S. 1790 (S. Rept. 116–48) of the National Defense Authorization Act for Fiscal Year 2020, the committee still has insufficient clarity on the Navy's intentions regarding a significant *Virginia*-class submarine design change, which could occur in the same time frame.

The committee recognizes that this additional submarine was the Chief of Naval Operations' top unfunded priority for fiscal year 2021. If this level of support continues, the committee expects the Navy to budget accordingly in its fiscal year 2022 future years defense program submission.

Therefore, the committee recommends an increase of \$472.0 million in line number 6 of SCN.

***Arleigh Burke*-class destroyers**

The budget request included \$3.0 billion in line number 10 of Shipbuilding and Conversion, Navy (SCN), for procurement of *Arleigh Burke*-class destroyers.

The committee notes the available prior year funds in this line number.

Therefore, the committee recommends a decrease of \$30.0 million in line number 10 of SCN.

Surface ship supplier stability

The budget request included \$29.3 million in line number 11 of Shipbuilding and Conversion, Navy (SCN), for DDG-51 advance procurement.

The committee believes that expanding the capabilities of the second- and third-tier contractors in the surface ship industrial base should lead to greater industrial base stability, cost savings, and improved efficiency as production increases to build greater quantities of surface combatants.

The committee also notes that the Navy future years defense program includes procurement of two *Arleigh Burke*-class destroyers in fiscal year 2022, which would be procured using a multiyear procurement contract. The committee understands that advance procurement of long lead time material could reduce component costs and enable improved ship construction intervals.

Therefore, the committee recommends an increase of \$435.0 million in line number 11 for DDG-51 advance procurement.

The committee directs the Secretary of the Navy to notify the congressional defense committees, in writing, within 30 days of obligating funds provided for surface ship supplier stability. The notification shall include: obligation date, contractor name or names, location, description of the shortfall to be addressed, actions to be undertaken, desired end state, usable end items to be procured, period of performance, dollar amount, projected associated savings, including business case analysis, if applicable, contract name, and contract number.

LPD Flight II

The budget request included \$1.2 billion in line number 14 of Shipbuilding and Conversion, Navy (SCN), for LPD Flight II ships.

The committee notes that the Navy received incremental funding authority in section 129 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) for the LPD-31, which would be fully funded in this request.

The committee further notes that additional funding is required in line number 15 of SCN to maximize the benefit of the amphibious ship procurement authorities provided elsewhere in this Act

through the procurement of long lead material for LPD-32 and LPD-33.

Therefore, the committee recommends a decrease of \$250.0 million in line number 14 of SCN. This sum is added to line number 15 of SCN elsewhere in this Report.

LPD Flight II advance procurement

The budget request included no funding in line number 15 of Shipbuilding and Conversion, Navy (SCN), for LPD Flight II advance procurement.

The committee notes that \$500.0 million is required in line number 15 of SCN to maximize the benefit of the amphibious ship procurement authorities provided elsewhere in this Act through the procurement of long lead material for LPD-32 and LPD-33.

Therefore, the committee recommends an increase of \$500.0 million in line number 15 of SCN, of which \$250.0 million is a transfer from line number 14.

LHA replacement amphibious assault ship

The budget request included no funding in line number 17 of Shipbuilding and Conversion, Navy (SCN), for the LHA replacement amphibious assault ship.

The committee remains concerned with the procurement profile for large deck amphibious assault ships, which includes a span of 6 years until the next large deck amphibious assault ship (LHA-9) would be procured in fiscal year 2023.

The committee notes that efficiencies could be gained by reducing this time span, including steadier workflow with an increased learning curve, material and equipment suppliers with more predictable delivery contracts, and a more effective continuous improvement schedule.

The committee urges the Secretary of the Navy to accelerate the construction of LHA-9, including putting the remainder of the \$350.0 million appropriated in fiscal year 2019 for this ship on contract as soon as possible, leveraging the incremental funding authority in section 127 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) to build LHA-9 as efficiently as possible and utilizing the amphibious ship procurement authorities provided elsewhere in this Act to further increase efficiency and stability in the shipbuilding industrial base.

Therefore, the committee recommends an increase of \$250.0 million in line number 17 of SCN.

Landing craft utility

The budget request included \$87.4 million in line number 23 of Shipbuilding and Conversion, Navy (SCN), for the procurement of landing craft utility (LCU 1700) vessels.

The committee notes insufficient justification to support an increase in quantities from 4 to 5 LCU 1700 vessels, as compared to the projection for fiscal year 2021 in the fiscal year 2020 future years defense program.

Therefore, the committee recommends a decrease of \$17.0 million in line number 23 of SCN.

Outfitting

The budget request included \$825.6 million in line number 24 of Shipbuilding and Conversion, Navy (SCN), for outfitting.

The committee notes unjustified cost growth on the Littoral Combat Ship (\$51.8 million) and *Zumwalt*-class destroyer (\$26.5 million) programs.

Therefore, the committee recommends a decrease of \$78.3 million in line number 24 of SCN.

Yard patrol craft

The budget request included \$249.8 million in line number 26 of Shipbuilding and Conversion, Navy (SCN), for service craft.

In order to increase training opportunities for Surface Warfare Officer candidates from all accession sources, the committee continues to believe that the Navy should replace the six YP-676 class craft slated for disposal with upgraded YP-703 class craft that incorporate modernization, training, and habitability improvements derived from lessons learned with existing YP-703 craft.

The committee urges the Secretary of the Navy to release a request for proposals for the detail design and construction of upgraded YP-703 class craft not later than fiscal year 2021. The committee notes that the Navy's latest cost estimate for acquisition of the first upgraded YP-703 class craft is \$25.5 million.

Therefore, the committee recommends an increase of \$25.5 million in line number 26 of SCN.

LCAC service life extension

The budget request included \$56.5 million in line number 27 of Shipbuilding and Conversion, Navy (SCN), for LCAC service life extensions.

The committee notes insufficient justification to support an increase in funding, as compared to the projection for fiscal year 2021 in the fiscal year 2020 future years defense program.

Therefore, the committee recommends a decrease of \$56.5 million in line number 27 of SCN.

Hybrid electric drive

The budget request included \$58.5 million in line number 2 of Other Procurement, Navy (OPN), for surface combatant hull, mechanical, and electrical equipment.

The committee notes that the Consolidated Appropriations Act, 2020 (Public Law 116-93) included \$35.0 million for "program increase—hybrid electric drive" in this line number. The committee understands that the purpose of this funding was to provide for the installation of the five previously procured hybrid electric drive (HED) ship sets.

The committee further understands that the earliest the Navy can execute an HED installation is in fiscal year 2023 and that, prior to installation, approximately \$15 million is required to implement engineering changes and software updates on the 5 previously procured HED ship sets.

Therefore, the committee recommends a decrease of \$20.0 million in line number 2 of OPN.

DDG modernization

The budget request included \$547.6 million in line number 5 of Other Procurement, Navy (OPN), for DDG modernization.

The committee notes unjustified excess unit cost growth for installation of modernized hardware and software.

Therefore, the committee recommends a decrease of \$50.0 million in line number 5 of OPN.

LCS common mission module equipment

The budget request included \$39.70 in line number 30 of Other Procurement, Navy (OPN), for LCS common mission module equipment.

The committee notes insufficient justification for Mine Countermeasures containers (\$13.4 million) and Mission Package Computing Environment sonar signal processing (\$8.9 million).

Therefore, the committee recommends a decrease of \$22.3 million in line number 30 of OPN.

LCS mine countermeasures mission modules

The budget request included \$218.8 million in line number 31 of Other Procurement, Navy (OPN), for LCS mine countermeasures mission modules.

The committee notes that procurement of the buried minehunting module and remote minehunting module would occur prior to operational testing, which is planned to be completed in fiscal year 2022. The committee seeks to avoid excess procurement of these systems in advance of satisfactory testing.

Therefore, the committee recommends a decrease of \$123.5 million in line number 31 of OPN.

LCS anti-submarine warfare mission modules

The budget request included \$61.8 million in line number 32 of Other Procurement, Navy (OPN), for LCS anti-submarine mission modules.

The committee notes recent variable depth sonar testing delays necessary to correct deficiencies and that the initial operational test and evaluation period for the littoral combat ship anti-submarine warfare mission package is scheduled for fiscal year 2021. The committee seeks to avoid excess procurement of these systems in advance of satisfactory testing.

Therefore, the committee recommends a decrease of \$57.0 million in line number 32 of OPN.

Small and medium unmanned underwater vehicles

The budget request included \$67.7 million in line number 35 of Other Procurement, Navy (OPN), for small and medium unmanned underwater vehicles.

The committee notes that the procurement of 2 Knifefish surface mine countermeasure unmanned undersea vehicle systems would occur prior to operational testing, which is planned to be completed in fiscal year 2022. The committee seeks to avoid excess procurement of these systems in advance of satisfactory testing.

Therefore, the committee recommends a decrease of \$30.1 million in line number 35 of OPN.

Surface electronic warfare improvement program

The budget request included \$387.2 million in line number 45 of Other Procurement, Navy (OPN), for the surface electronic warfare improvement program.

The committee notes that the following funding is early to need: installation (\$5.0 million), 2 Blocks 1B3 & 2 systems (\$32.0 million), and 3 SEWIP Lite & 1B2 systems (\$19.4 million).

Therefore, the committee recommends a decrease of \$56.4 million in line number 45 of OPN.

Cooperative engagement capability

The budget request included \$26.0 million in line number 48 of Other Procurement, Navy (OPN), for procurement of cooperative engagement capability systems.

The committee notes program delays with the Common Array Block antenna.

Therefore, the committee recommends a decrease of \$7.3 million in line number 48 of OPN.

Next generation surface search radar

The budget request included \$159.8 million in line number 72 of Other Procurement, Navy (OPN), for procurement of items for less than \$5.0 million.

The committee notes that the next generation surface search radar program has available funds due to available prior year installation funding (\$15.6 million), late production contract award (\$33.9 million), and excess engineering change proposal funding (\$5.3 million).

Therefore, the committee recommends a decrease of \$54.8 million in line number 72 of OPN.

Sonobuoys

The budget request included \$237.6 million in line number 92 of Other Procurement, Navy (OPN), for the procurement of sonobuoys.

The committee notes that greater-than-expected sonobuoy expenditures in fiscal year 2019 resulted in the Chief of Naval Operations' requesting procurement of additional sonobuoys as a fiscal year 2021 unfunded priority.

Therefore, the committee recommends an increase of \$49.1 million in line number 92 of OPN.

Ground-Based Anti-Ship Missile

The budget request included \$174.7 million in line number 5 of Procurement, Marine Corps (PMC), for Artillery Weapons Systems.

The committee recognizes that Naval Strike Missiles (NSMs) form the initial basis for the Ground-Based Anti-Ship Missile (GBASM) program, which will significantly enhance the Marine Corps' ability to perform sea denial operations. In his unfunded priorities list, the Commandant of the Marine Corps identified an unfunded requirement of \$59.6 million for procurement of NSMs to support the GBASM program.

Accordingly, the committee recommends an increase of \$59.6 million in line number 5 of PMC for GBASM.

Air Force

F-35A

The budget request included \$4.6 billion in line number 1 of Aircraft Procurement, Air Force (APAF), for F-35A procurement.

The committee is concerned that, after repeated Congressional plus-ups and support for increased production, the Air Force still budgets for a quantity below the stated production objectives of the F-35 program. Further, the committee is concerned that the Air Force has squandered an opportunity to capitalize on advanced procurement appropriations by only budgeting for 48 aircraft this year instead of the 60 aircraft that were planned and that the advanced procurement was previously provided for by the Congress. The committee expects the Department to execute proper forecasting and propose appropriate budget requests rather than to continue to rely on Congressional plus-ups.

Therefore, the committee recommends an increase of \$976.7 million in line number 1 of APAF for the purchase of 10 additional F-35As.

MQ-9

The budget request included \$171.9 million in line number 20 of Aircraft Procurement, Air Force (APAF), for MQ-9 procurement.

The committee is concerned about terminating procurement of MQ-9s without replacement. Further, the committee is worried that, with a reduction of MQ-9s, the Department will incur a significantly increased cost in the long run and the Air Force will be unable to meet combatant command requirements for unmanned fixed wing intelligence, surveillance, and reconnaissance.

Therefore, the committee recommends an increase of \$50.0 million in line number 20 of APAF and the use of the production shutdown funds totaling \$120.6 million from Overseas Contingency Operations funds for the purchase of additional MQ-9s in order to maintain the production line for another year.

B-1

The budget request included \$3.9 million in line number 22 of Aircraft Procurement, Air Force (APAF), for B-1.

The committee supports the Air Force's request to realign funds to support certain B-1 radio cryptographic modernization requirements within the associated Research, Development, Test, and Evaluation account rather than using procurement dollars.

Accordingly, the committee recommends a decrease of \$3.9 million in line number 22 of APAF.

B-1B

The budget request included \$21.8 million in line number 24 of Aircraft Procurement, Air Force (APAF), for B-1B.

The committee supports the Air Force's request to realign funds to support certain B-1 radio cryptographic modernization requirements within the associated Research, Development, Test, and Evaluation account.

Accordingly, the committee recommends a decrease of \$493,000 in line number 24 of APAF.

F-16 Radar

The budget request included \$615.8 million in line number 30 of Aircraft Procurement, Air Force (APAF), for F-16 modernization.

The committee recognizes the importance of the Air Force's efforts to modernize its fourth generation fighter fleet and equip itself with the most advanced and capable radars in support of the National Defense Strategy. However, the committee is concerned about the quantity and timing of procurement of advanced radars for the entire F-16 fleet.

Therefore, the committee recommends an increase of \$25.0 million in line number 30 of APAF for the procurement of additional radar sets across the entire F-16 fleet.

T-38 Ejection Seat

The budget request included \$36.8 million in line number 45 of Aircraft Procurement, Air Force (APAF), for T-38 upgrades.

The committee is aware that T-38As and T-38Bs have not been retrofitted with modern ejection seat technology that can support the range of heights and weights of the current Air Force pilot population. The legacy seats lack modern capability, which creates safety concerns for pilots during ejection in the current operational envelope. The committee notes that this technology is in use in all Air Education and Training Command (AETC) T-38C Talons. The upgraded egress system would provide a significant improvement in safety margins for all pilots.

Therefore, the committee recommends an increase of \$7.7 million in line number 45 of APAF to equip T-38As and T-38Bs with updated egress systems that provide for the safety of Air Force pilots.

E-4B Survivable Super High Frequency program

The budget request included \$58.8 million in line number 59 of Aircraft Procurement, Air Force (APAF), for the E-4B National Airborne Operations Center (NAOC).

The committee understands that the E-4B Survivable Super High Frequency program has been rephased to future fiscal years.

Accordingly, the committee recommends a reduction of \$14.7 million in line number 59 of APAF for the E-4B NAOC.

E-8 (JSTARS)

The budget request included \$11.0 million in line number 60 of Aircraft Procurement, Air Force (APAF), for conducting various modifications of Joint Surveillance/Target Attack Radar System (JSTARS) aircraft.

The committee believes in the continued relevance of the JSTARS platform and the immediate requirement for a low-cost network that can provide multiple simultaneous data links to and from airborne and ground-based platforms in contested environments.

Therefore, the committee recommends an increase of \$10.0 million in line number 60 of APAF for installing modifications in JSTARS aircraft to provide for secure information transmission capability.

CV-22 ABSS

The budget request included \$36.8 million in line number 70 of Aircraft Procurement, Air Force (APAF), for CV-22 upgrades.

The CV-22 Osprey is operated by Air Force Special Operations Command (AFSOC) to conduct special missions around the world. The CV-22 Advanced Ballistic Stopping System (ABSS) system provides protection for passengers in the aircraft cabin area via floor armor and sidewall cabin armor. The AFSOC initially procured 16 ABSS systems, but 34 aircraft remain to be retrofitted.

Therefore, the committee recommends an increase of \$5.0 million in line number 70 of APAF for CV-22 ballistic protection.

F-35A initial spares

The budget request included \$926.7 million in line number 71 of Aircraft Procurement, Air Force (APAF), for Spares and Repair Parts.

The committee remains concerned that the initial spares procurement accounts are not adequately resourced which continues to affect readiness, aircraft availability, and mission capable rates of F-35 aircraft.

Therefore, the committee recommends an increase of \$30.0 million in line number 71 of APAF for the purchase of initial spares packages for the F-35 aircraft.

Joint Air-to-Surface Standoff Missile (JASSM)

The budget request included \$476.0 million in line number 4 of Missile Procurement, Air Force (MPAF), for JASSM.

The committee is concerned that the Air Force has not procured sufficient weapons to support the National Defense Strategy and is also concerned that the mix of Long Range Anti-Ship Missiles (LRASMs) and Joint Air-to-Surface Standoff Missiles (JASSM) is too heavily weighted on JASSM to support National Defense Strategy-envisioned conflicts in the Indo-Pacific region.

Therefore, the committee recommends a decrease of \$75.0 million in line number 5 of MPAF to realign weapons capability and purchase additional LRASMs, recommended elsewhere in this report.

Long Range Anti-Ship Missile (LRASM)

The budget request included \$19.8 million in line number 5 of Missile Procurement, Air Force (MPAF), for the Long Range Anti-Ship Missile (LRASM).

The committee is concerned that the Air Force has not procured sufficient number of weapons to support the National Defense Strategy.

Therefore, the committee recommends an increase of \$75.0 million in line number 5 of Missile Procurement, Air Force (MPAF), for procurement of additional LRASMs.

Cobra Dane service life extension

The budget request included \$96.6 million in line number 17 of Procurement, Space Force (PSF), for Space Mods.

The committee notes that, because of projected delays in fielding two homeland defense radars in the Indo-Pacific area of responsibility, Cobra Dane will now be required to exceed its originally

planned life expectancy. The committee also notes that this project was included on the unfunded priorities list submitted by the Commander, U.S. Northern Command and North American Aerospace Defense Command.

Accordingly, the committee recommends an increase of \$12.5 million in line number 17 of PSF to accelerate the service life extension of the Cobra Dane radar.

PDI: Mission Partner Environment (MPE) local upgrades, U.S. Indo-Pacific Command

The budget request included \$9.3 million in line number 14 of Other Procurement, Air Force (OPAF), for international intelligence technology and architectures.

The unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command (INDOPACOM), included additional funding for Mission Partner Environment (MPE) local upgrades to modernize the command, control, communications, and computers architecture in the INDOPACOM area of responsibility and provide local systems to support and enhance operations with allies and partners.

Therefore, the committee recommends an increase of \$1.5 million in line number 14 of OPAF for MPE local upgrades within the INDOPACOM area of responsibility, specifically, the BICES-X program.

PDI: Mission Partner Environment (MPE) local upgrades, U.S. Indo-Pacific Command

The budget request included \$132.3 million in line number 49 of Other Procurement, Air Force (OPAF), for base communications infrastructure.

The unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command (INDOPACOM), included additional funding for Mission Partner Environment (MPE) local upgrades to modernize the command, control, communications, and computers architecture in the INDOPACOM area of responsibility and provide local systems to support and enhance operations with allies and partners.

Therefore, the committee recommends an increase of \$14.0 million in line number 49 of OPAF for MPE local upgrades within the INDOPACOM area of responsibility, specifically, the PACNET initiative to transform the theater communications and data architecture.

Energy efficient small shelters upgrades

The budget request included \$52.0 million in line number 56 of Other Procurement, Air Force (OPAF), for Mobility Equipment.

Solar shades provide energy efficiency and extended service life of small shelters.

Therefore, the committee recommends an increase of \$4.7 million in line number 56 of OPAF for Mobility Equipment.

Defense Wide

Joint Regional Security Stacks SIPR funding—Procurement

The budget request included \$88.7 million in line number 19 of Procurement, Defense-wide, for the Joint Regional Security Stacks (JRSS).

The committee is aware of the operational cybersecurity limitations of the JRSS technology as assessed by the Director, Operational Test and Evaluation, the difficulty of training personnel to use the JRSS, and the shortage of feasible tactics, techniques, and procedures to make effective use of the JRSS. The committee believes that the deployment of JRSS on the Secret Internet Protocol Router Network is thus inappropriate, given JRSS' limited cybersecurity capability and the existence of alternative capabilities to execute its network functions.

Therefore, the committee recommends a decrease of \$11.1 million in line number 19 of Procurement, Defense-wide, due to the operational cybersecurity limitations of the JRSS technology.

Terminal High Altitude Area Defense

The budget request included \$495.4 million in line number 31 of Procurement, Defense-Wide (PDW), for Terminal High Altitude Area Defense (THAAD) and did not include funding in line number 36 of PDW for BMDS AN/TPY-2 Radars.

The committee notes that the Army remains below its validated requirement for THAAD batteries and that the President's budget did not include funding for the procurement of additional batteries. The unfunded priorities list submitted by the Director of the Missile Defense Agency included funding for an eighth THAAD battery. The committee further notes that procurement of this battery in early fiscal year 2021 would be more cost-efficient due to synchronization with an ongoing foreign military sales case.

The committee also understands that the production line supporting the THAAD Heavy Expanded Mobility Tactical Trucks (HEMTTs) will likely close in the near future. The Director's unfunded priorities list also included funding for a life-of-type buy for HEMTTs to support the existing and future force.

Accordingly, the committee recommends an increase of \$106.4 million in line number 31 of PDW for the eighth battery components (\$76.3 million) and HEMTTs (\$30.1 million) and an increase of \$243.3 million in line number 36 of PDW for BMDS AN/TPY-2 Radars.

SM-3 IIA procurement

The budget request included \$218.3 million in line number 37 of Procurement, Defense-Wide (PDW), for SM-3 Block IIA missiles.

The committee believes that procuring higher quantities of this interceptor each year (including foreign military sales) is prudent, given existing requirements for Aegis Ashore and Aegis Ballistic Missile Defense ships, the capacity and efficiencies of the industrial base, and the potential for additional land-based SM-3 systems. The committee also notes that this increased procurement was included on the unfunded priorities list submitted by the Director of the Missile Defense Agency.

Accordingly, the committee recommends an increase of \$128.0 million in line number 37 of PDW for SM-3 Block IIA missiles.

Armed Overwatch

The budget request included \$101.0 million in line number 55 of Procurement, Defense-wide, for Armed Overwatch.

The committee is concerned that the acquisition strategy for an armed overwatch aircraft for U.S. Special Operations Command (SOCOM) lacks a validated requirement and an appropriate analysis of the cost-effectiveness of acquiring a new special operations-peculiar platform for this purpose. Furthermore, the committee is concerned that the rapid acquisition timeline being pursued by SOCOM does not allow for adequate consideration of: the cost of operating and sustaining the aircraft; the potential negative impacts on an already stressed community of pilots, aircrews, and maintainers; and how such a costly addition fits into SOCOM's medium-to-long-term airborne intelligence, surveillance, and reconnaissance capability roadmap.

Therefore, the committee recommends a decrease of \$101.0 million in line number 55 of Procurement, Defense-wide, for Armed Overwatch. The committee notes that, elsewhere in this report, the committee recommends increases in funding to address unfunded requirements identified by SOCOM to address urgent needs, to include the replacement of combat loss aircraft and other equipment.

DHC-8 combat loss replacement

The budget request included no funding in line number 56 of Procurement, Defense-Wide, for Manned ISR.

The committee notes that a DHC-8 aircraft operated by U.S. Special Operations Command (SOCOM) was destroyed during a terrorist attack against forces supporting Operation Enduring Freedom—Horn of Africa and that SOCOM identified replacement of the combat loss as an unfunded requirement.

Therefore, the committee recommends an increase of \$40.1 million in line number 56 of Procurement, Defense-wide, for combat loss replacement of a DHC-8 aircraft.

Aircraft maintenance support combat loss replacement

The budget request included \$3.8 million in line number 62 of Procurement, Defense-wide, for U-28.

The committee notes that various aircraft maintenance spares and support equipment were destroyed during an attack on forces supporting Operation Inherent Resolve and that U.S. Special Operations Command identified replacement of these items as an unfunded requirement.

Therefore, the committee recommends an increase of \$24.7 million in line number 62 of Procurement, Defense-wide, for combat loss replacement of aircraft maintenance spares and support equipment.

Special Operations Tactical Communication/Next Generation Tactical Communications

The budget request included \$88.7 million in line number 71 of Procurement, Defense-wide, for Warrior Systems, SOF Tactical Communications.

The committee notes that U.S. Special Operations Command (SOCOM) identified executability issues with the Multi-Mission Payload-Light (MMP-Light) program due to appropriations rescissions in fiscal year 2020. As a result, SOCOM requested the transfer of funds from the MMP-Light to the man-pack Capital Equipment Replacement Program for fiscal year 2021.

Therefore, the committee recommends an increase of \$13.4 million in line number 71 of Procurement, Defense-wide, for the man-pack Capital Equipment Replacement Program. The decrement associated with this transfer is reflected elsewhere in this report.

Multi-Mission Payload

The budget request included \$12.2 million in line number 77 of Procurement, Defense-wide, for Warrior Systems, Multi-Mission Payload (MMP).

The committee notes that U.S. Special Operations Command (SOCOM) identified executability issues with the MMP-Light program due to appropriations rescissions in fiscal year 2020. As a result, SOCOM requested the transfer of funds from the MMP-Light program to the man-pack Capital Equipment Replacement Program for fiscal year 2021.

Therefore, the committee recommends a reduction of \$12.2 million in line number 77 of Procurement, Defense-wide, for Warrior Systems, Multi-Mission Payload (MMP). The increase associated with this transfer is reflected elsewhere in this report.

Syria exfiltration reconstitution

The budget request included \$247.0 million in line number 81 of Procurement, Defense-wide, for Operational Enhancements.

The committee notes that U.S. Special Operations Command identified the replacement of items destroyed in connection with the exfiltration of forces in Syria as an unfunded requirement.

Therefore, the committee recommends an increase of \$12.5 million in line number 81 of Procurement, Defense-wide, for Syria exfiltration reconstitution.

Items of Special Interest

A-10

The committee is encouraged that the Air Force is executing a modernization strategy for the A-10 fleet to preserve this unique capability for CAS, FAC-A, and CSAR missions. The committee believes that upgrades to weapons delivery, management systems, and the electronic warfare and communications suite that keep pace with threat advancements and proliferation are critical to the continued success of the weapon system. The committee notes that these enhancements and the aircraft wing replacements, airframe refurbishment, and new mission computers will maintain the effectiveness of the A-10C through at least the 2030s. However, the

committee is concerned with the assumptions being made about the required total size of the A-10 fleet in the future.

Therefore, the committee directs the Secretary of the Air Force to provide a briefing no later than November 1, 2020, to the committee to explain the required capacity for the unique A-10 capability and to validate the assumptions used to calculate the planned future fleet size of the A-10. The briefing should address capacity required to sustain current missions, support future missions, and to deliver rotational forces for combatant commanders in the various mission sets of the A-10C.

Active Protection Systems updated plans for M2 Bradley and Stryker combat vehicles

The committee commends the successful test, integration, and application of an active protective system on the M1 Abrams tank but notes with concern that similar results have not been achieved for the M2 Bradley fighting vehicle or Stryker. Threats to combat vehicles such as the M2 Bradley and Stryker family of vehicles are of ever-increasing lethality and proliferating widely, and active protection systems are integral to these vehicles' survivability.

Accordingly, the committee directs the Secretary of the Army to provide a briefing, no later than August 1, 2020, on the Army's updated plans to integrate active protection systems into the M2 Bradley and Stryker family of vehicles. The briefing should also include an assessment of the impact of the recent reset of the Optionally Manned Fighting Vehicle program on the Modular Active Protection System.

Advanced Battle Management System bridge report

The committee is aware of the Air Force's plans to invest substantial funds into the Advanced Battle Management System (ABMS) program to achieve future warfighting objectives. However, the committee is concerned that there exists an interim requirement to achieve resilient networking using existing infrastructure and datalinks. Therefore, the committee directs the Secretary of the Air Force, in conjunction with the other military services, to submit a plan to the congressional defense committees, not later than January 1, 2021, for the allocation of resources, along with details as to how and when the resources will be executed, so as to either improve current Link 16 capabilities or create an alternative solution in terms of increased capacity, improved resilience, and techniques to reduce probability of detection. Additionally, the plan shall specify the path forward to improve the resiliency of Link 16 networks using existing capabilities, to include, but not necessarily limited to, additional air, ground, sea, and space-borne relay nodes to enhance resistance to interference and complicate potential adversaries' targeting.

Advanced combat search and rescue capability

The committee commends the Air Force on its historical focus on combat search and rescue (CSAR), including the resourcing and training of specialized squadrons focused on returning isolated personnel back to friendly forces. The National Defense Strategy refocuses the Department of Defense's weight of effort to preparing

for near-peer warfare and, as a result, CSAR has become even more important. Emerging technologies, such as the Agility Prime program, and capabilities, such as the CV-22, present new opportunities for the CSAR mission. Therefore, the committee directs the Secretary of the Air Force to conduct an analysis, and report to the committee, no later than February 1, 2021, on the benefits and capabilities of these technologies and their potential for use in contested environments and the scenarios envisioned in the National Defense Strategy.

Air Force pilot training

The committee supports the Air Force's procurement of the T-7A Redhawk training aircraft, recognizing the improved capabilities that it will bring to undergraduate pilot training. The Air Force plans to transition from the T-38C to the T-7A at five locations: Columbus AFB, Mississippi; Laughlin AFB, Texas; Randolph AFB, Texas; Sheppard AFB, Texas; and Vance AFB, Oklahoma.

The committee is concerned about potential impacts that this transition will have on the Air Force's undergraduate pilot training pipeline, which could further exacerbate its pilot shortage. Therefore, the committee directs the Secretary of Air Force to provide a plan, no later than March 1, 2021, to the congressional defense committees on how it will transition undergraduate pilot training from the T-38C to the T-7A. This plan should include, at a minimum, the following: the timeline of deliveries of T-7A aircraft; the order of beddown locations at each of the planned training bases; details on the standup and expansion of the T-7A instructor pilot cadre; details on the standup of simulator operators and maintenance personnel; impacts of the new training syllabus; an assessment of the transition's overall impact to the undergraduate pilot training pipeline; and an assessment of the requirement for an additional training location if the Air Force were to determine that the capacity at the five planned training bases is insufficient.

Anti-ship missile development

The committee is encouraged by increased attention across the Department of Defense to the surface warfare mission area, including several new anti-ship missile (ASM) programs. However, the committee desires greater clarity on Joint Force ASM requirements, development efforts, and acquisition strategies. The committee is interested in ensuring that rigorous ASM requirements exist tied to specific threats and operational concepts, development efforts are rationalized where possible, and acquisition strategies are streamlined.

Therefore, the committee directs the Vice Chairman of the Joint Chiefs of Staff, the Under Secretary of Defense for Research and Engineering, and the Under Secretary of Defense for Acquisition and Sustainment, in consultation with the Secretaries of the military departments, to submit a report to the congressional defense committees not later than December 1, 2020, on Joint Force ASM requirements, development efforts, and acquisition strategies.

This report shall include the following elements: (1) A description of Joint Requirements Oversight Council-validated (JROC-validated) requirements for ASMs, including inventory objectives and

capabilities required for each ASM, such as range, speed, seeker performance, and data link requirements; (2) A description of other Department of Defense requirements for ASMs that have not been validated by the JROC, including inventory objectives and capabilities required for each ASM, such as range, speed, seeker performance, and data link requirements; (3) A description of the development efforts supporting each ASM program listed under (1) and (2), such as prototyping subsystems, investigating use of common components, conducting developmental testing, conducting operational testing, and engaging in other forms of risk reduction; and (4) A description of the acquisition strategies, if applicable, for each ASM program listed under (1) and (2) above.

Army Radio Modernization

The committee recognizes the challenges faced by the Army in testing, evaluating, and fielding radio capabilities to create an overarching integrated tactical network and is encouraged by the Army's intent to utilize a rapid acquisition process to separately compete each tactical radio variant for each aircraft being outfitted under the Army's Air to Ground Networking Radio program. Despite challenges in integration, by encouraging the platform specific head to head competition, rather than making a one-size-fits-all decision, the Army will promote competition within the industry and tailor the best solution for each aircraft. The committee encourages the Army to quickly conduct a thorough and deliberate process to ensure that the most effective radio is selected for each aircraft.

Assessment of Navy anti-submarine warfare training targets

The committee understands that the Navy lacks a modern heavy-weight anti-submarine warfare (ASW) target and that the current inventory of ASW training targets is deficient in satisfying the pre-deployment training requirements of our submarine, surface, and aviation ASW forces. The committee further understands that these ASW training targets are increasingly difficult to sustain, costly to repair, limited in capability, and have no identified replacement. The committee is concerned that these factors may negatively impact the ASW proficiency of deploying naval forces.

Therefore, the committee directs the Secretary of the Navy to submit to the congressional defense committees not later than February 1, 2021, an assessment on the current capabilities of Navy heavyweight ASW targets and a modernization plan for future targets and training capabilities. The assessment shall include, at a minimum, the following: (1) The current inventory of anti-submarine warfare targets, their capabilities, and age; (2) An evaluation as to how the current inventory of heavyweight ASW targets supports ASW training certification requirements for surface, submarine, and aviation ASW forces, to include the number heavyweight ASW targets required to generate a sufficient number of target presentations during training events and the degree to which these target presentations may be made in a manner that is consistent with current and projected peer and near-peer threat submarine capabilities; (3) An evaluation of existing training target availability and the Navy's plan to replace the current inventory of training targets with capabilities that are equal to or better than

current Navy capabilities; (4) The benefits and risks of the 20-year service life extension plan currently in execution beyond the current expected 30-year service life of the MK 30 Mod 1 heavyweight ASW target; and (5) A plan to begin replacement of the current inventory of existing training targets no later than September 30, 2023.

This assessment shall be presented as a briefing and submitted in unclassified form but may include a classified annex.

C-17 maintenance

The committee is aware that the Air Force intends to achieve cost savings by moving 100 percent of its C-17 fleet heavy maintenance to a single depot. The Air Force has acknowledged that this course of action would decrease readiness, although not below an acceptable level, and that it would take 14 years to obtain a positive return on capital investment. The committee notes that the Air Force also found that such a course of action would realize billions of dollars of savings in C-17 life cycle costs and establish affordable and effective depot maintenance and commodity repair capability. The committee also believes that this course of action would improve the Air Force's implementation of section 2464 of title 10, United States Code. Therefore, the committee directs the Secretary of the Air Force to submit a report, no later than January 31, 2021, to the congressional defense committees that details each course of action evaluated in the business case analysis of moving C-17 heavy maintenance to a single depot and other future product support strategies for the C-17 aircraft.

Additionally, the committee directs the Director, Cost Assessment and Program Evaluation, to review the Secretary's report and submit an independent assessment to the congressional defense committees no later than March 1, 2021.

Comptroller General report on the Supervisor of Shipbuilding

The committee notes that the Government Accountability Office (GAO) concluded in a June 2018 report, *Navy Shipbuilding: Past Performance Provides Valuable Lessons for Future Investments* (GAO-18-238SP), that the Navy has experienced significant cost increases, schedule delays, and performance issues on its shipbuilding programs. The committee understands that recent quality issues on a number of Navy ships and submarines point to, among other issues, challenges in the Navy's ability to oversee quality at the private shipyards that build its vessels.

The committee notes that the Navy's Supervisors of Shipbuilding, Conversion and Repair (SUPSHIPS) organization is responsible for administering contracts for new ships and submarines, as well as nuclear repair and modernization at private shipyards, including ensuring that shipbuilders provide the Navy with vessels that meet quality expectations. The committee understands that SUPSHIPS' role in this regard is unusual, as the Defense Contract Management Agency provides this type of contract oversight for most other Department of Defense contracts.

Therefore, the committee directs the Comptroller General to review the Navy's SUPSHIPS organization, including an assessment

of: (1) The roles, responsibilities, procedures, capabilities, and capacity of SUPSHIPS to ensure that ship contracts are executed on time, at expected cost, and to contractual and performance requirements; (2) SUPSHIPS' role in overseeing suppliers for Navy ship programs; (3) The effectiveness of actions taken by SUPSHIPS and its higher chain-of-command when shipbuilders are not meeting cost, schedule, or performance requirements; (4) SUPSHIPS' approach to contract execution oversight and monitoring for shipbuilding programs, as compared to that of the Defense Contract Management Agency for other large Department of Defense acquisition programs; and (5) Any other related matters that the Comptroller General deems appropriate.

The committee directs the Comptroller General to provide a briefing to the congressional defense committees on the findings of this review by December 1, 2020, with a report to follow.

Comptroller General review of Navy shipbuilding and ship maintenance

The committee notes that the Navy is embarking on an ambitious, expensive undertaking to develop, design, and construct a number of new ships—both manned and unmanned—over the coming years, which would represent the biggest increase in fleet size in over 30 years.

The committee understands that the Navy expects vessels to be constructed in quantities that sustain the industrial base and expand the overall size of the Navy, which requires not just a healthy industrial base for ship construction but also for all of the materials, systems, and foundry work that go into building a complete ship. Likewise, the Navy will have to expand capability in the ship repair industrial base, which consists of public and private shipyards that are struggling to execute maintenance programs to sustain the current fleet of approximately 300 battle force ships.

However, the economic consequences of the first global pandemic in over 100 years may have significant and potentially long-lasting ramifications on the Navy's already limited industrial bases for shipbuilding and ship repair.

Accordingly, in order to better understand and address the viability of future Navy ship construction and ship repair plans, the committee directs the Comptroller General to conduct a review of: (1) The Navy's current shipbuilding plan and the capability of the shipbuilding industrial base to support this plan; and (2) The ship maintenance plan and the capability of the ship repair industrial base to support that plan.

As part of this review, the Comptroller General shall assess the impacts of the COVID-19 pandemic on the Navy's ability to build and maintain quality ships on time and on schedule. This review shall also address the following questions: (1) What plans does the Navy have in place to execute its current shipbuilding and ship repair plans? (2) How does the Navy evaluate the health of its shipbuilding and ship repair industrial bases? (3) To what extent are shipbuilding and ship repair program performance affected by COVID-related issues? (4) How is the Navy assessing and addressing the consequences of COVID-19 on the shipbuilding and ship repair industrial bases, including lower-tier suppliers? (5) What chal-

allenges related to its industrial bases will the Navy likely face over the next decade that could present significant risk to achieving its shipbuilding and ship repair plans? (6) What other matters does the Comptroller General deem relevant to highlight?

The Comptroller General shall submit this review to the Committees on Armed Services of the Senate and House of Representatives not later than March 1, 2021.

Counter unmanned aircraft systems matters

The low cost, ease of operation, and accelerating proliferation of innovative commercial-based small unmanned aircraft system (UAS) capabilities is rapidly expanding the scope and complexity of the threat to U.S. forces and infrastructure. The committee believes that countering small UASs will be an enduring requirement for the Department of Defense (DOD) for at least the next decade. As a result, the committee is encouraged by the DOD's designation of the Army as Executive Agent for Counter small Unmanned Aircraft Systems (C-sUAS) in 2019, the rapid standup of the Joint C-sUAS Office (JCO) in 2020, and the recommendation to downselect and prioritize resources toward the most promising systems.

To further the Department's C-sUAS activities, the committee recommends an increase in funding toward several C-sUAS efforts, totaling approximately \$73 million, noted elsewhere in this report. These efforts include fully funding the requirement to expedite activities of the JCO as captured in the Chief of Staff of the Army's unfunded priorities list, providing additional funding to the JCO to increase and improve test and evaluation activities, and providing additional funding to U.S. Special Operations Command (SOCOM) for operational demonstration of C-sUAS capabilities. The committee encourages the JCO to work closely with SOCOM to ensure that the JCO's efforts appropriately incorporate special operations-peculiar requirements that arise from the employment of small, disaggregated teams in remote and austere locations and to provide pathways to transition technologies demonstrated by SOCOM.

The committee supports the Department's investment in advanced technologies to enhance C-sUAS capabilities and encourages expediting procurement and fielding of commercially available solutions. However, the committee believes that commercial C-sUAS proposals should demonstrate combat capability in operationally relevant environments and be validated by third-party entities and Department of Defense developmental and operational test organizations, as appropriate, before being considered and adopted by the Department. Additionally, the committee recognizes the leadership and innovation of multiple Federal agencies, especially the Department of Justice (DOJ), in the development and fielding of C-sUAS capability as well as the DOJ's focus on and investment in test and evaluation infrastructure to support long-term objective analytical evaluation of current and evolving C-sUAS capabilities over the next decade.

Therefore, elsewhere in this report, the committee recommends a provision that would require the JCO to prioritize C-sUAS systems that can be fielded in year 2021 and would also encourage the Secretary of the Army, as the executive agent, to consider establishing a Counter-UAS center of excellence to coordinate research

and development of counter-drone technologies, tactics, techniques, and procedures. Additionally, the committee would require development of a plan and investment in infrastructure to build the test and evaluation framework required to deepen understanding of countering the small, low, and slow UAS threats that the committee believes represent an enduring threat to U.S. troops and infrastructure.

DDG-51 destroyer multi-year procurement

The committee continues to support the national policy of achieving at least a 355-ship fleet, as codified in the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), which is integral to the National Defense Strategy and its emphasis on near-peer competition with Russia and China.

The committee views DDG-51 destroyers as the backbone of the surface fleet, providing multi-mission flexibility and increasing capability with introduction of Flight III and the AN/SPY-6 radar. With plans for construction of a new class of Large Surface Combatants (LSCs) toward the end of this decade and the current multi-year procurement of DDG-51s ending in fiscal year 2022, the committee believes that it is imperative that the Navy award another DDG-51 multi-year contract beginning in fiscal year 2023. This contract is critical to ensuring that Flight III capability continues to be delivered to the fleet and the industrial base is maintained to support the LSC acquisition strategy.

Accordingly, the committee urges the Secretary of Defense and the Secretary of the Navy to make all necessary plans to award another multi-year contract for DDG-51 Flight III destroyers in fiscal year 2023, including long lead material purchases in fiscal year 2022.

E-8 strategy

The committee is encouraged by the Air Force's plans to modernize the E-8C Joint Surveillance and Target-Attack Radar System (JSTARS) weapon system to meet combatant commander requirements until a replacement capability is fielded. Additionally, the committee recognizes the Secretary of the Air Force's commitment to perform associated upgrades to meet airworthiness and operational mandates.

The committee is concerned and disappointed, however, that these plans have not been followed by execution to implement upgrades on a reasonable schedule. The committee is concerned with the history of delayed execution of funds to procure and field modifications in a timely manner. The committee believes the Air Force should assess what the Air Force needs to do to ensure that E-8C JSTARS efforts are consistent with ensuring that the Air Force can effectively sustain and advance this weapon system's capability commensurate with combatant commander requirements.

Therefore, the committee directs the Secretary of the Air Force to submit a report to the congressional defense committees by February 1, 2021, on the strategy for sustaining the E-8C JSTARS fleet until a suitable replacement capability and capacity is fielded. The strategy shall include: (1) Recommended changes to the E-8C program management structure to address funding execution short-

falls; and (2) A plan for modifications, including schedules and associated funding profiles, for achieving those modifications and ensuring that combatant commander requirements are met.

E-8C modernization

The committee is encouraged by the Air Force's recognition of the importance of E-8C Joint Surveillance and Target Attack Radar System (JSTARS) aircraft and its efforts to modernize the avionics and communications equipment onboard to make the platform an integral component of the Advanced Battle Management System. The committee is concerned that the Air Force is considering a potential effort for re-engining the E-8 Joint JSTARS aircraft at the expense of other JSTARS modernization programs. The committee is aware that the business case for JSTARS re-engining would require that the aircraft to fly well into the 2040s, which is beyond the planned in-service date, to see a positive return on the investment and, as such, believes that the money that might be used for re-engining would be better spent on other JSTARS modernization efforts, such as installing advanced avionics and upgrading communications equipment.

Electronic warfare red team

Realistic training of blue forces in electronic warfare requires a red force that is trained in the tactics, techniques, and procedures of potential opponents, as informed by timely intelligence, and that fields representative electronic warfare equipment. The committee directs the Secretary of Defense to brief the congressional defense committees, no later than March 31, 2021, on progress made and gaps remaining in training electronic warfare red forces based on intelligence as well as the Department of Defense's ability to field representative equipment or systems that can simulate representative equipment to complement the tactics, techniques, and procedures of red forces in order to better prepare the Joint Force through realistic electronic warfare training.

F-35 basing requirements

The National Defense Strategy requires the Department of Defense to posture ready, combat-credible forces forward alongside allies and partners and, if necessary, to fight and win. The Department's Indo-Pacific Strategy—which describes the Indo-Pacific as the Department's priority theater—emphasizes efforts to enhance Joint Force preparedness for the most pressing scenarios, which will occur along our competitors' peripheries, to include a fait accompli scenario.

To date, the Air Force has announced the selection of 9 operating locations for the F-35A, including locations in the continental United States, Alaska, and Europe. It has yet to announce plans for any F-35A operating locations forward in the Indo-Pacific region—in other words, locations sufficiently forward to enable immediate response in the most pressing scenarios envisioned in the Department's foundational strategic documents. At present, realizing any potential plan to establish an F-35A operating location forward in the Indo-Pacific region could take nearly a decade. Put another way, nearly half of the Air Force's total procurement quantity

of F-35As will be delivered before the first aircraft arrives at an operating location forward in the Department's priority theater.

Therefore, the committee directs the Secretary of the Air Force, in consultation with the Commander, Indo-Pacific Command, not later than December 31, 2020, to provide a briefing to the committee on: the Air Force's current projected timeline to establish an F-35A operating location forward in the Indo-Pacific region; options to place a continuous rotational F-35A force utilizing only Air National Guard assets; options for accelerating that timeline; and an assessment of the merit and feasibility of those options.

Flame retardant vehicle soft armor and materiel

The military services have established baseline requirements for flame resistant uniforms, but the committee understands that they have not developed similar requirements for vehicle soft armor, such as spall liners, and internal textile materials. Vehicle soft armor is often manufactured with a broad range of materials, which may include highly flammable plastics and glass fibers. While the primary purpose of soft armor is to protect against fragments, a large majority of enemy strikes result in flame incidents, which place soldiers and marines at greater risk.

As the military services develop next generation systems that can counter near-peer threats, the committee encourages the Army and the Marine Corps to review requirements for combat vehicles that include flame resistant standards. Further, the committee directs the Secretary of the Army, in coordination with the Secretaries of the Navy and the Air Force, to provide a briefing by September 30, 2020, on the feasibility and availability of incorporating materials inside combat vehicles that possess flame resistant properties.

Future Vertical Lift long-term cost and schedule assessment

The committee is encouraged by the Army's progress on the Future Vertical Lift (FVL) program, including a Competitive Demonstration Risk Reduction (CDRR) contract award for the Future Long Range Assault Aircraft (FLRAA) and a Competitive Prototype (CP) award for the Future Attack Reconnaissance Aircraft (FARA). The committee supports the development and procurement of these critical FVL capabilities but is concerned about the feasibility of simultaneously procuring these aircraft, as well as other Army modernization priorities currently in development, given budget projections and the Army's fielding timeline.

Accordingly, the committee directs the Secretary of the Army to provide a report no later than February 15, 2021, to the committee assessing the current schedule, to include potential for sequencing procurement of the FLRAA and FARA programs. The report shall include 10-year cost and schedule projections, an assessment of operational and acquisition risks, and potential mitigation measures to both FLRAA and FARA cost and schedule profiles.

Guided missile frigate

The committee notes that a contract for up to 10 guided missile frigates (FFG(X)) was awarded in April 2020 with a potential cumulative value of \$5.6 billion. Given that this is a new class of

ships that will have a significant role in the Navy battle force, the committee seeks additional information on the program.

Accordingly, the committee directs the Director of the Congressional Budget Office to submit to the congressional defense committees, not later than October 1, 2020, a report analyzing the FFG(X) program. The report shall include: (1) An analysis of the estimated costs of the program in the context of other current and past Navy shipbuilding programs; (2) An independent cost estimate of the FFG(X) program based on the specific winning ship design; and (3) Other related matters the Director deems appropriate.

HMMWV rollover mitigation

The committee understands that the Army is in the process of performing safety modifications to the Light Tactical Vehicle fleet to mitigate rollover accidents. The committee supports the Army's fiscal year 2021 budget request to procure 5,421 anti-lock brake system/electronic stability control retrofit kits that will be installed through a partnership with the Red River Army Depot. The committee understands that these kits have successfully been installed on all new High Mobility Multipurpose Wheeled Vehicles (HMMWVs) and that the Army will begin the retrofit of legacy HMMWVs with these life-saving technologies.

Hospital ship modernization

The committee notes that during the COVID-19 pandemic, the country saw a demonstration of the unique capabilities provided by the USNS *Mercy* and USNS *Comfort*. Both of these ships are nearing the end of their useful service lives. The committee believes that the need for medical support capability to enable expeditionary operations and respond to natural disasters and other emergencies is enduring.

Therefore, the committee urges the Secretary of the Navy to modernize the capability provided by these hospital ships as soon as possible.

Hybrid electric drive on Arleigh Burke-class destroyers

The committee notes that the Navy has received more than \$175.0 million to develop, procure, and install six hybrid electric drive (HED) systems for Arleigh Burke-class destroyers but that only one such installation, on the USS *Truxton*, has occurred.

In a January 2020 report to the Congress on HED, the Navy stated that it has yet to conduct sufficient testing and operations to determine the utility and reliability of the system. The committee continues to be interested in the potential benefits of HED systems as well as how the Navy will test, evaluate, and measure the at-sea performance and effectiveness of the HED on the USS *Truxton*.

Accordingly, the committee directs the Secretary of the Navy, not later than 15 days after the fiscal year 2022 budget request is submitted to the Congress, to provide a report to the Committees on Armed Services of the Senate and House of Representatives on the plan for HED installation, testing, and operational use on Arleigh Burke-class destroyers. This report shall include: (1) The requirements or plan to develop requirements for HED on naval vessels;

(2) A test plan to determine HED operational suitability and effectiveness that is approved by the Commander, Operational Test and Evaluation Force; (3) Details surrounding the hardware, software, or other upgrades required before installing existing HED systems, including the timeline for completing such upgrades; (5) The installation schedule for existing HED systems, including fiscal year and hull number; and (6) The HED-related funding requirements by fiscal year and the extent to which such requirements are fully funded in the future years defense program.

Improved Turbine Engine Program

The Improved Turbine Engine Program (ITEP) will enhance the performance and operational readiness of the current Black Hawk and Apache helicopter fleets through the production and delivery of a more fuel efficient and powerful engine that is capable of operating in high and hot environments. In addition, the engine will be the government-furnished engine for the Future Attack Reconnaissance Aircraft (FARA) program, which is a key priority of the Army's Future Vertical Lift (FVL) program.

The committee has supported significant Army investments in competitive technology development programs for turbine engines over the past decade. While the ITEP can enhance warfighting capabilities in its delivery of improved fuel efficiencies and mature technologies, the Army must also prioritize maintenance and sustainment costs to ensure the continued affordability of the ITEP and associated capabilities. Given the critical role of this program in modernizing Army aviation, the committee encourages the Army to pursue opportunities to accelerate the fielding of this engine.

Integrated air and missile defense in the U.S. Central Command area of responsibility

Recent attacks on U.S. and partner nation forces underscore an increase in missile, rocket, and unmanned aircraft system threats in the U.S. Central Command (CENTCOM) area of responsibility (AOR). The committee is aware that the Army and CENTCOM have already taken significant steps to improve the protection of U.S. troops in the region from these threats. While the committee understands that providing integrated air and missile defense (IAMD), counter-rocket, artillery, and mortar (C-RAM), and counter-unmanned aircraft systems (C-UAS) coverage for every facility and base where U.S. forces are stationed is not practical due to resource constraints, the committee remains concerned about IAMD and C-RAM planning, procedures, and coverage in the CENTCOM AOR.

Accordingly, the committee directs the Secretary of Defense, in consultation with the Commander, CENTCOM, the Chairman of the Joint Chiefs of Staff, and the Chief of Staff of the Army, to provide a classified report to the committee no later than September 1, 2020, on the IAMD, C-RAM, and C-UAS posture in the CENTCOM AOR. The report shall include:

- (1) An explanation of current and planned IAMD and C-RAM capabilities and coverage in the CENTCOM AOR, including allocation against the critical and defended asset lists;

(2) An accounting of partner or allied forces performing IAMD and C-RAM functions in the AOR, in defense of their own or coalition forces and assets, and an assessment of the effectiveness of such capabilities;

(3) An assessment of the adequacy of current and planned IAMD and C-RAM capabilities to meet CENTCOM operational requirements;

(4) A description of IAMD and C-RAM gaps in coverage that generate substantial risk to U.S. forces or mission;

(5) An assessment of the impact on IAMD and C-RAM forces and personnel of additional deployments to the CENTCOM AOR, assessed in the context of global requirements; and

(6) Any other matters deemed relevant by the Secretary.

Joint and service exercises

The committee is concerned with the resourcing of joint and single service exercises and the potential disconnect with the National Defense Strategy. The committee is aware of reductions in joint exercise accounts based on the Defense-Wide Review that could significantly impact the ability of the military services and combatant commanders to adequately assess and improve joint readiness, access, basing, and overflight to set the conditions to be successful in a conflict.

Therefore, no later than January 1, 2021, the Secretary of Defense, in coordination with each of the combatant commanders and service chiefs, shall report to the committee on the level of risk being assumed based on the level of resourcing requested for the Combatant Commander Exercise, Engagement and Training Transformation effort. The report shall specifically address how reductions in funding have impacted: (1) Readiness; (2) The ability to conduct joint operations; (3) The ability to develop relationships with partners and allies; and (4) Daily competition with adversaries to set conditions for combat operations and work to achieve national security objectives without kinetic conflict.

Joint electronic warfare training range

The committee recognizes the requirement for the Department of Defense (DOD) to operate across the electromagnetic spectrum and prevail in electronic warfare (EW) in every operational domain. Development of capabilities needed to control the EW battlespace requires well-developed training ranges that enable the military services and Defense Agencies and Field Activities to rapidly test and field new weapon systems. Increased demand and spectrum encroachment at current EW training ranges mean that these facilities are inadequate to meet the Department's EW test and training needs over the next several years. Therefore, the committee directs the Secretary of Defense to provide a plan for the establishment of a Joint Electronic Warfare Training Range that: (1) Offers sufficient space for spectrum isolation; (2) Provides for the ability to protect sensitive technologies from detection by offering access to large, inland space; and (3) Would be specifically dedicated to EW activities to avoid overcrowding. This plan shall be briefed to the congressional defense committees no later than December 1, 2020.

Live-virtual-constructive and game-based training environment training

The committee continues to recognize and support the important role that a secure live-virtual-constructive and game-based (LVC–G) training environment plays in improving military capabilities and readiness to meet increasing threats in highly contested environments.

However, the committee is concerned that, despite repeated urging from the Congress, the Air Force and Navy have not adequately planned for or invested in a secure LVC–G advanced training environment to support timely development, acquisition, and fielding of cutting-edge air combat training systems.

Therefore, the committee directs the Secretary of the Air Force, in coordination with the Secretary of the Navy, to provide a briefing to the committee no later than February 1, 2021, on its plan to develop and field LVC–G training environments that emulate real-world operational conditions. At a minimum, the briefing shall include: (1) The timeline and funding plan to develop and field LVC–G training environments; (2) Considerations regarding creation of a program of record for secure advanced training environment systems; (3) Recommendations for related resource allocations through the program objective memorandum process; and (4) Description of efforts to leverage efficiencies in the joint environment.

M2 Bradley Fighting Vehicle program assessment

The recent reset of the Optionally Manned Fighting Vehicle (OMFV) program will likely delay the fielding of the Army’s replacement vehicle for the M2 Bradley Fighting Vehicle (BFV) that has been in operational service for more than 30 years. The OMFV program is a critical modernization effort for the Army, and it is one of the signature programs under the Next Generation Combat Vehicle (NGCV) Cross Functional Team (CFT).

Given the change in the OMFV acquisition strategy, the committee wants to understand the impact of delaying the fielding of the OMFV on the Bradley program. Accordingly, the committee directs the Secretary of the Army to conduct an assessment analyzing the impact of the delayed OMFV fielding on the M2 BFV program and any changes to the Bradley program that may be required as a result of the change in acquisition strategy. The Army shall brief the results of this assessment to the committee no later than August 1, 2020.

Marine Corps integrated air and missile defense capabilities

The committee supports the force design efforts of the Commandant of the Marine Corps to better organize, equip, and posture the Marine Corps for great power competition in the Indo-Pacific region. The committee understands the need for integrated air and missile defense (IAMD) for the distributed “stand-in forces” envisioned by the Commandant and that effective air and missile defense requires an integrated, layered approach across the Joint Force. Accordingly, the committee directs the Commandant to provide a report, no later than December 15, 2020, on the Marine Corps’ plans to integrate, vice federate, the air and missile defense

capabilities that it is developing as part of the joint IAMD architecture.

Mission command systems

The Fiscal Year 2019 Annual Report of the Director, Operational Test and Evaluation (DOT&E), highlighted testing issues with the Command Post Computing Environment (CPCE). The committee is concerned by the report's findings and the resulting fielding limitations currently in place that underscore the challenges the Army faces with developmental mission command systems (MCS). Due to CPCE's performance during operational testing and the Army's challenges with developmental MCS, the committee directs the Secretary of the Army to provide a briefing to the SASC no later than September 30, 2020, on how the Army plans to implement DOT&E's recommendations in order to resolve deficiencies identified during testing and possible alternative commercial solutions.

Mission planning and force structure for hypersonic weapon systems

For fiscal year 2021, the Department of Defense is proposing to fund hypersonic Research, Development, Test, and Evaluation (RDT&E) activities at \$3.5 billion, an increase of 5.9 percent over the fiscal year 2020 appropriated level of funding. While the RDT&E funding for weapons has received much visibility in response to near peer competitors, the committee is concerned that mission planning, the allocation of the weapons between combatant commands, as well as the service force structures to support these weapons are not adequately accounted for.

The committee understands that the original proponent for the hypersonics requirement was the U.S. Strategic Command. At the time, it was proposed as an alternative to nuclear weapons—a long-range precision strike capability of a hypersonic weapon offered a non-nuclear option to hold at risk the same class of targets.

However, with the success to date in demonstrating these weapons, the envisioned target sets have grown. Likewise, it is not clear what the military services' force structure for employing these weapons will entail. When originally conceived by U.S. Strategic Command, there were to be a small number of hypersonic weapons deployed on select platforms. That does not appear to be the case today.

The committee believes that the Department of Defense should be assessing the other parts of a complete architecture needed to field such systems, including the need for mission planning, weapons allocation processes, and force structure changes.

Therefore, the committee directs the Chairman of the Joint Chiefs of Staff, in coordination with the combatant commanders and Secretaries of the military departments, to submit to the congressional defense committees a long-term plan, no later than March 30, 2021, describing: (1) The potential target sets for hypersonic weapons envisioned today and the required mission planning to support targeting by U.S. Strategic Command and other combatant commands; (2) How synchronization of these weapon systems will occur between the combatant commands; (3) The required force structures needed by the military services to

support employment of these weapons against the classes of targets that will be held at risk; and (4) In the case of the Navy, whether such weapon systems should be deployed on both submarines and surface combatants as well as the number of such vessels that need to be so equipped.

Mk93 machine gun mount upgrade program

The Army continues to invest in soldier lethality improvements that ensure that soldiers are equipped with the best technology available, including crew-served platforms such as the M2 .50 caliber machine gun and the Mk19 grenade machine gun. The Army has upgraded these weapon systems to increase their lethality and effectiveness with the intent of keeping both weapons systems in its inventory for the foreseeable future. However, the committee is concerned that, without upgrades to the Army's inventory of the Mk93 machine gun mounts utilized by the M2 and Mk19, investments in weapon optics, fire control, enablers, and ammunition may not be fully realized or could be undermined.

While the Army has completed necessary developmental improvements to the Mk93 machine gun mount, the Army has not yet implemented these upgrades across the Mk93 inventory. Therefore, the committee directs the Army to provide a briefing to the SASC by September 30, 2020, on its plan to implement upgrades to its Mk93 machine gun mounts in order to realize the benefit of these investments. The briefing should include details on how the Army will align funding during the budget process to synchronize the delivery and integration of Mk93 Improvement Kits with the Mounted Machine Gun Optic and 40mm High Explosive Air Burst ammunition.

Next-generation crypto key loader

Given the increasing sophistication and proliferation of cyber and electronic warfare threats, the committee is concerned about the Army's delay in procuring and fielding the next-generation crypto loader and phasing out the current outdated device, of which 80 percent are beyond their current service life. Accordingly, the committee directs the Secretary of the Army to provide a report no later than January 31, 2021, to the committee on the plan to field the next-generation load device and phase out the decades-old Simple Key Loader (SKL). The report shall also include the number and associated cost of SKLs that the Army will purchase by year until a replacement is fielded, and specification of opportunities to accelerate acquisition of the next-generation load device and the currently planned first-fielding in 2024.

Pacific Air Force air base resiliency

The committee is concerned that the U.S. force posture in the Indo-Pacific has not sufficiently evolved to support implementation of the National Defense Strategy or to address the strategic and operational challenges posed by the People's Republic of China. Specifically, it is not clear that the Department of Defense has allocated sufficient resources to provide for the protection of air bases to ensure their ability to survive and operate while under attack from current and emerging cruise missiles and advanced

hypersonic missiles. Therefore, the committee directs the Commander, Pacific Air Forces, and the Director of Strategic Plans, Requirements, and Programs, Headquarters Pacific Air Forces, to provide a comprehensive assessment of requirements for air base resiliency in the Indo-Pacific area of operations to the committee no later than January 1, 2021. The report should address the minimum amount of protection, both active and hardening, required for main operating bases and expeditionary operating bases envisioned in the adaptive basing concepts currently under development.

Polymer based magazines

The committee notes that the Department of the Air Force, Marine Corps, Special Operations Command, and a number of allies are using a high-performing polymer magazine for their small arms that the Army has also authorized for use. The committee encourages the Army to integrate lessons learned from previous testing of high-performing polymer-based magazines and consider a Qualified Products List (QPL), similar to the Army's Protective Eyewear List, to allow units and soldiers to select from several approved options for magazines and include high-performing polymer magazines.

The committee directs the Secretary of the Army to provide a briefing to the congressional defense committees not later than November 30, 2020, on the Army's plan for Next Generation Squad Weapons (NGSW) magazines and the feasibility of having a QPL for magazines. The briefing shall include the Army's requirements for the NGSW magazines, such as metrics, materials, and other characteristics (e.g., visual status indicators).

Preservation of Department of Defense historic aircraft and spacecraft

The committee is concerned that the Department of Defense lacks clear and consistent guidelines for maintaining and disposing historic aircraft and spacecraft. The national collection of historic military aircraft and spacecraft is an important asset that helps honor our veterans and educates the public about key milestones in American history and military technology. However, there have been recent instances of historical aircraft being destroyed or sold for scrap without opportunity for the Department or an aviation museum to consider their preservation. It is in the best interest of the public to ensure that the Department has a clear process to determine disposition of historic aircraft and spacecraft given their historical value. The committee is also aware of the Navy's "Safe For Display Inspection" program, which could provide a model for the entire Department.

Therefore, the committee directs the Secretary of Defense, in consultation with the Secretaries of the military departments, to investigate the expansion of the "Safe For Display Inspection" program across all the military services and to provide to the committee a plan for the expansion of the program as well as an implementation timeline in a report no later than February 1, 2021.

Report on availability of repair for aircraft parts

The Department of Defense, across the military services, continues to employ various qualification standards and classification processes in the determination as to whether pitot tubes that require replacement are classified as “consumable” or “repairable.” The committee believes that, when safety, reliability, and performance of a replacement component are not impacted through a repair process, it is important that such components are reviewed for qualification as “repairable” in the interest of significant cost savings and, further, that the qualification processes across the military services are standardized in line with current Department of Transportation standards.

The committee therefore directs the Secretary of Defense, no later than January 1, 2021, to provide a briefing to the committee after consulting with each of the Secretaries of the military departments on potential cost savings and specific actions being taken to ensure that the pitot tube component is more widely reviewed as repairable and that applicable classification standards and processes are updated.

Report on Unmet ISR Requirements, RC-135 Integration, and KC-135 Conversion

The committee notes the continued testimony from combatant commanders indicating a shortfall in intelligence, surveillance, and reconnaissance (ISR) assets and the ongoing lack of capacity in comparison to demand. The committee also notes that the Air Force has been working to research, develop, test, field, and implement next-generation technologies, such as those germane to the Joint All-Domain Command and Control and Advanced Battle Management System efforts, that promise to provide enhanced networking capability across existing and future Air Force assets, allowing an integrated operating picture of the battlespace to be developed. The committee highlights that the RC-135 family of aircraft is slated to be fielded until 2050 and provide a significant capability within the Air Force’s ISR systems, particularly as a component of these linkages. The committee supports the Air Force’s intent to incorporate these aircraft as key elements of these next generation sensor networks and encourages the Air Force to continue its baseline modernization program and to fully utilize these platforms in achieving its Next Generation ISR Dominance Flight Plan.

The committee further notes the significant commonality between platforms of the C-135 inventory as well as the future availability of retiring KC-135 aircraft and past instances in which these platforms have successfully been converted to RC-135 ISR platforms. The committee believes that such a conversion offers the possibility for increasing the RC-135 inventory to meet combatant commander requirements. As such, the committee directs the Secretary of Defense, in coordination with the Secretary of the Air Force, to submit to the congressional defense committees a report detailing an analysis of the cost, process, and timeline of converting retiring KC-135 aircraft to RC-135V/W Rivet Joint ISR aircraft as well as an assessment of the shortfall in the current ISR inventory

and planned integration of the RC-135 into next-generation networks.

The report shall include: (1) An assessment of the overall ISR shortfall based on combatant commander demand, to include analysis of specific shortfalls and limitations imposed by the size of the current RC-135 fleet; (2) The number of KC-135 aircraft anticipated to be retired and available for other uses as a result of the fielding of the KC-46, delineated by fiscal year; (3) Analysis of added efficiencies gained through growth in the RC-135 inventory, to include impacts on maintenance and sustainment, aircraft availability, and mission completion rates through increased fleet size; (4) A summary analysis of the conversion process, to include cost and estimated time for completion per aircraft; (5) Lessons learned through previous examples of KC-135 aircraft conversion, including past conversion to the RC-135W Airseeker for the United Kingdom's Royal Air Force and applicability of that process to future conversions within the Air Force; (6) Identification of any need for additional or replacement aircraft within the C-135 fleet for which retiring KC-135 aircraft may be suited for conversion and for which there is a requirement, to include WC-135 and TC-135 variants; and (7) Details on the planned integration of the RC-135 fleet into next generation networks and continued efforts to maintain modernization and effectiveness.

The report shall be submitted in unclassified form, but may contain a classified annex if necessary, and shall be provided to the committees no later than February 1, 2021.

Requirements and budgeting for precisely geolocated 3D imagery

The committee recognizes the progress that the Department of Defense has achieved thus far in commercial solutions for automated three-dimensional (3D) image processing and geolocation determination to support the growing demand for rapid targeting and other requirements for precision geolocation. The committee is encouraged by positive steps such as coordination among stakeholders, broad recognition that commercial solutions can meet category 1 accuracy requirements for targeting, and reforms of the National Geospatial-Intelligence Agency's (NGA's) certification process. However, the committee does not believe that it is possible to meet the scale of global and near-real time requirements using current collection techniques. Furthermore, although the cost of acquiring and processing all the data needed through commercial sources is now dramatically reduced, the total budget required is substantial. Despite the pervasive need, no single organization has stepped forward or has been assigned to assume leadership responsibility and budget for the cost. Nor have user organizations or the NGA coalesced to provide a collective cost sharing solution.

Therefore, the committee directs the Vice Chairman of the Joint Chiefs of Staff, the Under Secretary of Defense for Intelligence and Security, and the Director of Cost Assessment and Program Evaluation to aggregate the demand for 3D imaging and geolocation data, develop an equitable and practical cost-sharing or enterprise funding solution, and recommend a course of action to the Secretary of Defense by January 1, 2021. The Secretary of Defense

shall brief the congressional defense committees by February 1, 2021 on the results of these actions.

Self-propelled lightweight howitzers

The committee understands that the Army is reviewing the need for self-propelled 105mm and 155mm howitzer solutions that increase survivability through rapid emplacement, firing, and displacement to evade enemy counterbattery fires. Since 2018, the Army has received operational needs statements (ONSs) from the 2nd Cavalry Regiment and 173rd Infantry Brigade Combat Team, both forward-stationed in Europe, and capability needs statements from I Corps and XVIII Airborne Corps, all related to mobile 105mm and 155mm howitzer capabilities.

The committee understands that the Army will conduct a live fire evaluation in fiscal year 2021 to compare available foreign and domestic mobile howitzer systems that meet the operational requirements of the 2nd Cavalry Regiment ONS. Further, Army Futures Command has directed the Fires Center of Excellence to develop a comprehensive cannon modernization strategy for all formations. The committee has been informed that, once the strategy is finalized and the mobile howitzer evaluation is completed, Army senior leadership will make a decision on the validation of mobile howitzers in the formations beyond the ONS requirement for the 2nd Cavalry Regiment.

Therefore, the committee directs the Secretary of the Army to deliver a briefing to the committee no later than March 1, 2021, on the Army's comprehensive cannon modernization strategy and a status update on the mobile howitzer evaluation.

Shoulder-launched munitions procurement strategy

The committee is concerned about the increasing weight carried by soldiers, to include weight from shoulder-launched munitions (SLM). The committee encourages the Army to consider employing already developed shoulder-fired weapons technology that can address threats in a defilade position. For that purpose, the committee expects the Army to assess and leverage other military services' and special operations components' requirements and solutions.

Specialization of carrier based squadrons

The committee is concerned with the current mission make-up of the carrier air wing in light of the National Defense Strategy (NDS) and great power competition. The committee has received reports of carrier-based strike squadrons' decreasing ability to adequately train across all of the missions required to win against a near-peer adversary.

Therefore, the committee directs the Secretary of the Navy, in consultation with the Chief of Naval Operations and the Commandant of the Marine Corps, to provide a report to the congressional defense committees, not later than February 1, 2021, as to the optimal mission make-up for carrier-based strike fighter squadrons and the efficacy of specializing various missions sets, such as air defense, as opposed to strike, to better prepare for conflicts envisioned by the NDS.

Tactical Combat Training System

The committee recognizes the success of the U.S. Navy-led Tactical Combat Training System-II and is encouraged that the Navy and the Air Force are jointly planning to use the training system. Any delay in fielding this capability would affect readiness of Navy and Air Force aircrews who need a modern, updated, and realistic training system for live, virtual, and constructive training. Additionally, the committee notes the Director of Operational Test and Evaluation strongly endorsed the Tactical Combat Training System-II, citing significant commonality with the Common Range Integrated Instrumentation System and potential cost savings of millions of dollars. The committee encourages the continued development and expedited fielding of the Tactical Combat Training System-II.

Tactical wheeled vehicle industrial base

The committee notes with concern that the fiscal year 2021 budget request includes a steep reduction in funding across the tactical wheeled vehicle (TWV) fleet. Funding decreases were most pronounced for the Heavy Expanded Mobility Tactical Truck (HEMTT) and the Family of Medium Tactical Vehicles (FMTV) programs, which rely on minimum sustaining rates (MSRs). Ensuring that heavy and medium tactical vehicles are authorized at or above the MSRs of production is important to maintaining a base of responsive vendors and suppliers in order to keep production lines active.

Furthermore, the Army's Brigade Combat Teams are particularly reliant on the FMTV and HEMTT fleets, and overall readiness rates may be impacted if parts and spares become unavailable due to production breaks. Finally, compounding this problem is the decision by the Department of Defense to reprogram \$101 million appropriated for HEMTT funding in fiscal year 2020 to support border wall construction.

The committee is concerned that these actions risk destabilizing the supplier base, much of which is constituted of small businesses that require predictable funding levels. Accordingly, the committee directs the Secretary of the Army to provide a briefing to the SASC no later than September 30, 2020, assessing the minimum sustaining rates for the TWV fleet and the Army's plan to support those production rates. The briefing shall also include an evaluation of the impacts to the industrial base if minimum sustaining rates are not achieved and details as to whether the Army anticipates any production breaks that could negatively impact Army readiness, modernization, and our soldiers. Finally, the briefing should address how the Army encourages competition within the tactical wheeled vehicle industry to ensure that the industrial base remains robust and viable.

Tactical wheeled vehicle strategy

The committee notes that the current tactical wheeled vehicle (TWV) fleet consists of nearly 250,000 vehicles and their associated trailers, generally categorized as light, medium, and heavy. Ensuring the suitability and resiliency of the tactical wheeled vehicle fleet is critically important to our national defense. Furthermore, the United States automotive and commercial truck industry has

invested in vehicle technologies, to include emissions controls, autonomous vehicles, and electric vehicles, that could be leveraged to upgrade the tactical fleet, some of which is built on designs originated in the 1980s or earlier.

The Army completed a Tactical Wheeled Vehicle Strategy in 2014, but, since that time, the Department of Defense has reoriented to prepare itself for near-peer competition with the release of the National Defense Strategy in 2018. It is the committee's understanding that Army Futures Command (AFC) is currently conducting a Tactical Wheeled Vehicle study designed to identify the capabilities required for the TWV fleet in order to support future multi-domain operations. Furthermore, the results of this study will be used to inform the development of a revised TWV strategy expected to be completed in fiscal year 2021.

The committee supports the Army's efforts to develop a revised TWV strategy that focuses on vehicle requirements and the capabilities necessary to ensure that the Army prevails in a future fight. Therefore, the committee directs the Army to provide a briefing to the SASC on the TWV fleet by December 31, 2020. The briefing should include an update on the Army's development of a revised TWV strategy, an assessment of the Army's current acquisition strategy for tactical wheeled vehicles, the Army's plan to ensure the viability of the defense industrial base, and specification of further opportunities to encourage competition within industry.

In addition, the committee directs the Comptroller General of the United States to assess the Army's tactical wheeled vehicle strategy and implementation efforts. The assessment should include an analysis of potential competitive opportunities and whether obstacles exist that prohibit such competition. The committee further directs the Comptroller General to submit an interim briefing not later than March 1, 2021, on the preliminary findings of the assessment.

Taser X-26 non-lethal conducted electrical weapon upgrade

Army personnel, across all components, require access to working non-lethal weapons in every environment in which the Army operates, from domestic bases to forward deployed soldiers. The committee understands that taser X-26 Conducted Electrical Weapons (CEWs) currently fielded across the Army are over 5 years past the recommended lifecycle for these weapons, which could increase the likelihood of failure due to age and deterioration. The committee is also aware that the Army's current inventory of the taser X-26 weapons may no longer be supported with software updates and, in some cases, hardware parts.

Therefore, the committee directs the Secretary of the Army to submit a briefing to the SASC by September 30, 2020, on the status of currently fielded taser X-26 CEWs and the Army's plan to field future non-lethal capabilities. The briefing shall include details as to whether the Army intends to remove all non-working taser X-26 units, details as to whether the remaining systems should be upgraded or replaced with a newer generation of CEW tasers, and the funding requirements to support these options. In addition, the committee encourages the Chief of the National

Guard Bureau to consider acquiring non-lethal taser CEWs to meet the needs of National Guard and Reserve personnel.

UH-60V Black Hawk conversions

Modernization of older model UH-60 Black Hawks through recapitalization and upgrades to the new UH-60V models is crucial to ensuring the continued viability of the Black Hawk fleet. This modernization effort extends the service life of airframes and replaces outdated analog cockpits with new digital cockpits, ensuring that Black Hawk helicopters remain safe and relevant for both overseas contingency operations and domestic emergencies.

The committee supports the Army's plan to field UH-60V Black Hawks across all components in order to maintain fleet and mission parity within the Army. Further, the committee is aware that the Army's modernization plan calls for recapitalizing 48 legacy aircraft each year with a goal of converting 760 total aircraft. The committee is concerned that it will take the Army more than 15 years to recapitalize these aircraft with production expected to continue through fiscal year 2037. Concurrently, the Army is pursuing multiple aviation modernization efforts, including the Future Long Range Assault Aircraft (FLRAA), which could impact the Black Hawk recapitalization effort given anticipated budget projections.

Given the importance of this modernization effort, the committee directs the Secretary of the Army to provide a briefing to the SASC no later than March 1, 2021, detailing how the Army intends to meet the goal of recapitalizing 48 aircraft per year and identifying opportunities to accelerate UH-60V Black Hawk conversions.

UH-72 Communications and Monitoring Systems

The committee understands that the UH-72A Lakota helicopter provides general aviation support for aviation units in the Active and Reserve components. Active Army and Army National Guard units operate the UH-72A in a variety of missions, including flight training, surveillance and reconnaissance, medical evacuation, border security, senior leadership transport, and disaster response. The committee is concerned that the Army is not taking advantage of modern health monitoring systems on the UH-72A. The committee is aware that commercial-off-the-shelf (COTS) technology is available that could upgrade the existing communications and health monitoring system with a digital, lightweight, beyond-line-of-sight, push-to-talk radio with Voice over Internet Protocol and a real-time fleet health monitoring, recording, and next generation satellite communications system. The committee is also aware that these same COTS solutions could positively impact training on the UH-72A.

Therefore, the committee directs the Secretary of the Army to provide a briefing to the SASC no later than September 30, 2020, on the Army's health monitoring systems for the UH-72A and existing COTS solutions that could improve the effectiveness and lifespan of the aircraft.

Use of Navy and Marine Corps aircraft for NOBLE EAGLE

The committee is aware of the importance of the homeland defense mission and the requirement to provide air defense of the

United States at all times irrespective of potential conflicts in other parts of the world. It is understood that the preponderance of aircraft assigned to the homeland air defense mission are from the United States Air Force. The committee is concerned that the capacity of the Air Force air assets capable of homeland defense is becoming more and more limited, given operational deployments to the U.S. Central Command, U.S. European Command, and U.S. Indo-Pacific Command areas of responsibility. The committee also recognizes that there are Navy and Marine Corps aviation units that could potentially be assigned to the homeland defense mission.

Therefore, the committee directs the Secretary of Defense, in consultation with the Commander, U.S. Northern Command, to provide a report to the congressional defense committees no later than October 1, 2020, that analyzes the current and potential further utilization of Navy and Marine Corps air units to augment the Air Force units used to provide homeland air defense.

USMC Aviator Body Armor Vest

The committee is aware that the current aviation life support equipment (ALSE) flight vests worn by Marine Corps MV-22 and CH-53 aircrews have excessive bulk that can impede the operational performance of precision mission tasks. The committee notes further that the Marine Corps has a requirement to replace the ALSE flight vests currently worn by MV-22 and CH-53 aircrews with an aviator body armor vest (ABAV) system that improves mobility and performance while enhancing survivability. The committee encourages the Marine Corps to compete both commercial off-the-shelf and government-owned designs of ABAV systems in order to identify a system that fully meets the Marine Corps requirement to enable and protect MV-22 and CH-53 aircrews while minimizing development costs and delays to procurement.

Variable depth sonar systems

The committee believes that the Navy should increase its capabilities in most mission areas, particularly in the area of anti-submarine warfare (ASW). Given ongoing efforts by potential adversaries to increase the capability, lethality, and size of their respective submarine fleets, the committee believes that expanding ASW capability on DDG-51 destroyers would allow these ships to be more effective in conducting ASW missions.

The Navy has been developing a variable depth sonar (VDS) system (AN/SQS-62) that will be deployed as part of ASW mission packages aboard Littoral Combat Ships. The committee believes that adding VDS systems to DDG-51 destroyers could increase the ASW capability of these ships, particularly considering that the DDG-51s are the largest component of the Navy's surface fleet and are central to fleet operations in peacetime and during hostilities.

Therefore, the committee directs the Secretary of the Navy to provide a report to the congressional defense committees no later than December 1, 2020, on the potential benefits of equipping DDG-51s with VDS systems. The report shall include: (1) An assessment of current DDG-51 ASW performance, compared to the potential ASW performance of DDG-51 destroyers outfitted with

VDS systems; (2) An assessment of current carrier strike group (CSG) ASW performance, compared to the potential CSG ASW performance if DDG-51 destroyers assigned to the CSG were outfitted with VDS systems; and (3) An estimate of the costs and manpower implications of outfitting DDG-51 destroyers with VDS systems.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Subtitle A—Authorization of Appropriations

Authorization of appropriations (sec. 201)

The committee recommends a provision that would authorize the appropriations for research, development, test, and evaluation activities at the levels identified in section 4201 of division D of this Act.

Subtitle B—Program Requirements, Restrictions, and Limitations

Designation and activities of senior officials for critical technology areas supportive of the National Defense Strategy (sec. 211)

The committee recommends a provision that would require the Under Secretary of Defense for Research and Engineering (USD(R&E)) to designate a group of senior Department of Defense officials who would be responsible for coordinating research and engineering in technology areas deemed critical to the National Defense Strategy (NDS). Each of the designated senior officials would be responsible for a particular technology area and would continuously and iteratively build the pathways necessary to develop new technologies vital to the modernization priorities of the NDS. The officials' responsibilities would encompass technical, logistical, and financial dimensions and would include coordination with international, interagency, and private sector organizations. The provision would also require the designated senior officials to coordinate with the appropriate intelligence agencies to develop direct comparisons between the capabilities of the United States and the adversaries of the United States.

The provision would also require that the USD(R&E) provide an annual report to the congressional defense committees regarding successful advances in research and engineering and technology transition and adoption following the implementation of the provision.

The committee notes the USD(R&E) has currently assigned a group of senior officials that serve as Assistant Directors (ADs) or Technical Directors (TDs) for the NDS modernization priorities. The committee believes that these ADs and TDs play a valuable role in building roadmaps to develop critical technologies while simultaneously coordinating efforts across the military services and the Department of Defense. The committee further notes that the recruitment of ADs and TDs with deep knowledge of and expertise in their designated technology areas is key to ensuring the effective

development and coordination of these technologies' development across the Department of Defense. The committee is encouraged by the impressive backgrounds of the current ADs and TDs and believes that these positions should be further formalized to institutionalize their roles and responsibilities. The committee believes that all DOD S&T organizations should coordinate appropriate S&T activities with these senior officials.

The committee directs the Under Secretary of Defense for Research and Engineering to provide each fiscal year, not later than 30 days after the date on which the budget justification materials are submitted to Congress in support of the Department of Defense budget, until December 1, 2025, to the congressional defense committees a briefing on the technology roadmaps and the findings of the most recent review conducted of the relevant research and engineering budgets, including a list of projects and activities with unwarranted or inefficient duplication.

Governance of fifth-generation wireless networking in the Department of Defense (sec. 212)

The committee recommends a provision that would establish a cross-functional team (CFT) for fifth-generation wireless networking and designate the Chief Information Officer (CIO) of the Department of Defense, in carrying out the responsibilities established in section 142 of title 10, United States Code, to lead the CFT and serve as the senior designated official for fifth-generation wireless networking policy, oversight, guidance, and coordination in the Department.

The committee commends the Department of Defense, in particular the Under Secretary of Defense for Research and Engineering (USD(R&E)), for its efforts over the last 2 years to develop a plan to determine how fifth-generation (5G) wireless networking can be used in military applications, how to gain network superiority, and how to protect 5G networks from adversaries seeking to compromise it. The committee is pleased with the USD(R&E)'s and the broader Department's rapid action in developing an experimentation plan to accelerate development of fundamental 5G dual-use technologies. The committee is also pleased with the Department's robust engagement with industry, through the National Spectrum Consortium, for these testing and experimentation projects.

While the committee is impressed with the progress USD(R&E) has made regarding 5G experimentation and believes that USD(R&E) needs to continue to play a key role in 5G research and development, the committee realizes that a broader enterprise-wide approach is needed for the Department to fully leverage and operationalize the technology effectively across the Department. As the Department continues to execute this experimentation plan, the committee believes that a broader, lasting governance structure is required to advance the development and adoption of next generation wireless communication policies, technologies, capabilities, and applications in a coordinated manner across the entire Department. The committee also believes that the adoption of these next generation wireless capabilities will be transformational for the Department.

The committee encourages the Secretary of Defense to identify and allocate the appropriate personnel necessary to support the 5G CFT and the additional responsibilities of the CIO for 5G policy, oversight, guidance, and coordination within the Department to ensure that this critical emerging technology becomes a competitive advantage to the warfighter. The committee is aware of the CFT model that the Department has employed to govern its cyber programs and policy—the establishment of a permanent team in the office of the Principal Cyber Advisor to support the rotating cyber CFT—and encourages the Secretary of Defense to use a similar construct in resourcing this implementation. The committee also expects that, as the leader of the CFT, the CIO will regularly report to and receive direction from the Secretary of Defense and Deputy Secretary of Defense.

Application of artificial intelligence to the defense reform pillar of the National Defense Strategy (sec. 213)

The committee recommends a provision that would require the Secretary of Defense to establish a set of no fewer than five use cases of artificial intelligence capabilities that support reform efforts consistent with the National Defense Strategy. The provision would also require the Under Secretary of Defense for Research and Engineering to pilot a technology development and prototyping activity that leverages commercially available artificial intelligence technologies and systems in the context of these use cases.

The committee notes that the pilot technology development and prototyping activity should inform, and be broadly applicable to, an artificial intelligence (AI) engineering approach that enables the Department to share data, algorithms, and models to accelerate AI adoption. The committee also notes that these efforts should be undertaken in coordination with other appropriate stakeholders, including the Joint Artificial Intelligence Center, elements of the Office of the Secretary of Defense, and the military departments, to ensure that infrastructure, acquisition, and other enabling activities are in place, that high priority activities are selected for execution, and that effective capabilities are transitioned into operational use.

The committee notes the compelling business case for near-term application of AI at scale within the Department of Defense (DOD) to enhance the effectiveness and efficiency of DOD “back office” business processes and business systems. Already in wide and effective use in the commercial sector, as well as in some DOD business functions, such applications can have fewer technological hurdles for their transition into use and provide significant opportunity to drive reforms and savings by optimizing the business functions of the DOD. The committee also believes that a comprehensive DOD AI engineering approach would advance the analysis and use of data across the Department in other application areas.

The committee notes that relatively simple applications of existing AI systems would greatly improve the way in which the Department analyzes and uses data to support management of enterprise acquisition, personnel, audit, and financial management functions.

Extension of authorities to enhance innovation at Department of Defense laboratories (sec. 214)

The committee recommends a provision that would extend a pilot program for the enhancement of the research, development, test and evaluation centers of the Department of Defense, established under section 233 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–9 328; 10 U.S.C. 2358 note), through September 30, 2025. The provision would also extend a pilot program to improve incentives for technology transfer from Department of Defense laboratories, established under section 233 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91; 10 U.S.C. 2514 note), through September 30, 2025.

The committee commends the military services that have been able to implement these pilot programs and encourages all the military services to look for opportunities to fully use these authorities. The committee notes that the Navy has indicated that it has aggressively implemented 18 management initiatives at technical warfare centers and labs under section 233 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) that have achieved greater efficiencies and effectiveness by decreasing processing days for administrative procedures by nearly 500,000 days over 18 months.

Updates to Defense Quantum Information Science and Technology Research and Development program (sec. 215)

The committee recommends a provision that would amend the Defense Quantum Information Science and Technology Research and Development Program, established in section 234 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232), by directing each of the Secretaries of the military departments to develop more robust programs for quantum computing capabilities.

The provision would require the Secretaries to develop and annually update a list of problems for which quantum computers are uniquely suited or could better resolve technical and research challenges. The provision would also support efforts by private sector, government, industry, and academic researchers by connecting small and medium-sized businesses with existing quantum computing capabilities with researchers who can make use of existing commercial quantum computers.

The committee notes the importance of harnessing quantum computing technologies to effectively compete in the rapidly-changing global security climate outlined in the National Defense Strategy.

Program of part-time and term employment at Department of Defense science and technology reinvention laboratories of faculty and students from institutions of higher education (sec. 216)

The committee recommends a provision that would implement a recommendation of the National Security Commission on Artificial Intelligence (AI) and authorize a pilot program to permit university students and faculty to take on part-time and term employment at

Department of Defense (DOD) laboratories to work on critical technologies and research activities.

The Commission noted that, when private sector companies hire university faculty as summer or part-time researchers, they “benefit from access to a diverse group of experts that understands and often creates the world’s most cutting-edge AI. In turn the companies provide resources, exposure to new techniques, and financial compensation to the professors, sometimes including funding for their university-based lab. When the professors return to teaching, they also expose promising students to the companies’ work, creating student awareness and excitement about the available opportunities, a positive perception of the companies, and relationships that encourage student employment upon graduation.” The Commission recommended that DOD replicate this proven technique and hire university faculty with relevant science, technology, engineering, and mathematics expertise to serve as part-time researchers in laboratories. The Commission also noted that faculty members could work during sabbaticals, summer breaks, or limited hours throughout the year.

Improvements to Technology and National Security Fellowship of Department of Defense (sec. 217)

The committee recommends a provision that would amend section 235 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) to increase the pay range for participants in the Department of Defense Technology and National Security Fellowship, executed by the Under Secretary of Defense for Research and Engineering. The committee notes that this fellowship is intended to bring more technology expertise to the Department of Defense and the Congress, with a focus on the intersection between technology and national security policy challenges. The provision would also add new background check requirements for fellows as a prerequisite for participation in the program.

Department of Defense research, development, and deployment of technology to support water sustainment (sec. 218)

The committee recommends a provision that would require the Secretary of Defense to research, develop, and deploy advanced technologies that support water sustainment with technologies that capture ambient humidity and harvest, recycle, and reuse water.

Development and testing of hypersonic capabilities (sec. 219)

The committee recommends a provision that would encourage the development of hypersonics capabilities as a key element of the National Defense Strategy. These weapons represent an area of intense technological competition between the United States, People’s Republic of China, and Russian Federation. The committee is concerned that there is a lack of focus on air-launched and air-breathing hypersonic capability inside the Department of Defense and remains concerned that more attention needs to be focused on the expeditious development and maturation of key hypersonic flight technologies. In addition to the need to improve ground-based test

facilities such as wind tunnels, the Department of Defense (DOD) also needs to increase its flight test rate to expedite the maturation and fielding of hypersonic technologies. The combination of ground-based testing and flight testing is critical to fully maturing the fundamental technologies needed to field a hypersonic flight system. High-rate hypersonic flight test programs would help mature six critical technology areas: (1) Thermal protection systems and high temperature flight structures; (2) Seekers and sensors for hypersonic vehicles; (3) Advanced navigation, guidance, and control; (4) Communications and data links; (5) High speed aerodynamic characterization; and (6) Advanced avionics and vehicle communication systems for hypersonic vehicles.

Therefore, the provision would require the Under Secretary of Defense for Research and Engineering, in consultation with the Chief of Staff of the Air Force, to provide an executable strategy and report to the congressional defense committees, no later than December 30, 2020, on the plan to field air-launched and air-breathing hypersonic weapon capabilities within 3 years. The strategy would include required investment in testing and infrastructure to address the need for both flight and ground testing.

Disclosure requirements for recipients of Department of Defense research and development grants (sec. 220)

The committee recommends a provision that would amend chapter 139 of title 10, United States Code, by adding a new section on disclosure requirements for recipients of Department of Defense research and development grants with an effective date of October 1, 2021.

Subtitle C—Plans, Reports, and Other Matters

Assessment on United States national security emerging biotechnology efforts and capabilities and comparison with adversaries (sec. 231)

The committee recommends a provision that would require the Secretary of Defense, through the Under Secretary of Defense for Research and Engineering and the Under Secretary of Defense for Intelligence and Security, to conduct an assessment of U.S. efforts to develop biotechnologies and biotechnology capabilities as compared to our adversaries' efforts and capabilities. The provision would also require the Secretary of Defense, through the Under Secretary of Defense for Intelligence and Security, to assess the ability of the intelligence community to meet the intelligence analysis needs of the Department of Defense with respect to emerging biotechnologies. The Secretary of Defense would be required to submit to the congressional defense committees a report on the assessments not later than February 1, 2021.

The committee notes the importance of biotechnology to the evolving global security landscape as outlined in the National Defense Strategy. Therefore, the committee expects an assessment of the efforts to develop emerging biotechnology capabilities for the national security purposes of the Department, other federal government agencies, academia, and industry. Additionally, the assessment should include an evaluation of resourcing efforts, to include

items such as funding, workforce capabilities and recruitment capabilities, facilities, test infrastructure, and the ability of the industrial base to support and operationalize successful research efforts. The assessment should also include a description of timelines for operational deployment of emerging biotechnologies for national security purposes.

The assessments should also analyze the overall progress made in the field of biotechnology by the United States and our adversaries, including the viability, deployment, and timelines for operational deployment of new technologies and broader efforts to ensure our competitive capabilities in the global arena. As a nascent and dynamic emerging field of global competition, the committee is concerned about the ability of the intelligence community to provide in-depth and adequate analysis to support U.S. research and development activities in the emerging biotechnology area beyond traditional biological weapons. As such, the assessment should include an analysis of the adequacy of current defense academic and industrial intelligence and security apparatus (including the Defense Counterintelligence and Security Agency and service counterintelligence centers) to support Department of Defense investments in biotechnology. The assessment should also include review of the necessary supporting functions required for optimal intelligence community assessment of biotechnologies, including technology forecasting, bioinformatics tools, and technical solutions. Recommendations for improvement should include needed upgrades to intelligence analysis and workforce, a suggested optimal organizational construct for the intelligence community to support the Department's biotechnology enterprise, and potential organizational schemes for a more effective whole-of-community approach.

Independent comparative analysis of efforts by China and the United States to recruit and retain researchers in national security-related fields (sec. 232)

The committee recommends a provision that would require the National Academies of Science, Engineering, and Medicine to conduct a study comparing methods for recruiting and retaining technology researchers, including financial incentives and academic opportunities, currently used by the U.S. and Chinese governments. The study would focus on incentives employed by China to bring researchers in American academic and government laboratories into Chinese talent programs and how these incentives diverge from those offered by the United States.

The committee notes that China maintains programs such as China's Thousand Talents, initially formed to attract Chinese expatriates and other researchers to China and recently renamed the National High-end Foreign Experts Recruitment Plan, to provide funding to researchers in the United States, including tenured American professors and researchers at federally-funded laboratories. Through these talent programs, American researchers are encouraged to set up labs in China and conduct research in Chinese laboratories, granting China access to sensitive technologies developed in the United States.

The committee notes China's efforts to close technology gaps through intellectual property theft and the relevance of these ef-

forts to challenges outlined in the National Defense Strategy (NDS). The committee also notes both the importance of robust basic research in science and technology to NDS implementation as well as the prevalence of foreign students in science, technology, engineering, and mathematics education in the United States.

Department of Defense demonstration of virtualized radio access network and massive multiple input multiple output radio arrays for fifth generation wireless networking (sec. 233)

The committee recommends a provision that would require the Department of Defense (DOD) to demonstrate virtualized radio access network (RAN) and network core technologies and massive multiple input multiple output (MIMO) radio array technology for commercial use that is globally competitive in terms of cost and performance. The provision would require that this technology demonstration be conducted at one or more of the sites where the DOD is deploying fifth generation (5G) network instances.

The committee notes that leading global providers of 5G wireless networking RAN equipment and RAN radio arrays are foreign companies in Europe, South Korea, and China. These providers offer vertically integrated, specialized, and proprietary products that are highly coupled, which make it difficult for customers to mix components from multiple companies and results in high costs. The committee is aware that, as in many other information technology sectors, wireless networking technologies are being developed that replace dedicated hardware through software virtualization on commodity computing systems. In addition, there is an emerging set of open standards for the interfaces among wireless networking components and functions that complements this virtualization technology.

The committee believes that these developments will offer opportunities for new entrants, including existing and new U.S. companies, to enter the wireless networking industry and compete effectively on cost and performance in the global 5G competition with China. The committee believes that it is important for the Department of Defense to demonstrate the maturity, cost, and performance of virtualized RAN technology, in coordination with the U.S. telecommunications industry, to ensure that this technology is a viable contender for commercial 5G network deployments.

The committee notes that MIMO radio arrays, currently based on specialized Gallium Nitride radio-frequency electronics, will also be critical in developing a competitive wireless networking solution, particularly in terms of cost, weight, power, and performance. The committee believes that competing effectively in 5G wireless networking technology will require U.S. companies to bring forth significant innovation in massive MIMO radio array technology.

Independent technical review of Federal Communications Commission Order 20-48 (sec. 234)

The committee recommends a provision that would require the Secretary of Defense to enter into an agreement with the National Academies of Science, Engineering, and Medicine to conduct an independent technical review of the Order and Authorization

adopted by the Federal Communications Commission (FCC) on April 19, 2020 (FCC 20–48). The independent technical review would include a comparison of the two different approaches used for evaluation of potential harmful interference. The provision also would require the National Academies of Science, Engineering, and Medicine to submit a report on the independent technical review.

The committee is aware that extensive testing performed by 9 federal agencies concluded that the Ligado proposal will cause interference for both civilian and military Global Positioning System (GPS) users. The committee notes that the Department of Defense, Department of Justice, National Aeronautics and Space Administration, Department of Transportation, Department of Commerce, Department of Homeland Security, Department of Energy, and Federal Aviation Administration all strongly oppose this proposal. The committee is also concerned that the mitigation conditions imposed on Ligado in the FCC Order are not practical and do not adequately protect GPS.

The committee is aware that one of the main justifications in the FCC Order for approving Ligado’s proposal involves the methods used for determining harmful interference. The committee believes that further technical evaluation of the methods is warranted and therefore recommends this independent study to review the two approaches (the Ligado-proposed and FCC-approved criteria of harmful interference to determine how select receivers are impacted versus the Department of Transportation study method of determining an allowable level of noise adjacent to the relevant spectrum) to determine which one most effectively mitigates risk and to recommend a way forward, including the possibility of incorporating additional testing.

Report on and limitation on expenditure of funds for micro nuclear reactor programs (sec. 235)

The committee recommends a provision that would require the Secretary of Defense to submit to the appropriate congressional committees a report on the Department’s micro nuclear reactor programs. The report would be required to cover operational, safety, programmatic, diplomatic, regulatory, and legal issues, in coordination with officials within the Department of Defense, Department of Energy, Department of State, and Nuclear Regulatory Commission. The provision would prohibit obligation or expenditure of funds beyond 20 percent of those authorized to be appropriated for such programs in fiscal year 2021 by this Act until submission of the report.

The committee supports the Department’s efforts to explore alternative operational energy sources and also supports innovation in reactor technology but does not believe that the Department has considered the unique complexities associated with nuclear energy in designing these programs. The committee is also concerned about implications for policy and programs outside the Department of Defense, including availability of unobligated enriched uranium.

Modification to Test Resource Management Center strategic plan reporting cycle and contents (sec. 236)

The committee recommends a provision that would modify the Test Resource Management Center strategic plan reporting cycle and period to be covered. It is currently a 30-year strategic plan, re-baselined every 2 years. This provision would make the strategic plan cover a 15-year period, to be re-baselined at least every 4 fiscal years, with an annual update as needed. The new strategic plan would be due not later than 1 year after the release of the Secretary of Defense's National Defense Strategy (NDS).

The committee notes that the current strategic plan required by section 196 of title 10, United States Code, is not as useful to the Congress or the Department of Defense as it could be, due to the nature and frequency of the updates. The committee believes that a more helpful strategic plan would be on a 4-year cycle, with yearly updates to relay any changes, analysis, or high visibility items determined worthy of reporting by the Director of the Test Resource Management Center.

Limitation on contract awards for certain unmanned vessels (sec. 237)

The committee recommends a provision that would require the submission of a certification by the Under Secretary of Defense for Research and Engineering to the congressional defense committees prior to the Department of Defense's contracting for certain vessels.

The committee is concerned that an excessive number of unmanned surface and undersea vessels (USVs and UUVs) are being acquired prematurely using Research, Development, Test, and Evaluation funds and that these vessels may include subsystems that lack sufficient technical reliability and technological maturity to allow the vessels to meet threshold requirements.

The committee seeks to avoid contracting for USVs and UUVs when the technical reliability and technological maturity of subsystems critical to propulsion and electrical distribution or the military purposes of the vessels are either unknown or known to be insufficient. For example, the committee notes the Navy requirement for Medium and Large USVs (MUSV and LUSV) to operate continuously at sea for at least 30 days without preventative maintenance, corrective maintenance, or emergent repairs. The committee is unaware of any unmanned vessel of the size or complexity envisioned for MUSV or LUSV that has demonstrated at least 30 days of such operation.

The committee understands that the Strategic Capabilities Office (SCO) prototype vessels intended to provide risk reduction for the Navy's LUSV program have demonstrated a maximum of 2 to 3 days of continuous operation. The committee also understands that the SCO vessels are approximately 25 percent the size by tonnage of a Navy LUSV. As a result, the committee is concerned that the applicability of lessons learned and risk reduction from the SCO vessels to the Navy MUSV and LUSV programs will be limited.

The committee views prior and successful land-based prototyping of individual critical subsystems as essential to providing a solid technical foundation for USV and UUV programs. Rather than delaying these programs, the committee believes that a deliberate en-

gineering-based subsystem prototyping approach will enable the delivery of capable, reliable, and sustainable USVs and UUVs that meet the needs of fleet commanders faster than the plan contained in the budget request, which assumes that several unproven or non-existent subsystems will rapidly materialize to meet the Navy's requirements for these vessels.

Documentation relating to Advanced Battle Management System (sec. 238)

The committee recommends a provision that would require the Secretary of the Air Force to submit specific documentation germane to the Advanced Battle Management System immediately upon enactment of this Act.

Armed Services Vocational Aptitude Battery Test special purpose adjunct to address computational thinking (sec. 239)

The committee recommends a provision that would require the Secretary of Defense, within 1 year of enactment of this Act, to establish a special purpose test adjunct to the Armed Services Vocational Aptitude Battery test to address computational thinking skills relevant to military applications.

Budget Items

Army

Artificial Intelligence Human Performance Optimization

The budget request included 303.3 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 61102A for Defense Research Sciences.

The committee notes the importance of improving special operations forces' individual performance optimization, resilience, and readiness, including recent emphasis on natural movement, full-range body motion, and gravity-aided non-traditional suspension training exercises. The committee is also aware that an opportunity may exist to fuse these new health and human performance approaches with advancements in artificial intelligence. The committee therefore encourages development of the Human Development Ecosystem to improve the health and well-being of individual military operators. The committee understands that this effort will further investigate application of AI to the physiological, cognitive, and emotional needs of the warfighter.

Therefore, the committee recommends an increase of \$2.0 million, in RDT&E, Army, for PE 61102A for AI Human Performance Optimization.

Increase in basic research, Army

The budget request included \$303.3 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 61102A Defense Research Sciences.

The committee recognizes the increasingly complex security environment detailed in the National Defense Strategy and born from rapid technological change, challenges from adversaries in every

operating domain, and decreased readiness derivative of the longest continuous stretch of armed conflict in U.S. history. Accordingly, it is crucial to adequately fund, resource, and structure the Department of Defense to conduct RDT&E activities for critical emerging technologies to stay ahead of our adversaries, most notably Russia and China. Resources must be devoted and responsibly spent toward research and development of artificial intelligence, quantum computing, hypersonics, directed energy, biotechnology, autonomy, cyber, space, 5G, microelectronics, and fully networked command, control, and communications technologies. As such, the committee encourages rapid development, prototyping, testing, and acquisition of these emerging technologies in order to remain ahead of our adversaries.

Therefore, the committee recommends an increase of \$10.0 million in RDT&E, Army, for PE 61102A Defense Research Sciences to support additional basic research.

Pandemic Vaccine Response

The budget request included \$11.8 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62115A Biomedical Technology.

Given the recent COVID-19 global pandemic, the committee notes the importance of protecting warfighter populations in the event of a global pandemic and supports expanding rapid response vaccine capabilities and capacity to preserve force readiness during an outbreak. The committee commends the Department of Defense for its prior efforts to pursue novel rapid production capabilities and encourages the Department to pursue late-stage multi-modal platform technologies capable of responding to pandemics such as influenza and COVID-19.

Therefore, the committee recommends an increase of \$4.0 million, in RDT&E, Army, for PE 62115A for pandemic vaccine response research.

Hybrid additive manufacturing

The budget request included \$42.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62141A Lethality Technology.

The committee notes that additive manufacturing can enable rapid prototyping and manufacturing of missile and smart bomb electronics, energetics, structural components, and warheads. The committee supports the development of the next generation of integrated hybrid additive manufacturing processes and equipment necessary to prototype missile, rocket, and munition materials, electronics, subsystems, and fully integrated components to demonstrate advanced designs and capabilities. These processes could enable the capability to combine materials on demand and at faster production rates and has the advantage of delivering a range of products without the need to retool manufacturing equipment.

Therefore, the committee recommends an increase of \$3.0 million in RDT&E, Army, for PE 62141A for hybrid additive manufacturing.

Pathfinder Air Assault

The budget request included \$30.8 million for Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62142A Army Applied Research.

The committee notes the importance of coupling soldier insights with basic research initiatives to expedite the delivery of new technologies to the field. The committee further notes that Army Futures Command (AFC) is leading the Army Modernization Program and that the AFC University Technology Development Directorate (UTDD) has improved the delivery of university-based applied research outcomes to the force through the incorporation of soldier insights. The committee encourages the expansion of these efforts to improve air assault operations and precision fires and the continued co-designing of technology solutions with soldiers, ensuring outcomes that will fulfill their needs.

Therefore, the committee recommends an increase of \$3.0 million, in RDT&E, Army, for PE 62142A for Pathfinder Air Assault.

Harnessing Emerging Research Opportunities to Empower Soldiers Program

The budget request included \$125.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62143A Soldier Lethality Technology.

The committee is aware of the work being done by the Combat Capabilities Development Command's Soldier Center in improving the protection, survivability, mobility, and combat effectiveness of soldiers. Among these efforts is continued research in areas of advanced ballistic polymers for body armor, fibers to make uniforms more fire-resistant, lightweight structures for advanced shelters—all examples of tangible benefits to the soldier.

The committee recommends an increase of \$2.5 million in RDT&E, Army, for PE 62143A for the Harnessing Emerging Research Opportunities to Empower Soldiers program.

Metal-based display technologies

The budget request included \$125.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62143A Soldier Lethality Technology.

The committee notes the value of high efficiency and ruggedized computer display technology, which reduces the weight burden of extra batteries and displays and improves the warfighter's mobility and soldier lethality.

Therefore, the committee recommends an increase of \$3.0 million in RDT&E, Army, for PE 62143A for lightweight, metal-based display technologies.

Pathfinder Airborne

The budget request included \$125.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62143A Soldier Lethality Technology.

The committee notes the importance of enhancing Airborne Joint Forcible Entry operations in contested areas and fostering innovation to enable improved airborne responses to crisis contingencies around the world. The Pathfinder Airborne program pursues ap-

plied research projects to enable critical Army-specific airborne missions in technologies that include: advanced materials for soldier protection, communication, and sensing; next-generation additive manufacturing methods and materials; secure communications, smart wireless systems, and 5G wireless networks; visualization, simulation, and analytics for enhanced decision-making; quantum computing, sensing, and communications; and enhanced soldier performance.

Therefore, the committee recommends an increase of \$5.0 million, in RDT&E, Army, for PE 62143A for the Pathfinder Airborne program.

Ground technology advanced manufacturing, materials, and process technologies

The budget request included \$28.0 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62144A Ground Technology.

The committee notes that the Advanced Manufacturing, Materials, and Processes (AMMP) program located within the Center for Agile Materials Manufacturing Science at the Army Research Laboratory provides important tools and materials and process technologies to the rest of the Army and accelerates the ability of the Army to enhance its industrial base capabilities to meet the Army's six modernization priorities. The committee further notes that these innovations can reduce lifecycle costs and enhance capabilities for the warfighter.

Therefore, the committee recommends an increase of \$2.0 million, in RDT&E, Army, for PE 62144A for ground technology advanced manufacturing, materials, and process initiatives.

Ground Combat Vehicle Platform Electrification

The budget request included \$217.6 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62145A Next Generation Combat Vehicle (NGCV) Technology.

The committee recognizes that improving vehicle electrification technologies is essential for overmatch on the future battlefield and supports the Army Futures Command, specifically the NGCV Cross-Functional Team, as it executes experiments and builds prototypes.

Therefore, the committee recommends an increase of \$2.0 million in RDT&E, Army, for PE 62145A for ground combat vehicle platform electrification.

Immersive virtual modeling and simulation techniques

The budget request included \$217.6 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62145A Next Generation Combat Vehicle Technology.

The committee recognizes the importance of immersive and virtual simulation modeling and simulation enterprise support for the development of autonomous vehicle technologies.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Army, for PE 62145A for immersive virtual modeling and simulation techniques.

Next Generation Combat Vehicle modeling and simulation

The budget request included \$219.6 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62145A Next Generation Combat Vehicle Technology.

The committee notes that the Next Generation Combat Vehicle (NGCV) cross-functional team places a high emphasis on modeling and simulation for analyzing and evaluating vehicle platforms and technologies. The committee notes that there is a need to quickly perform complex trade studies on requirements, sub-system optimizations, and portfolio investments to provide program options in a timely fashion to decision-makers, including through the use of advanced software, modeling, and software-in-the-loop techniques.

The committee recommends an additional \$3.0 million in RDT&E, Army, for PE 62145A for NGCV modeling and simulation activities.

Backpackable communications intelligence system

The budget request included \$114.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62146A Network C3I Technology.

The committee notes the importance of conducting missions against non-state actors and near-peer competitors in highly contested domains. The National Defense Strategy highlights the need for maintaining capability to address non-state threats, along with increased resources for a potential high-end conflict against near-peer state actors. These state actors employ high frequency communications as either backup or primary modes for command and control. The committee notes that backpackable communications intelligence systems are small, covertly operable systems capable of countering some threat communications capabilities in highly contested environments, including locating sources of adversary wireless communications signals.

The committee recommends an increase of \$5.0 million, in RDT&E, Army, for PE 62146A for backpackable communications intelligence systems.

Defense resiliency platform against extreme cold weather

The budget request included \$114.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62146A Network C3I Technology.

The committee notes the impact of extreme cold weather on military infrastructure and the challenges that it poses for U.S. military operations. The committee notes the value of research in developing advanced capabilities for extreme cold regions in increasing the Army's ability to map remote extreme cold regions, ensuring the superiority of the U.S. Army in extreme cold regions, and reducing the deterioration of infrastructure due to freeze-thaw cycles. The committee further notes that research in developing capabilities for extreme cold regions should incorporate risk assessment, ground-based measurements, bio-inspired innovative sensors, geospatial mapping, and intelligent prediction capabilities.

Therefore, the committee recommends an increase of \$3.0 million, in RDT&E, Army, for PE 62146A for a defense resiliency platform against extreme cold weather.

Multi-drone multi-sensor intelligence, surveillance, and reconnaissance capability

The budget request included \$114.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62146A Network C3I Technology.

The committee recommends an increase of \$2.0 million in RDT&E, Army, for PE 62146A for multi-drone/multi-sensor intelligence, surveillance, and reconnaissance capabilities.

Quantum computing based materials optimization

The budget request included \$114.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62146A Network C3I Technology.

The committee notes the importance of the construction and demonstration of quantum computing technologies for the design and development of novel advanced materials. The committee further notes that quantum computing-based approaches for the rapid design of next generation materials may result in long-term accelerated development of military systems and may improve the rate of production of key defense technologies.

Therefore, the committee recommends an increase of \$2.0 million, in RDT&E, Army, for PE 62146A for quantum computing-based materials optimization.

Composite artillery tube and propulsion prototyping

The budget request included \$60.6 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62147A Long Range Precision Fires Technology.

The committee recognizes the need for extended range, greater mobility, and improved maneuverability for conventional tube artillery. Composite tube technology will allow the use of powerful propellants that will achieve the desired Extended Range Cannon Artillery ranges while reducing weight and length of tube, enabling greater combat maneuverability. The committee notes that this will increase effectiveness and survivability on the multi-domain battlefield. The committee believes that research into this technology could enable shorter, lighter tubes that can use stronger propulsion to achieve required range, allow greater mobility, which could enable circumvention of enemy counter fire, and increase weapon system lethality.

Therefore, the committee recommends an increase of \$7.0 million in RDT&E, Army, for PE 62147A for research and development of composite tubes and propulsion prototyping.

Counter Unmanned Aerial System threat research and development

The budget request included \$56.3 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62150A Air and Missile Defense Technology.

The committee supports the Army's investment in advanced technologies to mitigate threats from Unmanned Aircraft Systems (UAS), especially as these threats emerge and mature rapidly. The committee believes that it is important to leverage existing and proven counter-UAS technologies and to investigate ways to ex-

pand these technologies with automation and machine learning algorithms to discretely identify, detect, and classify emerging threat UAS systems. The committee notes that these technologies will enable soldiers to rapidly compress kill chain decision-making processes while increasing force protection for ground and airborne autonomous vehicles, which will expand soldiers' situational awareness within the battle space. The committee believes that it is important for the Army Research Lab to collaborate with academia and private industry to develop commercially available counter-UAS technology for force protection and other needs. The committee also encourages the Army Research Lab to help inform Army requirements and advise on technologies to fulfill Army Futures Command objectives.

Therefore, the committee recommends an increase of \$5.0 million in PE 62150A Air and Missile Defense Technology for counter-UAS threat research.

Counter unmanned aircraft systems research

The budget request included \$56.3 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62150A Air and Missile Defense Technology.

The committee recognizes that the threat of unmanned aerial systems (UASs) to U.S. forces, activities, and infrastructure reflects a variety of UAS sizes and sophistications and is rapidly evolving and proliferating. Developing ever-evolving counter-UAS solutions requires nimble, collaborative research.

Accordingly, the committee recommends an increase of \$5.0 million in RDT&E, Army, for PE 62150A for a counter-UAS research activity.

Coronavirus nanovaccine research

The budget request included \$95.5 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 62787A Medical Technology.

The committee notes that the United States Army Medical Research and Development Command is a key part of the whole-of-government response to COVID-19. The National Institute of Allergies and Infectious Diseases has identified nanovaccine research as potentially preventing pandemic diseases with vaccines that are more effective, are more durable, and can be produced more quickly.

Therefore, the committee recommends an increase of \$2.0 million in RDT&E, Army, for PE 62787A to continue Department of Defense efforts in developing nanovaccine capabilities for COVID-19 and directs the Army to integrate the nanovaccine research with other coronavirus research efforts to the maximum extent practicable.

3D Advanced Manufacturing

The budget request included \$109.6 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63118A for Soldier Lethality Advanced Technology.

The committee recommends an increase of \$2.0 million in RDT&E, Army, for PE 63118A for 3D Advanced Manufacturing.

Cybersecurity for industrial control systems and building automation

The budget request included \$14.8 million for Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63119A Ground Advanced Technology.

The committee understands the importance of creating research programs that would enhance partnerships in developing cybersecurity capabilities and strategic technical workforce development efforts in fields critical to national security. The committee believes that it is important to create opportunities to study the cybersecurity vulnerabilities of industrial and facility-related control systems, such as those used on military installations, and to expand the scope and cooperation of academia's current efforts with leading Federal laboratories in cybersecurity training and assessment and advanced control system technology implementation. The committee encourages the Army to leverage ongoing collaboration with Army research organizations to accomplish these efforts.

Therefore, the committee recommends an increase of \$3.0 million, in RDT&E, Army, for PE 63119A for cybersecurity for industrial control systems and building automation.

Graphene applications for military engineering

The budget request included \$14.8 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63119A Ground Advanced Technology.

The committee recognizes the importance of graphene and its use in many applications. These include materials that provide lighter logistics and stronger facilities protection, augment concealment and cover through multispectral augmentation, improve sensor and detection capabilities, and allow for better ground and air mobility. These types of materials applications align well with Army Futures Command's six modernization priorities.

Therefore, the committee recommends an increase of \$3.0 million in RDT&E, Army, for PE 63119A for graphene applications for military engineering.

High performance computing modernization

The budget request included \$188.0 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63461A Army High Performance Computing Modernization Program (HPMCP).

The committee notes that the HPMCP supports the advanced computing needs of Department of Defense acquisition, engineering, testing, and research organizations. The committee notes that the President's budget request routinely underfunds investment in this capability, such that annual Congressional increases are necessary for the HPMCP to continue normal operations. The committee also commends the HPMCP community for providing technical assistance to the scientific community during the COVID-19 crisis and supporting a variety of research activities, from modeling the movement of droplets travelling through an aircraft to conducting virtual screenings of vaccine alternatives.

Therefore, the committee recommends an increase of \$5.0 million, in RDT&E, Army, for PE 63461A for high performance computing modernization.

Carbon fiber and graphitic composites for Next Generation Combat Vehicle program

The budget request included \$199.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63462A Next Generation Combat Vehicle Advanced Technology.

The committee recognizes the versatility and broad application that carbon fiber technology provides for weight reduction and improving the survivability of the next generation of combat vehicles.

Therefore, the committee recommends an increase of \$10.0 million in RDT&E, Army, for PE 63462A for test and development of carbon fiber and graphitic foam applications in the Next Generation Combat Vehicle program.

Cyber and connected vehicle innovation research

The budget request included \$199.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63462A Next Generation Combat Vehicle Advanced Technology.

The committee recognizes the importance of identifying vehicle cyber vulnerabilities and adaptively securing manned and unmanned military vehicles. The committee further notes that, by leveraging partnerships in the commercial automotive, trucking, and defense industrial bases, the Army can bring together traditional and non-traditional suppliers to provide cost-effective cybersecurity solutions at manufacturing scale.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Army, for PE 63462A for cyber and connected vehicle research.

Small unit ground robotic capabilities

The budget request included \$27.7 million for Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63462A Next Generation Combat Vehicle Advanced Technology.

The committee notes that the Army's current dismounted infantry platoons have effective parity with those of potential adversaries. The committee is aware that our adversaries are increasingly sophisticated in the robotic arena, which in turn demands correspondingly capable responses to emerging threats. The committee also notes that there is no current organization or location that integrates dismounted infantry platoon-level robotic capabilities. These capabilities include: the Small Multipurpose Equipment Transport system and smaller unmanned ground vehicles; small unmanned aircraft systems; robotic air and small ground modular mission payloads; and technologies in autonomy, artificial intelligence, and communications. The committee believes that it is important that the Army extend air and ground robotic capabilities to smaller and lighter maneuver units, focusing initially on dismounted infantry platoons in order to provide them with substantial advantages over comparable potential adversary units.

Therefore, the committee recommends an increase of \$7.5 million, in RDT&E, Army, for PE 63462A for small unit ground robotic capabilities.

Virtual Experimentations Enhancement

The budget request included \$199.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63462A Next Generation Combat Vehicle Advanced Technology.

The committee recognizes the importance of automated virtual and physical prototyping to reduce the risk and cost of developing new technologies to support crew optimization, autonomy, and operations in degraded visual environments.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Army, for PE 63462A for Virtual Experimentations Enhancement.

Hyper velocity projectile extended range technologies

The budget request included \$121.1 million in Research, Development, Test, and Engineering (RDT&E), Army, for PE 63464A Long Range Precision Fires Advanced Technology.

The committee notes the importance of the development and testing of advanced guidance technology for the Hypervelocity Projectile—Extended Range (HVP—ER). The committee also notes that the HVP—ER requires a terminal sensor capability to meet Army's requirements to locate targets in Global Positioning System-degraded and -denied environments and that successful implementation of a terminal sensor in the HVP—ER would provide a necessary capability to achieve objective requirements for both the Extended Range Cannon Artillery Howitzer and the Cannon-Delivered Area Effects Munition programs.

Therefore, the committee recommends an increase of \$3.0 million, in RDT&E, Army, for PE 63464A for extended range hyper velocity projectile technologies.

Electromagnetic effects research to support long range precision fires and air and missile defense cross functional teams

The budget request included \$58.1 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63466A Air and Missile Defense Advanced Technology.

The committee notes the importance of: reducing the time required for development and testing associated with the Long Range Precision Fires (LRPF) and Air and Missile Defense (AMD) cross-functional teams, the ability to assess specific electromagnetic effects associated with radar and other electronic warfare programs, and expedited RDT&E activities in support of the LRPF and AMD cross-functional teams.

Accordingly, the committee recommends an increase of \$5.0 million in RDT&E, Army, for PE 63466A to establish electromagnetic effects research capabilities to directly support the LRPF and AMD cross-functional teams.

Development and fielding of high energy laser capabilities—Army

The budget request included \$58.1 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63466A Air and Missile Defense Advanced Technology.

The committee recommends an increase of \$10.5 million in RDT&E, Army, for PE 63466A for support for the high energy laser system characterization lab for the development and fielding of high energy laser capabilities.

Hypersonic hot air tunnel test environment

The budget request included \$11.1 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63305A Army Missile Defense Systems Integration.

The committee notes the importance of support facilities and propulsion methods that will demonstrate and test high speed and hypersonic technologies. The committee also notes that the Director of the Test Resource Management Center identified a need for increased capacity for and capability in ground testing of thermal protection systems to support hypersonic programs. The committee notes that a test environment that delivers high temperature testing available over a full hypersonic mission profile would support the aggressive set of hypersonics programs, prototypes, and deployment schedules envisioned in the National Defense Strategy and associated implementation plans.

Therefore, the committee recommends an increase of \$3.0 million in RDT&E, Army, for PE 63305A for hypersonic hot air tunnel test environment development.

Future Long Range Assault Aircraft (FLRAA)

The budget request included \$327.7 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 63801A Aviation—Advance Development.

The committee supports the development and procurement of the Future Long Range Assault Aircraft (FLRAA), which is a critical Army modernization priority. The committee understands that additional funding could enable the integration of key technologies onto the platform in order to mitigate program risk.

Accordingly, the committee recommends an increase of \$5.0 million in RDT&E, Army, for PE 63801A to support integration activities for the Future Long Range Assault Aircraft program.

Operational Fires program reduction, Army

The budget request included \$156.8 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 64115A Technology Maturation Initiatives.

The committee recognizes the importance of coordinating various service and agency hypersonics activities and is concerned with the lack of a transition pathway for the Defense Advanced Research Projects Agency's Operational Fires effort into a funded Army acquisition or development activity.

Therefore, the committee recommends a decrease of \$10.0 million in RDT&E, Army, for PE 64115A for an Operational Fires program reduction.

Hypersonic program reduction, Army

The budget request included \$801.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 64182A Hypersonics.

The committee recognizes the importance of hypersonic research and development, especially in light of the National Defense Strategy and the advancing threats that it describes. However, the committee is concerned that there has been a lack of adequate coordination on hypersonic prototyping efforts among the various stakeholders and service components.

Therefore, the committee recommends a decrease of \$5.0 million in RDT&E, Army, for PE 64182A.

Joint Counter Small Unmanned Aircraft Systems Office

The budget request included \$18.7 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 64741A Project FG5 Counter Unmanned Aerial Systems.

The committee is encouraged by the Department of Defense designation of the Army as Executive Agent for Counter small Unmanned Aircraft Systems (C-sUAS) in 2019, the rapid standup of the Joint C-sUAS Office in 2020, and the recommendation to downselect and prioritize resources toward the most promising systems. The Chief of Staff of the Army identified in his unfunded priorities list a requirement of \$17.5 million to: address gaps in currently fielded C-sUAS systems, increase capability against Group 3 unmanned aircraft systems threats, and expand interoperability.

Accordingly, the committee recommends an increase of \$17.5 million in RDT&E, Army, for PE 64741A Project FG5 for Counter Unmanned Aerial Systems.

Counter Unmanned Aerial Systems for Special Operations Forces

The budget request included \$18.7 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 64741A Project FG5 Counter Unmanned Aerial Systems.

The committee notes that deployed military personnel, especially special operations forces (SOF) deployed to austere locations, face an increasing threat from weaponized unmanned aerial systems (UASs). The committee believes that counter-UAS systems utilizing artificial intelligence, open-architecture systems, and the ability to integrate multiple sensors to detect, engage, and defeat threats could decrease the workload associated with existing counter-UAS solutions and more effectively protect small SOF teams and fixed locations. The committee understands that U.S. Special Operations Command (SOCOM), in partnership with the Defense Innovation Unit and the Defense Threat Reduction Agency, successfully demonstrated such capabilities in both a test environment and during an overseas operational assessment. The committee is encouraged by SOCOM's plans to conduct additional overseas operational assessments in fiscal year 2020 and notes that, elsewhere in this Act, the committee authorizes additional funds through the Joint Counter-Small UAS Office and for SOCOM to support continued advancement of these technologies.

Therefore, the committee recommends an increase of \$7.5 million in RDT&E, Army, for PE 64741A for counter-unmanned aircraft systems.

Counter small unmanned aircraft systems operational demonstrations

The budget request included \$18.7 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 64741A Project FG5 Counter Unmanned Aerial Systems.

The committee is encouraged by the Department of Defense's designation of the Army as Executive Agent for Counter small Unmanned Aircraft Systems (C-sUAS) in 2019, the rapid standup of the Joint C-sUAS Office in 2020, and the recommendation to downselect and prioritize resources toward the most promising systems. The committee expects the JCO to work closely with the United States Special Operations Command (SOCOM) on its developmental efforts to support expeditionary, mounted, and dismounted C-sUAS capabilities for deployed special operations forces. The committee understands that SOCOM is conducting operational demonstrations of C-sUAS capabilities in the United States and overseas and believes that these efforts are important for developing and acquiring capabilities to address emerging unmanned aircraft system threats and filling critical capability gaps identified by combatant commanders.

Accordingly, the committee recommends an increase of \$15.0 million in RDT&E, Army, for PE 64741A Project FG5 Counter Unmanned Aerial Systems.

Next Generation Squad Weapon

The budget request included \$265.8 million in RDT&E, Army, for PE 64802A for Weapons and Munitions Engineering Development, of which \$30.6 million was for Small Caliber Ammo for Next Gen Squad Weapons.

The committee understands that the Next Generation Squad Weapon (NGSW) is a top Army modernization priority urgently needed to increase the lethality of soldiers, marines, and special operators in close-combat formations. The NGSW program includes the NGSW rifle, the NGSW automatic rifle, the NGSW fire control optic, and a common 6.8 millimeter ammunition cartridge designed to address emerging threat capabilities and provide overmatch against threats at ranges beyond the current weapon systems.

Therefore, the committee recommends an increase of \$0.8 million, for a total of \$265.6 million, for PE 64802A for Weapons and Munitions in order to increase funding for NGSW small caliber ammunition to incorporate more soldiers, marines, and special operators in providing user assessment of the NGSW system.

The committee urges the Army to keep the committee fully apprised of progress relating to the fielding of the NGSW and how the Army will utilize user feedback and acceptance in determining key acquisition decisions in the program.

Bradley and Stryker Active Protection Systems

The budget request included no funding in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 64852A Project XU9 for the suite of Survivability Enhancements Systems.

The committee understands that additional funds would enable completion of Urgent Materiel Release (UMR) testing for the Bradley Iron Fist Light De-coupled (IFLD) and limited characterization

activities in support of Stryker and other ground combat platform active protection systems.

Accordingly, the committee recommends an increase of \$47.0 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 64852A in order to complete both the follow-on limited characterization effort (\$14.0 million) and the IFLD UMR Phase II testing (\$33.0 million).

Integrated Data Software Pilot Program

The budget request included \$142.7 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 65013A Information Technology Development.

The committee notes that new commercial software solutions can be used to improve the military services' supply, logistics, and spare parts management, increasing their combat readiness while reducing costs. The committee is aware of the challenges that the Army has faced in synchronizing information management and data to maintain a digital connection between the product data and parts information. The committee recommends that the Army make efforts to prioritize this integration and analysis activity and encourages its adoption throughout the Army's logistics enterprise to increase readiness and reduce costs.

Accordingly, the committee recommends an increase of \$5.0 million in RDT&E, Army, for PE 65013A for an integrated data software pilot program.

Army cyber situational understanding capability

The budget request included \$28.5 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 65041A Defensive Cyber Tool Development.

The committee understands that the Army intends for the Cyber Situational Understanding tool to provide tactical commanders with a better understanding of their and adversary forces' activity, maneuver, and exposure in the cyber, electromagnetic, and broader information domains. The Defense Advanced Research Projects Agency's PlanX capability, now transitioned to the Strategic Capabilities Office's Project IKE program and to United States Cyber Command, was initially developed to provide such a capability for tactical commanders. While PlanX has been adapted through further development to meet the specific needs of Cyber Command's planning and operational elements and is being used today by Army cyber protection teams, at least portions of the codebase remain well-suited for providing the tactical-level situational awareness that the Army seeks for its brigade- and division-level commanders. In fact, the committee understands that the PlanX capability is being used in such tactical applications outside of the cyber domain today. The PlanX codebase is also owned entirely by the government and would provide interoperability between the Cyber Mission Forces and Army maneuver units, making it an attractive baseline for further development projects. This line of reasoning is also applicable to similar Navy and Air Force initiatives to provide cyber situational awareness to tactical commanders.

The committee therefore directs the Secretary of the Army to assess: (1) The PlanX/Project IKE capability's ability to meet, with

further development, the Cyber Situational Understanding tool requirements; (2) The cost-efficiency of using the PlanX/Project IKE capability as the baseline for the Cyber Situational Awareness tool; (3) The training and interoperability benefits that result from acquisition and employment of situational understanding tools with a common baseline across the Cyber Mission Forces and tactical cyber units; and (4) Whether or not the Cyber Situational Understanding program should be reoriented to utilize and build off of the PlanX/Project IKE capability. The Secretary of the Army shall deliver a briefing to the Committees on Armed Services of the Senate and House of Representatives, detailing the findings of the assessment and a proposed path forward, no later than January 30, 2021.

Therefore, the committee recommends a decrease of \$12.0 million for PE 65041A for the Cyber Situational Understanding program to avoid duplication. The committee directs that the remaining funds for this initiative be used for tailoring the Joint Cyber Command and Control (JCC2) baseline to the Army's specific brigade combat team application. The committee urges the Departments of the Navy and Air Force to undertake similar efforts to adapt the JCC2 solution to tactical-level echelons.

Indirect Fire Protection Capability Increment 2

The budget request included \$235.8 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 65052A Indirect Fire Protection Capability Increment 2 (IFPC Inc 2).

The committee understands that a lower level of funding would be sufficient to execute all planned fiscal year 2021 activities for this program.

Accordingly, the committee recommends a decrease of \$47.8 million in RDT&E, Army, for PE 65052A for IFPC Inc 2.

Optionally Manned Fighting Vehicle

The budget request included \$327.7 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 65625A Optionally Manned Fighting Vehicle (OMFV).

The committee supports the Army's efforts to replace the Bradley Fighting Vehicle, which has been in service for over 30 years, but notes the OMFV program reset that occurred in January 2020. The committee understands that the Army terminated physical prototyping by multiple vendors planned and budgeted for fiscal years 2020 and 2021 in favor of digital prototyping prior to proceeding to physical prototypes.

Accordingly, the committee recommends a decrease of \$80.0 million in RDT&E, Army, for PE 65625A.

Directed energy test and evaluation capabilities

The budget request included \$350.4 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 65601A Test Ranges and Facilities.

The committee notes that directed energy systems are a priority within the modernization efforts to support the National Defense Strategy. The committee further notes that the "FY 2018–FY 2028 Strategic Plan for DOD T&E Resources" report indicated that the

demand for directed energy test capabilities will soon expand from “demand for testing to address specific objectives of laboratory demonstrations” to “demand for testing to address requirements for validating a weapon system for operational use.”

Accordingly, the committee recommends an increase of \$15.0 million in RDT&E, Army, for PE 65601A Test Ranges and Facilities to fund directed energy test capabilities.

Precision Strike Missile

The budget request included \$122.7 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 67134A Long Range Precision Fires.

The committee is supportive of the Precision Strike Missile (PrSM) program, including efforts to significantly increase range and versatility of the missile, but notes that the program is proceeding with a single vendor instead of two as originally planned and programmed.

Accordingly, the committee recommends a decrease of \$7.5 million in RDT&E, Army, for PE 67134A for PrSM.

Guided Multiple-Launch Rocket System

The budget request included no funds in Research, Development, Test, and Evaluation (RDT&E), Army, to qualify a second source for solid rocket motors (SRMs) for the Guided Multiple-Launch Rocket System, Extended Range (GMLRS-ER).

The committee is concerned that, as the Army transitions to the GMLRS-ER, a sole supplier of SRMs may not have the capacity to meet future production needs or provide a surge capacity, thus exposing the Army to the risk of disruption via a single point of failure.

Accordingly, the committee recommends an increase of \$17.5 million in RDT&E, Army, for PE 25778A to qualify a second source of solid rocket motors for GMLRS-ER.

Advanced manufacturing technologies

The budget request included \$61.0 million in Research, Development, Test, and Evaluation (RDT&E), Army, for PE 78045A End Item Industrial Preparedness Activities under the Manufacturing Technology Program.

The committee notes that the 2019 Army Modernization Strategy states that the Army is attempting to “fundamentally change the way [it] develop[s] materiel capability. Advanced manufacturing methods and materials will be incorporated into system design, development, production, and sustainment.”

Therefore, the committee recommends the following increases in RDT&E, Army, for PE 78045A to support the advanced manufacturing of weapons and systems consistent with Army modernization priorities: \$7.5 million for functional fabrics manufacturing; \$5.0 million for tungsten manufacturing for armaments; and \$5.0 million for nanoscale materials manufacturing.

Navy

Defense University Research and Instrumentation Program

The budget request included \$116.8 million for Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 61103N University Research Initiatives.

The committee notes the importance of the competitive grant process managed by the Office of Naval Research (ONR), through which the Defense University Research Instrumentation Program (DURIP) funds the academic institutions' purchase and development of the research equipment and infrastructure necessary for high-quality Navy-relevant science. This instrumentation plays a vital role in allowing Department of Defense-critical research projects to acquire technical resources specifically engineered to meet their requirements and is critical in accelerating the development of operational capabilities for the warfighter. The technologies developed and acquired through the DURIP process ensure that the next generation of scientists and engineers are trained with and have access to cutting-edge equipment and infrastructure, including in the execution of research aboard Navy-supported academic research vessels.

Therefore, the committee recommends an increase of \$2.0 million, in RDT&E, Navy, for PE 61103N for the Defense University Research and Instrumentation Program.

Increase in basic research, Navy

The budget request included \$467.2 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 61153N Defense Research Sciences.

The committee recognizes the "increasingly complex security environment" detailed in the National Defense Strategy and born from rapid technological change, challenges from adversaries in every operating domain, and decreased readiness derivative of the longest continuous stretch of armed conflict in U.S. history. Accordingly, it is crucial to adequately fund, resource, and structure the Department of Defense to conduct RDT&E activities for critical emerging technologies to stay ahead of our adversaries, most notably Russia and China. Resources must be devoted and responsibly spent toward research and development of artificial intelligence, quantum computing, hypersonics, directed energy, biotechnology, autonomy, cyber, space, 5G, microelectronics, and fully networked command, control, and communications technologies. As such, the committee encourages rapid development, prototyping, testing, and acquisition of these emerging technologies in order to remain ahead of our adversaries.

Therefore, the committee recommends an increase of \$10.0 million in RDT&E, Navy, for PE 61153N Defense Research Sciences to support additional basic research.

Predictive modeling for undersea vehicles

The budget request included \$467.2 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 61153N Defense Research Sciences.

The committee notes that the designs of Naval undersea systems are increasing in complexity, scope, and sophistication. This, along with complex operating environments, makes advanced predictive modeling and computational tools for such systems difficult to develop. Without validated modeling tools, underwater vehicle and platform development relies heavily on experimentation, which can significantly lengthen the design phase, result in costly system-level rework, and restrict innovation.

The committee recommends an increase of \$3.0 million in RDT&E, Navy, for PE 61153N for predictive modeling for undersea vehicles.

Direct air capture and blue carbon removal technology program

The budget request included \$21.4 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$122.2 million was for PE 62123N Force Protection Applied Research.

The committee notes that the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) required the Secretary of Defense, in coordination with the Secretary of Homeland Security, the Secretary of Energy, and the heads of such other Federal agencies as the Secretary of Defense considers appropriate, to carry out a program on research, development, testing, evaluation, study, and demonstration of technologies related to blue carbon capture and direct air capture.

Accordingly, the committee recommends an increase of \$8.0 million in RDT&E, Navy, for PE 62123N for electric propulsion research for carbon capture.

Electric propulsion for military craft and advanced planning hulls

The budget request included \$122.3 million for Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 62123N Force Protection Applied Research.

The committee notes the ongoing, yet increasing, operational tempo of naval special warfare maritime units such as the Special Warfare Combatant Craft and Coastal Riverine Force squadrons. The committee is aware that U.S. Special Operations Command has identified mission critical capability objectives for hybrid propulsion technologies and low signature management that, in the face of increasingly technologically advanced adversaries, are of substantial importance and should be supported.

Therefore, the committee recommends an increase of \$2.0 million, in RDT&E, Navy, for PE 62123N for electric propulsion for military craft and advanced planning hulls.

Expeditionary unmanned systems launch and recovery

The budget request included \$122.3 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 62123N Force Protection Applied Research.

The committee supports the Navy's investment in advanced fixed wing unmanned aerial vehicles and notes that, in order to support persistent operations in austere environments, additional investment in expeditionary launch and recovery capabilities is war-

ranted. The committee believes that it is important to conduct research and development related to the launch and recovery of expeditionary unmanned systems that enable high-efficiency, high-payload drones to take off and land on land and at-sea.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Navy, for PE 62123N to support expeditionary unmanned systems launch and recovery.

Testbed for autonomous ship systems

The budget request included \$122.3 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 62123N Force Protection Applied Research.

The committee notes that a key technology gap for long-duration autonomous ship operation lies in the robustness and resiliency of the hull and machinery plant. The committee also notes that autonomous ships will be expected to operate for months between human-assisted maintenance and that autonomous machinery must be robust and resilient in order to avoid failure, repair damage, or redirect platforms as needed. The committee notes the development of digital-twin technologies that allow for predictive or automated maintenance and improved operations and logistics and help fill a critical gap that has been identified in autonomous systems.

Therefore, the committee recommends an increase of \$3.0 million, in RDT&E, Navy, for PE 62123N for the development of a testbed for autonomous ship systems.

Interdisciplinary Cybersecurity Research

The budget request included \$50.6 million for Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 62131M Marine Corps Landing Force Technology.

The committee notes the current research efforts to understand expeditionary cyber challenges and commends the interdisciplinary approach to developing solutions for cyber systems and considering the role of human behavior in the tactical cyber environment. The committee supports continued multidisciplinary research in the areas of dynamic cyber defense, tactical cyberspace operations and signals intelligence, sensing, computation, and mobile communications.

Therefore, the committee recommends an increase of \$3.0 million, in RDT&E, Navy, for PE 62131M for interdisciplinary cybersecurity research.

Humanoid robotics research

The budget request included \$67.8 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 62236N Warfighter Sustainment Applied Research.

The committee recognizes the promise of autonomous humanoid robotics for dangerous and repetitive jobs on ships designed primarily for use by human sailors. In particular, the Navy has identified shipboard firefighting and a number of shipboard maintenance tasks as ideal candidates for integrating the use of humanoid robots.

Therefore, the committee recommends an increase of \$4.0 million in RDT&E, Navy, for PE 62236N for humanoid robotics research.

Social networks and computational social science

The budget request included \$67.8 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 62236N Warfighter Sustainment Applied Research.

The committee supports the Navy's research efforts to: develop algorithms, methods, and tools for analysis of social hysteria propagation and group polarization; improve methods of information environment assessment and strategic communication; and refine detection of adversarial information maneuvers across social media platforms.

The committee recommends an additional \$3.0 million in RDT&E, Navy, for PE 62236N for social networks and computational social science research.

Naval academic undersea vehicle research partnerships

The budget request included \$56.4 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 62747N Undersea Warfare Applied Research.

The committee notes that partnerships among academia, government, and industry are instrumental in translating technological advances to emerging Navy undersea vehicles and systems in cost-effective ways, training a highly skilled workforce, and supporting increased and sustained submarine production capacity. Undersea dominance is an enduring capability that is a key foundation of our national defense and a core element of strategic overmatch in an era of great power competition.

Therefore, the committee recommends an increase of \$7.5 million, in RDT&E, Navy, for PE 62747N for Navy and academia submarine partnerships.

Thermoplastic materials

The budget request included \$160.5 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 62792N for Innovative Naval Prototypes Applied Research.

The committee recommends an increase of \$7.3 million in RDT&E, Navy, for PE 62792N for continued development of technology to fabricate composite aircraft and ship parts from highly formable thermoplastic materials.

Mission planning advanced technology demonstration

The budget request included \$219.0 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 63640M United States Marine Corps Advanced Technology Demonstration.

The committee supports the Department of Defense Unmanned Systems Integrated Roadmap and notes the importance of a robust intelligence, surveillance, and reconnaissance (ISR) platform for forward deployed operations in contested environments. The committee encourages the development of a Mission Support Station that allows mission plans to be created and then dynamically updated based on available data from numerous sources, including

weather, satellite imagery, sensor feeds, and other ISR from unmanned systems.

Therefore, the committee recommends an increase of \$3.0 million in RDT&E, Navy, for PE 63640M for the mission planning advanced technology demonstration.

Unmanned surface vessel development

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$464.0 million was for PE 63178N Medium and Large Unmanned Surface Vehicles and \$38.4 million was for PE 63573N Advanced Surface Machinery Systems.

The committee notes that the budget request provides for the prototyping and testing of Medium and Large Unmanned Surface Vessels (MUSVs and LUSVs), including procurement of up to two additional LUSVs in conjunction with a Strategic Capabilities Office (SCO) initiative. The committee understands that the 4 LUSVs procured by the SCO beginning in fiscal year 2018, at a cost of more than \$510 million, are sufficient to achieve the objectives of the SCO initiative, which is scheduled to be completed in the fourth quarter of fiscal year 2021.

The committee believes that further procurement of MUSVs and LUSVs should occur only after the lessons learned from the current SCO initiative have been incorporated into the system specification and additional risk reduction actions are taken.

A specific area of technical concern for the committee is the Navy requirement for MUSVs and LUSVs to operate continuously at sea for at least 30 days without preventative maintenance, corrective maintenance, or emergent repairs. The committee is unaware of any unmanned vessel of the size or complexity envisioned for MUSV or LUSV that has demonstrated at least 30 days of such operation.

The committee understands that the SCO prototype vessels that are intended to provide risk reduction for these programs have demonstrated between 2 to 3 days of continuous operation. The committee also understands that the SCO vessels are approximately 25 percent the size by tonnage of a LUSV, which may limit the applicability of lessons learned and risk reduction from the SCO vessels to the MUSV and LUSV programs. Among other critical subsystems, the committee views the main engines and electrical generators in particular as key USV mechanical and electrical subsystems whose reliability is critical to ensuring successful operations at sea for at least 30 continuous days.

The committee also notes that additional funding is necessary to accelerate completion of the Integrated Power and Energy Systems test facility (ITF) to achieve full test capability in fiscal year 2023, consistent with section 131 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), as well as the qualification of silicon carbide power modules.

Accordingly, the committee recommends a decrease of \$464.0 million, for a total of \$0, in RDT&E, Navy, for PE 63178N, and an increase of \$200.0 million, for a total of \$238.4 million in RDT&E, Navy, for PE 63573N.

The committee's intent is that the increased funding in PE 63178N be used for: the USV main engine and electrical generator qualification testing directed elsewhere in this Act (\$70.0 million); USV autonomy development, which may include conversion of existing vessels (\$45.0 million); accelerating ITF testing (\$75.0 million); and accelerating the qualification of silicon carbide power modules (\$10.0 million).

Advanced combat systems technology

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$70.2 million was for PE 63382N advanced combat systems technology.

The committee notes that project 3416 (HIJENKS) had insufficient schedule justification (\$7.0 million) and project 3422 (SHARC) would procure excess platforms ahead of satisfactory testing (\$7.1 million).

Accordingly, the committee recommends a decrease of \$14.1 million, for a total of \$56.1 million, in RDT&E, Navy, for PE 63382N.

Surface and shallow water mine countermeasures

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$52.4 million was for PE 63502N surface and shallow water mine countermeasures.

The committee notes Barracuda (project 2989) schedule delays, including a 2-year delay in the critical design review and developmental testing to fiscal years 2022 and 2024 respectively. The committee is also concerned that operational testing was removed from the program schedule and directs the Secretary of the Navy to restore such testing.

Accordingly, the committee recommends a decrease of \$28.2 million, for a total of \$24.2 million, in RDT&E, Navy, for PE 63502N.

Advanced submarine system development

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$185.4 million was for PE 63561N advanced submarine system development.

The committee notes that engineering development models are early to need in project 9710.

The committee also notes that additional funding (\$20.0 million) could be used to complete procurement qualification of out-of-autoclave bow dome technology and demonstrate other components that utilize this technology for future use on Virginia-class and other classes of submarines.

Accordingly, the committee recommends a net increase of \$10.0 million, for a total of \$195.4 million, in RDT&E, Navy, for PE 63561N.

Ship concept advanced design

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$126.4 million was for PE 63563N ship concept advanced design.

The committee lacks sufficient clarity on the capability requirements to support the following ship design efforts: Future Surface

Combatant (project 2196, \$19.1 million), next generation medium amphibious ship (project 4044, \$30.0 million), and next generation medium logistics ship (project 4045, \$30.0 million).

The committee supports the Conditions Based Maintenance + (CBM+) initiative, which improves the cost, schedule, and performance outcomes in ship maintenance availabilities using analytic tools. The committee understands that additional funds (\$16.0 million) could accelerate the implementation of the CBM+ initiative.

Accordingly, the committee recommends a decrease of \$63.1 million, for a total of \$63.3 million, in RDT&E, Navy, for PE 63563N.

Large Surface Combatant preliminary design

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$70.2 million was for PE 63564N ship preliminary design and feasibility studies.

The committee lacks sufficient clarity on the Large Surface Combatant (LSC) capability requirements and the program's compliance with section 131 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) to support the start of preliminary design for the LSC program or completion of the Capabilities Development Document (project 0411).

Accordingly, the committee recommends a decrease of \$41.3 million, for a total of \$29.0 million, in RDT&E, Navy, for PE 63564N.

Additionally, the committee directs the Secretary of the Navy to submit a report with Navy's fiscal year 2022 budget request that details the plan to comply with the requirements of section 131 of the National Defense Authorization Act for Fiscal Year 2020.

Littoral Combat Ship

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$32.2 million was for PE 63581N Littoral Combat Ship.

The committee notes available prior year funds in project 3096.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$27.2 million, in RDT&E, Navy, for PE 63581N.

LCS mission modules

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$67.9 million was for PE 63596N LCS mission modules.

The committee notes that the Littoral Combat Ship mine countermeasures mission package has an outdated integrated master schedule and test and evaluation master plan (project 2550). The committee also notes available prior year funds due to testing delays (project 2551).

Accordingly, the committee recommends a decrease of \$35.0 million, for a total of \$32.9 million, in RDT&E, Navy, for PE 63596N.

Conventional munitions

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$9.9 million was for PE 63609N conventional munitions.

The committee notes insufficient justification to support insensitive weapons development (project 0363).

Accordingly, the committee recommends a decrease of \$7.8 million, for a total of \$2.1 million, in RDT&E, Navy, for PE 63609N.

Surface Navy Laser Weapon System

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$128.8 million was for PE 63925N directed energy and electric weapon systems.

The committee notes excess engineering and sustainment support costs for the Surface Navy Laser Weapon System (project 3402).

Accordingly, the committee recommends a decrease of \$15.0 million, for a total of \$113.8 million, in RDT&E, Navy, for PE 63925N.

Large unmanned undersea vehicles

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$78.1 million was for PE 64031N large unmanned undersea vehicles.

The committee notes excess procurement ahead of Snakehead phase 1 testing, which is scheduled for fiscal year 2022. The committee seeks to avoid excess procurement of these systems in advance of satisfactory testing.

Accordingly, the committee recommends a decrease of \$36.0 million, for a total of \$42.1 million, in RDT&E, Navy, for PE 64031N.

Advanced undersea prototyping

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$115.9 million was for PE 64536N advanced undersea prototyping.

The committee notes that the Snakehead and Orca test strategies require updates to enable certification by the Director of Operational Test and Evaluation in accordance with the Senate report accompanying the Department of Defense Appropriations Bill, 2020, incorporated into the Consolidated Appropriations Act, 2020 (S. Rept. 116–103). Additionally, the committee is aware of Orca testing delays.

Accordingly, the committee recommends a decrease of \$20.0 million, for a total of \$95.9 million, in RDT&E, Navy, for PE 64536N.

Hypersonic program reduction, Navy

The budget request included \$1.1 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 64659N Precision Strike Weapons Development Program.

The committee recognizes the importance of hypersonics research and development, especially in light of the National Defense Strategy and the advancing threats posed by adversaries. However, the committee is concerned that there has been a lack of adequate coordination on hypersonics prototyping efforts among the various stakeholders and service components.

Therefore, the committee recommends a decrease of \$5.0 million in RDT&E, Navy, for PE 64659N Precision Strike Weapons Development Program.

Conventional prompt strike

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$1.1 billion was for PE 64659N precision strike weapons development program.

The committee notes that the budget request included modification and installation costs for conventional prompt strike weapons integration on two *Virginia*-class submarines but included funds for the procurement of only one *Virginia*-class submarine. Therefore, modification and installation costs are early to need for one *Virginia*-class submarine.

Accordingly, the committee recommends a decrease of \$52.0 million, for a total of \$1.1 billion, in RDT&E, Navy, for PE 64659N.

The committee supports conventional prompt strike weapons development and the associated submarine integration. However, the committee lacks clarity on the requirement, including the inventory objective, for submarines capable of employing these weapons and notes that projected funding through fiscal year 2025 will total more than \$900.0 million for submarine design, modification, and installation costs for such weapons.

Therefore, the committee directs the Chief of Naval Operations to submit to the congressional defense committees not later than March 30, 2021, approved requirements, including the inventory objective by ship class, for submarines capable of employing conventional prompt strike weapons. The Chief of Naval Operations shall coordinate this response with a related report from the Chairman of the Joint Chiefs of Staff on mission planning and force structure for hypersonic weapon systems, which is required elsewhere in this Report and due on the same date.

Additionally, the committee directs the Secretary of Navy to request funding required for new construction submarine modification and installation costs associated with conventional prompt strike weapons as part of the end cost of each such submarine in the Shipbuilding and Conversion, Navy account in future budget submissions.

Submarine tactical warfare systems

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$63.9 million was for PE 64562N submarine tactical warfare systems.

The committee notes AN/BYG-1 APB17 and APB19 testing delays.

Accordingly, the committee recommends a decrease of \$5.0 million, for a total of \$58.9 million, in RDT&E, Navy, for PE 64562N.

Advanced degaussing

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$51.9 million was for PE 64567N ship contract design.

The committee understands that, since legacy degaussing systems for surface combatants were developed, alternative methods for performing this function have proven to be more capable and cost-effective.

The committee believes that conducting an installation and demonstration of advanced degaussing capability on an existing *Arleigh*

Burke-class destroyer is warranted to evaluate the utility of such a capability for further forward-fit and back-fit on naval vessels.

Accordingly, the committee recommends an increase of \$14.9 million, for a total of \$66.8 million, in RDT&E, Navy, for PE 64567N.

Lightweight torpedo development

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$146.0 million was for PE 64610N lightweight torpedo development.

The committee notes High Altitude Anti-Submarine Warfare Weapon operational testing delays (project 1412) and Mk 54 Mod 2 torpedo contract delays (project 3418).

Accordingly, the committee recommends a decrease of \$30.0 million, for a total of \$116.0 million, in RDT&E, Navy, for PE 64610N.

Submarine acoustic warfare development

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$69.2 million was for PE 11226N submarine acoustic warfare development.

The committee notes that the Compact Rapid Attack Weapon engineering design model (TI-2) is early to need.

Accordingly, the committee recommends a decrease of \$8.0 million, for a total of \$61.2 million, in RDT&E, Navy, for PE 11226N.

Integrated surveillance system

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$103.0 million was for PE 24311N integrated surveillance system.

The committee notes that, since fiscal year 2015, the Navy has utilized Transformational Reliable Acoustic Path Systems (TRAPS) in anti-submarine warfare missions. The committee understands that these deployable systems have performed satisfactorily and comprise a critical element of the Navy's overall integrated under-sea surveillance system. The committee is concerned that capability or capacity gaps may result if additional spiral 1 TRAPS units are not procured in fiscal year 2021.

In addition, the committee understands that additional funding in project 0766 could accelerate the development, configuration, and integration of advanced sensors and associated signal processing into representative system sensor packages for developmental and operational testing.

Accordingly, the committee recommends an increase of \$50.0 million, for a total of \$153.0 million, in RDT&E, Navy, for PE 24311N.

LCAC composite component development

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$1.7 million was for PE 24413N amphibious tactical support units.

The committee understands that additional investment in advanced composites manufacturing for air cushion vehicle components, including propeller blades and composite deck house modules, could reduce the overall acquisition and life cycle costs of the Navy's air cushioned landing crafts.

Accordingly, the committee recommends an increase of \$5.0 million, for a total of \$6.7 million, in RDT&E, Navy, for PE 24413N.

G/ATOR demonstration

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$22.2 million was for PE 24460M Ground/Air Task Oriented Radar.

The committee believes that the Joint Force, particularly the Marine Corps, could derive significant warfighting benefits in the integrated air and missile defense mission area from integrating the AN/TPS-80 Ground/Air Task-Oriented Radar (G/ATOR) with Standard Missile-6 (SM-6) and the Cooperative Engagement Capability (CEC) network.

The committee understands that a proof-of-concept demonstration using a G/ATOR to conduct an SM-6 engagement would require \$73.6 million, which includes the procurement of a G/ATOR that would remain a dedicated test asset.

The committee further understands that the G/ATOR is capable of providing tracks, via the USMC Composite Tracking Network (CTN), to the CEC network. However, changes to the CTN are required to enable completion of an Engage On Remote capability between Navy surface combatants and a G/ATOR.

The committee further understands it would cost approximately \$10.0 million to analyze the feasibility of a stand-alone G/ATOR and SM-6 engagement.

The committee notes that the Marine Corps is supportive of conducting such a demonstration and analysis, which would consist of two tracking events and a live fire shoot, coordinated with the Navy, in fiscal year 2022.

Accordingly, the committee recommends an increase of \$83.6 million, for a total of \$105.8 million, in RDT&E, Navy, for PE 24460M.

Attack and utility replacement aircraft vehicle

The budget request included \$21.5 billion in Research, Development, Test, and Evaluation (RDT&E), Navy, of which \$18.1 million was for PE 64212N, Other Helo Development, including \$11.3 million for development of an attack and utility replacement aircraft (AURA) vehicle.

The Navy AURA program has been following the Army's development of the Future Long Range Assault Aircraft (FLRAA), applying lessons learned from the Army program, and assessing subsystem commonality with the Army development efforts.

The committee supports such cooperation, urges the Navy and Army to expand these efforts, and recommends an increase of \$5.0 million in PE 64212N for that purpose.

Cyber tool development

The budget request included \$35.0 million in Research, Development, Test, and Evaluation (RDT&E), Navy, for PE 35251N Cyber Space Operations Forces and Force Support.

The committee recognizes the importance of the Navy Cyber Warfare Development Group (NCWDG), which benefits enormously from its unique intelligence, prototyping, and acquisition authori-

ties and nesting within U.S. Fleet Cyber Command. The committee encourages the Army and Air Force to evaluate the authorities available to and organizational alignment of the NCWDG and the feasibility of modeling their tool development organizations and activities after the NCWDG. The committee also understands that the funding for development and acquisition of operational tools across the Navy and Army is insufficient for the development and acquisition of foundational tool suits, a critical component of the Joint Cyber Warfighting Architecture.

Therefore, the committee recommends an increase of \$10.0 million in RDT&E, Navy, for PE 35251N Cyber Space Operations Forces and Force Support for cyber tool development.

Air Force

Increase in basic research, Air Force

The budget request included \$315.3 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 61102F Defense Research Sciences.

The committee recognizes the “increasingly complex security environment” detailed in the National Defense Strategy and born from rapid technological change, challenges from adversaries in every operating domain, and decreased readiness derivative of the longest continuous stretch of armed conflict in U.S. history. Accordingly, it is crucial to adequately fund, resource, and structure the Department of Defense to conduct RDT&E activities for critical emerging technologies to stay ahead of our adversaries, most notably Russia and China. Resources must be devoted and responsibly spent toward research and development of artificial intelligence, quantum computing, hypersonics, directed energy, biotechnology, autonomy, cyber, space, 5G, microelectronics, and fully networked command, control, and communications technologies. As such, the committee encourages rapid development, prototyping, testing, and acquisition of these emerging technologies in order to remain ahead of our adversaries.

Therefore, the committee recommends an increase of \$10.0 million in RDT&E, Air Force, for PE 61102F Defense Research Sciences to support additional basic research.

High Energy Synchrotron X-Ray program

The budget request included \$140.8 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 62102F Materials.

The committee notes the value of continued funding for high-energy X-ray beamlines optimized for Air Force research needs. This research capability enables Air Force Research Laboratory researchers, collaborators, and original equipment manufacturers to employ real-time, three-dimensional x-ray characterization methods to test a broad range of mission-critical structural and functional materials. The committee notes the value of this research to high performance materials for tactical aircraft, the understanding of metal fatigue, processes for additive manufacturing technologies, and scientific workforce development.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Air Force, for PE 62102F for the High Energy Synchrotron X-Ray research program.

Materials maturation for high mach systems

The budget request included \$140.8 million for Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 62102F Materials.

The committee notes the importance of advanced thermal protection systems (TPSs) research to enable efficient operation of high-speed vehicles for military and commercial aerospace needs. The committee further notes that much scientific and technical work remains in the exploration of the capabilities of the high temperature materials and associated coatings, identification of non-destructive inspection techniques, study of initiation and progression of material damage in severe flight environments, and transition of the technology into advanced load-bearing TPSs.

Therefore, the committee recommends an increase of \$5.0 million, in RDT&E, Air Force, for PE 62102F for materials maturation for high mach systems.

Metals Affordability Initiative

The budget request included \$140.8 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 62102F Materials.

The committee recognizes the importance of the Metals Affordability Initiative as an innovative public-private partnership that makes metals for warfighter needs lighter, stronger, and more affordable. Since the program's inception in 1999, the MAI has saved taxpayers over \$2 billion, and has a 10:1 return on taxpayer investment, by increasing yields, decreasing maintenance costs, and minimizing time and expense for metals manufacturing for Air Force needs.

Therefore, the committee recommends an increase of \$5.0 million in PE 62102F Materials to support the Metals Affordability Initiative.

Qualification of additive manufacturing processes

The budget request included \$140.8 million for Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 62102F Materials.

The committee notes that Executive Order 13806, "Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resilience of the United States," points to "gaps in the national-security-related domestic manufacturing capabilities, including non-existent, extinct, threatened and single-point-of-failure capabilities." The committee also notes that a great deal of additive manufacturing research and development is conducted openly on commercially available systems, allowing adversaries access to substantial innovation. The committee supports further development of additive manufacturing processes that leverage unclassified innovations for sensitive and classified weapon systems.

Therefore, the committee recommends an increase of \$2.0 million, in RDT&E, Air Force, for PE 62102F for qualification of additive manufacturing processes.

Technologies to repair fasteners

The budget request included \$103.3 million for Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 63030F Air Force Foundational Development/Demos.

The committee notes that the galvanic corrosion of fastener holes in carbon-composite and aluminum alloy airframes is a significant maintenance burden and a source of aircraft downtime. The committee believes that the development of inexpensive and reliable technologies that can repair fastener holes could reduce maintenance costs and extend the useful lifetime of the F-22 and F-35.

Therefore, the committee recommends an increase of \$2.5 million, in RDT&E, Air Force, for PE 63030F for technologies to repair fasteners.

Hypersonic materials

The budget request included \$349.2 million in Research, Development, Test, and Evaluation, Air Force (RDAF), for PE 62201F Aerospace Vehicle Technologies.

The committee supports the Air Force's efforts to design and test materials capable of withstanding the hypersonic environment.

Accordingly, the committee recommends an increase of \$10.0 million in RDAF for PE 62201F.

Golden Horde Vanguard program reductions

The budget request included \$157.6 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 63032F Future AF Integrated Technology Demos.

The committee recognizes the importance of programs that support the transition of promising innovative science and technology programs into formal acquisition or operational use. The committee notes that these efforts are more appropriately funded outside of the limited funding available for science and technology efforts themselves.

Therefore, the committee recommends a decrease of \$50.0 million in RDT&E, Air Force, for PE 63032F Future AF Integrated Technology Demos for Golden Horde Vanguard program reductions. The committee report reallocates this funding to high priority science and technology activities in support of the National Defense Strategy.

Fixed-wing improvements

The budget request included \$199.6 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 63033F Next Gen Platform Dev/Demo.

The committee notes that Air Force efforts to improve B-52 flight operations resulted in a 6.6 percent performance gain, saving 4.2 million gallons of fuel per year, and a positive return on investment in less than 1 year. Flight data analysis also showed that not pursuing efficiencies resulted in increased fuel burn and costs, 350 additional maintenance hours per year, and 41 days of non-mission

capable status for landing gear maintenance. Analysis for KC-135 aft body drag reduction devices show savings of \$7.5 million per year.

Accordingly, the committee recommends the following increases: \$3.0 million for B-52 pylon fairings, \$3.0 million for C-130 finlets, and \$3.0 million for KC-135 aft body drag, in RDT&E, Air Force, for PE 63033F Next Gen Platform Dev/Demo.

AETP/NGAP

The budget request included \$636.5 million in Research, Development, Test, and Evaluation, Air Force (RDAF), for PE 64004F Advanced Engine Development.

The committee supports the Air Force's efforts to develop state of the art engine technology that has the potential to provide expanded flight envelopes with increases in thermal and power production at the same time. The committee encourages the Air Force to accelerate this revolutionary technology to achieve the increase in combat capability.

Accordingly, the committee recommends an increase of \$50.0 million in RDAF for PE 64004F.

Directed energy counter-Unmanned Aerial Systems (CUAS)

The budget request included \$21.0 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 64032F Directed Energy Prototyping.

Unmanned aerial systems (UASs) pose a growing threat to U.S. forces. The development of directed energy capabilities to counter UASs and cruise missiles is critical, as employment of such defensive capabilities would impose substantial costs on adversaries.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Air Force, for PE 64032F.

Advanced Hypersonic Air-breathing Weapon

The budget request included \$381.9 million in Research, Development, Test, and Evaluation, Air Force (RDAF), for PE 64033F Hypersonic Prototyping.

The committee supports the Air Force's efforts in developing air-breathing hypersonic missiles but is concerned that the Air Force has not provided sufficient resources to successfully transition the Hypersonic Air Breathing Weapon being developed by the Defense Advanced Research Projects Agency (DARPA), in partnership with the Air Force, based on the recent successes and acceleration of the DARPA program.

Accordingly, the committee recommends an increase of \$65.0 million in RDAF for PE 64033F.

KC-135 operational energy increases

The budget request included \$219.3 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 64858F Tech Transition Program.

The committee notes that roughly 60 percent of operational energy use occurs in the Air Force at a cost of over \$5.4 billion per year. One of the greatest consumers of fuel in the Air Force is the KC-135. Just switching from horizontal to vertical wiper blades

with a \$2 million investment can save almost \$10 million each year. Using low-cost flight planning software instead of traditional practices can decrease the workload for flight planners by roughly 300 hours per month. In the air, the same planning software has been shown to improve flight efficiency by at least 10 percent, which saves \$75.0 million per year.

Accordingly, the committee recommends the following increases: \$4.5 million for agile software development and operations, \$10.0 million for KC-135 winglets, and \$2.0 million for KC-135 vertical wipers in RDT&E, Air Force, for PE 64855F Tech Transition Program.

Polar communications

The budget request included \$219.0 million in Research, Development, Test, and Evaluation (RDT&E), Space Force, for PE 64858F Tech Transition.

The committee understands that strategic satellite communication is vital to national security and that there exists a potential 7-year gap in resilient capability coverage. Additionally, the Commander, U.S. Northern Command, has warned about a lack of basic and reliable communications in the northern most latitudes, communications that the Department of Defense will need to help respond to great power competition. The committee is aware of recent developments in low- and medium-earth orbit communications that could support additional satellite capability to begin to establish more robust communications at these northern latitudes.

Therefore, the committee recommends an increase of \$46.0 million in RDT&E, Space Force, for PE 64858F for strategic satellite communications capability.

Low-Cost Attributable Aircraft Technology

The budget request included \$219.3 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 64858F Tech Transition Program.

The committee supports the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics' intent to accelerate the Air Force Research Laboratory's Low-Cost Attributable Aircraft Technology XQ-58 program for collaborative pairing with manned platforms, potentially including the F-35. The committee views the combined application of commercial technology, autonomy, and artificial intelligence as an innovative solution to meeting the demands of the National Defense Strategy.

Accordingly, the committee recommends an increase of \$128.0 million, in RDT&E, Air Force, for PE 0604858F for the purchase of additional XQ-58 aircraft and operationally relevant testing.

Long Endurance UAS

The budget request included \$219.3 million in Research, Development, Test, and Evaluation, Air Force (RDAF), for PE 64858F Tech Transition Program.

The committee supports the Air Force's effort to provide an alternative to traditional space assets by using unmanned vehicles to provide persistent over the horizon surveillance, targeting, and tactical communications capability.

Accordingly, the committee recommends an increase of \$33.5 million in RDAF for PE 64858F for long endurance unmanned aircraft systems.

Rapid repair of high performance materials

The budget request included \$219.3 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 64858F Tech Transition Program.

The committee recognizes the importance of further advancement of systems that can be used to repair high performance materials for the Department of Defense. The committee highly encourages further integration of portable deployable systems.

Accordingly, the committee recommends an increase of \$6.0 million, in RDT&E, Air Force, for PE 64858F for development of technologies to enable the rapid repair of high performance materials.

Small satellites

The budget request included \$219.3 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 64858F Technology Transition Program.

The committee is encouraged by the Department of Defense's focus on small satellite capabilities and supports the growth and expansion of the space industry capabilities in this critical technology area.

Therefore, the committee recommends an increase of \$6.0 million in RDT&E, Air Force, for PE 64858F for small satellites.

Air Force Open Systems Integration

The budget request included no funding in Research, Development, Test, and Evaluation, Air Force (RDAF), for PE 0604429F Airborne Electronic Attack.

The committee supports the Air Force's initiative to transition the Systems of Systems Technology Integration Tool Chain for Heterogeneous Electronic Systems (STITCHES) capability to the 850th Electronic Warfare Group. This open systems integration solution provides critical capability across the Department of Defense. The committee was disappointed to learn that the transition was authorized but failed to capture the required funding.

Accordingly, the committee recommends an increase of \$30.0 million in RDAF for PE 0604429F for STITCHES transition activities.

SLATE/VR Training

The budget request included \$248.7 million in Research, Development, Test, and Evaluation, Air Force (RDAF), for PE 0605223F Advanced Pilot Training.

The committee supports the effort to accelerate the fielding of commercially developed airborne augmented reality for: (1) In-flight learning; (2) Operational training; (3) Advancing learning and performance assessment science and practice by integrating and testing advanced airborne augmented reality prototypes in Air Force training aircraft; and (4) Active Air Force fighters through initial integration activities for the F-16.

Accordingly, the committee recommends an increase of \$6.0 million in RDAF for PE 0605223F.

Gulf Test Range modernization

The budget request included \$208.7 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 64759F Major T&E Investment.

The committee notes its support for the next phase in the Gulf Test Range telemetric modernization process.

Therefore, the committee recommends an increase of \$15.0 million in RDT&E, Air Force, for PE 64759F for Gulf Test Range modernization.

Enterprise Resource Planning Common Services

The budget request included \$9.9 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 38602F Enterprise Information Services.

The committee remains concerned about the Air Force's development of Enterprise Resource Planning Common Services with respect to implementing best practices for the frequency of capability delivery to end users and notes that the acquisition strategy for this program is inconsistent with the Air Force's digital modernization strategy.

The committee recommends a reduction of \$7.5 million in RDT&E, Air Force, for PE 38602F.

Advanced Air to Air capability

The budget request included \$15.8 billion in Research, Development, Test, and Evaluation, Air Force (RDAF), for PE 9999999 Classified Programs.

The committee supports the Air Force's efforts in developing advanced air-to-air weapons to enable air superiority, which is fundamental to achieving victory in any conflict.

Accordingly, the committee recommends an increase of \$62.0 million in RDAF for PE 9999999.

Air Force Integrated Personnel and Pay System

The budget request included \$27.0 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 65018F Air Force Integrated Personnel and Pay System (AF-IPPS).

The committee notes its continuing concern with AF-IPPS implementation of best practices for frequency of capability delivery to end users and that the acquisition strategy for this program is inconsistent with the Air Force's digital modernization strategy.

Therefore, the committee recommends a decrease of \$20.0 million in RDT&E, Air Force, for PE 65018F.

B-1B Squadrons

The budget request included \$15.8 million in Research, Development, Test, and Evaluation, Air Force (RDAF), for PE 11126F B-1B Squadrons.

The committee supports the Air Force's request to realign funds to support certain B-1 radio cryptographic modernization requirements within this account.

Accordingly, the committee recommends an increase of \$10.8 million in RDAF for PE 11126F for cryptographic modernization activities.

**PDI: Mission Partner Environment (MPE) local upgrades,
U.S. Indo-Pacific Command**

The budget request included \$13.6 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 35600F International Intelligence Technology and Architectures.

The unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command (INDOPACOM), included additional funding for Mission Partner Environment (MPE) local upgrades to modernize the command, control, communications, and computers architecture in the INDOPACOM area of responsibility and provide local systems to support and enhance operations with allies and partners.

Therefore, the committee recommends an increase of \$3.7 million in RDT&E, Air Force, for PE 35600F, specifically for the BICES-X program.

C-17 microvanes

The budget request included \$9.9 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 41130F C-17 Aircraft (IF).

The committee supports efforts to increase efficiency and to reduce costs associated with fuel burn. The committee notes that the Air Force estimates savings of approximately \$10.0 million per year, with less than a 4-month positive return on investment, through the use of C-17 microvanes, which have been shown to streamline airflow and reduce drag.

Accordingly, the committee recommends an increase of \$3.0 million in RDT&E, Air Force, for PE 41130F for the fielding of C-17 microvanes.

Logistics Information Technology

The budget request included \$35.2 million in Research, Development, Test, and Evaluation (RDT&E), Air Force, for PE 78610F Logistics Information Technology (LOGIT).

The committee notes its concern with the progress of the Item Master effort with respect to implementation of best practices for frequency of capability delivery to end users and that the acquisition strategy for this program is inconsistent with the Air Force's digital modernization strategy.

Therefore, the committee recommends a decrease of \$20.0 million in RDT&E, Air Force, for PE 78610F.

Small satellite mission operations center

The budget request included \$139.9 million in Research, Development, Test, and Evaluation (RDT&E), Space Force, for PE 1206601SF Space Technology Applied Research.

The committee believes that there is significant potential in small satellite missions and that a central operations center would provide synergy to the ongoing Department of Defense efforts.

Therefore, the committee recommends an increase of \$3.0 million in RDT&E, Space Force, for PE 1206601SF for a small satellite mission operations center.

GPS User Equipment

The budget request included \$390.7 million in Research, Development, Test, and Evaluation (RDT&E), Space Force, for PE 1203164SF NAVSTAR Global Positioning System (User Equipment) (SPACE).

The committee understands that the modernized Global Positioning System user equipment program for the Space Force has slipped by over a year and that more delays are possible.

Therefore, the committee recommends a decrease of \$20.0 million in RDT&E, Space Force, for PE 1203164SF.

National Security Space Launch technology development

The budget request included \$561.0 million in Research, Development, Test, and Evaluation (RDT&E), Space Force, for PE 1206853SF National Security Space Launch Program (SPACE)—EMD.

Elsewhere in this Act, the committee recommends a provision that would require the Secretary of the Air Force to establish a program to develop technologies and systems to enhance phase three National Security Space Launch requirements and enable further advances in launch capability associated with the insertion of national security payloads into relevant classes of orbits.

Therefore, the committee recommends an increase of \$30.0 million in RDT&E, Space Force, for PE 1206853SF. This increase would resource this important program.

Cobra Dane service life extension

The budget request included \$28.2 million in Research, Development, Test, and Evaluation, Space Force (RDSF), for PE 1203873SF Ballistic Missile Defense Radars.

The committee notes that, because of projected delays in fielding two homeland defense radars in the Indo-Pacific area of responsibility, Cobra Dane will now be required to exceed its originally planned life expectancy. The committee also notes that this project was included on the unfunded priorities list submitted by the Commander, U.S. Northern Command and North American Aerospace Defense Command.

Accordingly, the committee recommends an increase of \$18.5 million in RDSF for PE 1203873SF to accelerate the service life extension of the Cobra Dane radar.

Commercial space domain awareness

The budget request included \$86.7 million in Research, Development, Test, and Evaluation (RDT&E), Space Force, for PE 1203940SF Space Situation Awareness Operations.

The committee believes that, in an increasingly crowded environment, the space situational awareness (SSA) mission is essential to U.S. Government and commercial space operations. The committee views the use of commercial data for this mission as an important part of an integrated approach to achieving SSA.

Therefore, the committee recommends an increase of \$7.0 million in RDT&E, Space Force, for PE 1203940SF for commercial procurement of SSA data.

Global Positioning System III—Operational Control Segment

The budget request included \$482.0 million in Research, Development, Test, and Evaluation (RDT&E), Space Force, for PE 1206423SF Global Positioning System III—Operational Control Segment.

The committee believes that Global Positioning System modernization is a critical milestone for achieving the lethal force envisioned in the National Defense Strategy but sees this request as excess to need.

Therefore, the committee recommends a decrease of \$65.0 million in RDT&E, Space Force, for PE 1206423SF.

Defense Wide

Defense Established Program to Stimulate Competitive Research

The budget request included \$35.6 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 61110D8Z Basic Research Initiatives.

The committee recognizes the importance of the Defense Established Program to Stimulate Competitive Research (DEPSCoR). The program helps increase the number of university researchers and improve the capabilities of institutions of higher education in eligible jurisdictions to perform competitive research relevant to the Department of Defense.

Therefore, the committee recommends an increase of \$20.0 million in RDT&E, Defense-wide, for PE 61110D8Z for DEPSCoR.

Minerva Research Initiative

The budget request included \$35.6 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 61110D8Z Basic Research Initiatives.

The committee is concerned by the proposed divestment in social science research programs within the Office of the Under Secretary of Defense for Research and Engineering and the Army's withdrawal from Minerva Research Initiative in recent years. At a time when peer and near-peer adversaries are increasingly employing strategies of malign influence and disinformation, maintaining the Nation's technological superiority in the face of these threats requires not only investing in physical sciences but also the integration of cross-disciplinary research that explores the social, cultural, behavioral, political, historical, and religious drivers of today's increasingly complex global security environment.

Therefore, the committee recommends an increase of \$17.0 million in RDT&E, Defense-wide, for PE 61110D8Z Basic Research Initiatives for the Minerva research initiative.

The committee further notes that the National Academies of Science, Engineering, and Medicine's 2020 review of Minerva's accomplishments found that, despite facing challenges with establishing a stable, well-functioning organizational structure as well as resource limitations, the program has made important contributions. The study found that the program has had a positive impact on the amount of dialogue between the Department of Defense and

the social science community, the number of social science researchers with an interest in research relevant to national security, and the amount of collaboration among researchers working on topics relevant to national security. The committee directs the Under Secretary of Defense for Research and Engineering to review the findings of this report and brief the congressional defense committees on planned responses to the report's recommendations, no later than March 1, 2021.

Traumatic brain injury medical research

The budget request included \$53.7 million for Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 61117E Basic Operational Medical Research Science.

The committee notes the importance of continued medical research conducted by the Army Futures Command and Army Research Laboratory to advance the prevention, detection, and treatment of acute traumatic brain injury (TBI). The committee notes that TBIs are associated with a variety of long-term effects and are prevalent in military and civilian settings. The committee supports this funding increase to help the Army to prevent TBI incidence and ultimately develop prevention, detection, and treatment methodologies that could be used to protect the entire Joint Force as well as civilian populations.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Defense-wide, for PE 61117E for traumatic brain injury medical research.

Aerospace, education, research, and innovation activities

The budget request included \$31.0 million for Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 61228D8Z Historically Black Colleges and Universities/Minority Institutions.

The committee notes the importance of fundamental research and the pipeline of highly qualified technical talent in support of long-term national security needs. The committee supports increased funding for aerospace education and research activities at Historically Black Colleges and Universities/Minority Institutions to promote the expansion of the future aerospace technical workforce, especially among U.S. citizens, and to enhance research in areas such as fatigue damage tolerance, experimental aerodynamics, and the performance of materials and components under extreme environmental conditions.

Therefore, the committee recommends an increase of \$2.0 million in RDT&E, Defense-wide, for PE 61228D8Z Historically Black Colleges and Universities/Minority Institutions for aerospace education, research, and innovation activities.

Historically Black Colleges and Universities/Minority Institutions

The budget request included \$31.0 million for Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 61228D8Z Historically Black Colleges and Universities/Minority Institutions.

The committee notes the importance of increasing the Department of Defense's (DOD) partnerships with Historically Black Colleges and Universities (HBCUs). These HBCU institutions can support the Department of Defense's needs for high quality research as well as serve as a source for United States citizens with science, technology, engineering, and mathematics training who can support national security technology missions.

Therefore, the committee recommends an increase of \$5.0 million, in RDT&E, Defense-wide, for PE 61228D8Z.

Emerging biotech research

The budget request included \$250.1 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 62715E Materials and Biological Technology.

The committee recognizes the importance of protecting warfighter populations stationed domestically and abroad in the event of a pandemic. The committee supports expanding rapid response vaccine capabilities and capacity that can meet the needs of this population in the event of an outbreak. The committee commends the Department of Defense for its prior efforts, conducted by the Defense Advanced Research Projects Agency, to pursue novel rapid production capabilities and directs the Department to pursue late-stage multi-modal platform technologies capable of responding to pandemics such as influenza, COVID-19, and future infectious diseases.

Therefore, the committee recommends an increase of \$40.0 million in RDT&E, Defense-wide, for PE 62715E for an increase in emerging biotechnology research.

Operational Fires program reduction, Defense-wide

The budget request included \$231.0 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 63286E Advanced Aerospace Systems.

The committee recognizes the importance of coordinating various service and agency hypersonics activities and is concerned with the lack of a transition pathway for the Defense Advanced Research Projects Agency's Operational Fires effort into a funded Army acquisition or development activity.

Therefore, the committee recommends a decrease of \$20.0 million in RDT&E, Defense-wide, for PE 63286E for a reduction in the Operational Fires program.

Hypersonic program reduction

The budget request included \$102.0 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 64331D8Z Rapid Prototyping Program.

The committee recognizes the importance of hypersonic research and development, especially in light of the National Defense Strategy and the advancing threats that it describes. However, the committee is concerned that there has been a lack of adequate coordination on hypersonic prototyping efforts among the various stakeholders and service components.

Therefore, the committee recommends a decrease of \$20.0 million in RDT&E, Defense-wide, for PE 64331D8Z for hypersonic program reduction.

Stratospheric balloon research

The budget request included \$133.4 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 63338D8Z Defense Modernization and Prototyping.

The committee recognizes the increasing importance of stratospheric balloons in command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) and missile defense missions. The committee is concerned that, as projects move from the Office of Secretary of Defense's Missile Defeat Project to elsewhere in the Department, transition of prior research will be insufficient. Specifically, the committee is concerned that the Trippwire high altitude demonstration program, previously funded under the Missile Defeat Project, lacks specific budgetary continuity. The committee understands that the Trippwire technologies still require testing and evaluation activities before they can transition to the military services as a program of record.

Therefore, the committee recommends an increase of \$13.0 million in RDT&E, Defense-wide, for PE 63338D8Z for stratospheric balloon research.

Rapid prototyping using digital manufacturing

The budget request included \$93.8 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 63680D8Z Manufacturing Technology.

The committee notes that high performance computing, when combined with additive manufacturing, has the potential to significantly support the ability for forward deployed forces and the defense industrial base to make optimal use of the additive manufacturing capabilities. High performance computing assets can be used to optimize design processes, support real time monitoring of manufacturing processes and product quality, and support detailed data analyses of critical parts. The Department of Defense has indicated that the use of high performance computing addresses a critical capability required in implementation of additive manufacturing.

The committee recommends an increase of \$5.0 million in RDT&E, Defense-wide, for PE 63680D8Z Manufacturing Technology for rapid prototyping using digital manufacturing.

Defense supply chain technologies

The budget request included \$40.0 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 63680S Manufacturing Technology Program.

The committee recognizes the potential of academic partnership programs to increase the adoption of additive manufacturing, automation, and robotics metal-casting technologies among small-to-medium businesses in the defense industrial base.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Defense-wide, for PE 63680S for defense supply chain technologies.

Steel Performance Initiative

The budget request included \$40.0 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 63680S Manufacturing Technology Program.

The committee notes that failure to invest in steel technology for advanced weapon systems threatens leadership in commercial steel technology and in defense equipment performance. The committee understands that steel is a critical and enabling material for the performance of defense equipment. Investment is needed in steel alloy development and manufacturing technology to maintain warfighter preparedness and a strong industrial base.

Therefore, the committee recommends an increase of \$10.0 million for RDT&E, Defense-wide, for PE 63680S.

Network-Centric Warfare Technology program reduction

The budget request included \$661.2 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 63766E Network-Centric Warfare Technology.

The committee is concerned with the coordination of service and Strategic Capabilities Office programs and activities as well as the absence of transition plans for some of the proposed and ongoing research efforts.

Therefore, the committee recommends a decrease of \$10.0 million in RDT&E, Defense-wide, for PE 63766E Network-Centric Warfare Technology.

Operational Energy Capability Improvements

The budget request included \$0.0 in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 64055D8Z Operational Energy Capability Improvement.

The committee notes that, since its creation in 2012, the Operational Energy Capability Improvement Fund (OECIF) has served as “seed money” to start or consolidate promising innovations and to demonstrate technological feasibility with the goal of transitioning science and technology investments into Department of Defense programs. The committee further notes that OECIF investments are directly focused on the capability needs expressed in the National Defense Strategy and that OECIF’s efforts have complemented, not replaced or duplicated, investments made by the military services. The committee is concerned that the budget request did not include funding for the OECIF and notes its support for the program as the Department works to rapidly address new and critical issues arising from emerging threats to our ability to supply the Joint Force.

Accordingly, the committee recommends an increase of \$65.0 million in RDT&E, Defense-wide, for PE 64055D8Z Operational Energy Capability Improvement.

Funding for long-duration demonstration initiative and joint program

The budget request included \$61.3 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 63851D8Z Environmental Security Technical Certification Program.

The committee recommends an increase of \$15.0 million in RDT&E, Defense-wide, for PE 63851D8Z to fund a pilot program on long-duration energy storage established elsewhere in this Act.

Advanced technologies

The budget request included \$730.5 million in Research, Development, Test, and Evaluation, Defense-wide (RDDW), for PE 64250D8Z Advanced Innovative Technologies.

The committee is supportive of advanced innovation but is concerned that some of the projects planned to be undertaken in fiscal year 2021 are outside of the charter of the Strategic Capabilities Office—namely, the use of mature technology to produce game-changing capability. The committee is encouraged by the continued work on the hypervelocity gun weapon system (HGWS) and its continued development to provide a low cost integrated air and missile defense interceptor. The committee encourages the continued development of the HGWS program.

Therefore, the committee recommends a decrease of \$100.0 million in RDDW for PE 64250D8Z.

Defense Modernization and Prototyping program reduction

The budget request included \$133.4 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 64331D8Z Defense Modernization and Prototyping.

The committee recognizes the importance of hypersonic research and development, especially in light of the National Defense Strategy and the advancing threats that it describes. However, the committee is concerned that there has been a lack of adequate coordination on hypersonic prototyping efforts among the various stakeholders and service components.

Therefore, the committee recommends a decrease of \$20.0 million in RDT&E, Defense-wide, for PE 64331D8Z.

Homeland Defense Radar-Hawaii

The budget request did not contain funding in Research, Development, Test, and Evaluation, Defense-Wide (RDDW), for PE 64672C Homeland Defense Radar-Hawaii (HDR-H).

The committee is aware of the challenges related to site selection for HDR-H but understands that the Missile Defense Agency has a viable path forward if provided sufficient funding. The committee believes that a persistent sensing capability in this area of responsibility is critical for homeland defense and also notes that this program was included in the unfunded priorities list submitted by the Commander, Indo-Pacific Command.

Accordingly, the committee recommends an increase of \$162.0 million in RDDW for PE 64672C.

Next Generation Interceptor

The budget request included \$664.1 million in Research, Development, Test, and Evaluation, Defense-wide (RDDW), for PE 64874C Improved Homeland Defense (IHL) Interceptors.

The committee fully supports the effort to modernize the Ground-Based Interceptor fleet but also notes that delays in releasing the request for proposals for the Next Generation Interceptor (NGI)

have led to a projected contract award date that is almost 1 year later than initially planned for by the Missile Defense Agency (MDA). These delays have also prevented the MDA from obligating or expending the fiscal year 2020 funding that was appropriated for the two initial contract awards.

Accordingly, the committee recommends a decrease of \$310.0 million in RDDW for PE 64874C for the NGI program.

PDI: Guam Defense System

The budget request did not include funding in Research, Defense, Test, and Evaluation (RDT&E), Defense-wide, for PE 64880C Land-Based SM-3 for a Guam Defense System (GDS).

The committee notes that this project was included on the unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command, who stated that Guam is both the western-most territory of the U.S. homeland and a critical location for posture and operations in the Indo-Pacific area of responsibility. The committee agrees with the Commander that protection of U.S. assets and personnel on Guam is critical for effective operations in the region.

Accordingly, the committee recommends an increase of \$76.8 million in RDT&E, Defense-wide, for PE 64880C Land-Based SM-3 for GDS.

In addition, the committee expects the Missile Defense Agency (MDA), along with U.S. Strategic Command (STRATCOM) and U.S. Indo-Pacific Command (INDOPACOM), to continue to analyze and refine the plan for a defense architecture against the range of missile threats to Guam while also beginning the work described above.

Accordingly, not later than January 31, 2021, the committee directs the Secretary of Defense, in consultation with the Director of the MDA and the Commanders, STRATCOM and INDOPACOM, to submit to the congressional defense committees an assessment of the architecture required for the defense of Guam from air and missile threats, including ballistic, hypersonic, and cruise missiles. The assessment shall include the following elements:

- (1) An analysis of existing and projected air and missile threats to U.S. forces, assets, and infrastructure located on Guam;
- (2) An analysis of impacts to the ability of U.S. forces to conduct operations in the INDOPACOM area of operations if systems and assets on Guam are vulnerable to air and missile threats;
- (3) An analysis of systems currently available for procurement or deployment that could contribute to the defense of Guam from these threats not later than the end of 2025;
- (4) An analysis of new systems currently in development, or modifications to existing systems, that could enhance or substitute for existing options in contributing to this mission;
- (5) Estimated cost and schedule for the various options studied; and
- (6) Anything else the Secretary deems relevant.

Hypersonic and Ballistic Tracking and Custody Layer

The budget request included \$216.0 million in Research, Development, Test, and Evaluation, Defense-wide (RDDW), for PE 1206410SDA Space Technology Development and Prototyping.

The committee understands that the Space Development Agency (SDA) is responsible for the development of the hypersonic and ballistic space-based tracking and custody layer. In addition the committee has been informed that the SDA is transferring funds to have the Missile Defense Agency continue development of the Hypersonic and Ballistic Tracking Space Sensor as a potential sensor for the tracking layer.

Therefore, the committee recommends a decrease of \$20.0 million in RDDW for PE 1206410SDA.

Hybrid space

The budget request included \$216.0 million in Research, Development, Test, and Evaluation, Defense-wide (RDDW), for PE 1206410SDA Space Technology Development and Prototyping.

The committee understands that the Commander, U.S. Indo-Pacific Command, Commander, U.S. European Command, and other combatant commanders have identified the need for persistent space-based radars in their unfunded priorities lists for fiscal year 2021. A constellation of low earth orbit, space-based radars, with rapid revisit rates and the capability to maintain situational awareness of adversary activities and providing low latency target custody, would meet the requirements of the combatant commanders.

Therefore, the committee recommends an increase of \$130.0 million in RDDW for PE 1206410SDA.

Hypersonic and Ballistic Tracking Space Sensor

The budget request did not include funding in Research, Development, Test, and Evaluation, Defense-Wide (RDDW), for PE 1206895C BMDS Space Programs for a Hypersonic and Ballistic Tracking Space Sensor (HBTSS).

The committee is aware that some funding for this capability was included in the budget request for the Space Development Agency (SDA). The committee notes, however, that section 1683 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) required the Secretary of Defense to assign primary responsibility for the development and deployment of an HBTSS payload to the Missile Defense Agency. Further, the amount of funding contained in the requested SDA budget for this program is far less than what is required to keep the HBTSS program on track, according to fiscal year 2020 budget documentation.

The committee notes that the Commander, U.S. Strategic Command, and Commander, U.S. Northern Command, among other senior military and civilian officials, have stated repeatedly that space-based sensors are the most effective path to improving both homeland and theater missile defenses against a wide range of missile threats. The committee is disappointed that the Department of Defense has once again neglected to request meaningful funding for this program.

Accordingly, the committee recommends an increase of \$120.0 million in RDDW in PE 1206895C for HBTSS.

Stryker Nuclear Biological Chemical Reconnaissance Vehicle Sensor Suite Upgrade

The budget request included \$320.0 million in Research, Development, Test, and Evaluation, Defense-wide (RDDW), for PE 64384BP Chemical and Biological Defense Program—EMD, of which \$128.9 million was for Contamination Avoidance programs, including the Stryker Nuclear Biological Chemical Reconnaissance Vehicle Sensor Suite Upgrade (NBCRV SSU).

The committee understands that platform-mounted reconnaissance of nuclear and radiological hazards is a key capability for ground forces and supports the Department of Defense's efforts to develop stand-off technology that would protect soldiers and equipment from radiation exposure. The committee believes that this capability would be useful on a broader variety of platforms.

Accordingly, the committee recommends an increase of \$3.0 million in RDDW for PE 64384BP for Contamination Avoidance programs to accelerate integration activities for the Stryker NBCRV SSU and to investigate platform-agnostic variants of the sensor package.

Infrastructure to assess counter-small UAS commercial solutions

The budget request included \$422.5 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 64940D8Z Central Test and Evaluation Investment Program (CTEIP).

The committee notes the expansion of small Unmanned Aircraft System (sUAS) threats as fueled by the proliferation of industry-driven sUAS capabilities highlighted elsewhere in this Act. The committee believes that the scope and complexity of this threat will only increase over the next decade.

Therefore, the committee recommends an increase of \$15.0 million in RDT&E, Defense-wide, for PE 64940D8Z to build the necessary test and evaluation infrastructure to assess Counter-sUAS (C-sUAS) capabilities.

To ensure the best use of this additional funding, the committee directs the Under Secretary of Defense for Research and Engineering (USD R&E) to provide a plan for the development of the test and evaluation infrastructure required to appropriately assess C-sUAS solutions so as to systematically address the long-term threat to U.S. troops and critical infrastructure.

The committee expects future funding to be used to build the appropriate test and evaluation infrastructure, but it will be contingent on the efficacy of the briefed plan. The committee recommends that the USD R&E consult with the Department of Justice on its efforts to systematically address C-sUAS threats using a comprehensive test and evaluation plan.

The plan shall be briefed to the congressional defense committees no later than February 1, 2021, and shall address the capability to: (1) Provide full time, space, and position information on low, slow, and small targets that are either under operator control or auto-

mous and that may be executing terrain-following maneuvers; (2) Enable cyber analyses of defeat mechanisms for autonomous and automated systems; (3) Enable end-to-end analysis of the proposed C-sUAS kill chain from sensor to defeat mechanism to impact on UAS functionality; and (4) Such other matters as the USD R&E determines to be appropriate.

Telemetry range extension wave glider relay

The budget request included \$422.5 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 64940D8Z Central Test and Evaluation Investment Development.

The committee notes the need for investments in test ranges in support of the capabilities called for in the National Defense Strategy. Range extension enables range safety and Department of Defense over-water test events of long-range hypersonic weapons, aircraft, and sea surface platforms.

Therefore, the committee recommends an increase of \$15.0 million in RDT&E, Defense-wide, for PE 64940D8Z.

National Academies study on comparison of talent programs

The budget request included \$5.8 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 65151D8Z Studies and Analysis Support—OSD.

The committee recommends a provision elsewhere in this Report to require the National Academies of Science, Engineering, and Medicine to conduct a study comparing methods for recruiting and retaining researchers used by the U.S. and Chinese governments. The committee notes that the People's Republic of China maintains various well-funded talent programs through which American researchers are encouraged to set up labs in China and conduct research in Chinese laboratories, providing the country access to sensitive technologies developed in the United States.

Therefore, the committee recommends an increase of \$2.0 million in RDT&E, Defense-wide, for PE 65151D8Z for the National Academies of Science, Engineering, and Medicine study on comparison of talent programs.

Defense Technical Information Center

The budget request included \$59.4 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 65801KA Defense Technical Information Center (DTIC).

The committee notes the challenges that the DTIC faces in efficiently and effectively performing its mission to facilitate sharing, maintain open repositories, and develop analytics of data across the research and engineering enterprise. The committee notes that the role of the DTIC needs to be re-examined given the emphasis that the Department of Defense is placing on the use of modern data collection, distribution, and analysis techniques and technologies to support both management and combat missions.

Therefore, the committee recommends a decrease of \$50.0 million in RDT&E, Defense-wide, for PE 65801KA.

The committee directs the Under Secretary of Defense for Research and Engineering, in coordination with the Chief Data Officer and other appropriate officials, to brief the congressional de-

fense committees on a plan for the modernization and revitalization of DTIC missions, capabilities, and roles to support the National Defense Strategy no later than December 31, 2021.

Advanced machine tool research

The budget request included \$9.2 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 67210D8Z Industrial Base Analysis and Sustainment Support.

The committee notes that Executive Order 13806 (Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States) and the follow-on Department of Defense report both called for strengthening American manufacturing capabilities. The use of non-U.S.-origin machine tools could provide openings for both industrial and national espionage and yield degradation in product quality and functionality. U.S. machine tool makers are largely buying, rather than building, the tools necessary to manufacture cutting edge machine tools.

Therefore, the committee recommends an increase of \$20.0 million in RDT&E, Defense-wide, for PE 67210D8Z for research in advanced machine tooling.

Cold spray manufacturing technologies

The budget request included \$9.2 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 67210D8Z Industrial Base Analysis and Sustainment Support.

The committee notes that a January 2020 Government Accountability Office report, titled “Military Depots: DOD Can Benefit from Further Sharing of Best Practices and Lessons Learned” (GAO-20-116), cited the potential benefits of the application of cold spray manufacturing technologies in sustainment activities across the Department of Defense.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Defense-wide, for PE 67210D8Z for cold spray manufacturing technologies.

Domestic organic light emitting diode manufacturing

The budget request included \$9.2 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 67210D8Z Industrial Base Analysis and Sustainment Support.

The committee recognizes the importance of organic light emitting diode (OLED) microdisplays as critical components in major military aviation and ground combat programs of record. However, the committee is concerned that the domestic OLED manufacturing industrial base is fragile. Spare parts are very limited, often resulting in substantial time and production capacity loss. A single-point-of-failure for any one of these tools can result in a complete production line halt that can span weeks or even months.

Therefore, the committee recommends an increase of \$5.0 million in RDT&E, Defense-wide, for PE 67210D8Z for support for domestic OLED manufacturing.

Implementation of radar supplier resiliency plan

The budget request included \$9.2 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 67210D8Z Industrial Base Analysis and Sustainment Support.

The committee acknowledges the Department of Defense's preparation of a Radar Supplier Resiliency Plan.

To support implementation of this plan, the committee recommends an increase of \$5.0 million in RDT&E, Defense-wide, for PE 67210D8Z. Accordingly, the committee directs the Secretary of Defense to report to the congressional defense committees by April 15, 2021, on the critical deliverables that will have a direct and measurable impact on the radar industrial base during the first year of implementation.

Manufacturing for reuse of NdFeB magnets

The budget request included \$9.2 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 67210D8Z Industrial Base Analysis and Sustainment Support.

The committee notes that the Department of Defense depends on high-performance magnets, including rare earth neodymium-iron-boron (NdFeB), for the functioning of sophisticated weapon systems. Section 2533c of title 10, United States Code, requires the Department to stop using magnets from China. The committee is also concerned about the reliability of other sources of these magnets and the global dependence on raw materials supplied by China.

Therefore, the committee recommends an increase of \$6.0 million in RDT&E, Defense-wide, for PE 67210D8Z to expand domestic manufacturing capacity for these magnets.

Submarine Construction Workforce Training Pipeline

The budget request included \$9.2 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 67210D8Z Industrial Base Analysis and Sustainment Support.

The committee notes that, over the next decade, the submarine shipbuilding industry must hire at least 18,000 new skilled workers to support the production of the *Columbia*-class ballistic missile submarine and the continued construction of the *Virginia*-class submarine. The submarine industry has worked closely with State and local governments, community colleges, high schools, and community-based non-profits for the past several years to establish new training pipelines to support these increased hiring needs. Thus far, such pipeline training programs have placed nearly 2,500 people in submarine industry jobs. The committee notes that additional funding will increase the throughput of these pipelines and expand them into additional States to more adequately respond to the hiring demand.

Therefore, the committee recommends an increase of \$20.0 million in RDT&E, Defense-wide, for PE 67210D8Z for increasing the submarine construction workforce training pipeline.

Workforce transformation cyber initiative pilot program

The budget request included \$46.5 million for Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 33140D8Z Information Systems Security Program.

The committee supports the National Security Agency (NSA) National Cryptologic School pilot program to enable workforce transformation certificate-based courses on cybersecurity and artificial intelligence that are offered by Center of Academic Excellence (CAE) universities. The committee understands that this pilot program will develop courses and curricula with technology partners and also provide funding for select NSA CAE universities to offer these courses and receive tuition reimbursement for participation in the courses.

Therefore, the committee recommends an increase of \$20.0 million, in RDT&E, Defense-wide, for PE 33140D8Z for the workforce transformation cyber initiative pilot program.

Cyber orchestration pilot

The budget request included \$8.9 million for Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 33140K Information Systems Security Program.

Elsewhere in this report, the committee directs the Secretary of Defense to sponsor a demonstration of commercial technologies and techniques for enabling interoperability among cybersecurity systems and tools and for machine-to-machine communications and automated workflow orchestration. This demonstration should include comply-to-connect products, the Assured Compliance Assessment Solution, the Automated Continuous Endpoint Monitoring program, the Sharkseer perimeter defense system, and other Department of Defense cybersecurity systems. The committee urges the Secretary to coordinate this demonstration with the speed metrics pilot and the demonstration of the Systems of Systems Technology Integration Tool Chain for Heterogeneous Electronic Systems interoperability technology recommended elsewhere in this report.

Therefore, the committee recommends an increase of \$10.0 million, in RDT&E, Defense-wide, for PE 33140K for the cyber orchestration pilot program.

Joint Regional Security Stacks SIPR funding—RDT&E

The budget request included \$9.7 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 33228K Joint Regional Security Stacks (JRSS).

The committee is aware of the operational cybersecurity limitations of the JRSS technology as assessed by the Director, Operational Test and Evaluation, the difficulty of training personnel to use the JRSS, and the shortage of feasible tactics, techniques, and procedures to make effective use of the JRSS. The committee believes that the deployment of JRSS on the Secret Internet Protocol Router Network is thus inappropriate, given JRSS' limited cybersecurity capability and the existence of alternative capabilities to execute its network functions.

Therefore, the committee recommends a decrease of \$486,000 in RDT&E, Defense-wide, for PE 33228K due to the operational cybersecurity limitations of the JRSS technology.

Multi-Mission Payload

The budget request included \$1.2 million in Research, Development, Test, and Evaluation (RDT&E), Special Operations Command, for PE 1160431BB Warrior Systems for Multi Mission Payload (MMP).

The committee notes that United States Special Operations Command (SOCOM) identified executability issues with the MMP-Light program due to appropriations rescissions in fiscal year 2020. As a result, SOCOM requested the transfer of funds from the MMP-Light to the man-pack Capital Equipment Replacement Program for fiscal year 2021.

Therefore, the committee recommends a reduction of \$1.2 million in RDT&E, Special Operations Command, for PE 1160431BB. The increase associated with this transfer is reflected elsewhere in this report.

Advanced satellite navigation receiver

The budget request included \$39.1 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 65814OTE Operational Test Activities and Analyses.

The committee notes the need for test and evaluation activities for development of countermeasures and counter-countermeasure capabilities. Currently, full characterization of existing threats is limited due to the technical limitations of current flight data systems to support high speed and dynamic flight testing requirements.

Accordingly, the committee recommends an increase of \$5.0 million in RDT&E, Defense-wide, for PE 65814OTE to improve threat characterization in high dynamic flight testing.

Joint Test and Evaluation Program

The budget request included \$39.1 million in Research, Development, Test, and Evaluation (RDT&E), Defense-wide, for PE 65814OTE Operational Test Activities and Analyses.

The committee notes that the Joint Test and Evaluation program focuses on joint (cross-service and cross-combatant command) warfighter needs and rapid delivery of non-materiel solutions, such as: joint tactics, techniques, and procedures; concepts of operations; improved and new training packages; and new test tools and methodologies. Over the past decade, the program has completed 40 joint tests and 96 quick reaction tests, sponsored primarily by the combatant commands. The committee believes that this important work should continue.

Therefore, the committee recommends an increase of \$22.0 million in RDT&E, Defense-wide, for PE 65814OTE to restore the Department's proposed cut to the program under the Defense-Wide Review.

Items of Special Interest

Advanced powertrain demonstrator

The committee supports the efforts of the Army in developing and integrating modern powertrain technology to provide leap-ahead capabilities for ground combat vehicles. The committee notes that the Advanced Powertrain Demonstrator initiative has successfully demonstrated improved power density, which can provide opportunities to add capabilities to existing ground combat vehicles, such as additional crew members or weapons, and has provided a wider array of options for next-generation platforms.

The committee encourages the Army to continue to progress the Advanced Powertrain Demonstrator to higher Technology Readiness Levels and to consider resourcing follow-on efforts, including the Advanced Mobility Experimental Prototype, in collaboration with the Program Executive Office for Ground Combat Systems. In addition, the Army should continue to leverage private sector investment in powertrain technologies to achieve leap-ahead breakthroughs in powertrain efficiency.

Anti-corrosion and nano technologies

The committee remains concerned about the high cost of corrosion within the Department of Defense. The military services, particularly the Navy, face complex threats in the Indo-Pacific region that require our military equipment and infrastructure to be resilient and have maximum operational availability. The committee urges the Office of Naval Research to pursue lightweight, nanotechnology-based capabilities that provide high corrosion resistance and other performance properties to decrease the cost of corrosion and increase the operational availability of military equipment and infrastructure that enhances the ability of the Joint Force, particularly the Navy, to operate in the Indo-Pacific area of responsibility.

Artificial intelligence and machine learning technologies and systems

The committee recognizes that the Department of Defense (DOD) is deploying artificial intelligence (AI) and machine learning (ML) to increase warfighter capability, decrease operational costs, and increase civilian safety. AI/ML can realize these benefits by enabling machines to perform tasks that have traditionally required labor-intensive human intelligence—for example, to analyze data, image, video, and audio files, potentially increasing capabilities to track threats and monitor global developments.

The committee notes that the interim report from the National Security Commission on Artificial Intelligence identifies an outstanding need for distributed and decentralized data processing capabilities, down to the distributed team, squad, and platoon levels, where units often cannot rely on high-bandwidth networks or heavy-duty data processing resources. The committee notes that there may be an opportunity to deploy AI to this distributed tactical edge environment to enhance decision-making and to support activities such as mapping, sensing, and mission planning. The committee encourages the Department to develop, adopt, and de-

ploy such technologies, when appropriate, to gain significant tactical and strategic advantages.

Further, the committee notes the potential use of AI/ML technology to address a broad spectrum of DOD missions. The committee directs the Director of the Joint Artificial Intelligence Center (JAIC) to provide a briefing to the congressional defense committees, no later than March 1, 2021, that identifies military occupational specialties and capabilities across the military services and Defense Agencies and Field Activities that can better leverage AI to maximize effectiveness, mission goals, and cost savings to the Federal Government. The committee directs that this briefing include an identification of business processes and business information technology systems that would directly benefit from the immediate application of commercial AI/ML capabilities to DOD “back office” activities, such as financial management, acquisition, personnel management, and the Department’s audit.

The committee also notes the unique cybersecurity vulnerabilities of AI/ML-based systems. The committee notes that the Department’s efforts to develop and deploy secure hardware and software do not yet have a clear thrust to mitigate threats that are unique to AI/ML-enabled capabilities. The committee directs the Department to leverage multidisciplinary teams, compromised of U.S. Government, industry, and research university representatives, to urgently develop required capabilities and infrastructure to secure the algorithms, data, and execution of AI/ML-enabled systems. Further, the committee encourages the Department to partner with research universities to develop undergraduate and graduate curricula and research fellowship opportunities focused on threat identification and mitigation for AI/ML-enabled systems.

The committee also encourages the JAIC to work closely with the White House Artificial Intelligence Task Force, as well as the National Institute for Standards and Technology, to develop standards for the use of AI across the U.S. Government and best practices for the Federal Government’s engagement of the private sector. The committee also urges the Secretary of Defense to continuously review and refine a detailed code of ethics associated with its use of AI to ensure that any future uses respect civil rights, including privacy, and to ensure that human decision-makers remain central to all operational activities involving AI/ML and AI/ML-enabled capabilities.

Finally, the committee recommends that the Department consider establishing joint U.S.-allied partner ventures, as well as joint DOD ventures with state-level AI-based economic development activities, that address shared needs in AI/ML-enabled capabilities.

Carbon fiber and graphitic foam for Special Operations Forces tactical vehicles

The committee recognizes recent efforts made by United States Special Operations Command (SOCOM) to develop low-cost, wider application carbon fiber and graphitic foam components in support of the Special Operations Forces (SOF) tactical vehicle program. The committee notes that carbon fiber components may reduce vehicle weight, reduce fuel consumption, increase payload capacity,

and could extend service life for SOF tactical vehicles. Additionally, graphitic carbon foam may also reduce vehicle heat signatures and improve heat dissipation from the engine and electronics compartments and could provide protection against blast energy, directed energy weapons, and electromagnetic pulse threats.

The committee notes that the Defense Logistics Agency has designated graphite/carbon fiber as a strategic material. The committee acknowledges that the U.S. Army and SOCOM have identified low cost mesophase pitch as a United States-based source of graphite that can be used to produce carbon fiber, graphitic carbon foam, and battery technologies. The committee recognizes the versatility and broad application that carbon fiber technology may provide for the Armed Forces by reducing the weight of parts as compared to traditional steel components.

Therefore, the committee encourages SOCOM continue its efforts to test, develop, and field low cost carbon fiber and graphitic carbon foam in support of its tactical vehicle program and other programs, as appropriate.

Carbon fiber wheels and graphitic foam for Next Generation Combat Vehicle

The committee commends the U.S. Army Ground Vehicle Systems Center's (GVSC's) decision to transition into lower cost, wider application carbon fiber composite wheels and graphitic carbon foam research in support of the Next Generation Combat Vehicle (NGCV). Carbon fiber wheels may reduce vehicle weight, reduce fuel consumption, increase payload capacity, and extend service life for the NGCV. Graphitic carbon foam may dramatically reduce vehicle heat signatures and improve heat dissipation from engine and electronics compartments while also protecting against blast energy, directed energy weapons, and electromagnetic pulse threats. Finally, these products lend themselves to being produced at remote locations with additive manufacturing processes in support of NGCV operation and maintenance.

The Defense Logistics Agency has designated graphite/carbon fiber as a strategic material. The committee notes favorably that the U.S. Army GVSC has identified low cost mesophase pitch as a United States-based source of graphite that can be used to produce carbon fiber, graphitic carbon foam, and battery technologies for the NGCV. The committee recognizes the versatility and broad application that carbon fiber technology provide for the Armed Forces by reducing the weight of parts by over 50 percent, as compared to traditional steel components, while improving survivability and performance.

The committee encourages the U.S. Army GVSC to continue to test, develop, and field low cost mesophase pitch carbon fiber and graphitic carbon foam components that may reduce vehicle weight, reduce fuel consumption, increase payload capacity, extend service life, reduce vehicle signatures, improve survivability, and utilize additive manufacturing technology to reduce cost and weight in the NGCV program.

Close Combat Lethality Task Force

In March 2018, the Close Combat Lethality Task Force (CCLTF) was established by former Secretary of Defense James Mattis, as a direct report to the Secretary, and chartered with dramatically improving the effectiveness and survivability of close combat formations through a combination of materiel and non-materiel means, including innovations in recruitment, retention, training, concepts of operation, tactics, techniques, and procedures, and equipment. The committee agreed with Secretary Mattis' rationale for creating the CCLTF, specifically that close combat formations should be manned, trained, and equipped as an elite force capable of combat "overmatch," and with its designation as a Cross Functional Team (CFT) under section 911 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114328), leveraging the critical enabling authorities of that law.

In a memorandum dated March 27, 2020, Secretary of Defense Mark Esper transferred the CCLTF to the Secretary of the Army with a tasking to determine alignment of the CCLTF within the Army hierarchy. This decision effectively ended the CCLTF's designation as a CFT under section 911. As a result, the CCLTF will no longer be accorded the priority of a CFT sponsored by, and reporting directly to, the Secretary of Defense, nor will it exercise the authorities available under section 911 and those assigned by the Secretary of Defense.

The committee is concerned about the potential consequences of these decisions on the close combat mission of the Department of Defense. The Secretary of the Army has been directed to report back to the Secretary of Defense on the authorities, responsibilities, policy, and procedures that the Secretary of the Army will provide for the continued operation of the CCLTF. While the Army's senior leaders have indicated that they remain committed to the vision and success of the CCLTF, it is unclear whether the Army intends to pursue the non-material initiatives that are central to dramatically improving close combat effectiveness and survivability. In addition, the committee notes that the Marine Corps also has considerable equities in the CCLTF, and they are critical to the success of this joint effort.

Therefore, the committee directs the Secretary of the Army to provide a briefing to the SASC, not later than September 30, 2020, on the Army's plan to provide enduring support for the materiel and non-materiel initiatives to improve close combat lethality and survivability. The briefing shall also provide details on the CCLTF's alignment within the Army, how the Army will partner with the Marine Corps and Special Operations Command on the CCLTF's initiatives, and whether the CCLTF will continue to be organized and operated as a cross-functional team reporting directly to a senior leader. Furthermore, the briefing shall address the status of the lines of effort assigned by Secretary Mattis and any changes to recruitment, retention, training, and personnel turnover in close combat units. Finally, the briefing shall also address whether personnel from the Cost Analysis and Program Evaluation office, the Offices of the Under Secretaries of Defense for Research and Engineering, Acquisition and Sustainment, and Personnel and Readiness, the Joint Staff, and U.S. Special Operations

Command will continue to participate in the CCLTF as outside experts.

Collaboration on research to counter foreign malign influence operations

The committee notes that section 228 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) authorizes the Department of Defense to carry out a research program on foreign malign influence operations as part of the university research program.

The committee believes that countering foreign malign influence should be a priority in the effective implementation of the National Defense Strategy, and the committee urges the Department to utilize this authority to the greatest extent possible and increase its collaboration with academia, nongovernmental organizations, and other relevant entities to maintain an edge in identifying and countering adversarial foreign malign influence.

Therefore, the committee directs the Secretary of Defense to provide a briefing to the the Committees on Armed Services of the Senate and the House of Representatives on how the Department will implement section 228 of the National Defense Authorization Act for Fiscal Year 2020. The briefing shall include, at a minimum: (1) Details on how the program will enhance understanding of foreign malign influence; (2) An identification of organizations that are collaborating on such research as well as a description of steps being taken to ensure appropriate inclusion of the military services' research and cyber centers; and (3) A description of how the program will work with universities, nongovernmental organizations, and other relevant entities to enhance the understanding of and development of appropriate responses to foreign malign influence through collaborative research and the exchange of information.

Comptroller General review of Artificial Intelligence Activities of the Department of Defense

The committee notes that the Department of Defense (DOD) is investing significantly in developing and acquiring artificial intelligence (AI) tools and systems in order to develop and deploy AI-enabled capabilities to support DOD missions. For example, the DOD has established a Joint Artificial Intelligence Center (JAIC) to coordinate Department-wide AI activities, increased science and technology investments in AI, and attempted to employ more AI experts in a variety of roles. The DOD has historically had challenges developing modern capabilities in a timely manner as well as coordinating disparate activities across the Department. Given the growing significance of AI to DOD's acquisition goals, the committee directs the Comptroller General of the United States to continuously monitor and report on: (1) DOD's AI-related efforts, including science and technology, research and development, and formal acquisition programs; (2) The status of these efforts, including types of technologies and technology transition strategies being used; (3) Efforts to build expertise and infrastructure, including accessible data sets and computational capabilities, both within the DOD and across the Federal Government, to support DOD missions. The committee directs the Comptroller General to provide a

briefing on the status of the effort to the committee by September 1, 2020, and provide a report to the committee by February 1, 2021.

Cyber Operations for Base Resilient Architecture

The committee understands that the U.S. is committed to a holistic cyber mission assurance program through investments in defensive cyberspace operations, weapon system cyber resiliency efforts, the Cyber Resiliency Office for Weapon Systems, and Mission Defense Teams.

Therefore, the committee encourages the Secretary of Air Force to continue funding and to expand the Cyber Operations for Base Resilient Architecture pilot program in the U.S. Indo-Pacific Command area of responsibility as part of the overall mission assurance strategy.

Emerging biotechnology for national security

The committee notes the importance that emerging biotechnologies will have in national security missions, including medical response to threats, biological defense, and bio-based manufacturing and computation.

The committee believes that the Department of Defense should consider developing more formal organizations with specific responsibility for maintaining critical technical expertise in these emerging areas and facilitating adoption and availability of these technologies for Department of Defense missions. The committee notes that the optimal construct for such an organization might be a network of linked organizations, or a virtual consortium of independent organizations, to include both public and private sector entities. Activities of such an organization should range from basic research to prototyping of new concepts to support for manufacturing and production to providing technical expertise to the Department as required.

The committee directs the Under Secretary of Defense for Research and Engineering to develop plans for the establishment of and support for potential organizational options to advance emerging biotechnology research, analyses, prototyping, and manufacturing activities for national security missions. The plan developed should address the following issues: development and continuous modernization of fundamental tools and technologies to advance knowledge in engineering biology; options for governance structures, level of investment required, a list of types of participants, intellectual property strategies, and other considerations required to stand up the entity or entities, including required physical and digital infrastructure; and possible metrics to measure progress or success.

The committee directs that the plan include a focus on strengthening the current organization, structure, and funding of emerging biotechnologies research and development across the Department to allow for stronger coordination across the military services and Defense Agencies and Field Activities and to develop, mature, and transition biotechnology activities, including the identification of duties of designated officials and additional authorities required.

The plan should also address coordination with appropriate inter-agency and international activities.

Not later than March 1, 2021, the Under Secretary of Defense for Research and Engineering shall provide a briefing to the congressional defense committees on the plans, policy recommendations, and implementation plan, strategy, and associated funding requirements.

Ground Vehicle Systems Center modeling and simulation

The U.S. Army Combat Capabilities Development Command (CCDC) Ground Vehicle Systems Center (GVSC) is developing a robust modeling and simulation capability. The committee notes that such a capability could assist the Next Generation Combat Vehicle Cross Functional Team, particularly as the Army focuses on a digital design approach to the Optionally Manned Fighting Vehicle. This approach could leverage modern practices of the commercial automotive industry and foster development of important next generation capabilities. The committee supports modeling and simulation capability development by GVSC and, elsewhere in this report, has authorized funds to support Next Generation Combat Vehicle technologies. The committee directs the Director, Army Combat Capabilities Development Command, to coordinate with the Director, Test Resource Management Center, to ensure that relevant modeling and simulation capabilities are available for wider use across the Department of Defense's test and evaluation enterprise.

High-energy laser weapons systems

The committee recognizes that advancements in stabilized gimbal systems have provided improvements in target detection, identification, and designation on high-energy laser (HEL) weapon systems. The committee notes that these systems can enhance long-range tracking performance, thereby improving success rates and enhancing the safety of servicemembers on the battlefield. Therefore, the committee directs the Secretary of Defense to provide a briefing to the congressional defense committees no later than December 31, 2020, on current actions being taken to improve advanced tracking and targeting capability on HEL weapon systems.

Implement National Academies of Science Army Information Science report recommendations

The committee notes that the 2019 National Academies of Sciences, Engineering, and Medicine Assessment of the Information Sciences Directorate at the Army Research Office found that the Army is producing work of high scientific quality with well qualified program managers and that funded projects are of high caliber and in areas relevant to the Army's science and technology mission with examples of transitions of the research to the Army and to the Department of Defense (DOD) more broadly. The study made a number of recommendations to improve the quality of these programs, related to: program assessment metrics and program management expertise; management of researchers and research portfolios; coordination of activities with other similar DOD and inter-agency activities; and broadening of the researcher base. The committee also notes that the Department of Defense's Office of Basic

Science issued a 2019 study on “Future Directions at the Intersection of Management Science and Information Science” which highlighted a number of opportunities in these fields where research could be conducted to improve the way that the Army and the Department as a whole could manage business processes within technology development organizations. The committee directs the Secretary of the Army to review these two studies and provide a briefing to the congressional defense committees on how the Army will address the findings and recommendations of these two reports, no later than January 1, 2022. This briefing shall be provided in publicly releasable format, with a classified annex as necessary.

Joint Artificial Intelligence Center reporting structure

The committee is aware of the recommendations made by the National Security Commission on Artificial Intelligence in its March 2020 report and appreciates its efforts to highlight a number of areas where the Department of Defense (DOD) can strengthen its efforts in adopting artificial intelligence (AI). The committee is also aware that, over the past 24 months, the Joint AI Center (JAIC) has grown from a nascent organization into the focal point of the DOD AI Strategy. Many of the JAIC’s initial AI capability development efforts have transitioned into operational end use by the military services, combatant commands, and several DOD components. The JAIC is now working with organizations across the DOD to develop dozens of new AI-enabled product lines and share lessons learned that will support independent efforts.

The committee believes that successful AI adoption depends on enabling capabilities across modern digital infrastructure, data management practices, and information technology operations. In recognition of the critical relationship between successful digital transformation and adopting AI, the committee understands that the Department positioned the JAIC within the DOD CIO organization. This structure has enabled the JAIC’s success and that of the CIO organization and benefited the DOD enterprise. However, moving forward, the committee also understands that the JAIC’s reporting directly to the Secretary of Defense would afford to the JAIC the high visibility that Secretary direct reports enjoy as well as high priority in the budget request process and the ability to grant waivers from any bureaucratic process requirements not grounded in law. The committee encourages the Department to continue to evaluate this balance to ensure that the JAIC appreciates from an appropriate balance of responsibilities, authorities, and oversight. The committee directs the Secretary to brief the congressional defense committees no later than March 31, 2021, on the future plans for the JAIC’s alignment and reporting structure.

Nanotechnology research

The committee notes the great advances in nanotechnology made through Department of Defense investments in nanomaterials and electronics in partnership with the National Nanotechnology Initiative. Currently, nanotechnology is fielded in numerous defense systems, including electronics, sensors, medical technologies, coatings, and uniforms. The committee believes that continued investment in this field is important to supporting a variety of modernization ac-

tivities consistent with the National Defense Strategy. Therefore, the committee directs the Under Secretary of Defense for Research and Engineering to provide a briefing, in publicly releasable format, with a classified annex as necessary, on Department activities in the research, development, and use of nanotechnology. The briefing shall describe: applications or proposed applications for nanotechnology in defense systems; specific materials being evaluated; research organizations in the U.S. Government and private sector engaged in such research; identified funding for such activities to date; and a description of the military services' and Defense Advanced Research Projects Agency's assessments on and plans for the use of nanotechnology to support future defense needs and requirements. The committee directs that this briefing be provided to the congressional defense committees no later than December 31, 2021.

National Guard research, development, test and evaluation activities

The committee notes that National Guard and reserve components consist of personnel that have private sector experience that is directly relevant to National Defense Strategy modernization priorities. For example, these personnel may have relevant experience in medical fields, software, robotics, cybersecurity, and other critical technical disciplines. In other cases, National Guard equipment and installations are commonly used in technological development and experimentation activities. For example, the committee is aware that the Army has taken advantage of facilities at Fort Pickett to conduct critical operational testing and experimentation for the Integrated Visual Augmentation System. In order to leverage these capabilities further, the committee directs the Secretary of Defense to review and analyze the benefits and feasibility of authorizing National Guard and Reserve members', equipment's, and facilities' participation on a reimbursable basis in research, development, test and evaluation (RDT&E) projects in which their involvement furthers the work because of a member's or unit's availability, qualifications, experience, education, or facilities and equipment. In this review, the Secretary should consider requesting authority to provide reimbursement for these activities from RDT&E accounts, subject to the availability of appropriations. The committee directs the Secretary to brief the congressional defense committees on a recommendation for this proposed policy action no later than February 1, 2021.

National Security Innovation Network

The committee recognizes that the nature of security threats are changing and notes that innovation and entrepreneurial methodologies can generate new solutions to national security problems. The committee notes that, while certain programs in the Department of Defense have allowed for more rapid acquisition, the challenge of implementing rapid change in the Department persists. The committee further understands that the acquisition of new talent to support the national security workforce will be critical to achieving the aims of the National Defense Strategy and that recruitment from innovative sectors of the economy that have traditionally been

less engaged in the defense enterprise will be critical for continued competitiveness.

The committee highlights the effectiveness of the National Security Innovation Network in building a network of alliances between the defense, academia, and venture communities whose innovation, collaboration, and adaptability can be of crucial service to national security. The committee expresses its support for the program and in particular notes the ongoing expansion of activities at universities through academic accelerator programs and technology and national security fellowships as an example of ways the Department of Defense can provide new pipelines for young talent to consider in support of the Nation's national security.

Open Systems Architecture for the Army's Future Vertical Lift programs

The committee recognizes the benefits of a Modular Open Systems Architecture (MOSA) systems engineering approach, as indicated by subchapter I of title 10, United States Code, which requires its use. The committee therefore appreciates that the Army has used it in the Future Vertical Lift Future Attack Reconnaissance Aircraft and Future Long-Range Assault Aircraft programs and also notes the importance of agile contracting in a time of great power competition.

In order to capture the benefits of a MOSA, the committee directs the Assistant Secretary of the Army for Acquisition, Logistics, and Technology to summarize lessons learned from using MOSA approaches, to include recommendations to update existing Department of Defense policy and guidance on MOSA approaches, no later than December 31, 2021, and to brief the congressional defense committees on this summary and these recommendations. This briefing shall be conducted at the classified level, as required. Should the Assistant Secretary also have views for the Congress to consider regarding updates to subchapter I of title 10, United States Code, the committee directs that the Assistant Secretary provide them.

Optionally Manned Fighting Vehicle requirements and acquisition strategy

The Optionally Manned Fighting Vehicle (OMFV) is a priority Army modernization program critically needed to replace the M2 Bradley fighting vehicle that has been in operational service for more than 30 years. Earlier this year the Army cancelled the initial OMFV solicitation and decided to revise the acquisition strategy. It is the committee's understanding that a reset of the program was necessary in order to establish technologically-achievable and affordable requirements as well as to facilitate competition.

The committee encourages the Army to complete a thorough re-evaluation of requirements for the OMFV and to pursue a competitive acquisition approach that will provide best quality and price. Accordingly, the committee directs the Secretary of the Army to provide a classified briefing to the SASC no later than August 1, 2020, on OMFV requirements and the revised acquisition strategy. The briefing shall include the threat-basis and operational ration-

ale for the OMFV requirements and the plan to integrate active protection systems.

Pandemic resilience technologies

COVID-19 has exposed vulnerabilities and challenges for the Navy's operations and logistics and maintenance enterprises. The committee is concerned about the Navy's ability to prepare for and respond to future pandemics. Critical gaps remain in our understanding of how COVID-19 spreads through personnel and platforms in Navy-specific environments and the effectiveness of various disease identification, mitigation, and eradication approaches under consideration.

To ensure warfighter health and ship operational availability into the future, the committee supports a significant applied research and development effort, in partnership with industry and universities, into pandemic resilience technologies and related operational protocols tailored to the unique, contained close-quarters and secure environments on Navy ships and shore facilities.

Accordingly, the committee encourages the Navy to develop and adopt technologies and protocols that have the potential to prevent the spread and mitigate the impact of future pandemics on Navy personnel and operations, including: (1) Artificial intelligence and data-driven infectious disease modeling and interventions; (2) Shipboard airflow management and disinfectant technologies; (3) Personal protective equipment, sensors, and diagnostic systems; and (4) Reduced-manning and unmanned operation, such as resilient unmanned logistics, to reduce human contact.

Predictive maintenance algorithm

The committee recognizes and commends the efforts of the 160th Special Operations Aviation Regiment in becoming one of the Joint Artificial Intelligence Center's (JAIC's) first two National Mission Initiatives through development of an algorithm to conduct predictive maintenance (PMx), rather than forensic or preventative maintenance, on rotary wing aircraft engines.

The committee encourages continued study of this algorithm and its scalability enterprise-wide and continued support of unique partnerships between Department of Defense elements, the JAIC, and outside stakeholders. Not later than November 30, 2020, the Secretary of Defense shall provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives. The briefing shall include details of the following: (1) Positive lessons learned through this partnership and program; (2) Barriers to these partnerships or to scalability, including data availability; and (3) A detailed description of any plans for future adaption of the PMx algorithm for other applications.

Reimbursable work at Army Combat Capabilities Development Command laboratories and engineering centers

The committee notes that the technical workforce and facilities of the Army labs and engineering centers are at the forefront of innovation and prototype development for the Army and a number of other Federal agencies. The committee is aware that recent restrictions on these organizations' ability to perform reimbursable work

have limited the ability for small businesses and other companies to leverage the workforce, equipment, and research infrastructure investments at these labs and centers. These limitations have also limited the ability of the Army's technical organizations to work more closely with leaders in the private sector to adapt new technological capabilities for Army missions.

The committee believes that the capabilities of Department of Defense (DOD) science and technology infrastructure should be available to Federal and industry customers, with those partnerships managed to prioritize defense core activities and missions. Therefore, the committee directs the Secretary of Defense to promulgate policy to fully implement the "manage to budget" flexibilities of subsection (e) of section 2358a of title 10, United States Code, to allow lab and center directors to manage and optimize their reimbursable workloads and customers without regard for funding organization or Tables of Distribution and Allowances limitations. The committee notes that some of the workload can be handled with technically expert term civilian employees, using the authorities established in section 1109 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114-92).

Review of barriers to innovation

The committee is aware of the report titled "Barriers to Innovation in Research and Engineering Activities of the Department of Defense," required by section 232 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91). The committee believes that it is important to address the barriers discussed in the report. The committee encourages the Under Secretary of Defense for Research and Engineering (USD (R&E)) to examine the feasibility of recommendations pertaining to: broadening hiring authorities at Science and Technology Reinvention Laboratories; adjusting reprogramming thresholds to increase the USD (R&E)'s flexibility to shift funds within the science and technology (S&T) budgeting activities; extending the appropriation life of Congressional budget additions; and continued support for authorities that encourage a competitive funding process to help address the challenges of aging infrastructure, that encourage acquisition at the speed of relevance, and that encourage a culture of innovation.

Additionally, the committee directs the USD(R&E), not later than December 31, 2021, to survey laboratories and other S&T organization to identify existing barriers to innovation in the research and engineering enterprise and to brief the congressional defense committees on: (1) Any required updates to the Department of Defense report developed in response to section 232 of the National Defense Authorization Act for Fiscal Year 2018 and proposed recommendations to address relevant findings; (2) Proposed changes in directives, rules, regulations, and other policies that will enhance the ability of the innovation, research, and engineering enterprise of the Department to execute its designated missions, including a description of how proposed changes have been coordinated with the Secretaries of the military departments and the appropriate heads of the Defense Agencies and Field Activities; (3) A schedule, plan, and identification of responsible organizations for addressing barriers identified in the review; and (4) Actions taken

to address specific issues identified in the Department of Defense report developed in response to section 232 of the National Defense Authorization Act for Fiscal Year 2018.

Soldier Enhancement Program

Established by the Congress in 1990, the Soldier Enhancement Program (SEP) allows the Army to quickly provide to soldiers the necessary equipment and clothing for success on the battlefield. It supports accelerated integration and modernization of critical kit, including more lethal weapons, lighter load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids. The committee understands that, during the Army's budget deliberations, senior Army leadership determined that funding for the SEP should be reallocated for higher Army priorities. Furthermore, the committee has been informed that the Army is reviewing how to retain SEP functions with a recommendation pending from Army Futures Command expected later this year. Therefore, the committee directs the Secretary of the Army to provide a briefing to the SASC by September 30, 2020, on the Army's plans to fulfill the critical evaluation and acquisition role performed by the SEP.

Strategic Capabilities Office activities

The committee notes that section 233 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) mandated that the Strategic Capabilities Office (SCO) report directly to the Deputy Secretary of Defense and established two cross-functional teams to improve the technical quality of SCO prototyping projects and to support the transition of those projects into the military services or Defense Agency and Department of Defense Field Activity acquisition activities or operational use. Consistent with the National Defense Strategy and challenges posed by Russia and China, the committee feels that the SCO should play a key role in responding in a timely fashion to fill the capability gaps and operational needs identified by combatant commands by using proven technology to produce game-changing capabilities with responsive new systems and technologies. The committee directs the Deputy Secretary of Defense to provide a briefing to the congressional defense committees no later than March 1, 2021, on the Strategic Capabilities Office's activities to respond to combatant command identified capability gaps, including an identification of activities to improve the speed at which new capabilities can be delivered and an assessment of the role that military service acquisition activities play in efficiently transitioning appropriate SCO programs into operational capabilities.

Ultra-compact hyperspectral imagery

Technology that can discriminate mobility hazards and targets in the three dimensional battle space may enable soldiers to make quicker decisions to effectively neutralize adversary weapon systems. The committee is aware that Ultra-Compact Hyperspectral Imagery (UCHSI) may provide a compact and affordable real-time imaging sensor that enables the warfighter to detect, identify, track, and prioritize targets of interest. Therefore, the committee

encourages the Army to consider this technology for possible applications that support Army modernization priorities such as the Next Generation Combat Vehicle, Long Range Precision Fires, Soldier Lethality, and Future Vertical Lift.

Unmanned Aerial Systems in Great Power Competition

The committee recognizes the important role that manned and unmanned aerial systems (UASs) serve in great power competition. The committee further appreciates that manned and satellite ISR platforms are costly and limited to episodic coverage and understands that the Department of Defense needs to develop new concepts of operations to effectively employ platforms not inherently designed for operating in contested environments, such as non-stealthy UASs. Therefore, the committee directs the Secretary of the Air Force to submit a report to the Committees on Armed Services of the Senate and the House of Representatives, no later than November 30, 2020, detailing the strengths and vulnerabilities of UASs in a National Defense Strategy-envisioned environment and the tactics, techniques, and procedures that would allow for the survivability of UASs in scenarios pitting the United States against near-peer adversaries.

TITLE III—OPERATION AND MAINTENANCE

Subtitle A—Authorization of Appropriations

Authorization of appropriations (sec. 301)

The committee recommends a provision that would authorize the appropriations for operation and maintenance activities at the levels identified in section 4301 of division D of this Act.

Subtitle B—Energy and Environment

Modifications and technical corrections to ensure restoration of contamination by perfluorooctane sulfonate and perfluorooctanoic acid (sec. 311)

The committee recommends a provision that would modify the authority for environmental restoration projects of the National Guard and provide technical corrections and conforming amendments to the statute governing the Defense Environmental Restoration Program.

Readiness and Environmental Protection Integration Program technical edits and clarification (sec. 312)

The committee recommends a provision that would amend section 2684a of title 10, United States Code, to provide a technical correction to the definition of an eligible entity.

Furthermore, this provision would allow funds obligated to agreements under section 2684a of title 10, United States Code, to be made available for use at the time of obligation and for any subsequent amendment to the agreement.

Survey and market research of technologies for phase out by Department of Defense of use of fluorinated aqueous film-forming foam (sec. 313)

The committee recommends a provision that would require the Secretary of Defense to conduct a survey and market research of available firefighting technologies or substances available to be adapted for use by the Department of Defense to facilitate the phase-out of fluorinated aqueous film-forming foam. The Secretary would be required to brief the congressional defense committees on the results of the survey and market research within 180 days of the enactment of this Act.

The committee is encouraged by recent research studies that identify remediation technologies that can destroy per- and polyfluoroalkyl substances (PFAS) in water that meet or exceed Federal guidelines with only inert byproducts remaining. This is an attractive alternative to treatment technologies that transfer the contamination to adsorption media that then require additional transport, disposal, or incineration. The committee strongly encour-

ages the Department, in cooperation with other Federal agencies where appropriate, to explore the use of destruction technologies at PFAS-contaminated sites. The committee notes that PFAS destruction will reduce PFAS exposure pathways, reduce long term operation and maintenance costs, and eliminate concerns over disposal procedures.

Modification of authority to carry out military installation resilience projects (sec. 314)

The committee recommends a provision that would make clarifying amendments to sections 2815 and 2684a of title 10, United States Code, to ensure that military installation resilience projects can be executed to maintain, improve, or rapidly reestablish mission assurance and prevent commercial and residential encroachment around military installations.

Native American Indian lands environmental mitigation program (sec. 315)

The committee recommends a provision that would amend section 160 of title 10, United States Code, to authorize the Secretary of Defense to participate in a program to mitigate the environmental effects of Department of Defense activities on Indian lands and culturally connected locations.

Energy resilience and energy security measures on military installations (sec. 316)

The committee recommends a provision that would amend subchapter I of chapter 173 of title 10, United States Code, by adding a section on energy resilience and energy security measures on military installations.

Modification to availability of energy cost savings for Department of Defense (sec. 317)

The committee recommends a provision that would amend section 2912(a) of title 10, United States Code, to include operational energy savings.

Long-duration demonstration initiative and joint program (sec. 318)

The committee recommends a provision that would require the Director of the Environmental Security Technology Certification Program of the Department of Defense to establish a demonstration initiative comprised of demonstration projects focused on the development of long-duration energy storage technologies not later than 180 days after the date of the enactment of this Act.

Pilot program on alternative fuel vehicle purchasing (sec. 319)

The committee recommends a provision that would require the Secretary of Defense to carry out a pilot program on alternative fuel vehicle purchasing.

Subtitle C—Logistics and Sustainment

Repeal of statutory requirement for notification to Director of Defense Logistics Agency three years prior to implementing changes to any uniform or uniform component (sec. 331)

The committee recommends a provision that would amend section 356 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232; 10 U.S.C. 771) by repealing the requirement that a Secretary of a military department notify the Director of the Defense Logistics Agency at least 3 years prior to implementing changes to any uniform or uniform component and making a technical correction.

The committee notes that, per section 352 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328), it is still the policy of the United States that the Secretary of Defense shall eliminate the development and fielding of armed force-specific combat and camouflage utility uniforms and families of uniforms in order to adopt and field a common combat and camouflage utility uniform or family of uniforms for specific combat environments to be used by all members of the Armed Forces.

Clarification of limitation on length of overseas forward deployment of currently deployed naval vessels (sec. 332)

The committee recommends a provision that would make a clarifying amendment to section 323(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232).

Subtitle D—Reports

Report on impact of permafrost thaw on infrastructure, facilities, and operations of the Department of Defense (sec. 351)

The committee recommends a provision that would require the Secretary of Defense to submit a report to the congressional defense committees on the impact of changes in permafrost on the infrastructure, facilities, assets, and operations of the Department of Defense within 180 days of the enactment of this Act.

Plans and reports on emergency response training for military installations (sec. 352)

The committee recommends a provision that would require the Secretary of Defense to provide a report due 180 days after the date of the enactment of this Act to the Committees on Armed Services of the Senate and the House of Representatives that includes a review of each Department of Defense installation's training protocols for coordination with local law enforcement for active shooter training.

Report on implementation by Department of Defense of requirements relating to renewable fuel pumps (sec. 353)

The committee recommends a provision that would require the Secretary of Defense to submit a report on renewable fuel pumps

to the Congress not later than 90 days after the date of the enactment of this Act.

Report on effects of extreme weather on Department of Defense (sec. 354)

The committee recommends a provision that would require the Secretary of Defense to submit to the congressional defense committees a report, not later than 180 days after the date of the enactment of this Act, on vulnerabilities to military installations and combatant commander requirements resulting from extreme weather.

Subtitle E—Other Matters

Prohibition on divestiture of manned intelligence, surveillance, and reconnaissance aircraft operated by United States Special Operations Command (sec. 371)

The committee recommends a provision that would prohibit the use of any funds authorized to be appropriated by this Act to divest any manned intelligence, surveillance, and reconnaissance (ISR) aircraft operated by the United States Special Operations Command (SOCOM) and prohibits the Department of Defense from divesting any manned ISR aircraft operated by SOCOM in fiscal year 2021.

The committee notes that elsewhere in this Act is a provision that would require the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict and the Commander of SOCOM to jointly submit to the congressional defense committees an acquisition roadmap to meet the manned and unmanned airborne ISR requirements of United States Special Operations Forces (SOF). The committee is concerned that there does not exist an overarching strategy to guide SOCOM's airborne ISR acquisition efforts that, among other things, clearly identifies current or anticipated special operations-peculiar capability gaps and describes future manned and unmanned ISR requirements of SOF over the near-, mid-, and long-term. Given longstanding shortfalls in the Department of Defense's ability to fulfill geographic combatant command ISR requirements, the committee believes that the submission of this roadmap should precede congressional consideration of any proposal that would result in the divestiture of ISR capabilities or otherwise change the current composition of SOCOM's airborne ISR fleet.

Information on overseas construction projects in support of contingency operations using funds for operation and maintenance (sec. 372)

The committee recommends a provision that would amend section 2805(c) of title 10, United States Code, by requiring the Secretaries of the military departments, the Directors of the Defense Agencies, and the heads of any other relevant components of the Department of Defense to track and report to the Under Secretary of Defense (Comptroller) relevant data regarding all overseas construction projects funded with amounts appropriated or otherwise made available for operation and maintenance in support of contin-

gency operations. Additionally, the provision would require that the Secretary of Defense prepare, for inclusion in the annual budget submission by the President under section 1105 of title 31, a consolidated budget justification display, in classified and unclassified forms, that identifies all overseas construction projects funded with amounts appropriated or otherwise made available for operation and maintenance in support of contingency operations.

The committee is concerned about the attendant risks of routinely using operation and maintenance (O&M) funding locally to more quickly meet contingency construction requirements due to perceptions that the Department of Defense (DOD) process for executing construction projects using military construction (MILCON) funding is too lengthy. In its September 8, 2016, report titled *Defense Infrastructure: Actions Needed to Enhance Oversight of Construction Projects Supporting Military Contingency Operations*” (GAO-16-406), the Government Accountability Office (GAO) concluded the practice of using O&M funding for contingency construction projects creates financial, operational, and duplication risks to DOD. For instance, the GAO found that, in 2015, officials at a base in the CENTCOM area of responsibility used O&M funding for temporary facilities for a squadron while in the same year requesting MILCON funding for a permanent facility for the same squadron, which could result in providing the same service to the same beneficiaries.

The committee believes that the extent of this risk is not fully known because the DOD does not track the universe and cost of all contingency construction projects funded with O&M appropriations. Nonetheless, the amount of O&M funds used appears significant given that the GAO identified almost \$1 billion in O&M-funded construction costs for fiscal years 2009–12 for projects in Afghanistan alone, costs that are significant compared with the \$3.9 billion that the DOD reported as enacted for MILCON-funded projects there in the same period.

While the committee supports actions that the DOD has taken to address issues raised in GAO’s report—such as working to revise authorities for construction agents in joint operational areas—the committee believes that more action is needed.

Provision of protection to the National Museum of the Marine Corps, the National Museum of the United States Army, the National Museum of the United States Navy, and the National Museum of the United States Air Force (sec. 373)

The committee recommends a provision that would amend section 2465(b) of title 10, United States Code, by adding a contract for the performance of on-site security guard functions at the: Marine Corps Heritage Center at the Marine Corps Base Quantico, Virginia, including the National Museum of the Marine Corps; Heritage Center for the National Museum of the United States Army at Fort Belvoir, Virginia; Heritage Center for the National Museum of the United States Navy at Washington, District of Columbia; and the Heritage Center for the National Museum of the United States Air Force at Wright-Patterson Air Force Base, Ohio.

Inapplicability of congressional notification and dollar limitation requirements for advanced billings for certain background investigations (sec. 374)

The committee recommends a provision that would exempt the Defense Counterintelligence and Security Agency from the \$1 billion Department of Defense-wide limitation on advance billings in working capital funds.

The committee understands that the Defense Counterintelligence and Security Agency will be processing its requests for background investigations through advance billing for maximum efficiency. The security clearance investigation mission did not exist at the Department of Defense when the \$1 billion limitation on advance billings was instituted. Without an exempting this mission from the cap, DOD would suffer from an inability to employ advance billings in the traditional areas of usage, such as disaster relief.

Repeal of sunset for minimum annual purchase amount for carriers participating in the Civil Reserve Air Fleet (sec. 375)

The committee recommends a provision that would amend section 9515 of title 10, United States Code, by striking subsection (k), which would make the minimum annual purchase amount for carriers participating in the Civil Reserve Air Fleet (CRAF) a permanent authority.

The committee notes that the original intent of section 9515 was to protect smaller carriers amid the economic downturn in 2008, which represented a substantial threat to the Department of Defense. The committee further notes that, according to the U.S. Transportation Command (TRANSCOM), the loss of significant capacity in these small carriers would not only have reduced the overall capacity in the CRAF program but also would have resulted in CRAF activation occurring sooner in the event of a crisis.

The committee understands that, given the economic downturn brought on by COVID-19, along with the fact that section 9515 was set to sunset in December 2020, being able to guarantee assured levels of business will help carriers make a business case for keeping aircraft that they might otherwise dispose of in the event of another downturn in business. In addition, this authority would allow TRANSCOM to offer carriers a reasonable business alternative to entering into long-term contracts with delivery companies that effectively prohibit pledging aircraft to the CRAF program. This authority would assist in ensuring that the CRAF program is able to maintain sufficient capacity in the future.

Improvement of the Operational Energy Capability Improvement Fund of the Department of Defense (sec. 376)

The committee recommends a provision that would realign the Operational Energy Capability Improvement Fund (OECIF) of the Department of Defense under the Assistant Secretary of Defense for Sustainment.

The committee notes that, despite the pressing requirements of fuel and logistical vulnerabilities identified in the National Defense Strategy, the current OECIF authority requested no funds for the OECIF, which has been increased elsewhere in this Act. The com-

mittee believes that realignment of this account will allow those charged with logistics and sustainment to invest in operational energy innovations that have a proven positive return on investment through cost savings, making improvements to combat capabilities, and increased readiness, thus reflecting the new reality of the contested logistics environment.

Commission on the naming of items of the Department of Defense that commemorate the Confederate States of America or any person who served voluntarily with the Confederate States of America. (sec. 377)

The committee recommends a provision that would establish a commission regarding the removal and renaming of certain assets of the Department of Defense that commemorate the Confederate States of America or any person who served voluntarily with the Confederate States of America.

Modifications to review of proposed actions by Military Aviation and Installation Assurance Clearinghouse (sec. 378)

The committee recommends a provision that would amend section 183a(c) of title 10, United States Code, to modify the review of proposed actions by the Military Aviation and Installation Assurance Clearinghouse.

Adjustment in availability of appropriations for unusual cost overruns and for changes in scope of work (sec. 379)

The committee recommends a provision that would modify the treatment of amounts appropriated to the Secretary of the Navy for changes within the scope of work for a contract for ship overhaul.

Requirement that Secretary of Defense implement security and emergency response recommendations relating to active shooter or terrorist attacks on installations of Department of Defense (sec. 380)

The committee recommends a provision that would require the Secretary of Defense to implement not that later than 90 days after the date of the enactment of this Act the recommendations germane to active shooter or terrorist attacks on installations of the Department of Defense made in a series of previously published reports.

Clarification of food ingredient requirements for food or beverages provided by the Department of Defense (sec. 381)

The committee notes that the Defense Logistics Agency declared the prohibition of certain ingredients from food it purchases but did not engage other departments and agencies with nutrition expertise, such as the Department of Agriculture and the Food and Drug Administration, in development of this policy. Therefore, the committee recommends a provision that would require the Department to seek comments from the public and subject matter experts with-

in the food supply chain before making a final determination about food ingredients.

Budget Items

Joint Counter-Unmanned Aerial Systems initial operating capability acceleration

The budget request included \$40.3 billion in Operation and Maintenance, Army (OMA), of which \$1.1 billion was for SAG 115 Land Forces Operations Support.

The committee notes that the Secretary of Defense recently designated the Department of the Army as the executive agent of the Joint Counter-Unmanned Aerial Systems Office (JCO). The committee further notes that the Secretary of Defense also provided guidance to accelerate the initial operational capability (IOC) for the JCO. The committee finally notes that, as part of his unfunded requirements list, the Chief of Staff of the Army requested additional funds to fund the establishment of the JCO, hire JCO personnel, and begin to execute its mission, which includes the development of rapid response capability.

Accordingly, the committee recommends an increase of \$10.3 million in OMA for SAG 115 for JCO IOC acceleration.

Child Development Center playground equipment and furniture increases

The budget request included \$40.3 billion in Operation and Maintenance, Army (OMA), of which \$8.2 billion was for SAG 131 Base Operations Support.

The committee notes that, as part of his unfunded requirements list, the Chief of Staff of the Army requested additional funds to replace child development center (CDC) playground equipment to address safety issues and for CDC Furniture, Fixtures, and Equipment (FF&E).

Accordingly, the committee recommends an increase of \$79.0 million in OMA for SAG 131 for CDC playground equipment and furniture.

Child Youth Service improvements

The budget request included \$40.3 billion in Operation and Maintenance, Army (OMA), of which \$8.2 billion was for SAG 131 Base Operations Support.

The committee notes that, as part of his unfunded requirements list, the Chief of Staff of the Army requested additional funds to provide for six key Child Youth Service (CYS) program improvements across multiple installations, namely to: (1) Provide for further CYS classroom management training and improved care-provider responses, intended to reduce inappropriate care-provider incidents, for \$5.0 million; (2) Provide for updated and expanded employee training to improve care-provider skills, certifications, and accreditation, encouraging professional development and employee retention for \$2.5 million; (3) Provide for improved CYS information technology and cloud service and maintenance to improve data management and reporting performance for \$5.0 million; (4) Recover unobtainable CYS reform savings, which includes Army fee

assistance to community partners for military children not able to be accommodated on installations and parent services that enable centralized registration, for \$26.0 million; (5) Provide for additional CYS transportation (buses) for children enrolled in before/after-school programs, specifically to reduce transportation challenges sometimes experienced by single/dual military member families, for \$5.0 million; (6) Provide for youth computer lab life-cycle replacement of computers and peripherals for school age and youth programs that encourage youth participation in order to divert from at-risk behavior for \$3.5 million.

Accordingly, the committee recommends an increase of \$47.0 million in OMA for SAG 131 for CYS improvements.

Army Facilities, Sustainment, Restoration, and Modernization increase

The budget request included \$40.3 billion in Operation and Maintenance, Army (OMA), of which \$3.5 billion was for SAG 132 Facilities Sustainment, Restoration, and Modernization, \$2.9 billion in Operation and Maintenance, Army Reserve (OMAR), of which \$327.1 million was for SAG 132 Facilities Sustainment, Restoration, and Modernization, and \$7.4 billion in Operation and Maintenance, Army Reserve National Guard (OMARNG), of which \$876.0 million was for SAG 132 Facilities Sustainment, Restoration, and Modernization.

The committee notes that, as part of his unfunded requirements list, the Chief of Staff of the Army requested additional funds for Facilities Sustainment, Restoration, and Modernization (FSRM), which would bring Army funding up to 90 percent of its requirement. The committee understands that these funds would alleviate current challenges in maintaining facilities to better support existing readiness levels while increased sustainment funding would also prevent disproportionate restoration and modernization backlog growth.

Accordingly, the committee recommends the following increases: \$62.4 million in OMA for SAG 132, \$5.3 million in OMAR for SAG 132, and \$11.2 million in OMARNG for SAG 132.

EUCOM and INDOPACOM Multi-Domain Task Force increases

The budget request included \$40.3 billion in Operation and Maintenance, Army (OMA), of which \$3.5 billion was for SAG 132 Facilities Sustainment, Restoration, and Modernization.

The committee notes that, as part of his unfunded requirements list, the Chief of Staff of the Army requested additional funds for sustainment, restoration, and modernization requirements for building renovations and Base Operating Support expenditures to adequately house personnel and headquarters for the Multi-Domain Task Force (MDTF) elements in the Indo-Pacific Command (INDOPACOM) and European Command (EUCOM) theaters.

Accordingly, the committee recommends an increase of \$126.8 million in OMA for SAG 132, specifically for MDTF for INDOPACOM and EUCOM.

Revitalization of Army deployment infrastructure

The budget request included \$40.3 billion in Operation and Maintenance, Army (OMA), of which \$3.5 billion was for SAG 132 Facilities Sustainment, Restoration, and Modernization.

The committee notes that, as part of his unfunded requirements list, the Chief of Staff of the Army requested additional funds to assist in the revitalization of Army deployment infrastructure, including the: (1) Airfield control group complex and rail load complex at Joint Base Lewis-McChord, Washington; (2) Commercial truck load complex and deployment support facility at Fort Bragg, North Carolina; (3) Commercial truck load complex at Fort Leonard Wood, Missouri; (4) Rail load complex, hangar repair, deployment support facility, and aerial port of embarkation support at Fort Hood, Texas; (5) Taxiway repair at Fort Huachuca, Arizona; and (6) Ramps repair at Fort Campbell, Kentucky.

Accordingly, the committee recommends an increase of \$45.3 million in OMA for SAG 132 for the above projects to support power projection restoration and modernization.

U.S. Africa Command force protection upgrades personnel recovery/casualty evacuation

The budget request included \$239.4 million in Operation and Maintenance, Army (OMA), for SAG 141 U.S. Africa Command (AFRICOM).

The committee notes that AFRICOM identified as an unfunded requirement the need for emergent force protection upgrades following the terrorist attack against U.S. personnel in Manda Bay, Kenya, and after a theater-wide review of force protection at multiple locations in Africa. AFRICOM identified the most immediate priorities as establishing and upgrading fencing, communications systems, and shelters to provide protection for Department of Defense personnel serving in select locations.

Therefore, the committee recommends an increase of \$2.5 million in OMA for SAG 141 for personnel recovery/casualty evacuation.

U.S. Africa Command intelligence, surveillance, and reconnaissance

The budget request included \$239.4 million in Operation and Maintenance, Army (OMA), for SAG 141 U.S. Africa Command (AFRICOM).

The committee notes that AFRICOM is currently able to meet 30 percent of its Joint Staff-validated intelligence, surveillance, and reconnaissance (ISR) requirements in its area of responsibility and has identified the need to sustain this level of ISR support in fiscal year 2021 as an unfunded requirement.

The committee recommends an increase of \$64.0 million in OMA for SAG 141 for ISR support.

United States Africa Command personnel recovery, casualty evacuation, and trauma care

The budget request included \$239.4 million in Operation and Maintenance, Army (OMA), for SAG 141 U.S. Africa Command (AFRICOM).

The committee notes that AFRICOM has identified shortfalls in its ability to provide timely personnel recovery, casualty evacuation, and trauma care to U.S. personnel operating in the AFRICOM area of responsibility. The committee notes that AFRICOM identified the need to address gaps in these critical capabilities as an unfunded requirement.

Therefore, the committee recommends an increase of \$36.0 million in OMA for SAG 141 for personnel recovery, casualty evacuation, and trauma care support for AFRICOM.

United States Cyber Command Access and operations

The budget request included \$314.5 million in Operation and Maintenance, Air Force (OMAF), for SAG 15E Cyber Command (CYBERCOM) and \$430.1 million in Operation and Maintenance, Army (OMA), for SAG 151 Cyberspace Operations.

The committee recognizes the importance of the Cyber Mission Forces (CMF) and the increased operational demands placed on them.

Therefore, the committee recommends an increase of \$25.0 million in OMAF for SAG 15E and an increase of \$5.0 million in OMA for SAG 151 in order to provide to the CMF more resources to access, operate, and train as required to meet operational demands as described in the unfunded priorities list of the Commander, U.S. Cyber Command.

Service-wide transportation

The budget request included \$491.9 million in Operation and Maintenance, Army (OMA), for SAG 421.

The committee recommends a decrease of \$25.0 million in OMA for SAG 421 to reflect historical underexecution.

Other personnel support

The budget request included \$701.1 million in Operation and Maintenance, Army (OMA), for SAG 434 for other personnel support.

The committee recommends a decrease of \$4.0 million in OMA for SAG 434 for historical underexecution.

Servicewomen's commemorative partnerships

The budget request included \$701.1 million in Operation and Maintenance, Army (OMA), for SAG 434 Other Personnel Support, of which no funds were for programs at military service memorials and museums that highlight the role of women in the military.

The committee notes that section 2834 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) authorized the transfer of administrative jurisdiction of an approximately 16.0 acre parcel of land in Arlington, Virginia, from the Secretary of the Interior to the Secretary of the Army. The Secretary of the Army was directed to enter into a memorandum of understanding to define roles and responsibilities for the shared responsibility and resources for operation and maintenance of the Women in Military Service for America (WIMSA) Memorial and surrounding grounds.

Accordingly, the committee recommends an increase of \$3.0 million in OMA for SAG 434 for WIMSA.

Pilot program on the remote provision by the National Guard for cybersecurity

The budget request included \$7.4 billion in Operation and Maintenance, Army National Guard (OMARNG), of which \$7.9 million was for SAG 151 Cyberspace Activities—Cyberspace Operations. The budget request also included \$6.8 billion in Operation and Maintenance, Air National Guard (OMANG), of which \$16.3 million was for SAG 012D Cyberspace Activities.

Elsewhere in this report, the committee recommends pilot programs on the National Guard's remote provision to State governments and National Guards in other States of cybersecurity technical assistance in training for, preparation for, and response to cyber incidents.

Therefore, the committee recommends an increase of \$3.0 million in OMARNG for SAG 151 and an increase of \$3.0 million in OMANG for SAG 012D to conduct these National Guard cybersecurity pilot programs.

PDI: Asia Pacific Regional Initiative, U.S. Indo-Pacific Command

The budget request include \$61.5 million in Operation and Maintenance, Navy (OMN), for SAG 1CCH Combatant Commander Core Operations, including \$9.4 million for the Asia Pacific Regional Initiative (APRI).

The committee notes that, last year, APRI funds helped to facilitate the deployment of a Royal Thai Army infantry battalion to the Joint Readiness Training Center at Fort Polk, Louisiana, for a month-long training exercise alongside U.S. Army soldiers. The committee commends this unique combined training event as a tangible step forward for the U.S.-Thai alliance. To the extent that the Royal Thai Army continues its modernization on the basis of U.S. formations and equipment, the committee encourages further opportunities for U.S.-Thai combined training, including in the United States. Moreover, in general, the committee encourages U.S. Indo-Pacific Command to facilitate, as appropriate, additional training opportunities for allies and partners in the United States.

Therefore, the committee recommends an increase of \$5.0 million in OMN for SAG 1CCH for the Asia Pacific Regional Initiative.

PDI: Joint Task Force Indo-Pacific, U.S. Indo-Pacific Command

The budget request included \$102.3 million in Operation and Maintenance, Navy (OMN), for SAG 1CCM Combatant Commander Direct Mission Support.

The unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command, included additional funding for Joint Task Force INDOPACOM (JTF-IP). The committee agrees with the assessment of the National Defense Strategy (NDS) that U.S. competitors and adversaries are "using other areas of competition short of open warfare to achieve their ends," including information warfare, and that "these trends, if unaddressed, will challenge our ability to deter aggression." The committee believes that increased resources for information operations in the Indo-Pacific are important for addressing the challenges described by the NDS.

Therefore, the committee recommends an increase of \$6.3 million in OMN for SAG ICCM for Special Operations Pacific's Joint Task Force Indo-Pacific information operations in support of U.S. Indo-Pacific Command.

PDI: Counterterrorism Information Facility in Singapore, U.S. Indo-Pacific Command

The budget request included \$102.3 million in Operation and Maintenance, Navy (OMN), for SAG ICCM Combatant Commander Direct Mission Support.

The unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command, included additional funding to assist the Association of Southeast Asian Nations (ASEAN) in establishing the Counterterrorism Information Facility in Singapore.

The committee recommends an increase of \$2.0 million in OMN for SAG ICCM for support to the establishment of the Counterterrorism Information Facility in Singapore.

PDI: Countering Chinese malign influence, U.S. Indo-Pacific Command

The budget request included \$8.8 million in Operation and Maintenance, Navy (OMN), for SAG ICCS Military Information Support Operations (MISO).

The National Defense Strategy warns that competitors and adversaries of the United States are using areas of competition short of open warfare, including information warfare, to achieve their ends. If unaddressed, this trend will undermine the ability of the United States to deter aggression. In particular, the committee notes the urgent need for intensified efforts to counter Chinese malign influence the Indo-Pacific region, including through disinformation and propaganda. These efforts will require expanded and deeper collaboration between the Department of Defense and other Federal departments and agencies.

Therefore, the committee recommends an increase of \$17.7 million in OMN for SAG ICCS for WebOps, force presence related to MISO, support for Radio Free Asia, and other campaign support activities. The committee does not recommend additional funding for the Indo-Pacific Defense Forum.

USNS Mercy MTF improvements

The budget request included \$49.7 billion in Operation and Maintenance, Navy (OMN), of which \$99.4 million was for SAG 2C1H Expeditionary Health Services Systems.

The committee notes that, as part of his unfunded requirements list, the Chief of Naval Operations requested additional funds to support optimization of the military treatment facility (MTF) in conjunction with the USNS *Mercy*'s service-life extension program to improve the hospital ship's ability to maintain Role 3 MTF capabilities.

Accordingly, the committee recommends an increase of \$11.6 million in OMN for SAG 2C1H for USNS *Mercy* MTF improvements.

Energy Security Programs Office

The budget request included \$49.6 billion in the Operation and Maintenance, Navy (OMN), of which \$519.7 million was for SAG 4B2N Planning, Engineering, and Program Support.

The committee continues to strongly support the Department of the Navy's Energy Security Programs Office (ESPO), which has successfully executed over 49 energy resilience projects leveraging non-Department of Defense funding in Texas, Tennessee, Mississippi, Florida, North Carolina, Virginia, Georgia, South Carolina, Arizona, Nevada, California, Maryland, New Jersey, New York, Connecticut, Rhode Island, Washington, Hawaii, Italy, and Japan. These projects range from microgrids to efforts to improve mission assurance. However, the Navy has made funding choices insufficient to support the ESPO for fiscal year 2021, and projects may not occur in Georgia, North Carolina, Virginia, Pennsylvania, Connecticut, Maryland, California, Hawaii, Washington, Guam, Bahrain, and Japan.

Accordingly, the committee recommends an increase of \$5.0 million in OMN for SAG 4B2N for the ESPO office to ensure that fiscal year 2021 projects are executed.

A-10 Aircraft

The budget request included \$34.8 billion in Operation & Maintenance, Air Force (OMAF), including \$731.5 million for SAG 011A Primary Combat Forces, of which \$1.4 billion was for SAG 011D Air Operations Training (OJT, Maintain Skills), \$0.0 was for SAG 011M Depot Purchase Equipment Maintenance, and \$4.4 billion was for SAG 011Y Flying Hour Program.

The budget request assumed a reduction of A-10 aircraft and squadrons in fiscal year 2021. The committee believes that this reduction is premature and as such recommends restoring such funding.

Therefore, the committee recommends the following increases in OMAF: \$1.7 million to SAG 011A Primary Combat Forces, \$12.4 million to SAG 011D Air Operations Training (OJT, Maintain Skills), \$3.4 million to SAG 011M Depot Purchase Equipment Maintenance, and \$52.9 million to SAG 011Y Flying Hour Program.

Air Force Facilities Sustainment, Restoration, and Modernization increases

The budget request included \$34.8 billion in Operation and Maintenance, Air Force (OMAF), of which \$3.2 billion was for SAG 011R Facilities Sustainment, Restoration, and Modernization, \$3.4 billion in Operation and Maintenance, Air Force Reserve (OMAFR), of which \$103.4 million was for SAG 011R Facilities Sustainment, Restoration, and Modernization, and \$6.8 billion in Operation and Maintenance, Air National Guard (OMANG), of which \$323.6 million was for SAG 011R Facilities Sustainment, Restoration, and Modernization.

The committee notes that, as part of his required unfunded requirements list, the Chief of Staff of the Air Force requested additional funds for facility maintenance and repair investment to achieve 1.85 percent of plant replacement value (PRV), accelerating

the ramp-up to meet the Department of the Air Force Infrastructure Investment Strategy goal of 2 percent PRV.

Accordingly, the committee recommends the following increases: \$101.8 million in OMAF to SAG 011R, \$4.2 million in OMAFR to SAG 011R, and \$8.9 million in OMANG to SAG 011R.

Transfer to OCO

The budget request included \$1.5 billion in Operation and Maintenance, Air Force, SAG 011W for Contractor Logistics Support and System Support.

The committee recommends a decrease of \$30.5 million to transfer such funding to Operation and Maintenance, Air Force, Overseas Contingency Operations, SAG 011W for Contractor Logistics Support and System Support. The committee notes a corresponding increase in that account.

Slowing Air Force KC-135 and KC-10 tanker fleet divestment

The budget request included \$34.8 billion in Operation and Maintenance, Air Force (OMAF), of which no funds were for SAG 011M Depot Purchase Equipment Maintenance and \$4.4 billion was for SAG 011Y Flying Hour Program.

The committee notes that the National Defense Strategy of 2018 specifically calls for “Resilient and Agile Logistics.” The committee further notes that program delays for the KC-46 tanker have exacerbated a growing tanker capacity problem and yet the Air Force chose to divest of crucial KC-10 and KC-135 resources. The committee notes that, according to the United States Transportation Command (TRANSCOM), this proposed divestment would cause significant negative impacts to TRANSCOM’s posture during wartime and daily competition and negatively impact senior leader decision space for mobilization if confronted with a crisis. The committee believes that the Air Force should be planning for contested logistics while accounting for delays in the KC-46 and other future programs.

Accordingly, the committee recommends the following increases for the KC-135 tanker fleet: \$3.4 million in OMAF to SAG 011M Depot Purchase Equipment Maintenance and \$36.6 million in OMAF to SAG 011Y Flying Hour Program. Additionally, the committee recommends the following increases for the KC-10 tanker fleet: \$48.4 million in OMAF to SAG 011M Depot Purchase Equipment Maintenance and \$16.2 million in OMAF to SAG 011Y Flying Hour Program.

PDI: Mission Partner Environment (MPE) local upgrades, U.S. Indo-Pacific Command

The budget request included \$34.8 billion for Operation and Maintenance, Air Force, of which \$849.8 million was for SAG 12A Global C3I & Early Warning.

The unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command (INDOPACOM), included additional funding for Mission Partner Environment (MPE) local upgrades to modernize the command, control, communications, and computers architecture in the INDOPACOM area of responsibility and provide

local systems to support and enhance operations with allies and partners.

Therefore, the committee recommends an increase of \$30.8 million for SAG 12A for MPE local upgrades within the INDOPACOM area of responsibility.

Hunt Forward missions

The budget request included \$314.5 million in Operation and Maintenance, Air Force (OMAF), for SAG 15E Cyber Command (CYBERCOM).

The committee recognizes the importance of CYBERCOM's cyber hunt forward missions as an integral component of the Department's persistent engagement strategy. The committee also notes the need for a framework to enhance consistency across these missions, as described elsewhere in this report.

Therefore, the committee recommends an increase of \$13.8 million in OMAF for SAG 15E in order to provide to the Cyber National Mission Force the capabilities it needs to implement systems and strategies as it seeks to deter, disrupt, and defeat cyber adversaries as reflected in the unfunded priorities list of the Commander, U.S. Cyber Command.

Securing the Department of Defense Information Network

The budget request included \$314.5 million in Operation and Maintenance, Air Force (OMAF), for SAG 15E Cyber Command (CYBERCOM) and \$1.9 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 280 Defense Information System Agency (DISA).

The committee recognizes the importance of CYBERCOM and DISA's missions in securing the Department of Defense Information Network (DODIN). The committee is encouraged by the recent efforts of the Department to develop enterprise-wide common security product integration frameworks to enable interoperability and coordinated orchestration among cybersecurity services, devices, appliances, agents, applications, tools, command and control centers, and the network. The committee understands that additional funding would allow the Department to support improvements in the situational understanding, monitoring, analytics, training, and inspections needed to enhance cyber resiliency and readiness.

Therefore, the committee recommends an increase of \$2.9 million in OMAF for SAG 15E and an increase of \$40.0 million in OMDW for SAG 280 in order to enhance the Department's ability to secure, operate, and defend mission areas of the DODIN as described in the unfunded priorities list of the Commander, U.S. Cyber Command.

Air Force marketing reduction

The budget request included \$34.8 billion in Operation and Maintenance, Air Force (OMAF), of which \$155.1 million was for SAG 033A Recruiting and Advertising. The budget request also included \$3.4 billion in Operation and Maintenance, Air Force Reserve (OMAFR), of which \$23.1 million was for SAG 042J Recruiting and Advertising. Finally, the budget request included \$6.8 billion in Operation and Maintenance, Air National Guard (OMANG),

of which \$48.6 million was for SAG 042J Recruiting and Advertising.

The committee notes that the Air Force Audit Agency recently completed its review of Air Force advertising and recruiting programs. The audit found that “Air Force personnel in all three components did not effectively manage marketing and recruiting programs.” The audit further notes that Air Force personnel “did not display fiscal responsibility” and were unable to demonstrate that the Air Force received “fair and reasonable pricing for over \$130 million (88 percent) of \$149 million in sample contract actions reviewed.” Additionally, the audit details numerous violations of the basic rules of government contracting and financial management. The committee is disappointed by such disregard for taxpayer dollars.

While the Air Force deserves credit for taking immediate action to correct some of the audit findings, the committee believes that the Air Force advertising and recruiting organization requires major reform. In response to similar audit findings, the Army completely revamped its entire advertising organization. The committee expects the Air Force to dedicate similar effort in restoring the Congress’ trust that advertising dollars are being spent efficiently and effectively.

Accordingly, the committee recommends the following decreases: \$20.0 million in OMAF to SAG 033A Recruiting and Advertising, \$5.0 million in OMAFR to SAG 042J Recruiting and Advertising, and \$15.0 million in OMANG to SAG 042J Recruiting and Advertising.

COVID-related throughput decrease

The budget request included \$34.8 billion in Operation and Maintenance, Air Force (OMAF).

The committee notes that the Air Force will likely experience COVID-19-related throughput issues, thereby decreasing the need for depot carryover balances funded through the Air Force Working Capital Fund.

Therefore, the committee recommends a decrease of \$75.8 million in OMAF to reflect COVID-related throughput issues.

Syria exfiltration reconstitution

The budget request included \$898.0 million in Operation and Maintenance, Defense-wide (OMDW), for SAG 1PL6 Special Operations Command Combat Development Activities.

The committee notes that U.S. Special Operations Command identified the replacement of items destroyed in connection with the exfiltration of forces in Syria as an unfunded requirement.

Therefore, the committee recommends an increase of \$3.0 million in OMDW for SAG 1PL6 for Syria exfiltration reconstitution.

Contractor logistics support

The budget request included \$685.1 million in Operation and Maintenance, Defense-wide, for SAG 1PL7 Special Operations Command Maintenance.

The committees notes that the availability of intelligence, surveillance, and reconnaissance (ISR) capabilities remains a peren-

nial shortfall across the geographic combatant commands. The committee notes that, despite this, the budget request for fiscal year 2021 cuts the contractor logistics support necessary for the deployment of manned ISR aircraft operated by U.S. Special Operations Command (SOCOM) without identifying a follow-on ISR solution to mitigate the loss in capability in fiscal year 2021.

Additionally, the committee notes that the budget request for fiscal year 2021 and the future years defense program includes proposals to modify the composition of SOCOM's airborne ISR fleet through the acquisition of new platforms and the divestment of platforms currently in its inventory. The committee is concerned that there does not exist an overarching strategy to guide SOCOM's airborne ISR acquisition efforts, particularly one that clearly identifies current or anticipated special operations-peculiar capability gaps and describes future manned and unmanned ISR requirements. The committee believes that it is not prudent to divest of important ISR capabilities without a clearly articulated strategy for how critical ISR requirements will be satisfied in the near-, mid-, and long-term. The committee notes that elsewhere in this Act, there is a provision that would require the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict and the Commander, SOCOM, to jointly submit to the congressional defense committees an acquisition roadmap to meet the manned and unmanned airborne ISR requirements of United States Special Operations Forces.

Therefore, the committee recommends an increase of \$22.0 million in Operation and Maintenance, Defense-wide, for SAG 1PL7 for contractor logistics support for manned ISR aircraft.

U.S. Special Operations Command flying hours

The budget request included \$2.6 billion in Operation and Maintenance, Defense-wide, for SAG 1PLR Special Operations Command Theater Forces.

The committee notes that, elsewhere in this Act, there is a provision that would prohibit the divestiture of manned intelligence, surveillance, and reconnaissance (ISR) aircraft operated by U.S. Special Operations Command (SOCOM) in fiscal year 2021 due to the lack of a plan to mitigate the loss of ISR capability in fiscal year 2021 as well as an overarching ISR acquisition roadmap for SOCOM's airborne ISR capabilities to meet its requirements over the near-, mid-, and long-term. The committee believes that the submission of the required roadmap should precede congressional consideration of any plan of SOCOM to change the composition of its airborne ISR capabilities.

Therefore, the committee recommends an increase of \$1.3 million in Operation and Maintenance, Defense-wide, for SAG 1PLR for flying hours.

Innovative Readiness Training increase

The budget request included \$40.3 billion in Operation and Maintenance, Defense-wide (OMDW), of which \$147.9 million was for SAG 4GT3 Civil Military Programs.

The committee notes that the \$13.1 million of the request for Civil Military Programs was for the Innovative Readiness Training

(IRT). The committee is aware that the military services continue to face readiness challenges due to budgetary constraints. The committee continues to recognize the value of the IRT, which affords to the military services realistic joint training opportunities for National Guard, Reserve, and Active-duty servicemembers.

The committee understands that the IRT offers complex and challenging training opportunities for domestic and international crises. The committee is also aware that Alaska, Arizona, Arkansas, California, Colorado, Hawaii, Indiana, Kentucky, Louisiana, Maine, Minnesota, Missouri, Montana, Nebraska, New Jersey, New Mexico, New York, North Carolina, North Dakota, South Dakota, Texas, Virginia, West Virginia, and Wyoming all use the IRT.

Accordingly, the committee recommends an increase of \$16.9 million in OMDW for SAG 4GT3 Civil Military Programs.

Starbase

The budget request included \$44.6 billion for Operation and Maintenance, Defense-wide (OMDW), of which \$148.0 million was for SAG 4GT3 Civil Military Programs.

The committee notes that the Science and Technology Academies Reinforcing Basic Aviation and Space Exploration (STARBASE) program is an effective program that improves the knowledge and skills of students in kindergarten through 12th grade in science, technology, engineering, and mathematics.

Therefore, the committee recommends an increase of \$15.0 million for SAG 4GT3 Civil Military Programs for the STARBASE program.

Defense Contract Management Agency

The budget request included \$1.4 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTO Defense Contract Management Agency (DCMA).

The committee notes that the Congress has previously directed that the Department of Defense centrally conduct commercial item determinations to ensure consistency in the application of professional judgment, as is now required under section 2380 of Title 10 United States code. Thus, the delegation and transfer of this function would violate the law. The DCMA has developed the requisite subject matter expertise to perform this function and should maintain such expertise. The committee also notes the importance of certain contract administration functions that the DCMA performs, including the recovery of cancelling funds and contract closeout.

Therefore, the committee recommends an increase of \$56.4 million in OMDW for SAG 4GTO to restore proposed reductions resulting from the Defense-Wide Review.

DWR restore: Congressional oversight

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide, for SAG 4GTN Office of the Secretary of Defense.

The committee records its remarks about the Defense-Wide Review (DWR) 1.0 elsewhere in this report. In particular, the oversight materials produced, as well as the proposal to transfer the

burden of payment for background investigations to the U.S. Congress, did not meet or reflect the stated goals of the DWR.

Accordingly, the committee recommends a decrease of \$3.0 million in Operation and Maintenance, Defense-wide, for SAG 4GTN for the Office of the Secretary of the Defense.

Joint Regional Security Stacks SIPR funding—O&M

The budget request included \$582.6 million in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GU9 Defense Information Systems Agency—CYBER.

The committee is aware of the operational cybersecurity limitations of the Joint Regional Security Stacks (JRSS) technology as assessed by the Director, Operational Test and Evaluation, the difficulty of training personnel to use the JRSS, and the shortage of feasible tactics, techniques, and procedures to make effective use of the JRSS. The committee believes that the deployment of JRSS on the Secret Internet Protocol Router Network is thus inappropriate, given JRSS' limited cybersecurity capability and the existence of alternative capabilities to execute its network functions.

Therefore, the committee recommends a decrease of \$4.7 million in OMDW for SAG 4GU9 for JRSS, due to the operational cybersecurity limitations of the JRSS technology.

DWR restore: blankets for homeless program

The budget requested included \$382.1 million for Operation and Maintenance, Defense-wide, for SAG 4GTB Defense Logistics Agency.

The Defense-Wide Review eliminated funding for the Defense Logistics Agency's (DLA's) Blankets for Homeless Program. The Stewart B. McKinley Homeless Assistance Act of 1987 (Public Law 100-77) enables the DLA to provide blankets to qualified U.S. 501(c)3 organizations working with the homeless, many of whom are veterans. Homeless shelters request blankets, which are issued on a first-come first-served basis up to the amount of funding.

Therefore, the committee recommends an increase of \$3.6 million for Operation and Maintenance, Defense-wide, for SAG 4GTB for the Defense Logistics Agency to continue this program.

Defense Institute of International Legal Studies

The budget request included \$2.7 million in Operation and Maintenance, Defense-wide (OMDW), SAG 4GTD, Defense Security Cooperation Agency for the Defense Institute of International Legal Studies.

The committee notes that the reforms to the Department of Defense's security cooperation enterprise contained in the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) emphasized institutional capacity building as a critical component of the Department's security cooperation efforts. The committee notes that the Defense Institute of International Legal Studies plays an important role in building partner nation legal capacity, which strengthens accountability within the security and justice sectors, civilian control of the military, enhanced compliance with human rights standards and international humanitarian law, democracy, and democratic rule of law.

Therefore, the committee recommends an increase of \$2.0 million in Operation and Maintenance, Defense-wide, for SAG 4GTD, Defense Security Cooperation Agency for the Defense Institute of International Legal Studies to increase its capacity to conduct its expanding mission of legal institutional capacity building as a significant component of the Department's security cooperation efforts. The committee notes that, elsewhere in this report, the committee recommends a correlated decrease in funding for the Institute for Security Governance.

Institute for Security Governance

The budget request included \$58.8 million in Operation and Maintenance, Defense-wide (OMDW), SAG 4GTD, Defense Security Cooperation Agency, for the Institute for Security Governance.

The committee notes that the reforms to the Department of Defense's security cooperation enterprise contained in the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) emphasized institutional capacity building as a critical component of the Department's security cooperation efforts. The committee notes that the Department has made progress in integrating institutional capacity building as a core element of its security cooperation activities and expects the Department to continue to expand these efforts. The committee also notes the importance of legal institutional capacity building, a key mission of the Defense Institute of International Legal Studies, to the long-term sustainability of these programs. The budget request of \$58.8 million for the Institute for Security Governance would represent a more than 57 percent increase over fiscal year 2020 funding levels.

In line with the committee's support for legal institutional capacity building, the committee recommends a decrease of \$2.0 million in Operation and Maintenance, Defense-wide, SAG 4GTD, Defense Security Cooperation Agency, for the Institute for Security Governance. The committee notes that, elsewhere in this report, the committee recommends a correlated increase for the Defense Institute of International Legal Studies.

PDI: Indo-Pacific Maritime Security Initiative

The budget request included \$410.7 million in Operation and Maintenance, Defense-wide, for SAG 4GTD Defense Security Cooperation Agency for the National Defense Strategy Implementation account.

The committee notes that the budget request for the National Defense Strategy Implementation account included amounts intended for building partner capacity (BPC) activities in the Indo-Pacific Command area of responsibility, utilizing authorities provided in section 333 of title 10, United States Code, and section 1263 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114-92). The committee continues to support the Indo-Pacific Maritime Security Initiative (MSI) as a standalone and signature security cooperation initiative for strengthening partnerships in the Department of Defense's priority theater, the Indo-Pacific. The initiative's flexibility with regard to multinational projects offers unique opportunities for increasing regional cooperation and deepening regional interoperability. Furthermore, the ini-

tiative is a tangible and recognizable symbol of the enduring American commitment to the Indo-Pacific region at a time when our strategic competitors are seeking to sow doubt about the value of our alliances and partnerships. For these reasons, the committee believes that the funding requested in the National Defense Strategy Implementation account for maritime-focused BPC activities in the Indo-Pacific Command area of responsibility is most appropriately executed pursuant to the MSI authority.

Therefore, the committee directs that, of the amount requested for BPC activities in the Indo-Pacific Command area of responsibility in Operation and Maintenance, Defense-wide, for SAG 4GTD for the National Defense Strategy Implementation account, not less than \$200.0 million be used pursuant to section 1263 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92). This amount shall only come from those amounts requested by the Department of Defense for security cooperation activities in the Indo-Pacific Command area of responsibility.

PDI: Indo-Pacific Maritime Security Initiative

The budget request included \$627.8 million in Operation and Maintenance, Defense-wide, Overseas Contingency Operations, for SAG 4GTD Defense Security Cooperation Agency for the National Defense Strategy Implementation account.

The committee notes that the budget request for the National Defense Strategy Implementation account included amounts intended for building partner capacity (BPC) activities in the Indo-Pacific Command area of responsibility, utilizing authorities provided in section 333 of title 10, United States Code, and section 1263 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92). The committee continues to support the Indo-Pacific Maritime Security Initiative (MSI) as a standalone and signature security cooperation initiative for strengthening partnerships in the Department of Defense’s priority theater, the Indo-Pacific. The initiative’s flexibility with regard to multinational projects offers unique opportunities for increasing regional cooperation and deepening regional interoperability. Furthermore, the initiative is a tangible and recognizable symbol of the enduring American commitment to the Indo-Pacific region at a time when our strategic competitors are seeking to sow doubt about the value of our alliances and partnerships. For these reasons, the committee believes that the funding requested in the National Defense Strategy Implementation account for maritime-focused BPC activities in the Indo-Pacific Command area of responsibility is most appropriately executed pursuant to the MSI authority.

Therefore, the committee directs that, of the amount requested for BPC activities in the Indo-Pacific Command area of responsibility in Operation and Maintenance, Defense-wide, for SAG 4GTD for the National Defense Strategy Implementation account, not less than \$200.0 million be used pursuant to section 1263 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92). This amount shall only come from those amounts requested by the Department of Defense for security cooperation activities in the Indo-Pacific Command area of responsibility.

Staffing of Department of Defense Education Activity schools

The budget request included \$44.6 billion in Operation and Maintenance, Defense-wide (OMDW), of which \$2.9 billion was for SAG 4GTJ Department of Defense Education Activity (DODEA). The amount authorized to be appropriated for OMDW includes the following change from the budget request. The provision underlying this change in funding levels is discussed in greater detail in title V of this committee report.

[Changes in millions of dollars]

Maintenance of student-teacher ratios in DODEA schools	+1.5
Total	+1.5

Impact aid

The budget request included \$44.6 billion in Operation and Maintenance, Defense-wide (OMDW), of which \$2.9 billion was for SAG 4GTJ Department of Defense Education Activity. The amount authorized to be appropriated for OMDW includes the following changes from the budget request. The provisions underlying these changes in funding levels are discussed in greater detail in title V of this committee report.

[Changes in millions of dollars]

Impact aid for schools with military dependent students	+50.0
Impact aid for children with severe disabilities	+20.0
Total	+70.0

Defense Community Infrastructure Program

The budget request included \$40.3 billion in Operation and Maintenance, Defense-wide (OMDW), of which \$40.2 million was for SAG 4GTM Office of Economic Adjustment.

The committee notes that section 2861 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232) established a pilot for the Defense Community Infrastructure Program. The committee continues to recognize the importance of the military services’ establishing and strengthening their relationships with local communities and looks forward to reviewing the results of the pilot program upon its completion.

Accordingly, the committee recommends an increase of \$50.0 million in OMDW to SAG 4GTM Office of Economic Adjustment.

National Security Commission on Artificial Intelligence

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide, for SAG 4GTN Office of the Secretary of Defense.

The committee recognizes the important work that the National Security Commission on Artificial Intelligence (NSCAI) has put forth in its interim reports and is aware of the first quarter recommendations of the Commission. Additionally, the committee is aware that additional funds are needed to cover additional Freedom of Information Act request expenses. The committee is sup-

portive of the NSCAI and looks forward to its final report and recommendations.

Therefore, the committee recommends an increase of \$2.5 million in Operation and Maintenance, Defense-wide, for SAG 4GTN for the NSCAI.

Bien Hoa dioxin cleanup

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTN Office of the Secretary of Defense, of which no funds were proposed for Bien Hoa dioxin cleanup in Vietnam.

Accordingly, the committee recommends an increase of \$15.0 million in OMDW for SAG 4GTN for Bien Hoa dioxin cleanup.

Energy Resilience Readiness Exercises

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTN Office of the Secretary of Defense, of which no funds were for Energy Resilience Readiness Exercises (ERREs).

The committee continues to support the significant success of “black start” ERREs performed by the military services and overseen by the Department of Defense (DOD). The committee believes that low-cost ERREs, which each cost roughly \$500,000, provide a real-world opportunity to “pull the plug” on military installations and truly test how each would respond in the event of a cyberattack or natural disaster. The committee believes that this is a small but warranted investment for Department of Defense installation readiness. Unfortunately, the Department elected not to program for any ERREs in fiscal year 2021.

Accordingly, the committee recommends an increase of \$2.0 million in OMDW for SAG 4GTN for ERREs.

Centers for Disease Control and Prevention nation-wide human health assessment

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTN Office of the Secretary of Defense, of which no funds were proposed for the ongoing Centers for Disease Control and Prevention (CDC) Nation-wide human health assessment related to contaminated sources of drinking water from per- and poly-fluoroalkyl substances.

The committee continues to support the ongoing human health assessment. Accordingly, the committee recommends an increase of \$10.0 million in OMDW for SAG 4GTN for the ongoing CDC assessment.

Funding for commission relating to Confederate symbols

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 490 Office of the Secretary of Defense.

The committee recommends an increase of \$2.0 million in OMDW for SAG 490 to provide adequate resources for the commission on Confederate symbols established elsewhere in this Act.

Cooperative program for Vietnam personnel MIA

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 490 Office of the Secretary of Defense.

The committee recommends an increase of \$2.0 million in OMDW for SAG 490 to provide adequate resources to a cooperative program with the Ministry of Defense of Vietnam to account for Vietnamese missing in action, a program which is authorized elsewhere in this Act.

DWR restore: Congressional background investigations

The budget request included \$949.0 million in Operation and Maintenance, Defense-wide, for SAG 5GTE Defense Counterintelligence and Security Agency.

The Defense-Wide Review proposed transferring the burden for processing security clearance background investigations for congressional staff from the Department of Defense to the congressional defense committees.

Accordingly, the committee recommends an increase of \$3.0 million in Operation and Maintenance, Defense-wide, for SAG 4GTE for the Defense Counterintelligence and Security Agency to continue processing congressional background investigations. The committee notes a corresponding decrease elsewhere in this report.

Energy performance contracts

The budget request included \$1.5 billion in the Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTN Office of the Secretary of Defense, of which no funds were for energy performance contracts.

The committee supports efforts by the Department of Defense and the military services to include energy resilience and cybersecurity in all energy performance contract projects. However, in too many instances, the upfront costs of resilience do not pencil out despite providing a direct mission benefit and capability. To facilitate inclusion of mission-critical resilience and cybersecurity across the Department, the committee recommends adding \$10.0 million to leverage performance contracting efforts. These funds should be used only to leverage resilience and cybersecurity into a performance contract when those measures cannot be effectively paid for with a performance contract and leverage at least \$10 of private capital for every dollar of Department funds.

Accordingly, the committee recommends an increase of \$10.0 million in OMDW for SAG 4GTN for energy performance contract funding.

Personnel in the Office of Assistant Secretary of Defense Sustainment and Environment, Safety, and Occupational Health

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTN Office of the Secretary of Defense, of which no funds were for sufficient numbers of personnel in the Office of the Assistant Secretary of Defense for Sustainment in Environment, Safety, and Occupational Health (ESOH).

The committee recognizes the challenges facing the Department of Defense in the Office's remit, ranging from per- and polyfluoroalkyl substances to the Military Housing Privatization Initiative.

Accordingly, the committee recommends an increase of \$2.0 million in OMDW for ESOH personnel in the Office of the Assistant Secretary of Defense for Sustainment.

Improvement of occupational license portability for military spouses through interstate compacts

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTN Office of the Secretary of Defense.

The committee remains concerned about the lack of portability of employment licenses and credentials across State lines, which hinders military spouse employment. Due to the delays and expense involved in re-licensure and re-credentialing, many military spouses decide not to practice their professions. This becomes a financial and career choice issue for military families, impacting servicemembers' desire to stay in the military.

Accordingly, the committee recommends an increase of \$4.0 million in OMDW for SAG 4GTN, for the activities outlined in section 575 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92), which required the Secretary of Defense to enter into a cooperative agreement with the Council of State Governments to assist with the funding and development of interstate compacts on licensed occupations.

National Cyber Director independent study funding

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTN Office of the Secretary of Defense.

Elsewhere in this report, the committee recommends an independent study on the establishment of a National Cyber Director.

Therefore, the committee recommends an increase of \$2.5 million in OMDW for SAG 4GTN for conducting an independent study on the establishment of a National Cyber Director.

Readiness and Environmental Protection Initiative

The budget request included \$1.5 billion in Operation and Maintenance, Defense-wide (OMDW), for SAG 4GTN Office of the Secretary of Defense, of which \$75.0 million was for the Readiness and Environmental Protection Initiative (REPI).

The committee continues to support the mission of the REPI and believes that the program has proven to be highly effective in addressing encroachment. However, the committee is concerned that the Department of Defense continues to underfund the REPI despite its success to date and the cost-efficiency of Department investments, born from substantial partner contributions. The Department has expressed concerns about the growing need to protect key installations, ranges, and airspace but has failed to match those concerns with adequate resources.

Accordingly, the committee recommends an increase of \$25.0 million in OMDW for SAG 4GTN for the REPI and strongly encour-

ages the Department to reflect in future REPI budget requests the urgency of the problem of encroachment and the success that the REPI has achieved in addressing this problem.

DWR restore: support to commissions

The budget request included \$340.3 million in Operation and Maintenance, Defense-wide, for SAG 4GTQ Washington Headquarters Services.

The Defense-Wide Review 1.0 proposed ending support for commissions and transferring the burden onto other components.

Accordingly, the committee recommends an increase of \$3.0 million in Operation and Maintenance, Defense-wide, for SAG 4GTQ for the Washington Headquarters Services to continue to provide support for commissions.

Biological Threat Reduction Program

The budget request included \$238.5 million in Miscellaneous Appropriations for SAG 1PL3 Cooperative Threat Reduction.

The committee believes that the Biological Threat Reduction Program (BTRP) has provided valuable assistance in the prevention and detection of emergent biological threats.

Accordingly, the committee recommends an increase of \$50.0 million in Miscellaneous Appropriations for SAG 1PL3 for the BTRP.

Acquisition Workforce Development Account

The budget request included \$58.2 million in Operation and Maintenance, Defense-wide (OMDW), for SAG 012 Acquisition Workforce Development Account (DAWDA).

The committee notes that the budget request included a \$199.0 million reduction for the DAWDA based on the Defense-Wide Review. The committee notes that this account was originally authorized due to the Department's inability to adequately invest in the training and education of its professional acquisition workforce. The committee is concerned that, at a reduced funding level, the Department will face challenges in building the acquisition workforce it needs to support the National Defense Strategy. The acquisition workforce is currently demonstrating its critical role as the Department works to meet the national security and economic challenges resulting from the COVID-19 pandemic. The committee believes that DAWDA is critical to meeting the Department's need to streamline procurement, work with Silicon Valley innovators, support research on and development of new acquisition tools and innovative acquisition policies, and develop a workforce to implement modern acquisition reforms and practices.

Therefore, the committee recommends an increase of \$98.5 million in OMDW for SAG 012 to increase funding for the Acquisition Workforce Development Account.

Operation and maintenance adjustments

The budget request included \$253.9 billion in Operation and Maintenance funding.

The committee notes that the onset of COVID-19 has forced the delay or cancellation of numerous training and exercise events, as well as slowed operations. The committee expects that COVID-19

will continue to affect such activities in an unpredictable and non-linear fashion.

Therefore, the committee recommends a decrease of \$550.0 million across the Operation and Maintenance accounts to account for the impacts of COVID-19 on training and operations.

Bulk fuel adjustment

The budget request included \$7.7 billion across the Operation and Maintenance accounts, both base and Overseas Contingency Operations, for the purchase of bulk fuel.

Analysis conducted by the Government Accountability Office (GAO) using the most recent data indicates that the Department of Defense will underexecute its bulk fuel purchases by \$1.5 billion in fiscal year 2021 owing to the rapid decrease in bulk fuel prices. The committee commends GAO for its forward-leaning work in analyzing bulk fuel prices to assist Congress in decision-making given the unique uncertainty of the current fuel markets.

Accordingly, the committee recommends a decrease in the Operation and Maintenance accounts of \$1.5 billion to account for likely underexecution in bulk fuel purchases.

Foreign currency adjustment

The budget request included \$5.4 billion in the Operation and Maintenance and Military Personnel accounts for activities requiring conversion of U.S. dollars to foreign currencies.

The committee notes that the Government Accountability Office has repeatedly issued recommendations for the Department of Defense to analyze its Foreign Currency Fluctuations, Defense account balance given historical trends and managerial usage of the account.

Accordingly, the committee recommends a decrease of \$450.0 million across the Operation and Maintenance and Military Personnel accounts.

Items of Special Interest

Adversary air

The committee is aware of the ongoing and growing requirements for near-peer representative air-to-air training using aggressor aircraft with capability similar to that of the advanced adversaries that these aircraft are designed to replicate. Additionally, it is becoming clear that this requirement will not be met in the near-term with solely organic service assets.

Therefore the committee directs the Secretary of the Air Force and the Secretary of the Navy, no later than February 1, 2021, to submit to the congressional defense committees a report that sets forth a plan to develop and implement an Air Aggressor Enterprise that incorporates advanced organic and contract services to maintain full-spectrum readiness for Air Force and Navy 4th and 5th generation aircraft.

The report shall include: (1) A description of the current Air Aggressor Enterprise for the Air Force and Navy; (2) A description of the needs, resources, and requirements that the Air Force and Navy require to maintain full-spectrum readiness for all required

joint and single service exercises as well as daily, home station, in-garrison training requirements; (3) A description and identification of any tactical, operational, or strategic risk that is incurred by maintaining, retiring, or modernizing the current Air Aggressor Enterprise; (4) A description of the basic requirements for an aircraft that can replicate a modern “2030” adversary in the air domain; and (5) An assessment of the costs and benefits of organic versus contract-supplied adversary air.

Air Force aerospace ground equipment

As the Air Force implements its “Base of the Future” concept, the committee encourages the use of new technologies and alternatives to the current method of powering aircraft on the flight-line through diesel generators and aerospace ground equipment (AGE). Existing AGE lack efficiency and can be costly for operations and repairs. Electrical Ground Power Units (eGPUs) can use automotive propulsion batteries to power an electronics package and be integrated onto a self-propelled cart, providing near silent operation while eliminating emissions. The committee understands that eGPUs could also increase overall system efficiency by nearly 75 percent and provide the additional function of having a one-solution power system to support a variety of loads. Furthermore, the elimination of mechanical moving parts and diesel fuel could decrease the ongoing need for periodic maintenance, which could reduce the total ownership costs of the units to the Air Force. By leveraging the economies of scale provided by using proven commercial automotive batteries to power aircraft on the flight-line, the Air Force could see a reduction in development, procurement, and lifecycle costs.

Accordingly, the committee directs the Secretary of Air Force to brief the committee not later than October 1, 2020, on the following: (1) Readiness status of the current AGE fleet; (2) Sustainment and operation and maintenance costs of the current AGE fleet; (3) Identification of alternate types of AGE that can provide flight-line power to aircraft; and (4) An assessment of total life cycle cost savings of replacing current diesel-powered flight-line AGE with eGPUs.

Air Force Reserve runway infrastructure

The committee believes that the Air Force’s physical runway infrastructure is an essential component of the readiness of U.S. operational and strategic forces, including the crucial reserve component forces that support the National Defense Strategy. The committee believes that the maintenance and extension of such assets is critical to launching aircraft quickly and effectively across a variety of mission areas. The committee is concerned by multiple examples where the Air Force Reserve has yet to or is not addressing these requirements with urgency.

In particular, the committee notes that the continued operation at Gila Bend Air Force Auxiliary Field, home of the 56th Fighter Wing, is crucial to emergency operations for both Luke Air Force Base and Davis-Monthan Air Force Base. The committee understands that the current end-of-runway turnaround does not meet current requirements, thus requiring the 56th Fighter Wing to op-

erate under a waiver. The committee further understands that Gila Bend accounted for 18,000 sorties in 2018 alone and will continue to increase as the 56th Fighter Wing fields additional F-35As. Additionally, the committee notes that the Niagara Falls Air Reserve Station's existing runway is not long enough to allow KC-135 aircraft to take off or land at high gross weights under all weather conditions. The committee further understands that the current taxi pattern does not allow for the use of the full runway without back taxi, which is not an option during the free-flow launch of aircraft required to support certain critical missions. The committee notes that both examples, if not addressed, increase risk to aircraft and crew safety during inclement weather or other emergency situations.

Accordingly, the committee directs the Secretary of the Air Force to conduct an assessment and provide a briefing to the congressional defense committees, no later than November 1, 2020, detailing the operational requirements for Air Force Reserve and Air Guard airfields in addition to the state of airfields where runway degradation currently poses a threat to operations. Additionally, the assessment shall include a list of all runways currently utilizing a waiver authority of current requirements and the cost associated for improving said runways to meet current requirements. The briefing shall include the operational requirement for airfields, an assessment of the impact to operations, cost to repair, cost to replace, remaining useful life, and narrative on the required daily maintenance to ensure that the runway is acceptable for full operations at the installation as well as any challenges with infrastructure acquisition methods and processes.

If required, a classified annex may accompany the unclassified briefing.

Air Force Special Operations Command total force utilization

The committee believes that the Air Force Special Operations Command (AFSOC) should make every effort to fully utilize the total force to meet aircrew training and operational requirements in platforms like the AC-130J, CV-22, MC-12W, and A-29 in order to meet the requirements of the National Defense Strategy (NDS). The committee notes that AFSOC's 2020 Strategic Guidance document indicated the need to "appropriately structure and resource its training enterprise to ensure full-spectrum readiness across the total force." Additionally, the committee believes that AFSOC should fully utilize infrastructure and personnel across the total force, to include those of the Air National Guard. Such assets include hanger space, taxiway, and parking space at available installations. Furthermore, the committee believes that AFSOC should fully utilize Active/National Guard associated installations with access to bombing ranges and large-scale military operating areas, low-level training routes, and advanced training environments.

Therefore, the committee encourages AFSOC to work with the National Guard Bureau to fully utilize the total force in support of AFSOC's strategic objectives and in furtherance of the NDS.

Assessment of potential transfer of real property, equipment and facilities in the Assembled Chemical Weapons Alternative Program

The Assembled Chemical Weapons Alternative Program carries out the destruction of chemical weapons produced by the United States as required under the Chemical Weapons Convention, which entered into force on April 29, 1997. The Department of Defense is responsible for the construction of facilities with specialized equipment to perform such destruction where the stockpile of chemical weapons is located. Given the highly toxic nature of this process, much of the equipment and facilities cannot be re-utilized, except for a small number of limited cases where re-use by local communities would be beneficial. The committee directs the Secretary of Defense to report to the congressional defense committees, no later than February 28, 2021, on the ability of the Assembled Chemical Weapons Alternatives Program to transfer for follow on use by the military or to local communities real property, equipment, and facilities, safe to use for additional duties at minimal cost to the U.S. Government and consistent with section 1521(d)(2) of title 50, United States Code, including necessary legislative changes if so required. The committee directs the Department of Defense to engage with relevant local communities, as appropriate, in preparation of the required report as well as planning related to any such transfers.

Backup power technology

The committee is concerned that the critical telecommunications and cybersecurity networks on our military installations throughout the United States and abroad are increasingly susceptible to power outages caused by attacks from our adversaries or by natural disasters. Loss of power to communications equipment contradicts mission readiness and assurance and must be mitigated.

The committee strongly encourages the Department of Defense to ensure that all military installations across the military services have backup power technology that adheres to master energy plans as well mission critical resilience and cybersecurity measures, meets performance standards set by the Environmental Protection Agency, and provides power for no less than 48 hours without refueling. The committee also strongly encourages the Department to pursue technologies with low noise while ensuring cost-effectiveness.

Briefing on contested logistics in support of the National Defense Strategy

The committee strongly supports the National Defense Strategy (NDS) and the Department of Defense's focus in preparing both the individual military services and the combatant commands for great power competition. The committee notes that, in the event of a large scale conflict, the Department will be required to maneuver in a contested environment, which will require logistics planning for manpower, liquid energy, munitions, sustainment, and many other facets of projecting a forward presence. The committee believes that the individual military service components' working together with the United States Transportation Command

(TRANSCOM) will be essential to ensuring that the Department is ready and resourced to project and sustain U.S. forces.

Accordingly, the committee directs the Secretary of Defense, in coordination with Commander, TRANSCOM, to brief the committee no later than October 15, 2020, on how the Department creates and sustains long-term logistics plans to inform the NDS to meet the requirements of great power competition. The briefing should address but not be limited to: (1) How logistics-centric war games inform future warplans; (2) How the Department shares best practices across the military services to improve potential outcomes for issues like operational energy; (3) The current logistics-focused documents used to support the NDS; and (4) The Department's view on whether a separate logistics-focused strategy document as an addendum to the NDS would bolster current plans. This briefing should also consider the unique geographic constraints, security risks, and potential for operations under a contested environment and any other issues the Department deems appropriate.

If required, the briefing may include a classified annex.

Briefing on microturbine technology for military applications

The committee notes the importance of installation and operational energy in support of both basing and contested logistics, which directly support the National Defense Strategy. The committee is aware of advances in microturbine and mobile substation technology that now enables rapid deployments of resilient power units that could maximize operational flexibility by using multiple fuel types, including natural gas and diesel, as well as alternative fuels such as propane, hydrogen, ethanol, biogas, and landfill gas, depending on fuel availability in the theater of operations. The committee understands that these units are compact, that they can be transported via air, sea, rail, or road, and that they can be operational in a matter of hours. The committee further understands that microturbines not only produce potential fuel savings but can also connect to existing power assets using a micro-grid controller to ensure that all assets are used in the most efficient manner. The committee notes that this power generation should allow for lower overall fuel usage and fewer fuel convoys on the road, which are vulnerable to potential enemy action.

The committee encourages the Secretary of Defense, in coordination with the Secretary of the Army, who serves as the executive agent for Joint Force Logistics, to review this technology and study its military applications. The committee directs the Secretary of Defense to provide a briefing to the committee on the potential applicability and effectiveness of microturbines for both installation and operational energy needs no later than November 1, 2020. If deemed viable, the briefing should also include a cost estimate and schedule for conducting a proof of concept demonstration.

Cold spray applications for Department of Defense sustainment and medical activities

The committee recognizes the importance of further advancement, procurement, and deployment of high pressure cold spray systems that can be used to repair high performance materials for

the Department of Defense. The committee highly encourages further integration of portable deployable high pressure cold spray systems. Such systems will potentially enable improved performance, readiness, and sustainability of deployed joint forces. Examples may include ships underway, deployed ground forces, and expeditionary aviation units.

The committee encourages the Department to explore additional cold spray applications during original manufacture of new weapon systems as well as for the application of antimicrobial copper surfaces. The committee recognizes that copper surfaces have proven effective at reducing or eliminating bacteria and viruses on touch surfaces and that cold spray technology is an efficient and cost-effective method of coating touch surfaces with antimicrobial copper. These applications may provide means of preventing the spread of harmful pathogens and reducing hospital-acquired infections.

Consideration for local broadcasting and traditional media for Department of Defense advertising

The committee encourages the service chiefs, in coordination with their respective recruiting commands, to give all due consideration toward the use of local broadcasting and traditional media sources when advertising for the Department of Defense.

Consideration of variable refrigerant flow systems

The committee acknowledges that variable refrigerant flow systems already deployed at United States Army, Air Force, and Navy installations, as well as on ships, play an important role in assisting the Department of Defense in achieving energy efficiency requirements. Further, the committee recognizes that variable refrigerant flow systems provide the Department with a number of benefits, including precise individual control and inverter technology to minimize energy consumption and optimize energy savings, adaptable designs suitable for both retrofits and new builds, large allowances for piping length and level difference to provide a flexible layout, and individualized climate control settings to maximize comfort.

Accordingly, the committee encourages the Department, in selecting equipment for heating, ventilation, and air conditioning, to consider life-cycle costs, energy efficiency, design flexibility, and individualized comfort. Additionally, when considering modifications to the Unified Facilities Criteria regarding the use of variable refrigerant flow systems at Department facilities, the committee encourages the Assistant Secretary of Defense for Sustainment to work collaboratively with industry to mitigate technical concerns, optimize equipment performance, minimize energy consumption, and maximize energy savings.

Defense Personal Property Program

The committee appreciates the work the United States Transportation Command (TRANSCOM) has undertaken to address shortfalls with the Defense Personal Property Program (DP3) through a single contractor known as the Global Household Goods Contract (GHC). The committee appreciates TRANSCOM's responsiveness to

congressional inquiries regarding this topic and looks forward to continued transparency from TRANSCOM.

The committee remains concerned, however, of GHC's implementation as it relates to remote and isolated installations. The committee is aware that locations, such as Alaska and Hawaii, generally have fewer shipping companies to assist in boosting capacity and much higher transit costs due to the time, space, and distance required for such moves. The committee notes that these unique challenges are often not considered in the planning and execution of Nation-wide government programs, leading to poor customer experiences, which could reflect poorly on the newly established GHC program.

Accordingly, as TRANSCOM begins its transition from DP3 to GHC, the committee encourages the use of small businesses to ensure that capacity and quality of service are maintained across all installation locations, especially in areas with remote, isolated, and insular installations.

Defense Personal Property Program

The committee is aware of the continued frustrations of servicemembers and their families with the quality and efficiency of the Defense Personal Property Program (DP3), provided by U.S. Transportation Command (TRANSCOM). The committee notes that DP3 arranges for the movement and storage of about 400,000 personal property shipments of servicemembers and their families annually—40 percent of them during peak moving season. The committee understands that TRANSCOM has identified problems meeting peak moving season demand and addressing longstanding quality issues.

The committee notes that TRANSCOM announced that, no earlier than April 30, 2020, it would award a Global Household Goods Contract to a single commercial move manager to oversee DP3 activities that relate to the movement and storage-in-transit of household goods. While the committee is encouraged by TRANSCOM's desire to improve the program's delivery of services to servicemembers, the committee believes that the Department of Defense should maintain certain services for servicemembers. The committee expects that servicemembers and their families will continue to have the option to utilize or reject any vendor to assist in their Personally Procured Move (PPM) relocation. Further, military exchanges should continue to enter into contracts and arrange marketing programs with PPM relocation vendors, as they deem appropriate, and market PPM relocation vendors to servicemembers who select the PPM relocation option.

Additionally, as the Department moves forward to implement the Global Household Goods Contract, the committee remains concerned about the recommendations described by the Government Accountability Office in a report titled "Movement of Household Goods: DOD Should Take Additional Steps to Assess Progress toward Achieving Program Goals" (GAO-20-295). The committee strongly encourages the Commander, TRANSCOM, to develop a process for tracking data during the first 3 years of the Global Household Goods Contract to inform the planned manpower study during the third year of the contract. The committee also encour-

ages the development of performance metrics for those DP3 activities that will still be performed by the military services, such as servicemember counseling and claims resolution. The committee believes that servicemembers and their families deserve a process that relies on quality data and include performance metrics to ensure accountability.

Defense Readiness Reporting Reform briefing

The committee recognizes that the Defense Readiness Report System must evolve to meet the demands of irregular warfare environments and capture whether force elements are able to compete and win in a high-intensity near-peer scenario. The committee is encouraged by the Department of Defense's ongoing efforts in readiness reporting reform, guided by the findings and milestones established in the Department's recent assessment of the current readiness reporting system, Defense Readiness Reporting Systems Reform (D-C613F67), and applauds the Department for its assessment of how readiness reporting can be improved using new analytical technologies.

The committee believes that the Department can benefit greatly from improving its readiness reporting, as implementing the National Defense Strategy depends on a more lethal and ready force. The committee notes that the report outlined specific measures the Department could take to successfully measure readiness of components and therefore enable a more effective warfighting force. The committee further notes that this report identifies threat-based reporting, improved information technology systems, interoperability, and agility as some of the elements required of the future data architecture. For example, the Department found that effective data modeling requires artificial intelligence-enabled technologies and that commercial-off-the-shelf products would benefit a future analytics workbench. The committee agrees that leveraging artificial intelligence-enabled technologies would allow the Department to better understand system data and make actionable decisions in near-real time.

Accordingly, the committee encourages the Department to consider inclusion of artificial intelligence as it develops guidance for the Defense Readiness Reporting System and expects the Department to implement the recommendations from its report, D-C613F67.

Additionally, the committee directs the Secretary of Defense to provide a briefing on Department of Defense Instruction 7730.66, Guidance for the Defense Readiness Reporting System, and Department of Defense Directive 7730.65, Department of Defense Readiness Reporting System, as well as an update on implementing the aforementioned recommendations no later than February 1, 2021.

Diverse training for special operations forces

The committee notes that training of special operations forces (SOF) requires access to diverse venues and locations to enable realistic military training. In particular, training in austere, remote, and rough terrain supports the development of operational tactics, techniques, and procedures and testing of special operations-peculiar equipment. The committee believes that former surface mine

sites may provide SOF with training opportunities for accomplishing SOF-unique tasks and encourages U.S. Special Operations Command to evaluate the use of such locations for future training opportunities.

Eastern Gulf Test and Training Range (EGTTR)

The committee notes that the Air Force Development Test Center's mission is to plan, conduct, and evaluate testing of U.S. and allied non-nuclear munitions, electronic combat, target acquisition, weapon delivery, base intrusion protection, and supporting systems. That mission is executed at Eglin Air Force Base in Florida, whose land test areas encompass 463,000 acres and water test areas, including the Eastern Gulf Test and Training Range (EGTTR), which cover 86,500 square miles in the Gulf of Mexico, making it the Department of Defense's (DOD) largest test and training area in the world.

The committee notes that the DOD uses the EGGTR to develop and maintain the readiness of our combat forces and that the EGGTR is critical to achieving the objectives contained in the National Defense Strategy. The EGTTR connects test and training ranges and capabilities across the Eastern Gulf of Mexico extending from Key West to NW Florida. The test and training areas contain multiple live-fire bombing ranges, including Pinecastle Range, Avon Park Air Force Range, and the Eglin Bombing Range, supporting simultaneous maritime, air, and land training exercises.

Due to its capabilities, the EGTTR complex is an integral part of DOD's Major Range and Test Facilities Base and the Training Resources Strategy. Additionally, the EGTTR supports multiple users, which include all military services within the DOD, other government agencies, foreign countries, and private companies. The Air Force currently expends annually in the EGTTR approximately 550 bombs, 580 missiles, 1,218,000 rounds of ammunition, and 637,000 countermeasures.

All the military services, plus other government agencies, allied nations, and commercial entities, use the EGTTR to test the newest weapons and to ensure that legacy inventory weapons still work as intended.

The committee understands that emerging technologies such as hypersonics, autonomous systems, and advanced sub-surface systems could require enlarged testing and training footprints.

Therefore, the committee recognizes the importance of the EGTTR to the national security of the United States.

Electronic component failures

The committee notes that the Department of Defense has found that electronics maintenance is a leading driver of weapon systems non-availability, accounting for over \$10 billion in fiscal year 2018 sustainment costs. This has exacerbated electronics availability issues and resulted in over 278,000 days of end-item system non-availability and approximately \$3 billion in non-value-added sustainment costs annually.

To address these issues, the committee directs the Secretary of Defense to provide a report to the congressional defense committees, no later than December 31, 2020, that analyzes this persistent

maintenance issue. The report should: recommend best practices to be used by the Department of Defense to address electronics component failures due to intermittent faults; identify responsible organizations in the military services and the Defense Agencies and Department of Defense Field Activities to address these issues; and include strategic plans and a roadmap to field intermittent fault detection and isolation capabilities.

Emerging viral threats

The committee believes that emerging viral threats such as the 2019 novel coronavirus highlight the need for innovative and real-time forecasting and modeling techniques to ensure that the U.S. military and civilians are best positioned to respond, as appropriate, to emerging public health and national security threats. The committee encourages the Department of Defense (DOD) to leverage emerging infectious disease forecasting and modeling methods and data developed by university and private partners to the extent practicable. The committee also encourages the Defense Threat Reduction Agency, in collaboration with other agencies such as the Department of Health and Human Services, to examine the zoonotic features of emerging viruses, such as COVID-19 and Ebola, with the goal of understanding how such pathogens cause disease in humans and the potential impact on U.S. national security interests.

Engine optimization initiatives at Tinker Air Force Base

The committee notes that the National Defense Strategy (NDS) requires a lethal and ready force and, to support that force, aviation platforms will have a key role in strategic airlift. Jet engine ingestion of debris and contaminants during operations erodes engine compressor blades, decreasing engine efficiency and power, increasing fuel burn and exhaust gas temperature, and causing higher maintenance costs and decreased aircraft availability.

The committee understands that the Air Force Office of Operational Energy, in conjunction with the Advanced Power Technology Office, Air Force Research Laboratory, Naval Air Systems, commercial airlines, industry, and the Air Force Life Cycle Management Center Propulsion Directorate at Tinker Air Force Base, is exploring blade coating certifications for the F-117 engine, blade scanning testing for the F-108 engine program, and an engine foam wash. The committee further understands that the Air Force is currently validating return on investment data and will have an implementation report of any proven concepts later this year.

The committee notes that coating high pressure compressor blades with erosion/corrosion-resistant finish preserves structures and increases time between repairs. Laser and infrared scanning of high pressure compressor blades can be used to determine physical characteristics of the airfoils and group them to “tune” the engine and improve efficiency. Finally, washing engines on wing with atomized water to remove debris from the compressor blade airfoil surfaces can be used to maintain optimal efficiency and deliver a cooler running engine.

The committee agrees with the Air Force’s assessment that, if the return on investment can be demonstrated through testing and

certification, these optimization initiatives can reduce fuel consumption of the largest USAF consumers and lead to second and third order benefits, including improved performance and increased readiness. The committee understands that industry is already realizing fuel savings of up to 3 percent using this technology. A roughly 2 percent fuel savings for the KC-135, for example, is \$17.0 million (2018 fuel expenditures).

The committee is encouraged by these potential savings as there are secondary and tertiary benefits in readiness and in the performance of contested logistics missions and looks forward to the final implementation report.

Improving depot best practice sharing

The committee notes that the Government Accountability Office (GAO) has issued several reports on the challenges experienced at the organic maintenance depots, including challenges pertaining to deteriorating equipment and facility condition, filling critical personnel skill gaps, meeting service repair needs, and excesses in carryover of workload. These problems can lead to delays in the maintenance of weapon systems that ultimately affect readiness by impeding the military services' ability to conduct training and provide forces to perform missions around the world. Despite these challenges, it is not clear the extent to which the Department of Defense (DOD) is assessing and mitigating the risk of maintenance delays when identifying its depot workload requirements.

The committee notes that the GAO's most recent report on the subject, "DOD Can Benefit from Further Sharing of Best Practices and Lessons Learned" (GAO-20-116), outlined specific areas where the DOD can improve both its information sharing practices as well as implementation of said practices between the military services. For example, the GAO found that while the DOD has more than 60 working groups, the Office of the Secretary of Defense does not maintain a centralized list of working groups nor points of contact. Additionally, the GAO found that differing military service priorities and strategies were also a barrier to successful best practice sharing. The committee agrees with GAO's assessment that the inability to locate these working groups combined with competing service priorities can impede the sharing of best practices.

The committee notes the benefits of cross-service sharing of best practices. The committee was encouraged, for example, to learn that the Navy Fleet Readiness Center Southwest implemented an intermittent fault detection system from Ogden Air Logistics Complex, an Air Force organization, reducing repair time from 90 days to 30 days while quadrupling the generators' time between failures. The committee further notes, however, that according to the GAO, the Army stated that, while it established lessons learned for sharing maintenance best practices and lessons learned, it did not maintain them due to organizational restructuring and resource constraints.

The committee notes that the GAO provided two recommendations, both of which the Department of Defense concurred with: 1) The Under Secretary of Defense for Acquisition and Sustainment should ensure that the Deputy Assistant Secretary of Defense for Materiel Readiness create, share, and maintain a comprehensive

and up-to-date list of all DOD sharing venues, including points of contact, related to depot maintenance; and 2) The Secretary of the Army should ensure that Army Materiel Command reestablishes and maintains organizations dedicated to sharing materiel best practices and lessons learned, as required by Army regulations.

Accordingly, the committee expects the Secretary of Defense to implement the recommendations of GAO-20-116.

Informing War Plans Through Accurate War Gaming

The committee notes the 2018 National Defense Strategy calls for resilient and agile logistics in the era of great power competition. The committee believes that the delivery of liquid energy, including, but not limited to JP5, JP8, Jet A1, and F76, is crucial to achieving that success.

The committee notes that the Air Force Office of Operational Energy has developed modeling and simulation tools to analyze fuel consumption and installation supply during wargames. The committee believes that these tools can better inform wargame outcomes and must be designed to reflect the new reality of the contested logistics environment that characterizes the operating environment to improve future warplans.

The committee encourages the Joint Staff to work in coordination with the Air Force Office of Operational Energy to produce energy-informed warplans through wargaming, campaign analysis, and modeling and simulation.

Infrared uniform management

The committee notes that the National Defense Strategy cites growing threats from China and Russia, whose forces are equipped with thermal detection sensors. The committee believes that, to counter this threat, it is important that servicemembers are equipped with uniforms that are effective in concealing servicemembers from enemy infrared (IR) and thermal sensors and durable enough to withstand wear and tear from combat operations. The committee further believes that, as advanced IR and thermal detection technology becomes increasingly available to the Nation's military competitors, effective and durable personal signature management becomes critical to force protection and mission execution.

The committee notes that the military services have previously established baseline standards for flame resistant uniforms for servicemembers deployed in hostile areas, which include a laundering durability requirement to ensure that servicemembers have an enduring protective capability that extends well into the predicted service life of the uniform. However, the committee understands that the military services do not currently maintain a similar durability requirement for uniforms with IR signature management capability. The committee understands that recent technical developments in flame resistant garments have begun to reduce costs while offering options that include a durable IR management capability. The committee notes that these emerging technological developments could provide the military services with ways to protect their forces, regardless of the environment, without imposing undue burden on already strained budgets.

As such, the committee encourages the military services to explore these technologies further and to incorporate durable IR signature management capabilities designed to fully protect our men and women in uniform.

Installation energy

The committee recognizes that the energy consumption of large, energy-intensive systems, such as heating, ventilation, and air conditioning (HVAC) systems of the Department of Defense (DOD), are monitored and managed by industrial control systems (ICS) to maximize their efficiency and cost savings. Unfortunately, computers, printers, and other smaller items plugged into an electrical system are not. While the More Situational Awareness for Industrial Control Systems (MOSAICS) program is focused on the cybersecurity of ICS platforms, it is not aimed at providing energy cost savings. Recent technologies have emerged on the market to provide comprehensive plug-load energy savings with cybersecurity protection.

Therefore, to further a DOD priority to leverage building control systems to achieve substantial energy savings in a highly secure architecture, the committee authorizes and encourages the Secretary of Defense to establish a pilot program that incorporates technologies relating to energy management on an installation that is not reliant on a single telecommunications provider or energy provider. This approach will assure that, if successful, the technology suite and architecture will be easily implemented across the DOD and will be able to generate the maximum level of energy savings in a secure environment.

The pilot should: (1) Include at least three installations; (2) Incorporate energy efficiency technology for an entire plug-load (large and small systems); (3) Incorporate comprehensive cybersecurity technology; (4) Integrate with current and future architectures; (5) Allow scalability and flexibility; and (6) Avoid single points of failure. The pilot program shall sunset on September 30, 2023. Within 90 days of completion of the pilot, the DOD shall brief the Committees on Armed Services of the Senate and the House Representatives on the results of the pilot, whether or not it should be expanded as appropriate, and explanation as to the outcome of that decision.

Installation Utility and Energy Authority Integration

The committee supports the Department of Defense's (DOD's) efforts to improve installation utility resilience. The committee recognizes that the DOD has a variety of statutory authorities that can be used to fulfill the Department's installation utility needs, including third-party financing, utilities privatization, and capital investment using appropriated dollars.

Accordingly, the committee directs the Secretary of Defense to brief the congressional defense committees, not later than April 1, 2021, on initiatives that leverage and integrate existing utility and energy authorities to support installation resiliency projects that improve utilities efficiency, upgrade infrastructure, and strengthen mission assurance.

Joint Military Information Support Operations WebOps Center

The committee notes that U.S. Special Operations Command (SOCOM) is designated as the coordinating authority for web-based military information support operations. The committee supports the establishment of the Joint Military Information Support Operations WebOps Center (JMWC) at SOCOM to enable global coordination of web-based MISO, counter transregional misinformation challenges, share best practices, and leverage efficiencies whenever possible.

However, the committee is concerned that the overall resource requirements to support the JMWC, in both funding and personnel, are not well understood and should be better refined as the JMWC seeks to achieve initial operating capacity later this year. Additionally, the committee believes that projected personnel requirements for some combatant commands are excessive and not aligned with the priorities outlined in the National Defense Strategy. The committee also believes that SOCOM should prioritize the development of rigorous standards and assessments to appropriately characterize the success or failure of web-based messaging efforts and make recommendations for re-directing resources when appropriate.

Military Munitions Response Program

The committee recognizes and supports the ongoing and costly efforts by the Department of Defense to address the significant challenges of cleaning up military installations contaminated by per- and polyfluoroalkyl substances. Additionally, the Department must weigh the pressing priority of executing the Military Munitions Response Program (MMRP) in a manner consistent with its budget request. The committee is also concerned about public safety at the over 5,000 MMRP sites across the country that potentially contain unexploded ordnance. The committee understands that tough choices must be made by the Department and the military services when balancing the priorities of environmental contamination and unexploded ordnance in executing the MMRP. The committee strongly encourages the Department and the military services to execute and obligate funds for the MMRP within the environmental restoration accounts in accordance with their budget requests as best as possible, given the competing priorities of MMRP and the need to clean up installations contaminated by per- and polyfluoroalkyl substances.

Military working dogs Comptroller General review

The committee recognizes the importance of working dogs, who serve honorably alongside servicemembers and support agencies across the Federal Government. However, the committee is concerned by the September 2019 State Department Office of the Inspector General report on the “Evaluation of the Anti-terrorism Assistance Explosive Detection Canine Program—Health and Welfare,” which documented serious animal welfare concerns for working dogs.

Given that the committee recognizes the importance of welfare protections for humane treatment, the committee directs the Comp-

troller General of the United States to submit to the Committees on Armed Services of the Senate and the House of Representatives a report no later than February 1, 2021, that reviews the use of working dogs across the Federal Government and evaluates whether welfare standards for working dogs are upheld. This report should include the total number of working dogs at each Federal entity and a summary of their support roles.

Additionally, the Comptroller General should summarize any Federal policies related to the protection or health and welfare of working dogs and evaluate whether Federal entities with working dogs implement and adhere to these policies. Finally, the Comptroller General should provide recommendations to strengthen oversight and protection of working dogs, including suggestions to standardize contracts relating to the use of working dogs by foreign countries or Federal contractors. These written agreements should ensure a mutual understanding regarding the health, welfare, and retirement of working dogs, require that any foreign partner or contractor provide welfare evaluations and healthcare for canines, and stipulate that medical needs after deployment or service are met.

National all-domain warfighting center

The committee recognizes the critical need for the National Guard, as an essential component of the Joint Force, to conduct all-domain training and exercises in support of the National Defense Strategy (NDS).

The committee notes the Joint Staff's development of an all-domain warfighting concept to support the NDS. It also notes that the National Guard Bureau has successfully sponsored exercise Northern Strike as a Joint National Training Capability accredited exercise to provide readiness-building opportunities for all the military services through joint combined arms training. This exercise occurs at Camp Grayling Joint Maneuver Training Center and the Alpena Combat Readiness Training Center, installations which have already provided opportunities for units from any service, allies, and partners to achieve or sustain proficiency in conducting joint command and control, air, maritime, and ground maneuver integration, and the synchronization of lethal and non-lethal (cyber) fires in a joint, multinational major combat operations environment that is scalable across unit resources levels. It also has multi-modal capabilities to train and exercise joint logistics and sustainment at operationally relevant distances. This training environment addresses training gaps and builds readiness at multiple echelons with the scope and scale required to address emerging challenges of near-peer competitors.

The committee encourages the Secretary of the Army and the Secretary of the Air Force to appropriately resource training and exercise opportunities for the Army and Air National Guards to maintain readiness in an all-domain training environment to the maximum extent feasible.

Naval expeditionary sustainment and repair

The committee supports investments that align mature technology-based solutions with expeditionary shipboard sustainment

and repair concepts of operations to improve warship resiliency, lethality, and availability.

Navy Converged Enterprise Resource Planning

The committee supports Navy efforts to modernize financial management and logistics systems using best-in-class commercial enterprise resource planning solutions and notes strong initial progress in this area. The committee urges the Navy to adopt a flexible staffing model to scale progress across the Navy enterprise, ensure cost-effective staffing, keep pace with innovation, and leverage the value of cloud computing-enabled platforms. To achieve this, the committee believes that the Navy should avoid excessive on-site place of performance requirements, restrictive experience level requirements inconsistent with commercial practices, and other policies that restrict available workforce, increase costs, and reduce the scalability needed to achieve audit readiness and logistics modernization goals. The committee notes that the recent challenges in response to the COVID-19 crisis highlighted the need for flexible policies with respect to place of performance of appropriate Department of Defense missions.

Navy shipyard infrastructure optimization

The committee notes that the Department of the Navy operates and maintains four public shipyards in the United States: Norfolk Naval Shipyard, Virginia; Portsmouth Naval Shipyard, Maine; Puget Sound Naval Shipyard, Washington; and Pearl Harbor Naval Shipyard, Hawaii. The committee recognizes the vital role these shipyards play in generating readiness, supporting the Navy's surface and submarine fleet by performing depot- and intermediate-level maintenance, modernization work, emergent repairs, and in-activations.

In recognizing the importance of maintaining these public shipyards, in the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91), the committee directed the Secretary of the Navy to provide a report to the congressional defense committees to address shortfalls in the public shipyard enterprise. The committee notes that the Navy created the Shipyard Infrastructure Optimization Plan (SIOP) within the Naval Sea Systems Command (NAVSEA) to recapitalize and modernize the infrastructure at all four public shipyards. The committee understands that subsequently the Navy established a program office, PMS-555, to help coordinate the various Navy stakeholders as they optimized the SIOP and began implementation of the plan.

The committee believes the infrastructure improvements needed at the Navy's public shipyards must be consistent and keep pace with the anticipated growth of Navy force structure, consistent with the 30-year shipbuilding plan, required annually pursuant to section 231 of title 10, United States Code. The committee is concerned that necessary SIOP infrastructure investments have seen little military construction or facilities, sustainment, restoration and modernization (FSRM) funding programmed to date. These investments are critical to ensuring the readiness of the Navy and for maintaining the fleet. The committee appreciates that the Navy is trying to optimize the program but remains concerned that fur-

ther delays will add cost and complicate fulfillment of fleet maintenance needs.

Accordingly, the committee directs the Secretary of the Navy to provide a briefing to the congressional defense committees every 6 months, beginning on September 1, 2020, on the status of the SIOP. Specifically, the briefing should include updates on the following plans: (1) Personnel Roadmap; (2) Infrastructure Development Plan; (3) Metrics Assessment Plan; (4) Workload Management Plan; and (5) Funding and Authorities Plan.

Additionally, the briefing shall include a listing of equipment from Federal Supply Class 3411 (Boring Machines), 3416 (Lathes), and 3441 (Bending and Forming Machines) that has been unserviceable for over 30 consecutive days. The listing shall include, for each such piece of equipment: (1) The reason for the delayed repair; (2) The availability of technical representatives from the manufacturer to provide assistance in diagnosing and repairing the discrepancy; and (3) The estimated time to repair.

Lastly, the committee directs the Secretary of the Navy to provide to the congressional defense committees a report with the annual budget request for each of fiscal years 2022 through 2027. This report shall include details surrounding the anticipated investment in the public shipyards contained in the future years defense program, including military construction and FSRM-funded projects. These investments shall be broken out by project, public shipyard, and fiscal year.

Partnerships with industrial base for hypersonic and directed energy programs

The committee recognizes the strategic importance of the defense industrial base. The committee also recognizes that hypersonic and directed energy programs are developing crucial platforms in support of the National Defense Strategy. The committee believes that, in order to efficiently utilize the combined capabilities of the organic and non-organic industrial bases, the Department of Defense should pursue partnerships and joint ventures between non-organic and established Centers of Excellence within the organic industrial base for any contract actions pertaining to enduring research and development, design, prototyping, testing, production, and sustainment, including for hypersonic and directed energy programs.

Preservation of the Force and Families program

The committee recognizes the near- and long-term physical, mental, and emotional effects of nearly two decades of continuous operations in high-stress environments experienced by our special operations forces (SOF). One of the top priorities of U.S. Special Operations Command (SOCOM) is to take care of its people, and, in responding to the demand signal from SOF components, SOCOM created the Preservation of the Force and Families (POTFF) program. The committee strongly supports all aspects of the POTFF initiative, especially the nesting of human, psychological, spiritual, and social performance support programs within an integrated care model, intended to maximize access and minimize stigma.

The committee also recognizes the stress caused by high operational tempo and unexpected deployment and training schedules on the families of SOF personnel and strongly supports the POTFF programs that provide families with the tools to deal with these unique challenges. The committee encourages SOCOM across all echelons to continue to prioritize the POTFF program and to utilize all tools at its disposal to drive forward the POTFF's continuous innovation and evolution to meet the needs of the SOF force and family.

Readiness and Environmental Protection Integration program

The committee recognizes the important role that the Department of Defense plays as a Federal partner in multi-state watershed restoration projects and the importance of the Readiness and Environmental Protection Integration (REPI) program in advancing a critical military goal: limiting encroachment and land use conflicts on and near military installations.

The committee strongly encourages the Department to support REPI projects that leverage other Federal and non-Federal funding sources to deploy best management practices on lands conserved through the REPI program to enhance resilience and improve water quality in watersheds where the Department has restoration partnership obligations and where land subsidence compounds the threat of sea level fluctuation and associated flooding.

Red Hill

The committee encourages the Navy and the Defense Logistics Agency (DLA) to prioritize engagement with local community stakeholders as well as the Environmental Protection Agency and the State of Hawaii as they continue efforts to carry out requirements established in the Administrative Order of Consent (AOC). The purpose of the AOC is to ensure that the drinking water supply is protected while allowing the Red Hill Bulk Fuel Storage Facility adjacent to Joint Base Pearl Harbor Hickam, Hawaii, to remain in use as a vital resource for our national defense. The committee also encourages the Navy to continue to hold quarterly informational updates on the Red Hill Bulk Fuel Storage Facility, as per the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), that are open to the public.

Additionally, the committee supports the Navy's continuing effort to improve the integrity of its bulk fuel storage systems, including its plan to acquire and implement a secondary containment solution for Red Hill where 27,000 gallons of fuel leaked in January 2014. The committee strongly encourages the Secretary of the Navy to appoint a senior executive solely responsible for overseeing and executing the Navy's obligations related to Red Hill, including those detailed in its October 2019 Tank Upgrade Alternative report. This individual should be given decision authority related to research and development, procurement, resourcing requirements, and community engagement, while continuing to rely on expert advice concerning engineering matters that affect the integrity of the bulk fuel storage facility.

Report on Department of Defense small arms training system capabilities

The committee notes that the past four National Defense Authorization Acts have called on the Department of Defense to transition to advanced small arms synthetic training systems to improve Active Duty, Reserve, and National Guard lethality and combat readiness training. The committee further notes that this directive aligns with the Department of Defense's National Defense Strategy objective to achieve a more lethal force and to accelerate ongoing reforms to ensure that the military services are making the most of the resources that the Congress provides and to focus on processes that free up time, money, and manpower to further readiness recovery. The committee is concerned that the military services have not yet achieved a consistent standard of verifying that all small arms synthetic training systems are leveraging advanced technology to achieve these objectives.

Despite years of program acquisition efforts by each of the military services coupled with reports from the Department confirming the importance of transitioning to next generation small arms training systems, the committee remains concerned that there is a lack of substantial financial investments in the improvement of legacy small arms simulation systems and programs of record, currently capable of only rudimentary training and data collection capabilities and lacking the requirement to integrate and validate key biometrics, human performance, and cognitive data that enable tracking and verification of trainee performance and skills enhancement.

Accordingly, the committee directs the Comptroller General of the United States to conduct an audit of each military service's existing and planned small arms simulation training systems. The report shall include, but not be limited to, a detailed description and assessment of each system's effectiveness in delivering: advanced human performance and cognitive training techniques; integrated biometric systems; advanced software-based data processing and collection capabilities beyond basic fundamentals of marksmanship; the ability to establish cognitive and physical baselines at the individual level; and the ability to track and report detailed trainee results without requiring man-in-the-loop logging and aggregation. In addition, the audit shall report: the type of data collected; how the data are retained and tracked to validate system effectiveness, lethality requirements, and measurable live fire qualification improvements at the individual, small unit, and collective levels; and how the data are being used to inform determinations for training and readiness resourcing of small arms trainers.

The committee directs that the Comptroller General provide a report on its findings no later than February 1, 2021.

Software to automate manufacturing

Noting that the National Defense Strategy cites the importance of maintaining the Department of Defense's domestic technological advantage, which requires changes across the National Security Innovation Base, the committee understands that automotive manufacturers, aerospace companies, medical technology companies, industrial automation companies, and consumer packaged goods

manufacturers leverage software that further automates manufacturing through the use of computer aided design (CAD), computer aided manufacturing (CAM), computerized numerically controlled (CNC) machining, and similar manufacturing technologies. These can optimize manufacturing, even at very low minimum order quantities.

The committee believes that, as the Department of Defense aims to balance near term readiness recovery with investments in long term combat capability and faces challenges with mission-critical repair part obsolescence and shortages across the organic industrial base, the use of such technologies could help address these challenges.

Therefore, the committee directs the Secretary of Defense, through the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense for Research and Engineering, in consultation with each Service Acquisition Executive, to: (1) Assess how using automated technologies related to CAD, CAM, and CNC machining at arsenals, depots, and fleet readiness centers could address spare part obsolescence issues; (2) Evaluate which service components would implement such digital manufacturing approaches and which current domestic industrial base entities could support these technologies; and (3) Submit a report to the congressional defense committees on (1) and (2) no later than October 1, 2021.

Utilities privatization

The committee continues to support the successful utilities privatization (UP) effort that has been underway for the past 2 decades. The UP program has succeeded for many years due to robust oversight from the military departments. This committee has repeatedly expressed its support for UP, both in legislative text and in accompanying report language. In the Senate report accompanying S. 1790 (S. Rept. 116–48) of the National Defense Authorization Act for Fiscal Year 2020, this committee reiterated its support for UP and specifically praised the Army for its successful privatization of the storm water system at Fort Knox. Existing legal authority, including the authority to privatize storm water systems under the current text of section 2688 of title 10, United States Code, allows the Department of Defense (DOD) to leverage private-sector expertise to enhance installation resiliency and to improve water, wastewater, storm water, and electrical services for tenant commands and residents in a cost-effective manner.

The committee strongly encourages the DOD to take additional action to use UP capabilities to the fullest extent possible, consistent with the intent of the original authorization. Thus, the committee encourages the Under Secretary of Defense for Acquisition and Sustainment to issue additional guidance to the military departments, building on the February 7, 2019, memorandum issued by the Under Secretary, authorizing the military departments to competitively seek proposals for storm water system privatization, consistent with section 2688 of title 10, United States Code. The committee encourages the Assistant Secretaries of the military departments with responsibility for energy, installations, and environment, in turn, to engage with installation leaders to consider

options for using the UP model for storm water infrastructure on the installations that they oversee under those authorities.

Accordingly, the committee directs the Under Secretary of Defense for Acquisition and Sustainment, in coordination with the Assistant Secretaries of the military departments with responsibility for energy, installations, and environment, to provide a report to the Committees on Armed Services of the Senate and the House of Representatives no later than March 1, 2021, on any updated guidance released by the DOD on UP and a list of any cases where the military departments have declined to privatize the storm water infrastructure of a base or installation that has already privatized water and wastewater systems, to include a detailed explanation for each such decision.

Water and energy infrastructure

The committee notes that the definition of military installation resilience, codified in section 101(e)(8) of title 10, United States Code, includes water and energy infrastructure improvement projects, as well as the protection of water sources, under “necessary resources on or outside of the military installation.” For example, the committee understands that El Paso Water provides approximately 30 percent of the water and 100 percent of the wastewater service for Fort Bliss. The committee strongly encourages the Army to maintain this relationship and these specific ratios as they relate to water and wastewater, which are crucial to the installation’s mission.

The committee also notes that an April 2019 report by the Department of Defense found that “water shortages can significantly impact military readiness through reduced training opportunities and limited operational capacity.” As such, the Department and the military services should be doing everything they can to ensure sustainable access to water for each installation, especially at locations that “may benefit [from] using additional water conservation measures to avoid potential water shortages or increased costs associated with water scarcity” like Fort Hunter Liggett, Fort Stewart, Mountain Home Air Force Base, Naval Air Station Lemoore, and Naval Air Weapons Station China Lake.

Given that water shortages pose a risk to the long-term viability of military bases, the committee directs the Army to brief the committee no later than October 1, 2020, on lessons learned from its Net Zero Initiative Pilot Program. Lastly, the committee encourages the Department and the military services to increase its focus on and maximize efforts in leak detection and repair, which the Department found is the “most promising water conservation strategy that DOD can apply.”

TITLE IV—MILITARY PERSONNEL AUTHORIZATIONS

Subtitle A—Active Forces

End strengths for active forces (sec. 401)

The committee recommends a provision that would authorize Active-Duty end strengths for fiscal year 2021, as shown below:

Service	FY 2020 Authorized	FY 2021		Change from	
		Request	Recommendation	FY 2021 Request	FY 2020 Authorized
Army	480,000	485,900	485,000	− 900	+5,000
Navy	340,500	347,800	346,730	− 1,070	+6,230
Marine Corps	186,200	184,100	180,000	− 4,100	− 6,200
Air Force	332,800	333,700	333,475	− 225	+675
DOD Total	1,339,500	1,351,500	1,345,205	− 6,295	+5,705

As COVID–19 continues to wreak havoc on the nation, the committee has monitored closely the military’s ability meet its recruiting and retention mission. Due to social distancing, school closures, and other virus mitigation measures, military recruiting has shifted to an online activity. It is too early to know whether this virtual approach will prove successful. Meanwhile, the military departments were forced to reduce basic training capacity to approximately 50 percent of normal operations. While each service believes it will be able to return to normal basic training throughput by early summer, this is not guaranteed. Based on these factors, the military’s ability to achieve authorized end strength in fiscal year 2020 is uncertain.

Many of the assumptions utilized in determining the military’s fiscal year 2021 end strength request are no longer accurate. Each military department may begin the fiscal year with fewer personnel than anticipated due to COVID–19. Recruiters may still be unable to access potential recruits in schools and in their homes, which could exacerbate recruiting challenges. Reduced basic training capacity could continue, limiting the military’s ability to process new recruits.

Therefore, the committee has taken a cautious approach to the end strength authorization for active forces. This provision would authorize end strength levels within existing variance authority for the Army, Navy, and Air Force. Based on detailed modelling conducted by the Marine Corps, the committee would further reduce Marine Corps end strength by 4,100 compared to the budget request.

The committee emphasizes that this provision does not signal a lack of support for the military’s end strength goals. If conditions

improve throughout the summer and fall of 2020, the committee would support restoring end strength to the requested level.

End strength level matters (sec. 402)

The committee recommends a provision that would repeal section 691 of title 10, United States Code, which would consolidate Active-Duty end strength management legal requirements into one statute. The provision would also amend section 115 of title 10, United States Code, to authorize the Secretary concerned to vary Active-Duty end strength levels as previously authorized by section 691.

The committee notes that the military departments are required to adhere to statutory end strength levels as specified in section 115 of title 10, United States Code. The amendments made by this provision would remove a mostly redundant requirement, which complicates the ability of the Secretary of Defense to manage the military.

Subtitle B—Reserve Forces

End strengths for Selected Reserve (sec. 411)

The committee recommends a provision that would authorize Selected Reserve end strengths for fiscal year 2021, as shown below:

Service	FY 2020	FY 2021 Authorized		Change from	
		Request	Recommendation	FY 2021 Request	FY 2020 Authorized
Army National Guard	336,000	336,500	336,500	0	+500
Army Reserve	189,500	189,800	189,800	0	+300
Navy Reserve	59,000	58,800	58,800	0	-200
Marine Corps Reserve	38,500	38,500	38,500	0	0
Air National Guard	107,700	108,100	108,100	0	400
Air Force Reserve	70,100	70,300	70,300	0	200
DOD Total	800,800	802,000	802,000	0	+1,200
Coast Guard Reserve	7,000	7,000	7,000	0	0

End strengths for Reserves on active duty in support of the reserves (sec. 412)

The committee recommends a provision that would authorize full-time support end strengths for fiscal year 2021, as shown below:

Service	FY 2020	FY 2021 Authorized		Change from	
		Request	Recommendation	FY 2021 Request	FY 2020 Authorized
Army National Guard	30,595	30,595	30,595	0	0
Army Reserve	16,511	16,511	16,511	0	0
Navy Reserve	10,155	10,215	10,215	0	60
Marine Corps Reserve	2,386	2,386	2,386	0	0
Air National Guard	22,637	25,333	25,333	0	2,696
Air Force Reserve	4,431	5,256	5,256	0	825
DOD Total	86,715	90,296	90,296	0	3,581

End strengths for military technicians (dual status) (sec. 413)

The committee recommends a provision that would authorize military technicians (dual status) for the reserve components of the Army and Air Force for fiscal year 2021, as shown below:

Service	FY 2020	FY 2021 Authorized		Change from	
		Request	Recommendation	FY 2021 Request	FY 2020 Authorized
Army National Guard	22,294	22,294	22,294	0	0
Army Reserve	6,492	6,492	6,492	0	0
Air National Guard	13,569	10,994	10,994	0	-2,575
Air Force Reserve	8,938	7,947	7,947	0	-991
DOD Total	51,293	47,727	47,727	0	-3,566

The provision would also prohibit under any circumstances the coercion of a military technician (dual status) by a State into accepting an offer of realignment or conversion to any other military status, including as a member of the Active, Guard, and Reserve program of a reserve component. The provision would further specify that if a technician declines to participate in such a realignment or conversion, no further action may be taken against the individual or the individual's position.

Maximum number of reserve personnel authorized to be on active duty for operational support (sec. 414)

The committee recommends a provision that would establish limits on the number of reserve personnel authorized to be on Active Duty for operational support under section 115(b) of title 10, United States Code, as of September 30, 2021, as shown below:

Service	FY 2020	FY 2021 Authorized		Change from	
		Request	Recommendation	FY 2021 Request	FY 2020 Authorized
Army National Guard	17,000	17,000	17,000	0	0
Army Reserve	13,000	13,000	13,000	0	0
Navy Reserve	6,200	6,200	6,200	0	0
Marine Corps Reserve	3,000	3,000	3,000	0	0
Air National Guard	16,000	16,000	16,000	0	0
Air Force Reserve	14,000	14,000	14,000	0	0
DOD Total	69,200	69,200	69,200	0	0

Separate authorization by Congress of minimum end strengths for non-temporary military technicians (dual status) and maximum end strengths for temporary military technicians (dual status) (sec. 415)

The committee recommends a provision that would amend section 115 of title 10, United States Code, to require the separate authorization of minimum end strengths for non-temporary dual status military technicians and maximum end strengths for temporary dual status military technicians for each fiscal year by the Congress. The provision would also require the Department of Defense to include, as part of the President's annual budget request, a re-

quest for end strength authorizations for non-temporary and temporary dual status military technicians.

The use of temporary dual status military technicians is largely not subject to congressional oversight. While the committee authorizes annually the minimum number of permanent dual status technician positions, temporary technician positions are not subject to any similar limitation. The committee has learned that each reserve component likely utilizes thousands of temporary technician positions every year but that the actual number is difficult to determine and each reserve component struggles to explain the purpose for the temporary technician workforce. A new end strength authorization for temporary military technicians would enable the Department of Defense and the Congress to understand the size and role of this population.

Subtitle C—Authorization of Appropriations

Military personnel (sec. 421)

The committee recommends a provision that would authorize the appropriations for military personnel activities at the levels identified in section 4401 of division D of this Act.

Budget Items

Military personnel funding changes

The amount authorized to be appropriated for military personnel programs includes the following changes from the budget request:

[Changes in millions of dollars]

Military personnel underexecution	- 1,611.69
End strength reduction.	- 755.0
Total	- 2,366.69

The committee recommends a total reduction in the Military Personnel (MILPERS) appropriation of \$2,366.69 million. This amount includes: (1) A reduction of \$1,611.69 million to reflect the Government Accountability Office’s most recent assessment of annual MILPERS under-execution; and (2) A decrease of \$755.0 million to reflect active component end strength reductions from the President’s Budget request.

TITLE V—MILITARY PERSONNEL POLICY

Subtitle A—Officer Personnel Policy

Repeal of codified specification of authorized strengths of certain commissioned officers on active duty (sec. 501)

The committee recommends a provision that would amend section 523 of title 10, United States Code, to require that the number of officers serving on Active Duty in the grades of major, lieutenant colonel, and colonel in the Army, Air Force, and Marine Corps or lieutenant commander, commander, and captain in the Navy in a given fiscal year be specifically authorized by the Congress.

The committee notes that the officer strength table was originally included as a fundamental feature of the Defense Officer Personnel Management Act (DOPMA) (Public Law 96–513). The strength table was designed to serve as an effective limitation on the number of mid-grade officers within each military service. The House report accompanying the legislation (H. Rept. 96–1462) explained that the table would be adjusted over time to align with emerging officer manpower requirements. However, in practice, the authorized strength table is rarely updated, and it is no longer linked to strategy or actual officer requirements.

The committee authorizes annual end strength levels for the overall active and reserve components and numerous other subsets of total force manpower. This allows end strength to fluctuate to meet strategic and budgetary necessities. Similarly, this provision would require each military service to annually justify required mid-grade officer manpower needs to support an annual authorization from the Congress. This provision would provide greater flexibility to the military while also ensuring that the Congress continues to perform its vital oversight role in ensuring that the officer corps is effectively managed.

Temporary expansion of availability of enhanced constructive service credit in a particular career field upon original appointment as a commissioned officer (sec. 502)

The committee recommends a provision that would amend sections 533 and 12207 of title 10, United States Code, to provide temporary authority for the Secretaries of the military departments to award constructive service credit upon original appointment in particular officer career fields for advanced education.

Section 502 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232) enacted authority to permit additional credit for “special training or experience in a particular officer career field as designated by the Secretary concerned, if such training or experience is directly related to the oper-

ational needs of the armed force concerned.” No authority was provided to award additional credit for “advanced education,” however. This provision would afford the Secretaries of the military departments greater flexibility to award credit for not only special training or experience but also advanced education in designated career fields such as those related to cyberspace or specialized skillsets.

The provision would also require each of the Secretaries of the military departments to submit a report detailing the use and benefits of enhanced constructive credit authority in meeting the operational needs of the Armed Forces.

Requirement for promotion selection board recommendation of higher placement on promotion list of officers of particular merit (sec. 503)

The committee recommends a provision that would amend section 616 of title 10, United States Code, to clarify that the secretary of the military department concerned shall prescribe guidelines and procedures for placing officers higher on a promotion selection list based on an officer’s merit.

Special selection review boards for review of promotion of officers subject to adverse information identified after recommendation for promotion and related matters (sec. 504)

The committee recommends a provision that would delay until January 1, 2021, the applicability of the amendments made by section 502 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), germane to the manner in which adverse information about a regular officer would be furnished to a promotion selection board convened under section 611(a) of title 10, United States Code, to consider such an officer for promotion to a grade below brigadier general in the Army, Air Force, and Marine Corps, rear admiral (lower half) in the Navy, or the equivalent grade in the Space Force.

The provision would also modify section 14107 of title 10, United States Code, to extend prescriptions for furnishing adverse information to promotion selection boards convened pursuant to section 14101(a) of title 10, United States Code, to consider a reserve officer for promotion to a grade above lieutenant colonel in the Army, Air Force, and Marine Corps, commander in the Navy, or the equivalent grade in the Space Force.

Finally, the provision would codify in two new sections of law the authority of the Secretary of the military department concerned to convene a special selection review board—pursuant to section 628a of title 10, United States Code, for regular officers and pursuant to section 14502a of title 10, United States Code, for reserve officers—upon determining that an officer recommended for promotion to a grade at or below major general in the Army, Air Force, and Marine Corps, rear admiral in the Navy, or the equivalent grade in the Space Force is the subject of adverse information that was not furnished to a promotion selection board that recommended the officer for promotion, as required by sections 615 or 14107 of title 10, United States Code.

Any special selection review board convened—whether for a regular or reserve officer—would, to the greatest extent practicable, apply the same standards used by the promotion selection board that originally recommended the officer for promotion and would consider the record of the officer as presented to the original promotion board, together with the adverse information regarding the officer. The special selection review board would be conducted so as not to indicate or disclose the officer or officers for whom the board was convened and the members of the board would apply a competitive process to determine whether or not to sustain the recommendation of the officer or officers at issue for promotion. An officer whose promotion is recommended for sustainment by a special selection review board and approved by the President would be appointed to the next higher grade as soon as practicable and, upon appointment, would have the same date of rank as the officer would have had pursuant to the recommendation of the original promotion board. If a special selection review board did not sustain a recommendation for promotion of an officer, that officer would be considered to have failed selection for promotion.

The amendments to section 14107 and the codification of sections 628a and 14502a of title 10, United States Code, would take effect on the date of the enactment of this Act.

Number of opportunities for consideration for promotion under alternative promotion authority (sec. 505)

The committee recommends a provision that would amend section 649c of title 10, United States Code, to make a technical correction related to the definition of the term “promotion zone” in the alternative promotion authority provided by section 507 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232).

Section 645 of title 10, United States Code, defines the term “promotion zone” in part as officers who have not “failed of selection for promotion to the next higher grade.” Though appropriate for traditional promotion policy, this portion of the definition inhibits the full implementation of the alternative promotion authority.

Mandatory retirement for age (sec. 506)

The committee recommends a provision that would amend section 1251 of title 10, United States Code, to include the Space Force and expand the authority of the Secretaries of the military departments to permit an officer to defer retirement until the officer reaches age 68. The provision would also clarify benefit eligibility for officers who reach mandatory retirement age.

Clarifying and improving restatement of rules on the retired grade of commissioned officers (sec. 507)

The committee recommends a provision that would clarify the rules governing the retired grades of commissioned officers. The codification of rules pertaining to regular officers would be restated in section 1370 of title 10, United States Code, and the rules applicable to non-regular officers—including guidance to address certain unique circumstances particular to a non-regular career path—set forth in new section 1370a of title 10, United States Code.

Both sections 1370 and 1370a would address the principles underpinning determinations of satisfactory service, the effect of misconduct in a lower grade on such determinations, service-in-grade requirements and waivers and reductions thereto, and requirements for notice to the Congress.

As a general rule, the restatement would reserve to the Secretary of the military department concerned the authority to make grade determinations with regard to officers—regular and non-regular—to be retired at or below major general, rear admiral, or the equivalent grade, but without the power of delegation. The restatement would reserve to the Secretary of Defense most actions related to officers proposed for retirement in a grade above major general, rear admiral, or the equivalent.

The restatement would promulgate enhanced guidelines for the assignment of a conditional retired grade to officers under investigation for misconduct or pending adverse personnel action and the determination of an officer's final retired grade and adjustment of retired pay on the resolution of such matters.

Finally, the restatement would clarify the conditions pursuant to which an administratively final retirement grade could be reopened, and the manner by which a proposed change to a reopened grade would be effectuated and the officer's retired pay recalculated. Although the committee has undertaken to clarify section 509 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92), it remains strongly committed to the principle that a determination to increase an officer's retired grade to O-9 or O-10 after reopening an administratively final determination may be effectuated only by the President, by and with the advice and consent of the Senate. Although the committee ultimately declined to take this step, it considered returning to the long-held practice—of requiring that all O-9 and O-10 retirements, of both active and reserve officers, be made by the President, by and with the advice and consent of the Senate. The current practice, enacted by section 502 of the National Defense Authorization Act for 1996 (Public Law 104-106)—pursuant to which the Secretary of Defense certifies to Congress the highest grade in which such officers have served satisfactorily and should be retired, is a creature of statute, derived from Congress' authority under Article I, Section 8, of the U.S. Constitution to raise, support, and regulate the armed forces. Prior to 1996, an officer could be retired in the grade of O-9 or O-10 only by the President, by and with the advice and consent of the Senate. The committee expects that any reopening of an administratively final determination of retired grade that results in the proposal to increase an officer's retired grade to O-9 or O-10, be submitted by the President to the Senate under provisions of section 509 of the National Defense Authorization Act for Fiscal Year 2020, as amended by the instant provision.

Repeal of authority for original appointment of regular Navy officers designated for engineering duty, aeronautical engineering duty, and special duty (sec. 508)

The committee recommends a provision that would repeal section 8137 of title 10, United States Code, which authorizes the Sec-

retary of the Navy to appoint regular officers who are designated for engineering, aeronautical engineering, and special duty.

Repealing this section of law will provide additional flexibility to the Navy to assign commanders and manage officers according to emerging needs. The committee notes that under current law the Navy needs to request a legislative change for every new category of unrestricted line officers, which delays the Navy's ability to adjust its officer corps to reflect current priorities. The other military departments already possess the flexibility that would be provided by this provision.

Subtitle B—Reserve Component Management

Exclusion of certain reserve general and flag officers on active duty from limitations on authorized strengths (sec. 511)

The committee recommends a provision that would amend section 526a of title 10, United States Code, to authorize the Chairman of the Joint Chiefs of Staff to allocate 15 general and flag officer positions in the combatant commands and 3 general and flag officer positions on the Joint Staff to be exclusively filled by reserve component officers. The provision would also create an exclusion from general and flag officer strength limitations for a Reserve general or flag officer who is on Active Duty for training or who is on Active Duty under a call or order specifying a period of less than 180 days.

Subtitle C—General Service Authorities

Increased access to potential recruits (sec. 516)

The committee recommends a provision that would amend sections 503 and 983 of title 10, United States Code, to add e-mail addresses and mobile telephone numbers to the list of information required to be provided to recruiters by institutions of higher education and secondary schools. The provision would also require secondary schools to provide student information within 60 days of a request from a military recruiter. Additionally, this provision would require colleges and universities to provide student directory information within 60 days of the start of a school year or 60 days of the date of a recruiter's request as well as to provide lists of those students who do not return to the institution from the previous semester.

Current law only allows for the collection of outdated communication information, such as address and telephone listings. Further, no response time is mandated, so many schools do not provide this information until it is too late for military recruiters to make the best use of it by providing students with pertinent information enabling them to explore their options.

The committee emphasizes that parents continue to have the right to opt out of releasing their child's information under the same terms and conditions as are available under current law.

Studies show that half of today's youth admit that they know little of the military. This provision would allow recruiters to collect better information for contacting today's students, improving the

military's ability to inform students and parents about the opportunities provided by military service.

Temporary authority to order retired members to active duty in high-demand, low-density assignments during war or national emergency (sec. 517)

The committee recommends a provision that would amend section 688a of title 10, United States Code, to make certain constraints on the Secretary of a military department's authority to order to Active Duty a retired member who agrees to serve on Active Duty inapplicable during a time of declared war or national emergency.

Certificate of release or discharge from Active Duty (DD Form 214) matters (sec. 518)

The committee recommends a provision that would require the Department of Defense Form DD 214 to be redesignated as the Certificate of Military Service. The provision would also amend section 569 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) to require the Certificate of Military Service to be a standard total force record of military service for all members of the Armed Forces that summarizes the record of service for each member and to require that the Certificate of Military Service be provided to members of the reserve components of the Armed Forces at appropriate times throughout a servicemember's career. Lastly, the provision would repeal section 570 of the National Defense Authorization Act for Fiscal Year 2020.

Evaluation of barriers to minority participation in certain units of the Armed Forces (sec. 519)

The committee recommends a provision that would require not later than 30 days after the date of the enactment of this Act the Secretary of Defense, acting through the Under Secretary of Defense for Personnel and Readiness, to seek to enter into an agreement with a federally funded research and development center to conduct a study on reducing barriers to minority participation in elite units in the Armed Services.

Subtitle D—Military Justice and Related Matters

Part I—Investigation, Prosecution, and Defense of Sexual Assault and Related Matters

Modification of time required for expedited decisions in connection with applications for change of station or unit transfer of members who are victims of sexual assault or related offenses (sec. 521)

The committee recommends a provision that would amend section 673 of title 10, United States Code, to extend the approval or disapproval time of an expedited transfer request from 72 hours to 5 calendar days.

This proposed change would allow commanders to have access to sexual assault victims' complete career information before counseling victims on their options. By providing more time for com-

manders to gather information, a victim of sexual assault requesting an expedited transfer will be able to make a fully informed decision.

Defense Advisory Committee for the Prevention of Sexual Misconduct (sec. 522)

The committee recommends a provision that would include the United States Coast Guard (USCG) Academy in the Defense Committee for the Prevention of Sexual Assault (DAC-PSA) established by section 550B of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92).

Additionally, this provision would require the DAC-PSA to advise the Secretary of the Department under which the USCG is operating on policies, programs, and practices of the USCG Academy.

Report on ability of Sexual Assault Response Coordinators and Sexual Assault Prevention and Response Victim Advocates to perform duties (sec. 523)

The committee recommends a provision that would require the Secretary of Defense to conduct a survey of sexual assault response coordinators and sexual assault prevention and response victim advocates on their experiences in assisting victims of sexual assault by June 30, 2021.

The provision would require the Secretary to submit a report on the results of the survey, including any actions to be taken based on the results, to the Committees on Armed Services of the Senate and the House of Representatives.

Briefing on Special Victims' Counsel program (sec. 524)

The committee recommends a provision that would require the Judge Advocates General of the Army, the Navy, the Air Force, and the Coast Guard and the Staff Judge Advocate to the Commandant of the Marine Corps to brief the congressional defense committees on the status of the Special Victims' Counsel program of the Armed Force concerned.

Accountability of leadership of the Department of Defense for discharging the sexual harassment policies and programs of the Department (sec. 525)

The committee recommends a provision that would require the Secretary of Defense to develop and implement a strategy on holding leadership accountable for discharging the sexual harassment policies and programs of the Department of Defense.

Safe-to-report policy applicable across the Armed Forces (sec. 526)

The committee recommends a provision that would require the Department of Defense to prescribe in regulations a safe-to-report policy regarding the handling of minor collateral misconduct involving a member of the Armed Forces who is the alleged victim of sexual assault that applies to all members of the Armed Forces and cadets and midshipmen at the military service academies.

Additional bases for provision of advice by the Defense Advisory Committee for the Prevention of Sexual Misconduct (sec. 527)

The committee recommends a provision that would amend section 550B of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) to include additional items for the Defense Advisory Committee for the Prevention of Sexual Misconduct to review.

Additional matters for reports of the Defense Advisory Committee for the Prevention of Sexual Misconduct (sec. 528)

The committee recommends a provision that would amend section 550B of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) to include additional matters for reports provided by the Defense Advisory Committee for the Prevention of Sexual Misconduct.

Policy on separation of victim and accused at military service academies and degree-granting military educational institutions (sec. 529)

The committee recommends a provision that would require the Secretary of Defense to promulgate regulations for the military academies and degree-granting military educational institutions to minimize the association between an alleged victim of sexual assault and the accused until both complete their courses of study.

Briefing on placement of members of the Armed Forces in academic status who are victims of sexual assault onto Non-Rated Periods (sec. 530)

The committee recommends a provision that would require the Secretary of Defense to brief the Committees on Armed Services of the Senate and the House of Representatives on the feasibility and advisability of granting requests from members of the Armed Forces who are in academic status and who are victims of sexual assault to be placed on a non-rated period for their performance report.

Part II—Other Military Justice Matters

Right to notice of victims of offenses under the Uniform Code of Military Justice regarding certain post-trial motions, filings, and hearings (sec. 531)

The committee recommends a provision that would amend Article 6b(a)(2) of the Uniform Code of Military Justice (10 U.S.C. 802b(a)(2)), to provide that victims of offenses under the Uniform Code of Military Justice have the right to reasonable, accurate, and timely notice of a post-trial motion, filing, or hearing that may address the finding or sentence of a court-martial with respect to the accused, unseal privileged or private information of the victim, or result in the release of the accused.

Consideration of the evidence by Courts of Criminal Appeals (sec. 532)

The committee recommends a provision that would amend Article 66 of the Uniform Code of Military Justice (10 U.S.C. 866) to authorize the Court of Criminal Appeals, when considering appeals of court-martial convictions, to consider the weight of the evidence only upon a specific showing by the accused of deficiencies of proof. Under the provision, the Court could set aside and dismiss a finding if clearly convinced that the finding was against the weight of the evidence.

Further, the provision would require a minimum of twelve years of experience in military justice assignments to qualify as a military judge on the Court of Criminal Appeals, with a waiver. The provision would also require the entire Court of Criminal Appeals review a determination by a panel of the Court that a finding of guilty was clearly against the weight of the evidence.

Preservation of records of the military justice system (sec. 533)

The committee recommends a provision that would require the Department of Defense to retain records of the military justice system for a minimum of 15 years.

Comptroller General of the United States report on implementation by the Armed Forces of recent GAO recommendations and statutory requirements on assessment of racial, ethnic, and gender disparities in the military justice system (sec. 534)

The committee recommends a provision that would require the Comptroller General of the United States to study and submit to the Committees on Armed Services of the Senate and House of Representatives a report on the implementation of the recommendations in the May 2019 report of the Government Accountability Office titled “Military Justice: DOD and the Coast Guard Need to Improve Their Capabilities to Assess Racial and Gender Disparities” (GAO-19-344) and the requirements in section 540I(b) of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92).

Briefing on mental health support for vicarious trauma for certain personnel in the military justice system (sec. 535)

The committee recommends a provision that would require the Judge Advocates General of the Army, the Navy, and the Air Force and the Staff Judge Advocate to the Commandant of the Marine Corps to brief the Committees on Armed Services of the Senate and the House of Representatives on the mental health support for vicarious trauma provided to certain personnel in the military justice system no later than 180 days after the date of the enactment of this Act.

Guardian ad litem program for minor dependents of members of the Armed Forces (sec. 536)

The committee recommends a provision that would amend section 540L of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) by adding an element to the report on the establishment of a guardian ad litem program for certain military dependents who are victims or witnesses of offenses under the Uniform Code of Military Justice involving abuse or exploitation.

Subtitle E—Member Education, Training, Transition, and Resilience

Training on religious accommodation for members of the Armed Forces (sec. 541)

The committee recommends a provision that would require the Secretary of Defense to develop and implement training regarding religious liberty and accommodation for members of the Armed Forces in consultation with the Chief of Chaplains of each service. Recipients of this training shall include commanders, chaplains, judge advocates, and others as recognized by the Secretary.

Additional elements with 2021 certifications on the Ready, Relevant Learning initiative of the Navy (sec. 542)

The committee recommends a provision that would require the Secretary of the Navy to submit a life cycle sustainment plan and report on the use of readiness assessment teams with the 2021 Ready Relevant Learning certifications required by section 545 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91).

Report on standardization and potential merger of law enforcement training for military and civilian personnel across the Department of Defense (sec. 543)

The committee recommends a provision that would require the Secretary of Defense to submit a report on the standardization and potential merger of law enforcement training for military and civilian personnel across the Department of Defense to the Committees on Armed Services of the Senate and the House of Representatives no later than June 8, 2021.

Quarterly Report on Implementation of the Comprehensive Review of Special Operations Forces Culture and Ethics (sec. 544)

The committee recommends a provision that would require quarterly reports on the implementation of the Comprehensive Review of Special Operations Forces Culture and Ethics.

The committee strongly supports efforts by the United States Special Operations Command (SOCOM) to address the root causes of ethical lapses and misconduct by Special Operations Forces (SOF) identified by the Comprehensive Review of Special Operations Forces Culture and Ethics completed in January 2020. The committee notes that the Comprehensive Review found that “selective implementation” of recommendations from four previous reviews related to SOF culture and ethics since 2011, including two

mandated by the Congress, have resulted in continued challenges related to the assessment and selection of SOF, leader development, force structure, and employment.

The committee also notes that, while the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD SOLIC) is the “service secretary-like” civilian responsible for oversight of and advocacy for SOF, the ASD SOLIC played a relatively minor role in the comprehensive review. The committee believes that the ASD SOLIC must play a direct and active role in overseeing implementation of the actions recommended by the comprehensive review if such reforms are to be successful.

Therefore, the committee recommends a provision that would require the ASD SOLIC, in coordination with the Commander, SOCOM, to provide the congressional defense committees with quarterly updates on progress in implementing the 16 actions recommended by the Comprehensive Review.

Information on nominations and applications for military service academies (sec. 545)

The committee recommends a provision that would require, no later than 1 year after the date of the enactment of this Act, the Secretary of the Defense, in consultation with the Superintendents of the military service academies, to submit a report to the Committees on Armed Services of the Senate and the House of Representatives on the feasibility and advisability of creating a uniform online portal for all congressional nominations to the military service academies.

The provision would also require the Secretary of Defense, in consultation with the Superintendents of the military service academies, to establish standard classifications that cadets, midshipmen, and applicants to the academies may use to self-identify gender, race, and ethnicity.

Pilot programs in connection with Senior Reserve Officers’ Training Corps units at Historically Black Colleges and Universities and minority institutions (sec. 546)

The committee recommends a provision that would authorize the Secretary of Defense to carry out pilot programs to reduce barriers to participation in the Senior Reserve Officers’ Training Corps (SROTC) through partnerships with nearby military installations and to assess the feasibility and advisability of providing financial assistance to members of SROTC who participate in flight training. Historically black colleges and universities and minority institutions would be given preference for participation in the pilot programs that would be authorized by this provision.

Expansion of Junior Reserve Officers’ Training Corps program (sec. 547)

The committee recommends a provision that would amend section 2031(a)(2) of title 10, United States Code, to insert language expanding the purpose of the Junior Reserve Officers’ Training Corps (JROTC) to include an introduction to service opportunities in military, national, and public service. The provision would also require the Secretary of Defense to develop and implement a plan

to establish and support not fewer than 6,000 JROTC units by September 30, 2031.

Department of Defense STARBASE program (sec. 548)

The committee recommends a provision that would amend section 2193b(h) of title 10, United States Code, to include the Commonwealth of the Northern Mariana Islands and American Samoa in the Department of Defense STARBASE program.

Subtitle F—Decorations and Awards

Award or presentation of decorations favorably recommended following determination on merits of proposals for decorations not previously submitted in a timely fashion (sec. 551)

The committee recommends a provision that would amend section 1130 of title 10, United States Code, to authorize a Secretary of a military department to present an award or decoration, following the favorable review of a request of a Member of Congress, after a 60-day period for congressional review. This provision would eliminate the requirement for legislation to waive the statute of limitation for award of that medal or decoration.

Honorary promotion matters (sec. 552)

The committee recommends a provision that would amend chapter 80 of title 10, United States Code, by authorizing the Secretary of Defense to make honorary promotions, whether or not posthumous, of a former member or retired member of the Armed Forces to any grade not exceeding the grade of major general, rear admiral (upper half), or an equivalent grade in the Space Force. At least 60 days prior to making an honorary promotion, the Secretary would provide notification to the Committees on Armed Services of the Senate and the House of Representatives and the requesting Member of Congress, if applicable, including a detailed discussion of the rationale supporting the determination.

In addition, the provision would amend section 1563 of title 10, United States Code, to require that all promotions made using this authority would be honorary, whether or not posthumous, with no effect on pay, retired pay, or other benefits.

Subtitle G—Defense Dependents' Education and Military Family Readiness Matters

Part I—Defense Dependents' Education Matters

Continuation of authority to assist local educational agencies that benefit dependents of members of the Armed Forces and Department of Defense civilian employees (sec. 561)

The committee recommends a provision that would authorize \$50.0 million in Operation and Maintenance, Defense-wide, for continuation of the Department of Defense (DOD) assistance program to local educational agencies impacted by enrollment of dependent children of military members and DOD civilian employees. The committee increased the funding amount for fiscal year 2021 to

provide additional assistance to local educational agencies that may experience unforeseen expenses related to the COVID-19 pandemic.

Impact aid for children with severe disabilities (sec. 562)

The committee recommends a provision that would authorize \$10.0 million in Operation and Maintenance, Defense-wide, for impact aid payments for children with disabilities (as enacted by Public Law 106-398; 114 Stat. 1654A-77; 20 U.S.C. 7703a), using the formula set forth in section 363 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (Public Law 106-398), for continuation of Department of Defense assistance to local educational agencies that benefit eligible dependents with severe disabilities. Subsection (b) of the provision would authorize the Secretary of Defense to use an additional \$10.0 million for payments to local educational agencies determined by the Secretary to have higher concentrations of military children with severe disabilities. Subsection (c) of the provision would establish a one-time requirement for the Secretary to brief the Committees on Armed Services of the Senate and the House of Representatives by March 1, 2021, on the Department's evaluation of each local educational agency with higher concentrations of military children with severe disabilities and its subsequent determination of the amounts of impact aid each such agency should receive. The committee increased the funding amount for fiscal year 2021 to provide additional assistance to local educational agencies that may experience unforeseen expenses related to the COVID-19 pandemic.

Staffing of Department of Defense Education Activity schools to maintain maximum student-to-teacher ratios (sec. 563)

The committee recommends a provision that would establish maximum student-to-teacher ratios for Department of Defense Education Activity (DODEA) schools through the 2023-2024 school year.

The committee remains concerned about the Department of Defense's plans to reduce staffing in grades K-3 as part of the Defense-Wide Review, which seeks to move funding from lower priority to higher priority programs. The committee believes that the education of children in the DODEA system should remain among the Department's highest priorities. Nevertheless, since the Department seeks to harvest savings from DODEA's budget, the committee directs the Secretary of Defense to review DODEA's above-school staffing and funding as of the date of this committee report and to brief the Committees on Armed Services of the Senate and the House of Representatives by December 1, 2020, on the results of this review. This review shall include: (1) An analysis of the number of employees, full-time and part-time, employed by the DODEA who are not assigned to a school; (2) The number of contractors so employed and the amount of contract payments made to such individuals; and (3) The amount of headquarters funding associated with the DODEA, along with a comparison to headquarters or overhead spending in domestic school districts in the continental United States.

Matters in connection with free appropriate public education for dependents of members of the Armed Forces with special needs (sec. 564)

The committee recommends a provision that would require each of the Secretaries of the military departments to collect and maintain information on special education disputes filed by servicemembers and the outcomes of such disputes, based on information from Exceptional Family Member Program (EFMP) personnel, installation or other military leadership, and any other sources that the Secretary concerned considers appropriate.

Additionally, the provision would require the Comptroller General of the United States to conduct a study and brief the Committees on Armed Services of the Senate and the House of Representatives, no later than March 31, 2021, on: (1) The consequences for a State or local educational agency of a finding of failure to provide free, appropriate public education to a military dependent; (2) The manner in which local educational agencies with military families utilize impact aid funds; (3) The efficacy of attorney and other legal support for military families in special education disputes; (4) The standardization of policies and guidance for school liaison officers between the Office of Special Needs of the Department of Defense (DOD) and the military departments and the efficacy of such policies and guidance; and (5) The improvements of family support programs of the Office of Special Needs, and of each military department, in light of the recommendations of the Comptroller General in the report titled “DOD Should Improve Its Oversight of the Exceptional Family Member Program” (GAO-18-348).

Pilot program on expanded eligibility for Department of Defense Education Activity Virtual High School program (sec. 565)

The committee recommends a provision that would require the Secretary of Defense to carry out a 4-year pilot program that would permit certain dependents of Active-Duty servicemembers to enroll in the Department of Defense Education Activity Virtual High School (DVHS) program. The provision would prescribe the selection of DVHS participants and limitations on the program. Additionally, the provision would require the Secretary to submit an interim report on the pilot program no more than 2 years after the date of the enactment of this Act to the Committees on Armed Services of the Senate and the House of Representatives and a final report to the same committees no more than 180 days after completion of the program.

Pilot program on expansion of eligibility for enrollment at domestic dependent elementary and secondary schools (sec. 566)

The committee recommends a provision that would require the Secretary of Defense, beginning not later than 180 days after the date of the enactment of this Act, to carry out a pilot program to authorize a dependent of a full-time Active-Duty servicemember, without regard to whether the member resides on a military installation, to enroll in a domestic Department of Defense Education Activity school on a space-available basis.

Comptroller General of the United States report on the structural condition of Department of Defense Education Activity schools (sec. 567)

The committee recommends a provision that would require the Comptroller General of the United States to submit a report to the congressional defense committees, within 1 year of the date of the enactment of this Act, on the structural condition of all Department of Defense Education Activity schools, including the infrastructure or other means to support the virtual education of students attending such schools with no physical structure.

Part II—Military Family Readiness Matters

Responsibility for allocation of certain funds for military child development programs (sec. 571)

The committee recommends a provision that would amend section 1791 of title 10, United States Code, to require the Secretary of Defense to be responsible for the allocation of Office of the Secretary of Defense-level funds for military child development programs for children from birth through 12 years of age. The provision would disallow delegation of the Secretary's responsibility to the military departments.

The committee remains concerned about the Department of Defense's plans to transfer funds to the military services to provide childcare fee assistance as part of the Defense-Wide Review. The committee believes that military family childcare should remain among the Department's highest priorities and transferring resources to the military services would degrade standardization of the program and hinder oversight capabilities of the Office of the Secretary of Defense.

Currently, the military services administer two separate contracts with different fee assistance benefits for military families, one more generous to military families than the other. The committee understands that there are ongoing discussions within the Department about creating a single contract for the childcare fee assistance program across the Department. Since the Army's childcare fee assistance contract provides the greatest benefit to military families, the committee encourages the Department to model any Department-wide contract after that currently used by the Army.

Improvements to Exceptional Family Member Program (sec. 572)

The committee recommends a provision that would amend section 1781c of title 10, United States Code, to standardize and improve the Exceptional Family Member Program (EFMP). The provision would: (1) Require the Secretary of Defense to implement certain performance metrics; (2) Create additional protections and options for servicemembers and their families enrolled in EFMP; and (3) Require the Office of Special Needs to create policies and procedures to confirm that each military service has the right staffing to ensure effective and efficient operation of the program so that military families receive the required support.

Procedures of the Office of Special Needs for the development of individualized services plans for military families with special needs (sec. 573)

The committee recommends a provision that would amend section 1781c(d)(4) of title 10, United States Code, to require that the policy of the Department of Defense Office of Special Needs must include requirements for the development and continuous updating by an appropriate office of an individualized services plan—whether medical, educational, or both—for each military family with special needs and procedures for the development of an individualized services plan for military family members with special needs who have requested family support services and have completed family needs assessments.

Restatement and clarification of authority to reimburse members for spouse relicensing costs pursuant to a permanent change of station (sec. 574)

The committee recommends a provision that would amend section 453 of title 37, United States Code, to authorize the Secretaries of the military departments to reimburse a servicemember of the Armed Forces for the qualified relicensing or credentialing costs of his or her spouse. The provision would repeal the expiring authority in section 476(p) of title 37, United States Code.

The committee notes that the provision would clarify the existing statutory language to ensure that servicemembers and their spouses can request reimbursement for qualified relicensing or credentialing costs when undergoing a permanent change of station from an overseas duty location to a duty location in the continental United States. Additionally, the provision would clarify the requirement for a military spouse to have been previously credentialed or certified, regardless of location or professional engagement.

Improvements to Department of Defense tracking of and response to incidents of child abuse involving military dependents on military installations (sec. 575)

The committee recommends a provision that would require the Secretary of Defense, consistent with the recommendations of the Comptroller General of the United States in the Government Accountability Office report titled “Child Welfare: Increased Guidance and Collaboration Needed to Improve DOD’s Tracking and Response to Child Abuse” (GAO–20–110), to improve the efforts of the Department of Defense to track and respond to incidents of child abuse involving dependents of members of the Armed Forces that occur on military installations.

Military childcare and child development center matters (sec. 576)

The committee recommends a provision that would amend section 1793 of title 10, United States Code, to require: (1) The liberal issuance of hardship waivers for childcare fees; (2) A family discount to be offered in child development centers (CDCs), charging any child after the first child an amount equal to 85 percent of the fee otherwise chargeable; (3) Secretaries of the military departments to carry out a fee assistance program modeled after the

Army Fee Assistance program; (4) Additional actions to allow for the hiring of qualified employees for CDCs; and (5) Reports on installations with imbalances between demand and availability for childcare.

Expansion of financial assistance under My Career Advancement Account program (sec. 577)

The committee recommends a provision that would amend section 453 of title 37, United States Code, to allow the reimbursement to a servicemember of the cost that his or her spouse incurs for the maintenance of professional licenses and credentials and continuing education courses associated with a permanent change of station. Additionally, the provision would expand the My Career Advancement Account Program to include expenses relating to continuing education courses and national testing.

Subtitle H—Other Matters

Removal of personally identifying and other information of certain persons from investigative reports, the Department of Defense Central Index of Investigations, and other records and databases (sec. 586)

The committee recommends a provision that would require that, not later than October 1, 2021, the Secretary of Defense establish and implement a policy and process through which a person's name, personally identifying information, and other pertinent information could be expunged or otherwise removed from: (1) The subject or title block of a Department of Defense (DOD) law enforcement or criminal investigative report; (2) The Department of Defense Central Index of Investigations (DCII); and (3) Any other record maintained by the DOD in connection with such a report or DCII entry, under circumstances in which probable cause did not or does not exist to determine that the offense for which the person was titled occurred or that the titled person actually committed the offense.

Further, the provision would require the Department to establish a mechanism to assist a person whose information is expunged or removed from DOD records in correcting or expunging the person's information from records and databases maintained by organizations or entities external to the DOD, based on information previously provided by the Department.

Finally, the provision would require the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and the House of Representatives, not later than October 1, 2021, detailing actions taken to implement these requirements.

National emergency exception for timing requirements with respect to certain surveys of members of the Armed Forces (sec. 587)

The committee recommends a provision that would amend sections 481, 481a, 7461, 8480, and 9461 of title 10, United States Code, to authorize the Secretary of Defense to postpone the conduct of the following surveys when conducting these surveys is not practicable due to a war or national emergency declared by the Presi-

dent or the Congress: (1) Armed Forces Workplace and Gender Relations Surveys; (2) Armed Forces Workplace and Equal Opportunity Surveys; (3) Assessments of sexual harassment and sexual violence at the military service academies; and (4) The workplace and gender relations survey of Department of Defense civilian employees.

The committee expects that the Secretary would exercise this authority to postpone these surveys and assessments only when conditions are such that the survey cannot be conducted or, if conducted, the results of the survey would not be meaningful. The committee also expects that any survey postponed under this authority would be conducted as soon as practicable and appropriate.

Sunset and transfer of functions of the Physical Disability Board of Review (sec. 588)

The committee recommends a provision that would amend section 1554a of title 10, United States Code, to authorize the Secretary of Defense to sunset the Physical Disability Board of Review (PDBR) on or after October 1, 2020. The provision would require the Secretary to transfer any remaining requests pending the Board's review at that time and to assign them to a board for the correction of military records operated by the Secretary of the military department concerned.

Extension of reporting deadline for the annual report on the assessment of the effectiveness of activities of the federal voting assistance program (sec. 589)

The committee recommends a provision that would amend section 105A(b) of the Uniformed and Overseas Citizens Absentee Voting Act (52 U.S.C. 20308(b)) to change the deadline to submit the annual report on the effectiveness of activities of the Federal Voting Assistance Program from March 31 of every year to September 30 of odd-numbered years. The provision also would clarify that the information submitted in the report should cover the previous calendar year to align with regularly scheduled elections for Federal office.

Pilot programs on remote provision by National Guard to State governments and National Guards in other States of cybersecurity technical assistance in training, preparation, and response to cyber incidents (sec. 590)

The committee recommends a provision that would authorize the Secretary of the Army and the Secretary of the Air Force to each conduct a pilot program to develop and use a capability within the National Guard through which a National Guard of a State would remotely provide State governments and National Guard units of other States with cybersecurity technical assistance. The provision would establish the development and exercise activities to be assessed and executed as part of the program, should it be carried out.

The committee is supportive of programs to facilitate National Guard cyber assistance to State and local entities. In future contingencies, such assistance will need to be provided rapidly if it is to be efficacious, meaning that physical transportation and access to

compromised systems are likely unaffordable luxuries for the National Guard and other cyber forces. The committee sees merit in such a program in preparing the National Guard for remote provision of cybersecurity assistance, a likely demand of governors and Federal authorities in the wake of cyberattacks of significant consequence.

The committee encourages the Secretary of the Army and the Secretary of the Air Force, if they opt to carry out such a program, to coordinate with the Commander, U.S. Cyber Command. The committee understands that Cyber Command has made concerted efforts to reduce its physical deployment of cyber protection teams and has developed capabilities and tactics, techniques, and procedures (TTPs) to enable remote provision of cybersecurity capability. The committee sees merit in the development of common architectures, toolsuites, and TTPs across the National Guard and Cyber Mission Forces for use in missions such as hunt forward operations, securing the Department of Defense Information Network, and the provision of assistance to critical infrastructure companies.

Plan on performance of funeral honors details by members of other Armed Forces when members of the Armed Force of the deceased are unavailable (sec. 591)

The committee recommends a provision that would require the Secretary of Defense, within 180 days of the date of the enactment of this Act, to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives on a plan for the performance of funeral honors functions at the funeral of a deceased member of the Armed Forces by one or more members of the Armed Force of the deceased or by such other servicemembers or organizations as described in the provision. The provision would amend section 1491(b)(2) of title 10, United States Code, to repeal the requirement that one member of the Armed Force of the deceased be a member of the funeral detail.

Limitation on implementation of Army Combat Fitness Test (sec. 592)

The committee recommends a provision that would prohibit the Secretary of the Army from implementing the Army Combat Fitness Test until the Secretary receives the results of a study from an independent entity on the extent that the test: (1) Would adversely impact Army members stationed or deployed to climates or areas with conditions that would prevent outdoor physical training on a frequent or sustained basis; and (2) Would affect recruitment and retention in critical support military occupational specialties of the Army, such as medical personnel.

Items of Special Interest

Air Force Junior Reserve Officers' Training Corps Flight Academy

As the United States confronts a shortage of pilots and aviation professionals, both the military and the private sector must look to increase awareness and enthusiasm for aviation-related careers among today's youth. The committee supports the Air Force's at-

tempts to boost interest in aviation professions through its Air Force Junior Reserve Officers' Training Corps (ROTC) Flight Academy program. The first 2 years' results of the program are promising. More than 40 percent of participants have come from historically underrepresented groups in the aviation community, and at least 80 percent of all participants have earned their private pilot certificates. 5 2018 participants earned U.S. Air Force Academy appointments, and 20 2019 participants earned service academy appointments. In addition, 62 2019 participants earned ROTC scholarships. In 2020, the program received 2,594 applications for 200 scholarships, compared with 621 applications for 120 scholarships in 2018, and the number of university partners has grown from 6 to 17, demonstrating clear success in accomplishing the program's goals of increasing awareness and enthusiasm for opportunities in aviation. The committee encourages the Air Force to continue and expand this important program.

Air Ground Operations Wings

The committee supports the Air Force's continued focus on ensuring that it has highly trained battlefield airmen who are ready to deploy at a moment's notice to provide commanders with combat-ready tactical air control party personnel, battlefield weather, and force protection assets. However, due to these units' high operational tempo, the committee is concerned about sustaining their long-term combat readiness and effectiveness.

Therefore, the committee directs the Secretary of the Air Force to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives no later than March 1, 2021, that assesses the long-term sustainment of Air Force's Air Ground Operations Wings (AGOW). This briefing should include the following components: (1) A description of the organizational structure of the Air Force's Air Ground Operations Wings; (2) An evaluation of AGOW equipment, manning, and training; (3) The status of AGOW base infrastructure and support; (4) An evaluation of AGOW training capability; and (5) Recommendations on improving the overall readiness of AGOWs and their associated personnel.

Ban on unsafe products at Department of Defense Child Development Centers

The Consumer Product Safety Improvement Act of 2008 (Public Law 110-314) prohibits the sale of recalled consumer products. While this Act has helped clear store shelves of dangerous products, it fails to ensure that they are removed from childcare facilities, potentially leaving children across the country at risk. While some states have banned the use of recalled products at childcare facilities, there remains no Federal requirement that childcare facilities, including on military installations, prohibit the use of these dangerous products. The committee is concerned about military children encountering recalled consumer products in Department of Defense (DOD) Child Development Centers (CDCs) and strongly encourages the Department to develop policy identifying and removing such products from DOD CDCs.

Briefing on current efforts to reduce non-essential training

The committee commends the Department of Defense and each of the military departments on recent efforts to reduce administrative, ancillary, and computer-based training requirements in order to give warfighters additional time to focus on combat lethality. These steps, when combined with a focus on empowering local commanders to manage training requirements, should significantly improve the quality of life and quality of service for all servicemembers.

Therefore, the committee directs the Under Secretary of Defense for Personnel and Readiness to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives on the effect of these non-essential training reductions on the morale and readiness of military personnel by November 1, 2020. The briefing shall include the Department's definition of non-essential training, as well as an update on any ongoing efforts to identify and reduce non-essential training. Additionally, the briefing shall highlight any non-essential training mandated by law that, in the Department's view, should be curtailed or eliminated.

Comptroller General report on the dual status military technician workforce

Over the last several years, the military technician workforce has been subject to several major transformation and realignment initiatives. For example, recent National Defense Authorization Acts reduced and eventually eliminated entirely non-dual status military technician position authorizations. Additionally, the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) required the Department of Defense to convert a significant number of dual status military technician positions into full-time Federal civilian positions. Meanwhile, the committee is monitoring current efforts in the Air National Guard to convert large numbers of dual status military technicians into Active Guard Reserve positions.

An additional confusing aspect of the military technician workforce is the use and prevalence of temporary military technician positions, which are meant to fill in for vacancies in permanent positions that occur when an employee deploys or is on another long-term military duty. This "temporary" workforce is not subject to any congressional oversight, so its size, structure, and purpose are largely unknown outside of the Department of Defense.

Therefore, the committee directs the Comptroller General of the United States to provide to the Committees on Armed Services of the Senate and the House of Representatives, not later than March 31, 2021, a report on the military technician workforce, with an emphasis on determining how temporary positions align with law, rules, and procedures governing the permanent technician workforce. The report should include the following components:

- (1) The number of temporary technicians utilized by each reserve component in recent fiscal years;
- (2) The justification for utilizing temporary dual status technicians;
- (3) A thorough description of the type of work performed by temporary dual status technicians;

- (4) An explanation of the approval process and any other management controls related to temporary dual status technicians;
- (5) A summary of benefits and employment protections for temporary dual status technicians;
- (6) An assessment of the degree to which the civilian duties of these temporary technicians align with military duties;
- (7) An analysis of the average Federal civilian experience of individuals employed as temporary technicians;
- (8) An analysis of the average Federal civilian experience of individuals employed as dual-status technicians who were converted to Active Guard Reserve positions in the Air National Guard in fiscal year 2019; and
- (9) An assessment of the effect on unit and personnel readiness resulting from the use of temporary positions compared to permanent dual status technicians.

Comptroller General review on Department of Defense's accreditation of confinement and other detention facilities

The committee is aware that the Department of Defense has contracted with the American Correctional Association for the accreditation of confinement and other detention facilities in the United States, South Korea, Germany, and Okinawa. The committee recognizes the importance of maintaining military facilities at home and abroad that meet basic health and safety standards, including the risks posed to members of the military services and the military's credibility by the maintenance of facilities that do not meet these standards.

Therefore, the committee directs the Comptroller General of the United States to provide to the Committees on Armed Services of the Senate and the House of Representatives a briefing on preliminary observations by February 27, 2021, followed by a report to be delivered on a mutually agreeable date, on the Department of Defense's accreditation of confinement and other detention facilities. This report shall include: (1) Information, including cost information, related to the contracts awarded by the Office of the Secretary of Defense and the military services for accreditation of these facilities over the past 3 years; (2) An assessment of DOD's process for ensuring that its accredited facilities meet established health and safety standards; and (3) An assessment of possible alternatives to the current use of contractors, such as creation of an independent unit, internal to the Department of Defense, responsible for oversight, auditing, and accreditation of these facilities.

Grade of Director of the Joint Artificial Intelligence Center

The committee notes that the Joint Artificial Intelligence Center (JAIC) has become the central organization for the adoption and incorporation of artificial intelligence capabilities throughout the Department of Defense. The committee recognizes the recommendation made by the National Security Commission on Artificial Intelligence with respect to the benefits of having a senior military official direct the JAIC. Therefore, the committee encourages the Secretary of Defense to ensure that the Director of the JAIC has the grade of lieutenant general in the Army, Air Force, or Marine

Corps, or vice admiral in the Navy. The committee further encourages the Secretary of Defense to ensure that the JAIC Director has operational experience in artificial intelligence, machine learning, or relevant career fields.

Interagency cooperation impacting recruiting

The committee remains concerned by studies that have found that up to 71 percent of young people in the United States may be ineligible for military service due to medical disqualifying factors, a lack of educational attainment, or a record of crime or substance abuse. The committee understands that these are deeper issues, outside the purview of the Department of Defense, but they have a direct impact on the military's ability to recruit new servicemembers.

The committee notes that barriers to recruitment cause a monetary cost to the Department of Defense by necessitating the use of enhanced recruiting tactics to meet mission. There are also risks associated with providing waivers to potential recruits who are otherwise ineligible to serve.

The committee recommends that the Secretary of Defense collaborate with the Secretaries and Administrators of relevant Federal departments and agencies, including the Departments of Agriculture, Education, Health and Human Services, and Justice, with the purpose of taking a holistic approach to addressing issues that ultimately impact the ability of the military services to recruit new servicemembers.

Junior Reserve Officers' Training Corps computer science and cybersecurity education

The committee recognizes that the United States in general, and the military in particular, currently struggles to find and produce a sufficient number of Americans trained to succeed in computer science and cybersecurity careers. The Junior Reserve Officers' Training Corps (JROTC) can serve as a catalyst to overcoming these systemic shortages by providing an extracurricular experience to this public service-oriented, highly diverse population of young Americans who demonstrate a penchant for computer science and related subjects. The committee encourages the Secretary of the Air Force to partner with Federal, State, and industry leaders to continue pilot programs that provide evidence-based computer science and cybersecurity education at schools serving JROTC youth.

Mental health discrimination during accession

During the military accession process, recruits with potentially disqualifying medical conditions are reviewed on a case-by-case basis to determine whether a given applicant is a candidate to receive a medical waiver. Although the committee recognizes that the physical, mental, and emotional strain associated with military service necessitates rigorous medical standards to protect servicemembers, the committee is concerned that existing medical waiver policies related to mental health conditions in pre-adolescent or early adolescent years could deter aspiring recruits from seeking mental healthcare. Given the propensity for military de-

pendents to serve and the stresses of military family life, these policies could disproportionately impact military children. The committee encourages the military services to review the medical waiver request process as it pertains to mental health conditions, particularly in instances of temporary or adolescent diagnoses with demonstrable clinical improvement.

Military Family Readiness and Command Climate Surveys

The committee believes that commanders and other individuals, both military and civilian, with military family readiness responsibilities must be adequately trained so that they are equipped to encourage, support, and increase military family readiness among the personnel within the unit or installation under such individual's command or purview, including by providing servicemembers and their families with a fuller understanding of the resources available locally within such units or installations. Further, the committee believes that leaders with these responsibilities must be evaluated on how well they encourage, support, and increase military family readiness, including through incorporation of these matters into command assessments and other surveys as appropriate to ensure that leaders at all levels pay the necessary attention to these matters.

The committee directs the Secretary of Defense to provide a briefing to the committee by no later than December 1, 2020, on the feasibility and advisability of incorporating military family readiness matters into command climate surveys or other appropriate mechanisms to assess the adequacy of command and unit efforts: (1) To welcome new military families to the installation concerned and to ensure that such families are immediately connected with any resources necessary to acclimatize to such installation; (2) To provide support for military families experiencing challenges with military family housing, including privatized military housing; (3) To inform military spouses of employment opportunities; (4) To provide support for military families seeking childcare opportunities, including for children with special needs; (5) To provide support for military families during deployment and training exercises of the unit concerned; (6) To provide support for military spouses during pregnancy and after childbirth; (7) To provide support for military families preparing to transition into civilian life; (8) To provide support for military families seeking healthcare or mental health resources; and (9) To provide support for military families experiencing food insecurity or seeking nutrition assistance program support.

Plan for enhancement of recruitment for the Armed Forces among rural, isolated, and native populations

The committee notes that recent Office of Personnel Management data show that people who come from native or isolated populations comprise less than 0.1 percent of the military. As the Department of Defense seeks to improve recruiting practices to improve performance among underrepresented groups, the native and isolated populations of the country can be a vital source of quality military personnel.

Therefore, the committee directs the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and the House of Representatives by December 1, 2020, detailing current military recruiting efforts among populations in rural areas, isolated areas, socially disadvantaged areas, and among native populations.

The report should include the following elements:

- (1) A summary of current and planned recruiting efforts in rural, isolated, and socially disadvantaged areas, as well as among native populations;
- (2) A discussion of challenges germane to access to rural and isolated populations;
- (3) An analysis of cultural challenges involved with recruiting rural, isolated, and native populations; and
- (4) An assessment of any funding shortfalls related to rural, isolated, and native population recruiting.

Senior officer accountability and use of “proximate cause” standard

The committee has recently become aware of a troubling practice within the military services of finding that, because the actions or inactions of senior military officials are not the “proximate cause” of events on the battlefield, such officials bear no responsibility for their leadership failures, even in cases in which a properly conducted investigation found that such officers should bear responsibility for their conduct.

Black’s Law Dictionary defines proximate cause as “the result of a direct action . . . that sets in motion a chain of events that is unbroken and causes damage, injury, and destruction with no other interference.” Would-be proximate cause is overcome by intervening causes. In the context of military action on a battlefield, those closest to the action and most in harm’s way, enlisted service members and junior officers, will almost always provide intervening cause that under this standard could absolve senior commanders from ever being responsible for anything that happens under their command. In short, the committee believes that application of the legal principle of proximate cause is inappropriate in determining a military commander’s responsibility for the actions of subordinate units. A commander’s responsibility for the actions of subordinates goes hand-in-hand with the commander’s authority. The committee strongly urges the military services to ensure that senior military officials are held accountable, to the extent appropriate, under traditional military norms of command responsibility that have served the United States military well for over 200 years.

Status of Remotely Piloted Aircraft Culture and Process Improvement Program

In 2016, the Air Force launched the Culture and Process Improvement Program (CPIP) for the Remotely Piloted Aircraft (RPA) community. At the time, the Air Force described the CPIP as providing focus to build a sustainable RPA enterprise for the long term. Based on numerous focus groups and other feedback, the CPIP cataloged over 170 recommendations to improve the health of the RPA workforce. Four years later, however, the Air Force strug-

gles to explain how many of the CPIP recommendations have been, or are planned to be, implemented.

The RPA workforce continues to face challenges not experienced by any other community in the Air Force. RPA crews are highly recruited to fly for government contractors who fly the same RPAs as the Air Force on “government owned-contractor operated” combat lines. Essentially, the government has established a dynamic in which it pays contractors to poach Air Force talent. Other well-known problems related to shift work, dwell time, and austere base locations continue to dampen morale among the RPA workforce. The CPIP identified these and other problems years ago, yet the Air Force seems to have made little progress in addressing them. From the perspective of the workforce, the time and effort spent on the CPIP amounted to little actual improvement.

Therefore, the committee directs the Secretary of the Air Force to provide a report to the Committees on Armed Services of the Senate and the House of Representatives by March 1, 2021, containing a detailed update on the status of each recommendation made by the Remotely Piloted Aircraft Culture and Process Improvement Program. The update shall include an explanation of each recommendation and, for each recommendation, a statement as to whether the Air Force has already implemented or intends to implement it. If a recommendation has already been, or is intended to be, implemented, the report shall include an actual or planned implementation date, designate a responsible official for the recommendation, and note whether additional resources are required for implementation. If the Air Force does not intend to implement a recommendation, the report shall include an explanation of the factors that led the Air Force to reach that decision.

Supporting innovations for 21st century servicemember and family readiness and resiliency

The committee is concerned that the Department of Defense lacks a modern, software-driven approach to support servicemember and military family population health, readiness, and resiliency, and it believes that the Department must implement transformative innovations that deliver 21st century servicemember and family readiness and resiliency.

Therefore, the committee directs the Secretary of Defense to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives, not later than 90 days after the date of the enactment of this Act, on the Department’s plan to develop partnership-driven innovation efforts featuring multi-domain, software-driven solutions that actively assist servicemembers and military families with implementation of the eight categories of total force fitness across their daily lives.

The report shall include the following elements: (1) A proposal and timeline describing how the Department will change its approach to total force fitness by better aligning its efforts across all operational elements of the military departments to support implementation of software-driven, systemic approaches to address total force fitness; (2) An overview of the Department’s current activities to accelerate partnerships for total force fitness innovation; and (3) A description as to how the Department can use existing authori-

ties in combination with public-private partnerships to support pilot/prototype projects for the development of scalable, modern software-as-a-platform approaches that are agile and comprehensive in breadth and capability.

The Veterans Metrics Initiative Study

Every year, over 200,000 servicemembers transition out of the military to civilian life. The Departments of Defense and Veterans Affairs, along with over 40,000 public and private organizations, offer a vast array of services to assist servicemembers during their military-to-civilian transitions: helping them find fulfilling employment or educational opportunities; meeting physical and mental healthcare needs; retaining secure housing; and successfully re-integrating them with civilian society. The committee is concerned, however, by the lack of evidence-based methods to determine the value of these many transition programs to veterans' long-term well-being.

The committee applauds The Veterans Metrics Initiative study, a public-private research partnership that evaluated programs currently being used by transitioning veterans. The study examined veteran well-being across four key areas—mental and physical health; vocation; finances; and social relationships—to identify factors associated with well-being over a 3-year period following separation from military service. The study also identified characteristics that can be tracked to predict which veteran populations will have increased difficulty in adjusting to civilian life, and which types of programs may be of greatest use to them, by identifying and characterizing program components that led to positive well-being.

Therefore, the committee encourages the Secretaries of Defense and Veterans Affairs to work with The Veterans Metrics Initiative study coordinator to collaborate on the use of these data to refine the Transition Assistance Program. Adjustments to the program could address those areas of greatest risk to the well-being of servicemembers as they transition to civilian life and provide enhanced programs for the populations predicted to have greater challenges in transition.

TITLE VI—COMPENSATION AND OTHER PERSONNEL BENEFITS

Subtitle A—Pay and Allowances

Reorganization of certain allowances other than travel and transportation allowances (sec. 601)

The committee recommends a provision that would amend chapter 7 of title 37, United States Code, to authorize the Department of Defense to continue making payments beyond fiscal year 2022 for per diem while on duty outside the continental United States and for funeral honors duties.

Hazardous duty pay for members of the Armed Forces performing duty in response to the Coronavirus Disease 2019 (sec. 602)

The committee recommends a provision that would require the Secretary of the military department concerned to pay hazardous duty pay in the amount of \$150 per month to members of the Armed Forces who perform duty in response to the coronavirus disease 2019 (COVID-19). Hazardous duty pay for COVID-19 would not be prorated.

Subtitle B—Bonuses and Special and Incentive Pays

One-year extension of certain expiring bonus and special pay authorities (sec. 611)

The committee recommends a provision that would extend, through December 31, 2021, various expiring bonus and special pay authorities for military personnel. The provision would extend special pay and bonus authority for reserve personnel, military healthcare professionals, and nuclear officers and consolidated pay authorities for officer and enlisted personnel. The provision would also extend the authority to provide a temporary increase in the rate of Basic Allowance for Housing in certain circumstances.

Increase in special and incentive pays for officers in health professions (sec. 612)

The committee recommends a provision that would amend subparagraphs (A) through (E) of section 335(e)(1) of title 37, United States Code, to increase the maximum amounts of special and incentive pays for military health professions officers.

A recent report by the Comptroller General of the United States (GAO-20-165) “found that for 21 of the 27 physician and dentist specialties, the maximum cash compensation was less than the private sector civilian median within four officer pay grades (O-3 to O-6).” Additionally, the report stated that “the maximum military cash compensation for 16 of 21 physician and 5 of 6 dental special-

ties was less than the civilian median for all pay grades.” Furthermore, a previous Comptroller General report (GAO–18–77) highlighted significant gaps in the military departments for numerous Active-Duty physician specialties, including those considered critical for combat casualty care. As a result of the information provided in these reports, the committee believes that it should enhance the cash compensation of military health professions officers to ensure that the Department of Defense can recruit and retain such officers, especially those serving in critical wartime medical and dental specialties.

Subtitle C—Disability Pay, Retired Pay, and Survivor Benefits

Inclusion of drill or training foregone due to emergency travel or duty restrictions in computations of entitlement to and amounts of retired pay for non-regular service (sec. 621)

The committee recommends a provision that would amend sections 12732 and 12733 of title 10, United States Code, to authorize the Secretary of Defense, or the Secretary of Homeland Security with respect to the Coast Guard, to provide points for Reserve retirement purposes if a Reserve servicemember is prevented from participating in required drills or training during the emergency period beginning on March 1, 2020, which coincides with the COVID–19 pandemic.

Modernization and clarification of payment of certain Reserves while on duty (sec. 622)

The committee recommends a provision that would amend section 12316 of title 10, United States Code, to modify the existing priority of payments so that a Reservist, who is entitled to retired or retainer pay and who performs paid reserve duty, would receive compensation for the reserve duty unless the Reservist elects to waive that compensation to receive the retired or retainer pay.

Subtitle D—Other Matters

Permanent authority for and enhancement of the Government lodging program (sec. 631)

The committee recommends a provision that would amend section 914 of the Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113–291) to permanently authorize a government lodging program for employees of the Department of Defense and members of the uniformed services under the jurisdiction of the Secretary of Defense. The provision would also require the Secretary concerned to exclude from the lodging program Department of Defense civilian employees who are traveling for the performance of mission functions of a public shipyard of the Department of Defense, if the purpose or mission of such travel would be adversely affected by the requirements of the Government lodging program.

Approval of certain activities by retired and reserve members of the uniformed services (sec. 632)

The committee recommends a provision that would amend section 908 of title 37, United States Code, to authorize retired members of the uniformed services, members of a reserve component of the Armed Forces not on Active Duty for more than 30 days, and members of the Commissioned Reserve Corps of the Public Health Service to accept payment for speeches, travel, meals, lodging, or registration fees, if approved by the Secretary concerned. The provision would also require that annual reports on approvals for employment or compensation of retired general and flag officers include the following elements: (1) The foreign government involved; (2) The duties to be performed; and (3) The compensation or payment to be provided.

Items of Special Interest

Commissary and Exchange loyalty programs

Military commissaries offer many benefits to their patrons through the Commissary Rewards Program, such as digital coupon offers, digital receipts, and at-cashier discounts. To improve sales and revenues at commissaries and military exchanges, the committee encourages the Military Exchange Service to adopt a loyalty program using lessons learned from the Defense Commissary Agency. The committee believes that both retail venues would benefit from cross-linking loyalty programs, which would further incentivize commissary customers to patronize both commissaries and exchanges. Similar loyalty programs in the private retail industry have proven to be highly successful in expanding sales.

Comptroller General report on the impact of reforms in the defense commissary system

The Defense Commissary Agency (DeCA) operates about 240 commissaries worldwide that sell groceries and household goods at reduced prices to eligible customers, including uniformed servicemembers, their families, and retirees. To pay for operating costs that exceed sales revenue, the Congress has appropriated approximately \$1.3 billion annually from amounts appropriated to the Defense Working Capital Fund for commissary use from fiscal years 2015 through 2019. Additionally, sales at the commissaries have fallen from \$5.5 billion in fiscal year 2015 to \$4.5 billion in fiscal year 2019. To help the DeCA improve its business operations without diminishing customer savings, the National Defense Authorization Act (NDAA) for Fiscal Year 2017 (Public Law 114–328) authorized certain reforms for the commissary system. For example, the NDAA authorized the DeCA to set commissary prices in response to market conditions and customer demand (i.e., variable pricing), and it authorized the Secretary of Defense to convert the commissary system to a non-appropriated fund entity or instrumentality, subject to certain conditions.

The committee seeks to understand the extent to which the DeCA has used these authorities and/or implemented other reforms (e.g., the sale of private label goods) to improve its operations and to reduce its need for appropriated funds. Therefore, the committee

directs the Comptroller General of the United States to conduct a review and to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives no later than March 1, 2021, with a report to follow, that includes the following: (1) What reforms the DeCA has implemented within the past 5 years to improve its business operations; (2) What effect those reforms have had on DeCA's sales, expenses, need for appropriated funds, and/or customer savings and satisfaction; (3) What challenges the DeCA faces in providing reduced-price groceries and household goods, and what steps the DeCA is taking to address those challenges; and (4) Any other issues that the Comptroller General determines are applicable to DeCA's operations and reform efforts.

Operation of commissaries during government shutdowns

Military commissaries provide a reliable source of high quality food and subsistence for military servicemembers and their families. During government shutdowns prompted by an expiration of congressional appropriations, commissary closures deprive families of this vital subsistence source. Due to the critical importance of commissaries to military families, the committee believes that the Department of Defense should designate commissary operations as excepted programs during government shutdowns.

Special operations special and incentive pay

The committee directs the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict (ASD SOLIC), in coordination with the Commander, United States Special Operations Command (SOCOM), the Secretary of the Army, and the Chief of Staff of the Army, to study the effect on steady-state retention of offering a Critical Skills Retention Bonus to Army Special Operations Forces (SOF) commissioned officers. Specifically, the ASD SOLIC shall evaluate the Navy's Special Warfare Officer Continuation Pay program and make a recommendation on whether such a program should be emulated by the other military departments. Not later than October 1, 2020, the ASD SOLIC shall provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives on its findings and recommendations for SOF special and incentive pay. Lastly, the committee encourages the ASD SOLIC and SOCOM to develop a dynamic modeling system to assess how adjustments in other special and incentive pay policy could increase retention within Army Special Operations Forces.

TITLE VII—HEALTH CARE PROVISIONS

Subtitle A—Tricare and Other Health Care Benefits

Authority for Secretary of Defense to manage provider type referral and supervision requirements under TRICARE program (sec. 701)

The committee recommends a provision that would amend section 1079(a)(12) of title 10, United States Code, to provide the Department of Defense with greater flexibility in determining which provider types under the TRICARE program may diagnose or assess a mental or physical illness, injury, or bodily malfunction and, by extension, the extent to which referrals and supervision may be required for these provider types.

Removal of Christian Science providers as authorized providers under the TRICARE Program (sec. 702)

The committee recommends a provision that would amend subsection (a) of section 1079 of title 10, United States Code, by striking paragraph (4) to remove Christian Science providers as authorized providers under the TRICARE program.

The Congress originally enacted the authorization of Christian Science providers and the associated statutory exemption of Christian Science services from TRICARE's medical necessity requirement because the Church of Christ, Scientist instructed its members to seek the care of Christian Science practitioners in lieu of other clinicians, including physicians. The Church has changed its position, however, and it no longer prohibits members from seeking traditional medical care, making this statutory exemption unnecessary.

Waiver of fees charged to certain civilians for emergency medical treatment provided at military medical treatment facilities (sec. 703)

The committee recommends a provision that would amend section 1079b of title 10, United States Code, to require the Secretary of Defense to implement procedures that would authorize military treatment facilities (MTFs) to waive fees for medical care provided to civilians at MTFs if, after any insurance payments, the civilian is unable to pay for the care provided and that care enhanced the medical readiness of the health care providers who furnished the care.

Mental health resources for members of the Armed Forces and their dependents during the COVID-19 pandemic (sec. 704)

The committee recommends a provision that would require the Secretary of Defense to develop a plan, within 180 days of the date of the enactment of this Act, to protect and promote the mental health and well-being of servicemembers and their dependents during the current pandemic. The provision would require the Secretary to conduct outreach to the military community to identify resources and healthcare services, including mental healthcare services, available under the TRICARE program to support servicemembers and their dependents.

Transitional health benefits for certain members of the National Guard serving under orders in response to the coronavirus (COVID-19) (sec. 705)

The committee recommends a provision that would require the Secretary of Defense to provide to a National Guard (NG) member separating from active service after serving on full-time duty pursuant to section 502(f) of title 32, United States Code, the health benefits authorized under section 1145 of title 10, United States Code, for a member of a reserve component separating from Active Duty, if the active service from which the NG member is separating was in support of the whole of government response to the COVID-19 pandemic.

Extramedical maternal health providers demonstration project (sec. 706)

The committee recommends a provision that would require the Secretary of Defense, within 1 year of the date of the enactment of this Act, to conduct a 5-year demonstration project designed to evaluate the cost, quality of care, and impact on maternal and fetal outcomes of using certain extra-medical maternal health providers (douglas and lactation consultants) under the TRICARE program to determine whether to make coverage of the services of such providers permanent under TRICARE.

Pilot program on receipt of non-generic prescription maintenance medications under TRICARE pharmacy benefits program (sec. 707)

The committee recommends a provision that would require the Secretary of Defense to conduct a 3-year pilot program whereby covered TRICARE beneficiaries may elect to receive certain non-generic prescription maintenance medications either through military treatment facility pharmacies, the TRICARE mail order pharmacy program, or retail network pharmacies. The provision would prescribe certain conditions of the pilot program and would require the Secretary to provide a briefing to the congressional defense committees, within 90 days of the date of the enactment of this Act, on implementation of the pilot program. Subsequently, the Secretary would provide an interim report to the same committees within 18 months after the commencement of the pilot program. Finally, the Comptroller General of the United States would submit a report on the program to the same committees by March 1, 2024.

Subtitle B—Health Care Administration**Modifications to transfer of Army Medical Research and Development Command and public health commands to Defense Health Agency (sec. 721)**

The committee recommends a provision that would amend section 1073c(e) of title 10, United States Code, and section 737 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) to delay the transfer of the Army Medical Research and Development Command (and such other medical research organizations of the Armed Forces, as appropriate) and the public health commands or programs of the military services to the Defense Health Agency from September 30, 2022, to September 30, 2024, and correcting the name of the Army Medical Research and Development Command.

Delay of applicability of administration of TRICARE dental plans through Federal Employees Dental and Vision Insurance Program (sec. 722)

The committee recommends a provision that would amend section 713(c) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232) to delay the transition of the administration of TRICARE dental plans for Active-Duty family members, non-activated National Guard/Reserve members, family members of National Guard/Reserve members, and certain survivors to the Federal Employees Dental and Vision Insurance Program until January 1, 2023.

Authority of Secretary of Defense to waive requirements during national emergencies for purposes of provision of health care (sec. 723)

The committee recommends a provision that would amend chapter 55 of title 10, United States Code, to authorize the Secretary of Defense to waive or modify the requirements of such chapter, or any regulation prescribed under such chapter, for a period of 60 days for services furnished by a health care provider (or class of providers) in an emergency area (or portion of such area) during an emergency period (or portion of such period). The provision would authorize the Secretary to renew any such waiver or modification for subsequent 60-day periods during an applicable emergency declaration. Additionally, the provision would require the Secretary to submit to the Committees on Armed Services of the Senate and the House of Representatives, at least 2 days before exercising a waiver or modification, a certification and advance written notice that describes the impact and duration of the waiver or modification. Finally, the provision would require the Secretary to submit a report to the same committees on the use of this authority within 1 year of the end of an emergency period during which the Secretary exercised this authority.

Subtitle C—Reports and Other Matters

Extension of authority for Joint Department of Defense-Department of Veterans Affairs Medical Facility Demonstration Fund (sec. 741)

The committee recommends a provision that would amend section 1704(e) of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84) to extend the authority for the Joint Department of Defense-Department of Veterans Affairs Demonstration Fund from September 30, 2021, to September 30, 2022.

Membership of Board of Regents of Uniformed Services University of the Health Sciences (sec. 742)

The committee recommends a provision that would amend section 2113a(b) of title 10, United States Code, to designate the Director of the Defense Health Agency as an ex officio member of the Board of Regents of the Uniformed Services University of the Health Sciences.

Military health system Clinical Quality Management Program (sec. 743)

The committee recommends a provision that would require the Secretary of Defense to implement a comprehensive clinical quality management program within the military health system. The provision would prescribe the elements of the program and include clinical quality management of healthcare delivery outside military medical treatment facilities, on ships, planes, in deployed settings, and in the purchased care component of the military health system.

The committee is aware of several recent incidents in which a military service waited years until a substantial claim was paid under the Federal Tort Claims Act before initiating a review to determine whether any involved healthcare provider met National Practitioner Data Bank (NPDB) reporting criteria. This delay in conducting a review of substandard medical care allowed providers who failed to meet medical practice standards to continue treating TRICARE beneficiaries. This provision would require initiation of the review as soon as possible after an event to expedite reports to the NPDB and other accountability measures in appropriate cases.

Modifications to pilot program on civilian and military partnerships to enhance interoperability and medical surge capability and capacity of National Disaster Medical System (sec. 744)

The committee recommends a provision that would amend section 740 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) to require the Secretary of Defense to implement the pilot program on civilian and military partnerships to enhance interoperability and medical surge capability and capacity of the National Disaster Medical System not later than September 30, 2021. The provision would: (1) Designate the Assistant Secretary of Defense for Health Affairs as the lead official for design and implementation of the program; (2) Describe the requirements for a phased selection of pilot program sites at not fewer

than five sites; and (3) Describe the conditions for consideration and prioritization of such sites. The provision would authorize the appropriation of \$5.0 million to the Secretary to establish and implement the pilot program.

The committee recognizes the importance of developing strong military-civilian partnerships to enhance and expand the capabilities and capacities of the National Disaster Medical System. These partnerships would: (1) Provide additional training platforms to improve the clinical readiness skills of military medical providers; (2) Expand the Nation's capacity to redistribute mass casualties of war to civilian medical centers; and (3) Establish an enduring framework for a well-coordinated Federal response to pandemics, such as COVID-19, or to nuclear, radiological, biological, and chemical threats.

Study on force mix options and service models to enhance readiness of medical force of the Armed Forces to provide combat casualty care (sec. 745)

The committee recommends a provision that would require the Secretary of Defense, within 30 days of the date of the enactment of this Act, to seek to enter into an agreement with a federally funded research and development center or other independent entity to conduct a study on force mix options and service models to optimize readiness of the medical force to deliver combat casualty care. The Secretary would submit a report on the findings of the study to the Committees on Armed Services of the Senate and the House of Representatives within 15 months of the date of the enactment of this Act.

The committee remains concerned that existing force mix options and service models do not meet the total combat casualty care requirements of the combatant commanders in their areas of responsibility. Therefore, the committee expects this study to consider, examine, and explore: (1) A design for an optimal scalable model for embedding critically skilled Active-Duty medical providers in civilian trauma centers; (2) The potential impact of expanding the current model of Reservists' serving in civilian trauma centers; and (3) Any options for alternative Reservists models, including various accession and training models.

Comptroller General study on delivery of mental health services to members of the reserve components of the Armed Forces (sec. 746)

The committee recommends a provision that would require the Comptroller General of the United States to conduct a study on the delivery of Federal, State, and private mental health services to members of the reserve components. The provision would require the Comptroller General to submit to the Committees on Armed Services of the Senate and the House of Representatives a report on the study not later than 1 year after the date of the enactment of this Act.

Review and report on prevention of suicide among members of the Armed Forces stationed at remote installations outside the contiguous United States (sec. 747)

The committee recommends a provision that would require the Comptroller General of the United States to conduct a review of efforts by the Department of Defense to prevent suicide among servicemembers stationed at remote installations outside the contiguous United States. The provision would prescribe the elements of such review and require the Comptroller General to brief the Committees on Armed Services of the Senate and the House of Representatives, not later than October 1, 2021, on preliminary observations relating to the review. The Comptroller General would then submit a report containing the results of the review to the same committees not later than March 1, 2022.

Audit of medical conditions of tenants in privatized military housing (sec. 748)

The committee recommends a provision that would require the Inspector General of the Department of Defense (DODIG) to conduct an audit of the medical conditions of servicemembers and their families who have resided in unsafe or unhealthy privatized military housing. One of the objectives of the audit is to determine the association between the exposure to specified hazards and the occurrence of a medical condition. Not later than 1 year after commencement of the audit, the DODIG would be required to submit to the Secretary of Defense and the Committees on Armed Services of the Senate and the House of Representatives a report on the results of the audit and to publish the audit on a publicly available internet website of the Department of Defense.

Comptroller General study on prenatal and postpartum mental health conditions among members of the Armed Forces and their dependents (sec. 749)

The committee recommends a provision that would require the Comptroller General of the United States to conduct a study on prenatal and postpartum mental health conditions among members of the Armed Forces and their dependents. The Comptroller General would submit a report on the study's findings to the Committees on Armed Services of the Senate and the House of Representatives within 1 year of the date of the enactment of this Act.

Plan for evaluation of flexible spending account options for members of the uniformed services and their families (sec. 750)

The committee recommends a provision that would require the Secretary of Defense to submit, by March 1, 2021, to the congressional defense committees a plan to evaluate flexible spending account options that allow pre-tax payment of health and dental insurance premiums, out-of-pocket health care expenses, and dependent care expenses for members of the uniformed services.

Assessment of receipt by civilians of emergency medical treatment at military medical treatment facilities (sec. 751)

The committee recommends a provision that would require the Comptroller General of the United States, within 1 year of the date of the enactment of this Act, to complete an assessment of the provision of emergency medical treatment by the Department of Defense to non-covered civilian patients at military medical treatment facilities during the period from October 1, 2015, to September 30, 2020. The Comptroller General would provide a report containing the results of the assessment to the Committees on Armed Services of the Senate and the House of Representatives within 180 days after completion of such assessment.

Items of Special Interest

Amyotrophic lateral sclerosis research of the Department of Defense

The committee encourages the Department of Defense to expand funding for research related to amyotrophic lateral sclerosis (ALS), an insidious, non-curable neurodegenerative disease, in the annual core medical research budget of the Department of Defense. Evidence from scientific research suggests a mutually inclusive relationship between military service and ALS with a higher incidence in the veteran population without known reasons. The committee directs the Department to brief, not later than September 30, 2020, the Committees on Armed Services of the Senate and the House of Representatives on the initiatives and funding for ALS research of the Department during the 5-year period preceding the date of the briefing. The briefing shall include a description of any existing or promising breakthroughs in the diagnosis and treatment of ALS resulting from such research.

Clinical performance management system

The committee is aware of web-enabled software that can empower health system administrators and frontline clinicians to transform healthcare delivery and reduce costs through a unique clinical performance management system. The software allows comparison of clinical effectiveness across key variables, including patient demographics, individual clinicians, procedures, medications, and facilities. With such available software, the Defense Health Agency and military treatment facility clinicians could perform rapid analyses of clinical data using actionable, accurate statistical process control charts to improve health outcomes, reduce variability, and improve performance throughout the military health system. The committee encourages the Defense Health Agency to explore this opportunity to improve the quality of care delivered in military treatment facilities.

Diagnostic medical devices for traumatic brain injury

The Department of Defense continues to seek ways to evaluate troops rapidly for suspected traumatic brain injury. Still, the committee remains concerned by the Department's failure to field certain diagnostic tools already approved by the Food and Drug Ad-

ministration. The committee believes that such tools could have more rapidly diagnosed servicemembers' mild TBI (mTBI) following the January 8, 2020, missile attack on Al Asad Air Base, Iraq. Although the Al Asad incident is a troubling example, the committee understands that most mTBIs occur in training, sports, and off-duty events at home station. More than ever, the committee believes that FDA-approved mTBI screening devices should be available for use in troop clinics where service personnel with no apparent symptoms are too often returned to duty without further medical evaluation. Therefore, the committee encourages the Secretary of Defense to deploy mTBI/concussion multi-modal diagnostic devices to the lowest possible echelon of medical care to help medical personnel and commanders better understand when injured troops must receive more specialized medical evaluation and treatment for mTBI.

Ensure eating disorder treatment for servicemembers and dependents

The committee is aware of studies indicating that there is a higher prevalence of eating disorders among members of the Armed Forces and veterans than among the general population and that research has found a significant relationship between eating disorders and these individuals with a history of post-traumatic stress and trauma. The committee recognizes that family members of the Armed Forces have a higher prevalence of eating disorders than the general population, with 20 percent of children of members of the Armed Forces found at risk of developing an eating disorder. The committee also recognizes that female members have a particularly high risk for an eating disorder, as studies have found that 16 percent of such members have an eating disorder and 34 percent of such members are at risk of developing an eating disorder.

Therefore, the committee encourages the Department of Defense and the Defense Health Agency to identify eating disorders as a health condition to be treated and to: (1) Ensure that facilities are available to treat these disorders for all servicemembers; (2) Provide eating disorder treatment under TRICARE to a dependent without regard to the age of the dependent; and (3) Require commanders and supervisory personnel to undertake mental health early identification training, including on the warning signs and symptoms of eating disorders.

Improve academic collaboration and streamline traumatic brain injury funding streams

The committee understands that the Department of Defense has identified traumatic brain injury (TBI) as a top medical priority for combat casualties and commends the significant investments in identifying and treating TBI and related pain. Additionally, the committee acknowledges that there are multiple federal funding streams available for research into identifying and treating TBI and that the Department collaborates with a wide variety of research institutions to develop improved identification and treatment tools.

The committee is concerned, however, that a lack of collaboration and information sharing between civilian researchers in these areas has slowed progress in developing diagnostic and treatment tools and that there appears to be only limited progress in deploying a diagnostic tool for TBI. Therefore, the committee directs the Secretary of Defense, in coordination with the Secretary of Veterans Affairs, the Secretary of the Department of Health and Human Services, and the heads of other Federal agencies as deemed appropriate by the Secretary of Defense, to coordinate available streams of federal funding for research in these critical areas. The Department should seek partnerships with civilian researchers and encourage collaboration and information sharing between such researchers receiving federal funds. Finally, the committee directs the Secretary of Defense to streamline the approval process for research funding, particularly those studies relating to TBI, to the greatest extent possible to accelerate the development of identification and treatment tools.

Improvements to the TRICARE Extended Care Health Option program

The Exceptional Family Member Program (EFMP) provides comprehensive, coordinated community support, housing, educational, medical, and personnel services worldwide to U.S. military families with children with special needs. The committee is aware that many families participating in the EFMP are not provided with consistent opportunities and services throughout each Permanent Change of Station move. Such moves disrupt family members as the unique services provided to special needs children can differ between States. As a component of EFMP, the TRICARE Extended Care Health Option (ECHO) program serves as an alternative to States' Home and Community-Based Services 1915(c) waiver programs for families of Active-Duty servicemembers. State waiver programs often operate under existing enrollment caps, which create lengthy waiting lists for services, making them inaccessible to many military family members. The committee is concerned that the current ECHO program may not provide comparable services to programs in States where military families reside, and, as such, the Department of Defense should consider program changes to provide more equitable access to services that States offer more widely.

Military health clinical readiness

Ensuring a ready medical force can only be accomplished when Active-Duty clinicians receive the necessary volume and diversity of clinical cases or surgeries in a peacetime setting sufficient to prepare them for the types of injuries they will treat in the combat theater. The committee supports the Defense Health Agency's (DHA) adoption of a knowledge, skills, and abilities (KSA) clinician readiness framework. Furthermore, the committee believes that a joint KSA center of excellence, leveraging the input of the combatant commands (through the Joint Staff Surgeon) and the military services' medical departments, will help sustain, integrate, and standardize the methodology across the military health system. Specifically, a joint KSA center of excellence will incorporate indus-

try best practices, integrate clinical readiness metrics into DHA's performance planning process, track National Guard and Reservist clinician KSAs, and help inform future service and joint medical training platforms. Accordingly, the committee recommends that the Secretary of Defense establish a joint KSA center of excellence.

Modification of Post Deployment Health Assessment (DD Form 2796) to increase reporting of exposure to burn pit smoke

The committee is aware that many servicemembers returning from deployment in support of a contingency operation do not report that they have experienced exposure to airborne contaminants from burn pits. As a result, they are not evaluated for the effects of such exposure, and there is no documentation in the member's health record. The DD Form 2796 contains a general question asking servicemembers if they are worried about their health because they believe they were exposed to something in the environment while deployed. Many servicemembers respond "no" if they are not experiencing health issues. To address underreporting of exposures, the committee directs the Secretary of Defense to modify DD Form 2796 to ask explicitly whether a servicemember was exposed to an open burn pit in an operational environment.

Musculoskeletal injury prevention

The committee is aware that musculoskeletal disorders account for almost 25 percent of all military injuries. Musculoskeletal injuries among Active-Duty servicemembers result in over 10 million limited duty days each year and account for over 70 percent of the medically non-deployable population. Servicemembers experience anterior cruciate ligament (ACL) injuries at 10 times the rate of the general population. Investing in injury prevention education and human performance programming can greatly reduce the number of musculoskeletal injuries, resulting in both improved servicemember health and improved combat force readiness.

The committee encourages the Secretary of Defense, in coordination with the Army Holistic Health and Fitness Program, to carry out a program on musculoskeletal injury prevention research to identify risk factors for musculoskeletal injuries among members of the Armed Forces and to create a better understanding for adaptive musculoskeletal and bone formation during initial entry military training. Additionally, the committee supports partnerships between the Department of Defense and institutions of higher education to expand current injury prevention and human performance education programs. These partnerships could support on-site medical coverage, musculoskeletal recovery, and physical performance improvement capabilities to improve unit readiness.

Rare cancer research and treatment

The Department of Defense has begun to address environmental exposure risks which may correlate with certain cancers. The committee remains concerned, however, with servicemembers' receipt of medical care following a rare cancer diagnosis. Over 60 cancers may disproportionately impact servicemembers, and many are rare cancers affecting fewer than 6 per 100,000 Americans annually.

Some targeted therapies for such cancers have been developed, but more work must be done. Understanding specific molecular drivers for each patient's cancer and then sharing those data are key to providing the most effective therapies and to advancing research that will lead to new treatments. Therefore, the committee directs the Department to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives, not later than March 1, 2021, that: (1) Describes the specific types of molecular diagnostic tests that are available to cancer patients within the military health system; (2) Provides recommendations on expansion of molecular diagnostic testing for servicemembers with cancer; and (3) Outlines data-sharing practices with the Department of Veterans Affairs, the National Institutes of Health, and the external research community.

Remote health capabilities in the tactical environment

Rapidly evolving telehealth capabilities—hardware with advanced remote vital signs monitoring, software facilitating medical records documentation and reach-back consultation in real time, and cloud storage of documentation—can significantly improve warfighter survival on the battlefield. In the critical moments after a combat injury, direct, two-way physician/combat medic interaction in the tactical environment at very low bandwidths can bridge communications gaps among medics, forward surgical hospital teams, and echelon III medical centers. The Army's Medical Communications for Combat Casualty Care (MC4) initiative demonstrates how the development of medical information management and information technology infrastructure facilitates point-of-injury care for combat casualties and ultimately saves lives. The committee encourages the Department of Defense to consider implementation of MC4 as a joint battlefield medical solution across the military services.

Status of pilot program to treat post-traumatic stress disorder resulting from sexual trauma

Section 702 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232) authorized a 3-year pilot program to assess the feasibility and advisability of using intensive outpatient programs to treat servicemembers suffering from post-traumatic stress disorder resulting from sexual trauma. The legislation required the pilot program to be carried out through partnerships with public, private, and non-profit health care organizations, universities, and institutions.

The committee is concerned that, nearly 2 years after the enactment of this provision, the Department of Defense has not yet selected civilian partners to participate in this pilot program. The committee urges the Department to expedite required policy and TRICARE manual changes needed to reach agreements with civilian partners to facilitate testing of new models of care that will be evidence-based and measurable. The committee further directs the Secretary of Defense to provide the Committees on Armed Services of the Senate and the House of Representatives with a briefing on the status of this pilot program not later than July 31, 2020.

Substance abuse prevention

The committee recognizes the ongoing work of the Department of Defense to reduce substance abuse among servicemembers. Certain studies from the Substance Abuse and Mental Health Administration conclude that a large percentage of suicide victims suffer from depression, substance use disorders, or both. The committee recognizes the importance of programs that teach harm reduction techniques and offer confidential educational information that can help reduce substance use and potential relapse. Therefore, the committee recommends that the Department initiate a pilot program to test an evidence-based, confidential, internet-based substance abuse education, peer coaching, and case management program.

TBI medical research

The Department of Defense continues to seek methods for expeditiously evaluating servicemembers for acute traumatic brain injury (TBI). The committee recognizes that over 320,000 servicemembers were diagnosed with a TBI within the last 15 years and that these injuries are associated with a variety of long-term effects, including cognitive impairment, psychiatric disorders, neurodegenerative diseases, and chronic traumatic encephalopathy. The committee further recognizes that the early diagnosis of a TBI, while it is still in its acute phase and especially prior to the display of symptoms, significantly improves military medical professionals' ability to treat this injury and to prevent or mitigate those long-term effects. The committee therefore encourages the Secretary of Defense to support the basic research required to develop and field acute TBI diagnostic capabilities as quickly as possible, to include multi-modal research models focused on medical imaging, molecular biomarkers, and biophysical sensors, among other diagnostic capabilities.

Telehealth and virtual health technology implementation

Section 718 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) required the military health system (MHS) to incorporate telehealth services throughout its direct and purchased care components. The Department of Defense's (DOD) slow implementation of telehealth and virtual health technologies, however, has hindered transformation of the MHS into a modern healthcare delivery platform. A rapid expansion of DOD's virtual health technologies over the last few years would have given beneficiaries more options to access certain healthcare services while practicing physical distancing at their homes during the COVID–19 pandemic.

The committee remains interested in the continued, expanded use of both telehealth and virtual health technologies throughout the MHS and recommends an approach that implements those technologies using a flexible, evolutionary acquisition process that encourages healthy competition, enables incremental improvements to provider workflows, improves access and care for beneficiaries, and potentially lowers overall costs to the MHS.

Traumatic brain injury treatment

The committee is encouraged by the recent successful clinical trial involving non-implanted neurostimulation devices and physical therapy for preventing headaches and improving balance for patients with mild-to-moderate traumatic brain injury (mmTBI). The committee supports continuing research into mmTBI treatments for the hundreds of thousands of servicemembers diagnosed with this illness. Therefore, the committee encourages the Department of Defense to pursue additional clinical trials with non-implanted neurostimulation devices to treat mmTBI.

TRICARE managed care support contract structure

The committee is aware that the Defense Health Agency (DHA) has been working to draft requirements for the fifth generation of TRICARE managed care support contracts, known as “T-5.” The DHA held two industry day events in 2019 to conduct market research and to present T-5 concepts to potential offerors, but the contracting plans presented by the DHA at each of these meetings differed drastically. At one event, the DHA presented the concept of potentially awarding multiple TRICARE contracts via an indefinite delivery indefinite quantity (IDIQ) contract structure. At a subsequent meeting, the DHA announced that it had shifted away from the IDIQ and/or multiple region concept and pivoted back to considering a two-region structure for TRICARE Prime contracts, similar to that of the existing TRICARE managed care support contracts.

The current TRICARE contract structure does not support innovation, beneficiary choice, increased competition, or market-based management strategies. Continuing the current contract structure limits the DHA and does not comport with the reforms directed by this committee. Specifically, maintaining a two-region structure will neither provide the DHA with options to swiftly address contractor performance issues or shortfalls nor will it incentivize contractors to comport with the most high quality, innovative, and cost-effective industry best practices to improve quality of care for TRICARE beneficiaries and to maximize returns on DHA investment. Furthermore, a DHA choice to continue to limit TRICARE managed care support contracts to two large regions stifles competition because the incumbents have a significant advantage. Additionally, very few private sector health care delivery companies have both the significant financial resources as well as the relevant past performance required to compete for such large scale, widely-scoped contracts.

In defense of maintaining the status quo, the DHA has informed the committee that there exists a legal barrier to the DHA’s contracting for multiple TRICARE networks, either via an increased number of smaller regions, by medical markets, or by means of a multiple award IDIQ contract vehicle. The committee notes, however, that to date the DHA has been unable to provide a citation to any such legal barrier. Moreover, an examination of relevant statutory (chapter 55 of title 10, United States Code) and regulatory (title 32, Code of Federal Regulations, part 199) language confirms that no such legal barrier exists. To the contrary, the stat-

utory and regulatory language contemplates multiple contracts as well as multiple provider networks.

The committee believes that shifting the next iteration of TRICARE managed care support contracts to a multiple region construct will allow private sector support plans to better serve beneficiaries by more closely matching local beneficiary needs with innovative service and care capabilities, improve integration with military treatment facility leadership, and facilitate a more agile, cost-effective approach for the Department. The committee therefore urges the Secretary to ensure that the contract structure for T-5 departs from the current two-region design.

The committee directs the Secretary to review the legislative reforms enacted over the past several years and report to the committee on how the acquisition strategy for the next set of TRICARE managed care support contracts incorporates those reforms in a manner that increases competition and beneficiary choice. This report should be provided to the committee prior to the release of any T-5 Request for Proposal.

TITLE VIII—ACQUISITION POLICY, ACQUISITION MANAGEMENT, AND RELATED MATTERS

Subtitle A—Industrial Base Matters

Policy recommendations for implementation of Executive Order 13806 (Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency) (sec. 801)

The committee recommends a provision that would require the Under Secretary of Defense for Acquisition and Sustainment to submit a series of recommendations surrounding United States industrial policies to the Secretary of Defense, who would subsequently be required to submit these recommendations to the President, the Office of Management and Budget, the National Security Council, the National Economic Council, and the congressional defense committees.

The committee commends the Department of Defense for its leadership in implementing the July 21, 2017, Presidential Executive Order on Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States. The challenges and shortfalls highlighted in the report authored in response to the executive order are of such scale that the committee believes that only a national approach can effectively address these deficits. Therefore, the committee expects the Department to exercise its leadership position, analytical capabilities, and policy expertise in developing recommendations for the industrial policies that the United States ought to pursue.

Assessment of national security innovation base (sec. 802)

The committee recommends a provision that would require the Deputy Secretary of Defense to conduct an assessment of how economic forces and structures are shaping the capacity of the na-

tional security innovation base. The provision would require the Deputy Secretary to submit an assessment along with any policy recommendations proceeding from it to the Secretary of Defense no later than 540 days after the date of the enactment of this Act and the Secretary of Defense to submit such assessment and recommendations, no later than 30 days after receipt, to the President, the Office of Management and Budget, the National Security Council, the National Economic Council, and the congressional defense committees.

The committee recognizes the Department of Defense's substantial efforts to ensure that the industrial base is innovative, robust, and expansive and remains concerned that the wider U.S. economy has a significant impact on the industrial base. The committee believes that ensuring domestic production and supply of critical national security technologies and source materials may extend beyond the activities, industrial policies, and scope of the Department of Defense and require serious interagency and private sector cooperation. Developing a strategy to address this issue should be an inclusive, whole-of-government deliberative process that involves the Department of Defense, other relevant government agencies, and relevant stakeholders. The committee also recognizes that Department of Defense appropriations are downstream of economic health and Federal budgets. This provision would therefore allow the Department to identify critical economic features, propose policies to guarantee that its development, industrial, and budgetary needs are recognized, and ensure that broader economic policy decisions are fully informed.

Improving implementation of policy pertaining to the national technology and industrial base (sec. 803)

The committee recommends a provision that would require the Secretary of Defense, in executing the activities required under sections 2501, 2502, and 2505 of title 10, United States Code, to also identify critical National Technology and Industrial Base (NTIB) member country development and manufacturing activities and capabilities. The provision would also: modify section 2502 of title 10, United States Code, to require the establishment of a regulatory council comprised of the member countries; modify section 2350a of title 10, United States Code, to allow for the consummation of cooperative research and development agreements among the NTIB member countries; and require the Secretary of Defense to establish a process for considering additional NTIB member countries, conduct an assessment on certain countries, and report on that assessment within 540 days of the date of the enactment of this Act.

Modification of framework for modernizing acquisition processes to ensure integrity of industrial base (sec. 804)

The committee recommends a provision that would amend section 2509 of title 10, United States Code, to add references to matters of existing law, regulation, policy, and associated activities and that would make a technical change related to optical transmission components. The committee appreciates the Department of Defense's continued attention to challenges that it faces in modern-

izing acquisition processes to ensure the integrity of the defense industrial base.

In carrying out the assessment required by section 2509 of title 10, United States Code, due March 15, 2022, the Comptroller General of the United States shall incorporate the following additional objectives: (1) The use by the Defense Logistics Agency and the Defense Health Agency of contracts for the purchase of drugs and medical devices; (2) The effect that increasing domestic manufacturing may have on the price and quality of drugs and medical devices used by the Department of Defense; and (3) The opportunities for investment in domestic advanced manufacturing capabilities for drugs and medical devices to reduce supply chain dependence risks to members of the Armed Forces and civilians.

Assessments of industrial base capabilities and capacity (sec. 805)

The committee recommends a provision that would require the Secretary of Defense to establish a process for assessing foreign industrial bases, to integrate that process with other industrial base analysis activities, and to report to the congressional defense committees on that approach by March 15, 2021.

The Department of Defense's September 2018 report on Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency identifies industrial policies of competitor nations as one of the five macro forces driving risk into the United States industrial base, noting "the erosion of parts of our industrial base[] is, in part, attributable to the industrial policies of major trading partners that have created an unfair and non-reciprocal trade environment." The report goes on to cite China's behavior in particular, to include Chinese economic aggression, as a contributing factor. The committee remains concerned not only about the United States' overreliance on China for key components of national security capabilities but also about how China's own industrial policy has facilitated this.

The committee notes the respective roles for the Director, Defense Counterintelligence and Security Agency (DCSA), and the Deputy Assistant Secretary of Defense for Industrial Policy outlined in section 2509 of title 10, United States Code, as part of a framework for modernizing acquisition processes to ensure the integrity of the industrial base. The committee acknowledges the increased demands levied on the DCSA, and the committee believes that cooperation between these two organizations on this activity will help to anchor a strategic vision for expeditiously identifying and countering evolving threats to the defense industrial base.

Analyses of certain materials and technology sectors for action to address sourcing and industrial capacity (sec. 806)

The committee recommends a provision that would require the Secretary of Defense to conduct a series of assessments of certain materials and technology sectors, such as microelectronics and pharmaceutical ingredients, to determine what action to take with respect to sourcing or investment to increase domestic industrial capacity and explore ways to entice critical technology industries to

move production to the United States for the purposes of national security. The committee notes that, in 2018, the Department of Defense published a study titled “Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States.” The study identified several risks to the industrial base, including foreign dependency. China, Japan, and Germany were all identified as sole suppliers for critical technologies used by the United States military. Additionally, the U.S.-China Economic and Security Review Commission’s 2019 annual report identified a “growing reliance” on products critical to the manufacturing of active pharmaceutical ingredients.

The committee notes that significant supply chain vulnerability has been demonstrated by the recent coronavirus pandemic. This represents a critical vulnerability, especially when some supply chains are under the direct control or influence of the Government of the People’s Republic of China or are potentially unreliable during an actual conflict. The committee remains concerned about overreliance on non-domestic sources of supply for certain technologies and products that are critical to the national defense, including microelectronics and pharmaceutical ingredients. The committee believes that the Department must increase resiliency by expanding our domestic industrial base as well as fostering industrial cooperation with trusted allies and partners, who may offer additional capability and capacity in certain areas. The committee notes that a variety of mechanisms to balance these objectives are available to the Department and enshrined in title 10, United States Code, to include the Berry amendment and the National Technology and Industrial Base, and elsewhere in section 55 of title 50, United States Code, pertaining to the Defense Production Act. The committee notes that, in some cases, these authorities have been used to support and maintain trusted and assured sources of critical goods from domestic or friendly nation sources and may be used beneficially to address other materials and goods. In establishing an assessment process for considering all available mechanisms, the committee intends to increase defense industrial base resiliency while also reducing espionage vulnerabilities and limiting the potential for foreign sabotage or disruption of U.S. access to supply.

The committee notes that the assessments required by this provision are intended neither to lead to the removal of covered items as identified in section 2533a(b) of title 10, United States Code, nor to remove the Department’s ability to make a determination of non-availability of domestic sources under section 2533a(c) of title 10, United States Code, to meet critical needs. The committee notes that the provision is intended to initiate analyses of items where such a determination has been made, to determine whether and what actions to take to develop additional domestic capacity, and to thereby increase supply chain security.

Microelectronics manufacturing strategy (sec. 807)

The committee recommends a provision that would require the Deputy Secretary of Defense to develop a Department of Defense-wide (DOD-wide) strategy by January 1, 2021, to manufacture state-of-the-art integrated circuits in the United States within a pe-

riod of 3–5 years that includes a plan to explore and evaluate options for re-establishing foundry services and the industrial capabilities associated with such services. The provision would require the Secretary of Defense to submit the strategy, together with any views and recommendations that the Secretary may have, to the President, the National Security Council, and the National Economic Council by January 15, 2021, followed by a briefing, not later than February 1, 2021, to the congressional defense committees. The committee expects the Deputy Secretary of Defense, in implementing this provision, to consult with the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense for Research and Engineering and to integrate the results of ongoing studies sponsored by those officials.

Section 224 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) required the Department of Defense to develop tiered standards for the security of supply chains for microelectronics and to procure products that comply with such standards. The committee intended this provision to stimulate government and industry action to reduce the United States' current near-total dependence on overseas foundries for the manufacture and assembly of state-of-the-art microelectronics.

Over the last few decades, Taiwan, South Korea, and the People's Republic of China have implemented large-scale national industrial policies to build microelectronics manufacturing facilities. In contrast, there are no longer any large-scale state-of-the-art microelectronics manufacturing foundries in the United States. There are facilities in the United States to manufacture advanced integrated circuits but they either do not offer manufacturing services for other companies' designs, they lack scale, or both.

The committee is aware that the DOD is developing technology that potentially could secure otherwise untrusted microelectronics components, but the committee is concerned that these technologies cannot protect against supply chain disruptions due to geopolitical shifts or military confrontation in a volatile region overseas. The committee is also aware that the Department is developing a strategy to enable the domestic production of state-of-the-art integrated circuits in low volumes to meet DOD needs. The committee is concerned that this approach will not scale to satisfy larger national security and economic requirements for an assured and trusted supply of state-of-the-art microelectronics. The committee believes that the U.S. Government needs to develop a comprehensive microelectronics strategy to foster a sustainable domestic electronics manufacturing capability that is globally and commercially competitive in both cost and performance.

The committee notes with concern that microelectronics supply chain problems are not limited to state-of-the-art devices. The production of printed circuit boards, servers, and other essential computing and networking equipment is also dominated by foreign suppliers in at-risk locations.

Additional requirements pertaining to printed circuit boards (sec. 808)

The committee recommends a provision that would require the Department of Defense to take steps to reduce and mitigate the

risks of reliance on certain sources of supply and manufacturing for printed circuit boards.

Statement of policy with respect to supply of strategic minerals and metals for Department of Defense purposes (sec. 809)

The committee recommends a provision that would state the policy of the United States regarding the supply of strategic minerals and metals for the purposes of the Department of Defense.

Report on strategic and critical minerals and metals (sec. 810)

The committee recommends a provision that would require the Secretary of Defense to submit a report on strategic and critical minerals and metals and vulnerabilities in the supply chains of such minerals and metals to the Committees on Armed Services of the Senate and the House of Representatives not later than June 30, 2021.

Stabilization of shipbuilding industrial base workforce (sec. 811)

The committee recommends a provision that would establish a shipbuilding industrial base working group.

Miscellaneous limitations on the procurement of goods other than United States goods (sec. 812)

The committee recommends a provision that would amend section 2534 of title 10, United States Code, related to miscellaneous limitations on the procurement of goods.

Use of domestically sourced star trackers in national security satellites (sec. 813)

The committee recommends a provision that would require, beginning October 1, 2021, any acquisition executive of the Department of Defense who approves a contract to require any star tracker system included in the design of such national security satellite to be domestically sourced, unless: (1) There was no available domestically sourced star tracker system to meet the national security satellite system's needs; (2) The cost of the available domestically sourced star tracker system was unreasonably priced based on market conditions; or (3) An urgent and compelling national security need exists.

According to a 2011 Department of Defense report, heavily subsidized foreign suppliers have invested significantly in developing state-of-the-art star tracking systems, effectively cornering the international market, including the U.S. government satellite market, for models with moderate accuracy. Recognizing the critical nature of these star tracking systems to the proper operation of U.S. Government satellites, the Department of Defense leveraged Title III of the Defense Production Act to invest over \$22 million in producing a competitively-bid, domestically sourced moderate accuracy star tracking system, which will be commercially available in 2021. Once in production, U.S.-made star trackers will be available to meet the range of needs of U.S. national security satellites.

The committee recognizes that star trackers have direct access to satellite attitude control systems, making their data integrity and processing capabilities integral to the satellite's safe navigation while also enabling accurate geolocation of terrestrial objects. The committee believes that the availability of domestically-sourced star trackers is vital to the safe and effective operation of U.S. national security satellites.

Modification to small purchase threshold exception to sourcing requirements for certain articles (sec. 814)

The committee recommends a provision that would modify the small purchases exception included in section 2533a of title 10, United States Code, also known as the Berry Amendment. The threshold for the small purchases exception in the Berry Amendment is based on the simplified acquisition threshold. The committee notes that section 805 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) modified the simplified acquisition threshold, increasing it from \$150,000 to \$250,000. This provision would return the threshold for the small purchases exception in the Berry Amendment to \$150,000.

Subtitle B—Acquisition Policy and Management

Report on acquisition risk assessment and mitigation as part of Adaptive Acquisition Framework implementation (sec. 831)

The committee recommends a provision that would require the Service Acquisition Executives to identify how they are assessing certain risks in acquisition programs under the new Adaptive Acquisition Framework.

The committee continues to appreciate the careful consideration paid by the Department of Defense to its Adaptive Acquisition Framework, which implements the acquisition reforms legislated over the last 5 years. The committee believes that the Service Acquisition Executives play important roles as portfolio managers and in executing programs delegated by the Under Secretary of Defense for Acquisition and Sustainment. The committee believes that the Department of Defense can no longer afford to use cost, schedule, and performance thresholds as simple proxies for risk when determining the path that an acquisition program travels through the Defense Acquisition System and in organizing how programs are managed and overseen. Exclusive attention to cost, schedule, and performance of major defense acquisition programs and other development programs obscures myriad other risks in programs, large and small, any one of which could be single points of failure for successful acquisitions. Given the role that the Service Acquisition Executives play in portfolio and program management, the committee believes their insights to be valuable in shaping overall acquisition policy.

The committee believes that another area of opportunity is the optimization of the Department's requirements generation processes, as established under Chairman of the Joint Chiefs of Staff Instruction 5123.01H, pertaining to the Joint Capabilities Integration and Development System, and the associated manual. The

committee notes that the Department's challenges are well-described in the MITRE Corporation's March 2020 report, titled "Modernizing DOD Requirements Enabling Speed, Agility, and Innovation," in particular the additional time it takes to produce validated requirements for an acquisition program. The committee notes the report's recommendations accord with the idea underpinning the Department's Adaptive Acquisition Framework. Notwithstanding the committee's direction elsewhere in this Act regarding the Department's incorporation of certain elements in finalizing its interim Software Acquisition Pathway, the committee directs the Secretary of Defense to consider the recommendations of the MITRE Corporation's report and to provide views to the congressional defense committees, along with rationales for why such recommendations could not be implemented if they are determined to be inapposite, not later than July 15, 2021.

Comptroller General report on implementation of software acquisition reforms (sec. 832)

The committee recommends a provision that would require the Comptroller General of the United States to assess the extent to which the Department of Defense has implemented various reforms related to the acquisition of software for weapon systems, business systems, and other activities that are part of the defense acquisition system. The committee notes that the Defense Science Board and Defense Innovation Board have produced substantial studies with significant recommendations for reform and that the committee has itself produced numerous provisions in prior National Defense Authorization Acts related to the reform of software acquisition. The committee further notes the Department's commitment to implementing these reforms.

The Comptroller General would brief the committee by March 15, 2021, and scope follow-on work accordingly.

The provision would also make certain modifications to the Comptroller General's annual assessment of selected acquisition programs and initiatives.

Subtitle C—Amendments to General Contracting Authorities, Procedures, and Limitations

Authority to acquire innovative commercial products and services using general solicitation competitive procedures (sec. 841)

The committee recommends a provision that would permanently authorize the Department of Defense to use what are commonly known as Commercial Solutions Openings to solicit and acquire innovative commercial items, technologies, or services.

The committee notes that this authority was originally established in section 879 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) and that it has been successfully used by the Department to establish agreements with small businesses in technology areas relevant to supporting the National Defense Strategy.

The committee directs the Secretary of Defense to collect and develop best practices for the use of this authority and to share those

practices with relevant acquisition organizations as well as to include it with appropriate educational and training activities of the Department's acquisition workforce.

Truth in Negotiations Act threshold for Department of Defense contracts (sec. 842)

The committee recommends a provision that would modify section 2306a of title 10, United States Code, by establishing a standard \$2.0 million threshold for application of the requirements of the Truth in Negotiations Act.

Revision of proof required when using an evaluation factor for defense contractors employing or subcontracting with members of the selected reserve of the reserve components of the Armed Forces (sec. 843)

The committee recommends a provision that would modify section 819 of the National Defense Authorization Act for Fiscal Year 2006 (Public Law 109-163) to remove a documentation requirement that is duplicative of solicitation requirements established under subpart 15.203 of the Federal Acquisition Regulation. The committee appreciates the Department of Defense's continued attention to regulatory reform efforts and notes that this change is based on a recommendation from the Department's Regulatory Reform Task Force.

Contract authority for advanced development of initial or additional prototype units (sec. 844)

The committee recommends a provision that would enhance an authority previously provided to the Department of Defense to streamline the process for moving technologies from science and technology into production by permitting activities to be performed under the same contract as the technology is matured. The committee notes that this proposal would help to implement the National Defense Strategy as a reform effort to enable greater performance and affordability, capability delivery at the speed of relevance, and rapid, iterative approaches from development to fielding.

Definition of business system deficiencies for contractor business systems (sec. 845)

The committee recommends a provision that would replace the term "significant deficiency" and its definition in section 893 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111-383) with the term "material weakness" and its definition, as established by Generally Accepted Auditing Standards. The committee notes that the Section 809 Panel's "Report of the Advisory Panel on Streamlining and Codifying Acquisition Regulations" recommended this terminology change to ensure consistency between the National Defense Authorization Act, the Defense Federal Acquisition Regulation Supplement, and Generally Accepted Auditing Standards.

In implementing this change in the Defense Federal Acquisition Regulation Supplement, the Department of Defense should ensure that the definitions for associated terms are also updated or incor-

porated as appropriate, including: “significant deficiency,” “other deficiency,” “material noncompliance,” “misstatement,” and “acceptable contractor business system.”

Repeal of pilot program on payment of costs for denied Government Accountability Office bid protests (sec. 846)

The committee recommends a provision that would repeal section 827 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), which required the Secretary of Defense to carry out a pilot program to determine the effectiveness of requiring contractors to reimburse the Department of Defense (DOD) for costs incurred in processing covered protests. The committee finds that the pilot program is unlikely to result in improvements to the bid protest process given the small number of bid protests captured by the pilot criteria and lack of cost data.

The committee continues to support efforts to improve the handling of bid protests. In support of such efforts, the committee directs the Secretary of Defense to undertake a study of the processes for agency-level bid protests. The study should evaluate the following for agency-level bid protests: prevalence, timeliness, outcomes, availability, and reliability of data on protest activities; consistency of protest processes among the military services; and any other challenges that affect the expediency of such protest processes. In doing so, the study should review existing law, the Federal Acquisition Regulation, and agency policies and procedures and solicit input from across the DOD and industry stakeholders. The study should also include recommendations to improve the expediency, timeliness, transparency, and consistency of agency-level bid protests.

Not later than September 1, 2021, the Secretary of Defense shall provide the congressional defense committees with a report detailing the results and recommendations of the study, together with such comments as the Secretary determines appropriate.

Subtitle D—Provisions Relating to Major Defense Acquisition Programs

Implementation of Modular Open Systems Architecture requirements (sec. 861)

The committee recommends a provision that would facilitate and establish requirements for the open systems architecture for Joint All-Domain Command and Control to ensure compatibility across new and legacy systems in the Department of Defense.

Sustainment reviews (sec. 862)

The committee recommends a provision that would require the military services to submit certain information, already required in section 2441 of title 10, United States Code, to the Congress regarding operating and support costs of the largest and most expensive acquisition programs. The information would also be required to be available on a public website maintained by the Director of the Cost Assessment and Program Evaluation. Additionally, the section would require the Comptroller General of the United States

to assess the steps the military departments are taking to quantify and address operating and support cost growth.

Recommendations for future direct selections (sec. 863)

The committee recommends a provision that would require each military department to nominate to the congressional defense committees at least one acquisition program for which it would be appropriate and advantageous to use large numbers of users to provide direct assessment of the outcome of a competitive contract award.

Disclosures for certain shipbuilding major defense acquisition program offers (sec. 864)

The committee recommends a provision that would require disclosures for certain shipbuilding major defense acquisition program offers.

The disclosures would require a description of the extent to which the offeror's planned contract performance will include foreign government subsidized performance, financing, financial guarantees, or tax concessions.

The committee's intent is to increase transparency in shipbuilding major defense acquisition programs.

Subtitle E—Small Business Matters

Prompt payment of contractors (sec. 871)

The committee recommends a provision that would amend contract financing law to strengthen the requirement that the Department of Defense establish a goal to pay small business contractors within 15 days of receipt of an invoice. The committee notes that the Defense Logistics Agency decision in November 2019 to move from 15-day payment terms to 30-day terms may have a detrimental effect on small businesses' ability to continue to do business for the U.S. Government, especially during economic downturns. The committee further notes that modern invoicing and payment systems should be able to support expedited review and payment of invoices and support Department efforts to continue to leverage existing commercial systems in support of those processes.

Extension of pilot program for streamlined awards for innovative technology programs (sec. 872)

The committee recommends a provision that would extend by 3 years the authorization of a pilot program to streamline contracting and auditing processes for certain innovative technology projects carried out by small businesses. Originally authorized in the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), this authority has the potential to accelerate the awards of Small Business Innovation Research contracts and other contracts to innovative non-traditional defense contractors by alleviating requirements for small businesses to submit certified cost and pricing data and requirements for certain types of audit and records examination.

Subtitle F—Provisions Related to Software-Driven Capabilities

Inclusion of software in government performance of acquisition functions (sec. 881)

The committee recommends a provision that would add software to the list of government performance of acquisition functions to ensure that each acquisition program has a software program lead position that is performed by a properly qualified member of the Armed Forces or a full-time employee of the Department of Defense. Additionally, the provision would remove the statutory reference to the categories of Major Automated Information System and Major Defense Acquisition Program so that software expertise is required for all acquisition programs, as needed.

As noted in the February 2018 Defense Science Board report titled “Design and Acquisition of Software for Defense Systems,” software is a crucial and growing part of weapon systems and the Department needs to be able to sustain software indefinitely. In the administration proposal on this provision, the Department noted that it “lacks modern software development expertise in its program offices or the broader functional acquisition workforce” and that the Department “needs to ensure software management and expertise is developed and established as core to major programs.” As part of implementing the Department’s high priority of improving software acquisition, the Department must ensure that properly qualified professionals occupy key leadership positions responsible for software.

Balancing security and innovation in software development and acquisition (sec. 882)

The committee recommends a provision that would require the Under Secretary of Defense for Acquisition and Sustainment to incorporate certain considerations while finalizing the interim software policy for a software acquisition pathway as part of the Department of Defense’s (DOD’s) new Adaptive Acquisition Framework.

The committee recognizes the growing importance of assuring the security of software and determining the provenance of code and the risks posed by reliance—whether known or inadvertent—on code produced by or within adversary nations.

The committee is also concerned about DOD’s non-compliance with section 875 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), which required the Department to implement an Office of Management and Budget pilot relating to open source software due to significant potential benefits to the Department, to include improved performance. The committee notes that the Department has cited security concerns in connection with openly publishing certain code. The committee further notes that there is no comprehensive Department-wide process for conducting security reviews of code or parts of code and that the National Security Agency, which should have similar security concerns to the Department as a whole, has such a process for the purpose of maximizing appropriate public release.

The committee encourages the Department to pursue the appropriate balance of innovation and security in developing, acquiring, and maintaining software.

The committee further directs the Under Secretary and the Department of Defense Chief Information Officer to develop a roadmap with milestones that will enable the Department to require and effectively manage the submission by contractors of a software bill of materials.

Finally, the committee reminds the Department that section 800 of the National Defense Authorization for Fiscal Year 2020 (Public Law 116–92) required that the Department’s software policy provide for delivery of capability to end-users no later than 1 year after funds are obligated and that other government-wide policy and best practices call for updates no less frequently than once every 6 months.

Comptroller General report on intellectual property acquisition and licensing (sec. 883)

The committee recommends a provision that would direct the Comptroller General of the United States to report on the implementation of the Department of Defense’s instruction for intellectual property acquisition and licensing. The committee notes that the Department established this instruction in response to section 2322 of title 10, United States Code, which required the Department to develop a policy for intellectual property acquisition and licensing and to create a cadre of intellectual property experts.

The report should assess the following: (1) Whether the Department is achieving the instruction’s core principles; (2) The extent to which key offices are fulfilling their responsibilities; (3) The Department’s progress in creating a cadre of intellectual property experts; (4) How the Department is assessing and demonstrating implementation; and (5) Changes to acquisition programs, among other things. The Comptroller General should submit the report to the congressional defense committees no later than October 1, 2021.

Subtitle G—Other Matters

Safeguarding defense-sensitive United States intellectual property, technology, and other data and information (sec. 891)

The committee recommends a provision that would require the Secretary of Defense to establish, enforce, and track actions being taken to protect defense-sensitive United States intellectual property, technology, and other data and information, including hardware and software, from acquisition by China. Additionally, the provision would require the Secretary to generate a list of critical national security technology and provide for mechanisms to restrict employees or former employees of the defense industrial base from working directly for companies wholly owned by, or under the direction of, the government of the People’s Republic of China.

The National Defense Strategy establishes that long-term strategic competition with near-peer adversaries is one of the two “principal priorities” of the Department of Defense. The committee

recognizes that the protection of defense-sensitive United States intellectual property, technology, and other data and information from acquisition by China or other potential adversaries is vital to the national security of the United States. It also recognizes that the Government of the People's Republic of China maintains, as a national priority, an unequalled global program of theft and other misappropriation of intellectual property and technology and unacceptable requirements for transfer of intellectual property, technology, and other data and information, with particular attention to items and matters of national security and economic importance.

Domestic comparative testing activities (sec. 892)

The committee recommends a provision that would modify section 2350a of title 10, United States Code, to allow for domestic comparative test. The committee believes that the Department of Defense's new Adaptive Acquisition Framework is a very important step toward ensuring additional avenues for new entrants to the defense industrial base. The committee emphasizes the Federal Acquisition Regulation preference for commercial solutions and believes that this is especially important in technical areas where commercial development outpaces the Department. The ability of companies with innovative commercial solutions to conduct comparative tests with one or more programs of record against program requirements is foundational to enabling the Department's benefiting from commercial innovation.

Accordingly, the committee directs the Under Secretary of Defense for Acquisition and Sustainment and the Under Secretary of Defense for Research and Engineering to jointly define the points along each of the acquisition pathways where market research should be refreshed and establish entry points for such testing.

Repeal of apprenticeship program (sec. 893)

The committee recommends a provision that would repeal section 2870 of title 10, United States Code, as added by section 865 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92), which requires the Secretary of Defense to revise the Defense Supplement to the Federal Acquisition Regulation to require that a system be used to monitor or record contractor past performance related to efforts to meet or exceed an apprenticeship employment goal of 20 percent.

Items of Special Interest

Army Combat Fitness Test equipment

The committee is aware that United States Army Forces Command (FORSCOM) trains, mobilizes, deploys, sustains, transforms, and reconstitutes assigned conventional forces and that United States Army Training and Doctrine Command (TRADOC) recruits, trains, and educates soldiers for all initial entry training. The Army Combat Fitness Test (ACFT) with its Holistic Health Fitness (H2F) approach is scheduled to replace the Army Physical Fitness Test in October 2020. The committee understands that there are domestic companies interested in supplying and sustaining this equipment. However, the committee is concerned that FORSCOM

has procured containerized gym equipment sourced from China and other non-domestic sources using a reverse auction contract vehicle without any technical evaluation ahead of ACFT implementation. The committee is most concerned that FORSCOM does not have a sustainment plan for these container gyms and will face increased operation and maintenance costs in maintaining lower quality equipment sustained in the field over time.

Accordingly, the committee directs the Secretary of the Army to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives by October 1, 2020, on: (1) The results of an assessment as to whether its reverse auction acquisitions were appropriate for ACFT gym equipment and whether it has the appropriate sustainment plan in place for its gym equipment; and (2) A plan to transfer procurement and sustainment of ACFT supporting gym equipment from FORSCOM to TRADOC.

Comptroller General review on the impact of small business Federal contracting programs

The committee directs the Comptroller General of the United States to conduct a review of Department of Defense contracts with certain small business concerns and assess the effect that Federal contract set asides have had on small business concerns in the defense industrial base. The committee notes that Federal contracting programs have been established to assist small business concerns with the intent of stimulating economic development and creating a level playing field. This has generally been accomplished by setting aside certain percentages of Federal contracts for different categories of small business concerns, including small business concerns owned and controlled by socially and economically disadvantaged individuals, as defined in section 8(d)(3)(C) of the Small Business Act (15 U.S.C. 637(d)(3)(C)), small business concerns owned and controlled by women, as defined in section 3 of such Act (15 U.S.C. 632), and qualified HUBZone small business concerns, as defined in section 31(b) of such Act (15 U.S.C. 657a(b)). However, beyond these percentages, the committee would like to understand how the Department measures the success of its efforts under these small business programs and, in turn, determines the health of this critical element of the defense industrial base.

Therefore, the Comptroller General review shall assess: (1) Whether the Department's efforts carried out under these Federal contracting programs have achieved their intended effect of stimulating economic development and creating a level playing field for small business concerns in the defense industrial base; (2) How the Department measures the short- and long-term effects of these contracting programs on small business concerns in the defense industrial base, (3) The Department's progress in implementing the small business plan required under section 851 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115-232); and (4) Other matters that the Comptroller General determines appropriate. The Comptroller General shall submit a report detailing the findings of the review to the congressional defense committees and congressional small business committees by August 31, 2021.

Contracting for non-traditional defense contractors

The committee recognizes that certain categories of non-traditional businesses face barriers to working with the Department of Defense. These businesses include, but are not limited to, veteran-owned, disabled-veteran-owned, and minority-owned businesses. The committee further recognizes that other categories of non-traditional businesses face obstacles to contracting with the Department, including entities that are owned entirely by employee stock ownership plans (ESOPs). The committee directs the Secretary of Defense to provide a briefing to the congressional defense committees by December 31, 2020, on the advantages of working with ESOPs and the barriers ESOPs face in contracting with the Department. For the purposes of this briefing, an ESOP shall mean an entity that is owned entirely by an employee stock ownership plan (as defined in section 4975(e)(7) of the Internal Revenue Code of 1986 (title 26 of United States Code)).

Development of domestic unmanned aircraft systems industry

The committee notes the prohibition on the operation and procurement of foreign-made unmanned aircraft systems (UASs) in section 848 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92). As such, the committee encourages the Department of Defense to take additional steps to promote the further development of the domestic UAS industry, including making it easier for small UAS providers to work with the Department by reducing burdensome requirements for participation in Department programs.

The committee also encourages the Department to use available rapid acquisition authorities to contract for proven commercial off-the-shelf technologies and recommends that the Department expand the use of capabilities from small, innovative, domestic UAS companies to provide the greatest opportunity to successfully meet performance objectives, program cost objectives, and schedules.

The committee directs the Secretary of Defense to brief the congressional defense committees no later than January 31, 2021, on the Department's plans to support domestic manufacturing of small unmanned aircraft systems, perhaps including use of the Defense Production Act or other mechanisms, to enhance the domestic production capacity.

Domestic procurement of military working dogs

The committee notes the critical role played by military working dogs in military operations around the world, and the committee is concerned by increased competition in procuring military working dogs. According to the Air Force, which serves as the Executive Agent for the Military Working Dog Program in Department of Defense Directive 5200.31E, nearly all military working dogs procured by the Department are whelped in Europe and trained domestically. Due to the finite number of breeders overseas, as well as rising market demand, the cost for the Air Force and other agencies to procure whelped military working dogs from Europe is skyrocketing. The Air Force recognizes that the United States does not have enough established breeders with the expertise, genetic qual-

ity, and potential capacity to meet increasing demands for military working dogs for the Department of Defense and other executive agencies. The committee supports initiatives of the Air Force to meet this challenge, including the forthcoming proposed Capabilities Based Assessment on the military working dog program that will include a review of procurement. This year-long assessment enables the Department to identify requirements necessary to execute the aforementioned program successfully and to breed military working dogs domestically in order to sustain a stable, secure supply and to minimize costs.

Additionally, the committee recognizes that the Department's Military Working Dog programs, carried out by the Air Force as executive agent, are in need of a dedicated line of accounting and therefore supports Department efforts to establish one. A dedicated line of accounting will more accurately capture the facility and resource requirements necessary to successfully and efficiently provide military working dogs to all the military services.

Domestic sources for corrosion control chemicals

The committee recognizes that the impact of corrosion on the Department of Defense (DOD) is nearly \$20.0 billion per year as it accounts for as much as 20 percent of maintenance costs and impacts military readiness. The committee notes that many of the current chemicals used to treat, mitigate, and control corrosion are produced in China and can be dangerous for workers and harmful to the environment. The committee believes that DOD should not be reliant on chemicals from China to maintain vital weapon systems and other military equipment. The committee understands that there are now bio-based solutions that are produced domestically that are safer, better performing, and more cost-effective than traditional solutions. The committee believes that the DOD should review whether these bio-based chemicals, which are already used in other domestic sections such as the oil and gas industry, could offer a better performing domestic corrosion control solution.

Accordingly, the committee directs the Assistant Secretary of Defense for Sustainment to review commercially-available, domestically-manufactured bio-based corrosion control and mitigation solutions used in other commercial sectors and to provide to the committee no later than November 1, 2020, a briefing that should include the Department's findings and potential military applications.

Improving information available to contracting officials regarding contractor workplace safety violations

The committee is concerned that companies with serious workplace safety violations continue to receive Department of Defense (DOD) contracts. The committee notes recent legislation directing attention to DOD contractor workplace safety, including establishing section 2509 of title 10, United States Code, to streamline and digitize processes for identifying and mitigating risks to the defense industrial base across the acquisition process. The committee notes that a February 2019 Government Accountability Office (GAO) report, titled "Defense Contracting: Enhanced Information Needed on Contractor Workplace Safety" (GAO-19-235), mandated

by the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) identified several challenges the DOD faces in addressing violations. The report found that, among 192 companies performing manufacturing or construction contracts for the DOD, 83 had previously been cited for health and safety violations and 52 of those had at least one “serious” violation, meaning that there was a “substantial probability that death or serious physical harm could result, and the company knew or would have known with the exercise of reasonable diligence.”

The GAO noted the absence of information on Occupational Safety and Health Administration (OSHA) violations to inform DOD decisions related to contract award and administration and recommended that the Assistant Secretary of Labor for OSHA address data limitations that prevent the DOD from reliably identifying contractors with violations. The GAO also recommended that the DOD make better use of the OSHA website and consider establishing a safety performance rating for DOD contracts in industries with high rates of occupational injuries. The DOD agreed with the recommendations, but it is unclear whether it has taken steps to implement them. Therefore, the committee directs the Secretary of Defense to provide to the Senate Armed Services Committee a briefing on the steps taken to implement the GAO recommendations by March 1, 2021.

Procurement Technical Assistance Program and COVID-19

The committee recognizes that, in order to address the economic damage caused by the COVID-19 pandemic, the Congress passed legislation that provided economic support to certain businesses.

The Procurement Technical Assistance Program supports the work of Procurement Technical Assistance Centers (PTACs) to provide support to businesses to pursue and perform contracts with the Department of Defense, other Federal, State, and local government entities, and with government prime contractors—often at no cost to the supported business.

The committee encourages the Secretary of Defense to identify opportunities for PTACs to provide their client businesses with relevant information related to recently created opportunities for economic support.

Report on battery supply chain security

The committee notes that the Department of Defense relies on reliable, durable, and high performance batteries for nearly all weapon systems and other military equipment such as backup, energy storage, and uninterrupted power supply. The committee notes that the United States is heavily reliant on China and foreign sources for mining and refining of lithium to create lithium ion batteries necessary for today’s modern weapon systems.

The committee also notes that the last primary lead smelter in the United States closed in 2013 and that, in order to produce new lead batteries needed for military and other systems, spent lead acid batteries must be recycled. The committee is concerned about the recent rise of unregulated, unreported, or mislabeled exports of spent lead acid batteries, as U.S.-based secondary lead recyclers

are encountering a shortage of batteries to recycle for use in military and civilian supply chains.

Accordingly, the committee directs the Under Secretary of Defense for Acquisition and Sustainment, in coordination with the Deputy Assistant Secretary of Defense for Industrial Policy, to deliver a report to the congressional defense committees no later than February 1, 2021, on the threats to the supply chain and reliance on foreign sources for lithium and the impact of unregulated, unreported, or mislabeled export of spent lead acid batteries affecting the domestic lead supply chain. In completing this report, the Department should consult with any other Federal agencies it deems appropriate.

Report on satellite power sourcing

The committee is aware that high-efficiency solar cells and panels are essential for powering civil and national security satellites. U.S. technological leadership and secure and reliable sources of solar cells and panels are critical aspects of wartime and peacetime satellite operations. A 2019 report by Air Force Research Laboratory and the Defense Innovation Unit found that China has a national strategy to become a global space power and aims to “penetrate foreign space companies to provide access to space-enabled global infrastructure . . . and use[s] predatory pricing and unfair trade practices to dominate key market segments.”

One of the recommendations in the report is for the United States to “include reforms in government contracting and direct government investment as needed to compensate for U.S. adversaries’ anti-competitive behavior, and establish the long-term technological and logistical space infrastructure needed to ensure long-term, U.S. dominance in space.”

The committee understands that the U.S. domestic supply of satellite solar power products is limited and believes that a whole-of-government approach is needed to enable a stable domestic industrial base for solar cell and panel manufacturing. The committee also believes that foreign competition within the solar cell industry is often subsidized in order to undercut U.S. domestic suppliers. The committee therefore directs the Secretary of Defense, in consultation with other agencies as required, to submit a report to the congressional defense and intelligence committees by December 31, 2020, outlining the vulnerabilities and risks associated with foreign sources of satellite solar power technology and provide a set of recommended investments, policy changes, or other steps deemed appropriate to support this segment of the national security space industrial base.

Risks associated with contractor ownership

The committee has a longstanding concern regarding the risks arising from insufficient transparency of contractor ownership structures, as reflected in section 845 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) on modernization of acquisition processes to ensure integrity of the defense industrial base and section 847 of the same law on mitigating risks related to foreign ownership, control, or influence of Department of Defense (DOD) contractors or subcontractors.

The committee notes that a November 2019 report by the Government Accountability Office (GAO), titled “Defense Procurement: Ongoing DOD Fraud Risk Assessment Efforts Should Include Contractor Ownership” (GAO-20-106), found that the DOD faces “financial and nonfinancial fraud and national security risks posed by contractors with opaque ownership.” The report noted that contractors can use opaque ownership structures for illicit financial gain through a variety of methods, including price inflation, fraudulent subcontracting, and subverting competitive processes. The DOD concurred with GAO’s recommendation that the DOD Comptroller “should include an assessment of risks related to contractor ownership as part of its ongoing efforts to plan and conduct a department-wide fraud risk assessment.” However, it is unclear what steps have been taken to implement it.

Therefore, the committee directs the Secretary of Defense to brief the committee, not later than October 30, 2020, on the status of implementing this recommendation. The briefing should also identify resources that the DOD is dedicating to mitigating the risks associated with contractor ownership, identify the entity or entities within the Department dedicated to addressing contractor ownership risks, evaluate whether existing control activities are sufficient to respond to these risks, and recommend any changes to law that would support efforts to identify and mitigate these risks.

Secure sources of supply for rare earth elements

The committee is aware of and supports the Department’s focus on identifying and acquiring secure sources of supply for rare earth elements (REE). The committee recognizes that the extraction of REE is becoming more prevalent across the United States and that there is further research being conducted to determine innovative techniques to improve such extraction of REE. For example, substantial progress has been made in the extraction of REE from coal acid mine drainage waste. The Department is encouraged to team with other agencies to take this proven extraction method from the laboratory to a practical, viable, steady-state process that produces REE for the Department’s warfighting needs. With the increase in extraction, the committee understands the importance for the Department of determining how to best store extracted REE and to maintain secure sources of supply. The committee strongly encourages the Department to continue to stockpile extracted REE in their appropriate forms, as it is critical for the Department to maintain adequate amounts of REE to source warfighter equipment and munitions in support of the National Defense Strategy.

The committee also strongly supports the five Presidential Determinations authorizing the use of Defense Production Act (DPA) Title III authorities to strengthen the domestic industrial base and supply chain for REE. Two Funding Opportunity Announcements (FOAs) focused on magnets and process capabilities have been issued. The committee urges the Department to also use DPA Title III authorities to invest in the production of nontraditional sources of REE feedstock, including the extraction of REE from coal ash. Coal ash deposits containing economically significant fractions of REE have been stockpiled in the U.S. for much of the last century from coal-burning power plants. They represent a supplemental re-

source to conventional ore-mining. Both industry and Federal Government investments have matured processes to extract REE from coal ash, and the committee encourages investment in a production scale plant to help address the national defense market for REE.

Accordingly, the Secretary of Defense shall brief the committee no later than February 1, 2021, and assess the viability and necessity of using or developing new technologies to maintain secure sources of supply of REE. The briefing shall cover or include the following elements: (1) Traditional extraction of REE; (2) Nontraditional corrosive extraction and refining of such elements from ore and coal; (3) Nontraditional noncorrosive extraction and refining of such elements from ore and coal; (4) An assessment of the economic importance of REE, including Indium, Gallium, Germanium, and Tin; (5) An assessment of the domestic supply chain and availability of rare earth metals, including Indium, Gallium, Germanium, and Tin; and (6) An evaluation of the need to stockpile REE, including Indium, Gallium, Germanium, and Tin. The briefing shall be provided at the appropriate level of classification.

Shipbuilding industrial base

The committee notes that the “Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019” stated, “An efficient and supported industrial base is a fundamental requirement to achieving and sustaining the Navy’s baseline acquisition profiles. Our shipbuilding industrial base and supporting vendor base constitute a national security imperative that is unique and that must be properly managed and protected. Over the previous five decades 14 defense-related new construction shipyards have closed, 3 have left the defense industry, and one new shipyard has opened. Today, the Navy contracts primarily with 7 private new-construction shipyards to build our future Battle Force, representing significantly less capacity than our principal competitors. If faced with the demands of a major conflict it may be possible to engage other industries to assist, but the cost of such assistance is currently unquantifiable.”

Consequently, the committee urges the Secretary of the Navy to properly manage and protect the domestic Navy shipbuilding industrial base and supporting vendor base.

Sustainment of munitions

Joint Munitions Command (JMC) provides the Army and the Joint Force with ready, reliable, and lethal munitions to sustain global operations. Since 2002, JMC and the Army have taken significant steps to address critical readiness concerns identified in the munitions readiness report; however, additional steps should be taken to ensure that life cycle needs for ammunition are met. In addition, the committee is aware of the interagency report, “Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States,” published in response to Executive Order 13806. The report highlights myriad challenges, especially for the organic industrial base, for securing the supply chain for a wide range of systems, including munitions.

As such, the committee directs the Secretary of the Army to provide a briefing, not later than December 31, 2020, to the committee on the feasibility and suitability of establishing a pilot program at JMC for the sustainment of munitions as part of the overall life-cycle management of munitions programs. The briefing should address the recommendations included in the interagency report to help “diversify away from complete dependency on source of supply” as well as “modernize the organic industrial base.” The briefing should also include cost savings and operational efficiencies that could be gained by centralizing the sustainment of munitions. Finally, the briefing should address whether an automated process would help determine critical required levels and the required sources needed to fulfill them.

TITLE IX—DEPARTMENT OF DEFENSE ORGANIZATION AND MANAGEMENT

Subtitle A—Office of the Secretary of Defense and Related Matters

Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict and related matters (sec. 901)

The committee recommends a provision that would clarify the responsibilities of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD SOLIC) for providing “service secretary-like” civilian oversight and advocacy for special operations forces (SOF). Specifically, the provision would modify section 138(b)(2) of title 10, United States Code, to clarify the administrative chain of command for the ASD SOLIC in exercising authority, direction, and control with respect to the special operations-peculiar administration and support of U.S. Special Operations Command (SOCOM). The provision would also codify the Secretariat for Special Operations, which currently exists within the Office of the ASD SOLIC, in section 139 of title 10, United States Code. Lastly, the provision would require the Secretary of Defense, not later than 180 days after the date of the enactment of this Act, to publish a Department of Defense directive establishing policy and procedures related to the exercise of authority, direction, and control of all matters relating to the organization, training, and equipping of SOF by the ASD SOLIC as specified by section 138(b)(2)(A) of title 10, United States Code.

The committee remains concerned with the lack of progress on implementation of section 922 of the National Defense Authorization Act (NDAA) for Fiscal Year 2017 (Public Law 114–328), which enhanced the role of ASD SOLIC as the “service secretary-like” individual responsible for providing civilian oversight and advocacy of SOF. The committee notes that a May 2019 report published by the Government Accountability Office (GAO) found that the majority of the remaining tasks identified by the Department as necessary for implementing section 922 do not have clear timeframes for completion. Furthermore, the GAO found that “outdated” departmental guidance is hindering the ASD SOLIC’s ability to serve as the “service secretary-like” civilian responsible for the oversight and advocacy of SOF, as required by section 138(b)(2)(A) of title 10, United States Code. Further, the committee is concerned by the lack of progress in staffing the Secretariat for Special Operations that was created to facilitate the ASD SOLIC’s “service secretary-like” responsibilities despite efforts by the committee in recent NDAA’s to provide additional flexibility to the Department to bring on additional personnel to support the activities of the Secretariat.

The committee strongly believes that an empowered and appropriately resourced ASD SOLIC is critical to the effective civilian oversight and advocacy of SOF and to ensuring that this force is appropriately aligned with the objectives of the National Defense Strategy.

Redesignation and codification in law of Office of Economic Adjustment (sec. 902)

The committee recommends a provision that would codify the Office of Economic Adjustment and redesignate it as the “Office of Local Defense Community Cooperation,” falling under the Office of the Under Secretary of Defense for Acquisition and Sustainment.

Modernization of process used by the Department of Defense to identify, task, and manage Congressional reporting requirements (sec. 903)

The committee recommends a provision that would require the Assistant Secretary of Defense for Legislative Affairs to conduct business process reengineering analysis and assess commercially available analytics tools, technologies, and services in order to modernize the process by which the Department of Defense identifies reporting requirements from the text of the National Defense Authorization Act, tasks the reports within the Department, and manages their completion and delivery to Congress. The analysis shall be conducted with the assistance of the Chief Data Officer of the Department of Defense and the Director, Defense Digital Service. A briefing to the congressional defense committees, due November 15, 2020, shall include key takeaways of the business process analysis and concrete steps taken to optimize the process, as well as any necessary congressional support.

The committee believes that the current process for tasking, assigning, generating, and distributing congressional required reports does not serve anyone involved, as most of the process involves manual data entry on both the departmental and congressional sides. This generates unnecessary workload for both sides and significantly impedes Congressional oversight. Section 874 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232) required the Department of Defense to diagnose the obstacles to achieving a modernized process for tracking congressionally required reports. The Committees on Armed Services of the Senate and the House of Representatives have worked with the Department to standardize all data elements involved for the rapid transmission of data and define the necessary functionality of a modernized process. The committee expects the Department to aggressively pursue the next step of this modernization effort, which is replacing its software systems and collaborating with the committee to enable its access to such systems in a timely fashion.

Inclusion of Vice Chief of the National Guard Bureau as an advisor to the Joint Requirements Oversight Council (sec. 904)

The committee recommends a provision that would include the Vice Chief of the National Guard Bureau as an advisor to the Joint Requirements Oversight Council under certain circumstances.

Assignment of Responsibility for the Arctic region within the Office of the Secretary of Defense (sec. 905)

The committee recommends a provision that would assign responsibility for the Arctic region to the Deputy Assistant Secretary of Defense for the Western Hemisphere or any other Deputy Assistant Secretary of Defense the Secretary of Defense considers appropriate. The committee recommends that the Secretary of Defense consider adding 'Arctic Region' to the title of the Deputy Assistant Secretary of Defense designated to cover Arctic issues as a way of highlighting the importance of the portfolio.

Subtitle B—Department of Defense Management Reform

Termination of position of Chief Management Officer of the Department of Defense (sec. 911)

The committee recommends a provision that would disestablish the position of the Chief Management Officer of the Department of Defense on a date to be determined by the Secretary of Defense but in no case later than September 30, 2022.

Report on assignment of responsibilities, duties, and authorities of Chief Management Officer to other officers or employees of the Department of Defense (sec. 912)

The committee recommends a provision that would require that, not later than 45 days before the date on which the Secretary of Defense determines that the position of the Chief Management Officer (CMO) of the Department of Defense (DOD) should be disestablished, the Secretary submit to the Committees on Armed Services of the Senate and the House of Representatives a report setting forth: (1) The position and title of each officer or employee of the DOD in whom the Secretary would vest responsibility for performing the various duties of the CMO on the disestablishment of that position; (2) Any duties of the CMO that the Secretary would recommend be discontinued or modified; (3) A description of the process and timeline for transferring the responsibilities and resources of the CMO to the appropriate persons and organizations; (4) The Secretary's recommendations for additional authorities and resources that may be required to ensure effective exercise by the appropriate officers or employees of the responsibilities to be transferred to them from the CMO; and (5) Such other matters as the Secretary deems appropriate.

The report would be required to reflect that the Secretary of Defense: (1) Vested in the Deputy Secretary of Defense responsibility to perform such duties of the CMO as are properly assigned to the Deputy in the role of Chief Operating Officer of the Department under provisions of section 1123 of title 31, United States Code; and (2) Assigned to the Performance Improvement Officer of the

Department of Defense the functions enumerated in section 1124 of title 31, United States Code.

Performance Improvement Officer of the Department of Defense (sec. 913)

The committee recommends a provision that would codify in section 142a of title 10, United States Code, the position of Performance Improvement Officer (PIO) of the Department of Defense (DOD), to be appointed consistent with and perform the duties and functions enumerated in section 1124 of title 31, United States Code, together with such other duties and responsibilities prescribed by the Secretary or Deputy Secretary of Defense.

The DOD PIO would report directly to the Deputy Secretary of Defense in the Deputy's role as the Chief Operating Officer of the Department of Defense, as set forth in section 1123 of title 31. The PIO would be authorized to communicate views on matters under the PIO's purview directly to the Deputy Secretary, without obtaining the approval or concurrence of any other officer or employee of the Department.

Assignment of certain responsibilities and duties to particular officers of the Department of Defense (sec. 914)

The committee recommends a provision that would affirm the designation of the Deputy Secretary of Defense as the Chief Operating Officer of the Department of Defense in accordance with section 1123 of title 31, United States Code, and the Deputy's responsibility for supervision of the Performance Improvement Officer of the Department. Further, consistent with the disestablishment of the position of the Chief Management Officer of the Department of Defense, the provision would reassign certain responsibilities and duties to particular officers of the Department, including: (1) To the Deputy Secretary of Defense or such other officer or official of the Department as the Secretary of Defense or Deputy may designate, the authority to designate a priority defense business system, consistent with section 2222 of title 10, United States Code; (2) To the Secretary of Defense, the Deputy Secretary of Defense, or an officer or official designated by either, the responsibility to conduct periodic reviews of the efficiency and effectiveness of each Defense Agency and Department of Defense Field Activity, as set forth in section 192 of title 10, United States Code; (3) To the Under Secretary of Defense (Comptroller), together with any such officers and employees of the Department of Defense as the Secretary or Deputy Secretary of Defense may designate, the maintenance of the "Financial Improvement and Audit Remediation Plan" in accordance with section 240b of title 10, United States Code; and (4) To the Performance Improvement Officer of the Department of Defense, designation as a member of the Defense Business Council and access authorization to all common enterprise data of the Department of Defense as set forth in section 2222 of title 10, United States Code.

Assignment of responsibilities and duties of Chief Management Officer to officers or employees of the Department of Defense to be designated (sec. 915)

The committee recommends a provision that, consistent with the disestablishment of the position of the Chief Management Officer of the Department of Defense, would reassign certain duties and responsibilities established in law to those officers or employees of the Department so designated by the Secretary or Deputy Secretary of Defense.

Definition of enterprise business operations for title 10, United States Code (sec. 916)

The committee recommends a provision that would codify in section 101 of title 10, United States Code, the definition of the term “enterprise business operations.”

Annual report on enterprise business operations of the Department of Defense (sec. 917)

The committee recommends a provision that would require the Secretary of Defense to submit to the Congress an annual report on the enterprise business operations of the Department of Defense. The report would include: a review of the proposed budget for the enterprise business operations of each of the Defense Agencies and Department of Defense Field Activities for the fiscal year beginning in the year in which the report is submitted; the identification of each such proposed budget that does not achieve required levels of efficiency and effectiveness for enterprise business operations; and a discussion of the actions proposed to address any such deficiency.

Conforming amendments (sec. 918)

The committee recommends a provision that would provide conforming amendments to title 10, United States Code, to reflect the disestablishment of the position of Chief Management Officer of the Department of Defense and the establishment of the position of Performance Improvement Officer of the Department of Defense.

Subtitle C—Space Force Matters

Part I—Amendments to Integrate the Space Force Into Law

Clarification of Space Force and Chief of Space Operations authorities (sec. 931)

The committee recommends a provision that would provide technical and conforming amendments to clarify in existing law the authorities of the United States Space Force and the Chief of Space Operations.

Amendments to Department of the Air Force provisions in title 10, United States Code (sec. 932)

The committee recommends a provision that would provide technical and conforming amendments to incorporate the United States

Space Force in Department of the Air Force provisions in title 10, United States Code.

Amendments to other provisions of title 10, United States Code (sec. 933)

The committee recommends a provision that would provide technical and conforming amendments to incorporate the United States Space Force in certain provisions of title 10, United States Code.

Amendments to provisions of law relating to pay and allowances (sec. 934)

The committee recommends a provision that would provide technical and conforming amendments to incorporate the United States Space Force in certain provisions of law pertaining to military pay and allowances.

Amendments relating to provisions of law on veterans' benefits (sec. 935)

The committee recommends a provision that would provide technical and conforming amendments to incorporate the United States Space Force in certain provisions of law relating to veterans' benefits.

Amendments to other provisions of the United States Code (sec. 936)

The committee recommends a provision that would provide technical and conforming amendments to incorporate the United States Space Force in certain other provisions of the United States Code.

Applicability to other provisions of law (sec. 937)

The committee recommends a provision that would define the authority of the Secretary of Defense and the Secretary of the Air Force with regard to members of the United States Space Force and the benefits for which members of the United States Space Force would be eligible with regard to any provision of law not addressed by the technical and conforming amendments enacted in this Act.

Part II—Other Matters

Matters relating to reserve components for the Space Force (sec. 941)

The committee recommends a provision that would explicitly authorize a reserve component of the United States Space Force (USSF) but delay the establishment of a Space National Guard until the completion of the Assistant Secretary of the Air Force for Manpower and Reserve Affairs-led reserve component study and until the Secretary of Defense certifies that a Space National Guard organization would effectively execute its assigned missions, which would also be described in that certification.

Additionally, the committee is aware that there are current Air National Guard units with space missions. These units play important roles in space operations. The committee directs the Air Na-

tional Guard to assign these units as USSF-gained units upon mobilization until such time as there is a Space National Guard.

Transfers of military and civilian personnel to the Space Force (sec. 942)

The committee recommends a provision that would prohibit the involuntary transfer of military or civilian personnel into the United States Space Force (USSF). The committee is fully supportive of the force structure and mission requirements of the United States Space Force but remains concerned that the involuntary transfer of military or civilian personnel into the USSF is counterproductive to its successful deployment.

Limitation on transfer of military installations to the jurisdiction of the Space Force (sec. 943)

The committee recommends a provision that would prohibit the transfer of a military installation to the responsibility or command of the U.S. Space Force until the Secretary of the Air Force conducts a business case analysis of the cost and efficacy of such transfer and briefs the congressional defense committees on the outcome of such analysis. Under the provision, the Secretary would be required to brief the congressional defense committees on the outcome of any such analysis within 15 days of its conclusion.

Subtitle D—Organization and Management of Other Department of Defense Offices and Elements

Annual report on establishment of field operating agencies (sec. 951)

The committee recommends a provision that would require the Secretary of Defense to submit a report to the congressional defense committees, not later than January 31 of each year, identifying any field operating agency established by the Department of Defense or a component thereof during the preceding calendar year. The report would list: (1) The name of such field operating agency; (2) The agency's location; (3) The title and grade of the head of the agency; (4) The chain of command, supervision, or authority by which the agency head reports to the Office of the Secretary of Defense or the military department concerned; (5) The agency's mission; (6) The number of personnel authorized and assigned to the agency; (7) The purpose underlying the agency's establishment; and (8) Any cost savings or other efficiencies expected to accrue to the Department in connection with the establishment and operation of the agency.

The committee intends this provision to substitute for a long-recurring provision of defense appropriations acts, last enacted in section 8041 of the Department of Defense Appropriations Act for Fiscal Year 2020 (Public Law 116-93).

TITLE X—GENERAL PROVISIONS

Subtitle A—Financial Matters

General transfer authority (sec. 1001)

The committee recommends a provision that would allow the Secretary of Defense to transfer up to \$4.0 billion of fiscal year 2021 funds authorized in division A of this Act to unforeseen higher priority needs in accordance with normal reprogramming procedures. Transfers of funds between military personnel authorizations would not be counted toward the dollar limitation in this provision.

Application of Financial Improvement and Audit Remediation Plan to fiscal years following fiscal year 2020 (sec. 1002)

The committee recommends a provision that would require that the Department of Defense Financial Improvement and Audit Remediation Plan ensure that an annual audit of the Department's financial statements for each fiscal year after fiscal year 2020 occurs by not later than March 31 following that fiscal year.

Subtitle B—Counterdrug Activities

Codification of authority for joint task forces of the Department of Defense to support law enforcement agencies conducting counterterrorism or counter-transnational organized crime activities (sec. 1011)

The committee recommends a provision that would establish a new section 285 in title 10, United States Code, to codify section 1022 of the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108–136), as most recently amended by section 1022 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), which authorizes the expenditure of funds from the drug interdiction and counter-drug activities account to enable joint task forces that support law enforcement agencies conducting counter-drug activities to also provide support to law enforcement agencies conducting counterterrorism or counter-transnational organized crime activities. The provision would also eliminate the geographic limitations on the use of the authority to better reflect the global nature of the threat.

Subtitle C—Naval Vessels and Shipyards

Modification of authority to purchase used vessels with funds in the National Defense Sealift Fund (sec. 1021)

The committee recommends a provision that would amend section 2218 of title 10, United States Code, to permit the Secretary of Defense to purchase 7 used, foreign-built sealift ships without

the accompanying requirement to procure 10 new sealift vessels from U.S. shipyards.

Waiver during war or threat to national security of restrictions on overhaul, repair, or maintenance of vessels in foreign shipyards (sec. 1022)

The committee recommends a provision that would amend section 8680 of title 10, United States Code, to allow the Secretary of the Navy to waive restrictions on the overhaul, repair, or maintenance of vessels in foreign shipyards during a time of war or for the duration of a period of a threat to national security (as determined by the Secretary of Defense).

Modification of waiver authority on prohibition on use of funds for retirement of certain legacy maritime mine countermeasure platforms (sec. 1023)

The committee recommends a provision that would modify the waiver authority germane to the prohibition on the use of funds for retirement of certain legacy maritime mine countermeasure platforms contained in section 1046 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) to include concurrence by the Director of Operational Test and Evaluation.

Extension of authority for reimbursement of expenses for certain Navy mess operations afloat (sec. 1024)

The committee recommends a provision that would further amend section 1014(b) of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 (Public Law 110–417), as most recently amended by section 1023(a) of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), by striking September 30, 2020, and inserting September 30, 2025, thereby extending the Secretary of Defense’s authority to fund the cost of meals on United States naval and naval auxiliary vessels for non-military personnel.

Sense of Congress on actions necessary to achieve a 355-ship Navy (sec. 1025)

The committee recommends a provision that would express the sense of Congress on actions necessary to implement the national policy of the United States to have available, as soon as practicable, not fewer than 355 battle force ships.

Subtitle D—Counterterrorism

Extension of prohibition on use of funds for transfer or release of individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to the United States (sec. 1031)

The committee recommends a provision that would extend through December 31, 2021, the prohibition on the use of funds provided to the Department of Defense to transfer or release individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to the United States.

Extension of prohibition on use of funds to close or relinquish control of United States Naval Station, Guantanamo Bay, Cuba (sec. 1032)

The committee recommends a provision that would extend through the end of fiscal year 2021, the prohibition on the use of funds provided to the Department of Defense: (1) To close or abandon United States Naval Station, Guantanamo; (2) To relinquish control of Guantanamo Bay to the Republic of Cuba; or (3) To implement a material modification to the Treaty between the United States of America and Cuba signed at Washington, D.C., on May 29, 1934, which modification would constructively close United States Naval Station, Guantanamo Bay.

Extension of prohibition on use of funds for transfer or release of individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to certain countries (sec. 1033)

The committee recommends a provision that would extend through December 31, 2021, the prohibition on the use of funds provided to the Department of Defense to transfer or release individuals detained at United States Naval Station, Guantanamo Bay, Cuba, to Libya, Somalia, Syria, and Yemen.

Extension of prohibition on use of funds to construct or modify facilities in the United States to house detainees transferred from United States Naval Station, Guantanamo Bay, Cuba (sec. 1034)

The committee recommends a provision that would extend until December 31, 2021, the prohibition on the use of funds provided to the Department of Defense to construct or modify facilities in the United States to house detainees transferred from United States Naval Station, Guantanamo Bay, Cuba.

Subtitle E—Miscellaneous Authorities and Limitations

Inclusion of disaster-related emergency preparedness activities among law enforcement activities authorities for sale or donation of excess personal property of the Department of Defense (sec. 1041)

The committee recommends a provision that would amend section 2576a of title 10, United States Code, to permit the transfer of excess property, to include high-water vehicles, for use in disaster-related emergency preparedness activities. High-water vehicles include the Family of Medium Tactical Vehicles, Light Medium Tactical Vehicles, Low Signature Armored Cab vehicles, Mine-Resistant Ambush Protected tactical vehicles, M939 series trucks, M809 series trucks, M35 series trucks, Medium Tactical Vehicle Replacement vehicles, the Heavy Expanded Mobility Tactical Truck, Palletized Load System trucks, Logistics Vehicle Systems, and any vehicle requested for high water response for disaster-related emergency preparedness.

Expenditure of funds for Department of Defense clandestine activities that support operational preparation of the environment (sec. 1042)

The committee recommends a provision that would authorize the Secretary of Defense to expend up to \$15.0 million in any fiscal year for clandestine activities for any purpose the Secretary determines to be proper for preparation of the environment for operations of a confidential nature. The committee notes that the Department of Defense previously utilized section 127 of title 10, United States Code, otherwise known as “emergency and extraordinary expenses” (EEE) for clandestine operational preparation of the environment activities. However, the committee has previously expressed concerns with the Department’s use of the EEE authority for non-emergent and recurring expenses. Therefore, the committee believes that this authority will allow for the continuation of clandestine operational preparation of the environment activities while enhancing congressional oversight.

Clarification of authority of military commissions under chapter 47A of title 10, United States Code, to punish contempt (sec. 1043)

The committee recommends a provision that would amend subchapter IV of chapter 47A of title 10, United States Code, to permit a judge of the United States Court of Military Commission Review or a military judge detailed to a military commission to punish contempt. The provision would also provide that the punishment for contempt may not exceed confinement for 30 days, a fine of \$1,000, or both and would establish the conditions under which punishment for contempt is reviewable.

The committee perceives the availability of the contempt power as essential to the orderly progression of military commission proceedings and notes that vesting contempt power in a military judge detailed to a military commission would align with the authority vested in both a military judge presiding over a court-martial and in a civilian judge presiding in a court established pursuant to Article III of the U.S. Constitution. The committee expects that a military judge detailed to a military commission would exercise contempt power in accord with the judicial tenets of fairness and impartiality.

Prohibition on actions to infringe upon First Amendment rights of peaceable assembly and petition for redress of grievances (sec. 1044)

The committee recommends a provision that would prohibit the use of amounts authorized to be appropriated by this Act for a program, project, or activity, or for the use of personnel, to conduct actions against United States citizens that infringe on their rights under the First Amendment to the Constitution peaceably to assemble or to petition the government for a redress of grievances.

Arctic planning, research, and development (sec. 1045)

The committee recommends a provision that would require the Secretary of Defense and the Chairman of the Joint Chiefs of Staff to begin planning and implementing changes that may be nec-

essary for requirements, training, equipment, doctrine, and capability development of the Armed Forces should an expanded role of the Armed Forces in the Arctic be determined to be in the national security interests of the United States.

Consideration of security risks in certain telecommunications architecture for future overseas basing decisions of the Department of Defense (sec. 1046)

The committee recommends a provision that would require the Secretary of Defense to take security risks posed by at-risk vendors such as Huawei and ZTE into account when making overseas stationing decisions.

Foreign military training programs (sec. 1047)

The committee recommends a provision that would require the Secretary of Defense to establish specified vetting procedures and monitoring requirements for certain military training on Department of Defense installations and facilities within the United States.

Reporting of adverse events relating to consumer products on military installations (sec. 1048)

The committee recommends a provision that would require the Secretary of Defense to ensure that any adverse event that occurs on a military installation relating to consumer products is reported on saferproducts.gov.

Inclusion of United States Naval Sea Cadet Corps among youth and charitable organizations authorized to receive assistance from the National Guard (sec. 1049)

The committee recommends a provision that would amend section 508 of title 32, United States Code, to add the United States Navy Sea Cadet Corps to the list of organizations authorized to receive assistance from the National Guard.

Department of Defense policy for the regulation of dangerous dogs (sec. 1050)

The committee recommends a provision that would require the Veterinary Service Activity of the Department of Defense to establish a standardized policy applicable across all military communities for the regulation of dangerous dogs within 90 days of the date of the enactment of this Act.

Sense of Congress on basing of KC-46A aircraft outside the contiguous United States (sec. 1051)

The committee recommends a provision that would articulate the sense of Congress on what the Secretary of the Air Force should consider during the strategic basing process for the KC-46A aircraft outside the continental United States.

Subtitle F—Studies and Reports

Report on potential improvements to certain military educational institutions of the Department of Defense (sec. 1061)

The committee recommends a provision that would require the Secretary of Defense to submit a report to the Committees on Armed Services of the Senate and the House of Representatives no later than December 1, 2021, setting forth the results of a review and assessment of potential improvements to certain educational institutions of the Department of Defense. The review would be conducted by an outside organization with expertise in analyzing matters in connection with higher education.

Reports on status and modernization of the North Warning System (sec. 1062)

The committee recommends a provision that would require the Secretary of Defense to submit to the congressional defense committees two reports: one on the current status of the North Warning System and another containing a plan for modernizing the capabilities provided by that system, including cost, schedule, and technological advancements required.

Studies on the force structure for Marine Corps aviation (sec. 1063)

The committee recommends a provision that would require the Secretary of Defense to commission three studies on the future of the U.S. Marine Corps aviation enterprise.

The committee commends the Marine Corps on its efforts to organize, train, and equip the force to better meet the needs outlined in the National Defense Strategy, in particular, the need for forward-postured, combat-credible forces to serve as the “contact” and “blunt” layers in both competition and conflict, particularly in the Indo-Pacific theater. While the committee supports the goals of the Marine Corps in a time of sustained world-wide deployments, it remains concerned about the planned aviation divestment. The committee requires more analysis to determine if reducing the number of F-35B squadrons contradicts the significant fifth-generation fighter capability requirements of the future force. Furthermore, the committee is concerned that reducing medium and heavy lift helicopter squadrons may not meet operational capacity requirements given the focus of Force Design 2030 on the Indo-Pacific and the logistics demands created by Expeditionary Advanced Base Operations, particularly in a contested environment.

Subtitle G—Other Matters

Department of Defense strategic Arctic ports (sec. 1081)

The committee recommends a provision that would require the Secretary of Defense to submit a report to the congressional defense committees on the updated assessment of the estimated cost of constructing, maintaining, and operating a strategic port in the Arctic at each potential site evaluated pursuant to section 1752(b) of the National Defense Authorization Act for Fiscal Year 2020

(Public Law 116–92). The report should also include, for each potential site at which construction of such a port could be completed by 2030, an estimate of the number of days per year that such port would be usable by vessels of the Navy and the Coast Guard. The provision would further permit the Secretary of Defense, in consultation with others, to designate one or more ports identified in the report as Department of Defense Strategic Arctic Ports.

Personal protective equipment matters (sec. 1082)

The committee recommends a provision that would require: (1) Briefings from the Secretaries of the military departments, no later than January 31, 2021, on the fielding of the newest generations of personal protective equipment (PPE) by the military services in the jurisdiction of each Secretary; (2) The Director of the Defense Health Agency to develop and maintain a system for tracking data on injuries among members of the Armed Forces when servicemembers are utilizing the newest generation of PPE and to brief Congress no later than January 21, 2025, on the prevalence of preventable injuries attributable to ill-fitting or malfunctioning PPE; and (3) The annual Periodic Health Assessment of servicemembers and post-deployment health assessments of servicemembers to include questions on whether a servicemember incurred an injury in connection with ill-fitting or malfunctioning PPE and, in the case of a servicemember's having incurred such an injury, questions on one or more elements of self-evaluation of the injury.

Estimate of damages from Federal Communications Commission Order 20–48 (sec. 1083)

The committee recommends a provision that would prohibit any funds authorized to be appropriated by this Act for fiscal year 2021 from being used by the Secretary of Defense to comply with the Order and Authorization adopted by the Federal Communications Commission (FCC 20–48) until the Secretary submits to the Congress an estimate of the covered costs and eligible reimbursable costs associated with interference with the Global Positioning System (GPS) resulting from the Order. The provision would require that the Secretary certify that the estimate is accurate with a high degree of certainty.

The committee is concerned that the Federal Communications Commission approved Ligado's proposal despite extensive testing performed by 9 Federal agencies that concluded that the Ligado proposal will cause interference for both civilian and military GPS users. The committee is concerned that the conditions imposed on Ligado in FCC 20–48 are not practical and do not adequately protect GPS. Specifically, the committee is concerned that the requirement for Ligado to repair or replace any potentially affected Federal GPS receiver would only cover the cost of the GPS receiver and not any of the associated development and fielding costs to repair or replace the device, placing a large cost burden on the Department of Defense.

Modernization effort (sec. 1084)

The committee recommends a provision that would require the Assistant Secretary of Commerce for Communications and Information, in consultation with the Policy and Plans Steering Group, to establish goals and a plan for modernization of spectrum management infrastructure. The provision also includes assorted reporting requirements and requires Government Accountability Office oversight of those reports and activities.

Items of Special Interest**21st Century Integrated Digital Experience Act implementation**

The committee supports the goals of the 21st Century Integrated Digital Experience Act (IDEA) (Public Law 115–336) and believes that embracing the requirements of the 21st Century IDEA would have a significant positive impact on the Department of Defense's mission delivery and improving customer service to employees, Active-Duty personnel, family members, and others who interact with the Department and the military services through intranets, websites, and forms.

Therefore, to assess the progress of the implementation of the 21st Century IDEA across the Department, the committee directs the Chief Information Officer (CIO) of the Department of Defense to prepare and issue a report on its implementation. This assessment should include the status of any Department-wide guidance and initiatives and consultation with the CIOs of the Army, Navy, Air Force, and Marine Corps, as well as the Washington Headquarters Service and any other relevant departments. The Department shall provide the report to the congressional defense committees within 90 days of the enactment of this Act.

American Red Cross

The American Red Cross is a congressionally chartered Federal instrumentality that provides independently verified emergency communication messages for military members seeking emergency leave due to medical emergencies of loved ones, supports deployed locations in conflict zones, and mobilizes clinical and non-clinical volunteers for service in military medical treatment facilities. Since 9/11, the Red Cross has served more than 1 million military families by providing critical services on military installations and in military hospitals around the world, supporting military families during deployments and emergencies, and continuing to serve veterans after completion of their military service. To provide these services, Red Cross staff and volunteers require support from the Department of Defense, including access to facilities and information technology. The committee encourages the Secretary of Defense to review and update agreements with the American Red Cross and the Department's directives to ensure appropriate support to the Red Cross as a Federal instrumentality.

Comptroller General assessment of Defense Logistics Agency disposal of surplus equipment

The committee is concerned that the Department of Defense may not be disposing of surplus equipment in accordance with Departmental guidance, particularly with respect to military vehicles. The committee therefore directs the Comptroller General of the United States to conduct a review of: (1) The Department's process for assigning demilitarization codes; (2) How the demilitarization codes inform the disposal process, including, in the case of property with controlled components, the degree to which the Department is authorized to make reasonable, cost-effective modifications in order to make them available for public use; (3) The extent to which the Defense Logistics Agency and the military services adhere to demilitarization coding and disposal policies, consistent with Department of Defense requirements; and (4) In the case of property with controlled components, the process used to determine whether or not to modify such property in order to make it available for public use. The Comptroller General shall submit a report detailing the findings of the review to the congressional defense committees by June 30, 2021.

COVID-19 and security forces relationships

The committee acknowledges that the COVID-19 pandemic will pose a unique challenge to security forces relationships by complicating planned exercises, reducing the possibility of in-person meetings and exchanges, and creating myriad scheduling and logistical challenges. However, the committee believes that building and maintaining security forces relationships has become even more important in the wake of the pandemic and feels that it is incumbent upon the regional combatant commands to adapt to changing circumstances.

Therefore, the committee directs the Secretary of Defense to provide, not later than September 30, 2020, the congressional defense committees with a briefing on the following subjects: (1) How the combatant commands, military services, and Defense Agencies and Department of Defense Field Activities have altered their plans to continue to build security forces relationships in light of COVID-19; (2) The types of exercises, key leader engagements, trainings, education, workshops, and other activities complicated by COVID-19; (3) The policies and procedures used to overcome these issues; (4) New policies, procedures, and activities—especially virtual alternatives—being employed to build relationships in light of COVID-19; and (5) The ways in which the pandemic has altered the goals and focus of various security forces relationships, especially related to how the pandemic has changed the perspective, plans, and needs of our key allies and partners.

Demonstration of current Department of Defense budget and program data visualization (sec.)

The committee is concerned that Department of Defense (DOD) senior leadership is not availing itself of modern data visualization tools to provide adequate visibility of choices and facilitate decision-making in the Planning, Programming, Budgeting, and Execution process. The scope and complexity of the data associated with the

defense enterprise are vast and can act as a significant tax on the efficiency of all levels of the national security enterprise.

The committee commends the Office of the Under Secretary of Defense (Comptroller) for developing an internal data visualization solution for the DOD-wide audit to help senior leaders understand data quickly, diagnose problems, and focus decision-making and resources.

The committee believes that both DOD leadership as well as the congressional defense committees would benefit from the use of modern data visualization tools, which could enable decision-makers to rapidly and more easily understand budgetary and programmatic data and trends.

Enabling congressional oversight of defense-wide agency spending (sec.)

The committee directs the Secretary of Defense to deliver a report with the submission of the budget request for fiscal year 2022 detailing the changes to the budgets of agencies not under the control of a military department, including programs affected by a Defense-Wide Review 2.0. The report shall identify the action taken under such review as either an expansion or acceleration, a cancellation, reduction in scope, deferral or delay, or a transfer to another component or agency. The report should include basic relevant budget data, including identifying information such as program element, sub-activity group, or line number, and the projected 5-year budget plan for each program.

The committee commends the Department of Defense for undertaking the Defense-Wide Review for the first time in the fiscal year 2021 budget process. The Defense-wide budget contains myriad and largely unconnected activities, from the Defense Health Program to the Missile Defense Agency, and comprises about 15 percent of the Department of Defense's overall budget. Establishment of a rigorous process for annual review by the Secretary of Defense of the Defense-wide budget is valuable. As the Defense-Wide Review 1.0 demonstrated, the relevant agencies conducted risk-based prioritization of their programs and activities, resulting in delays or reduction of programs for justified reasons. Unfortunately, in other cases, the Review simply acted as a catalyst to cut or eliminate programs based on little to no justification to meet savings targets.

The committee notes that the information provided by the Department to enable the committee to carry out its constitutional duty of oversight fell woefully short of expectations. Despite months of congressional requests for information, the Department hosted only one engagement on the Defense-Wide Review, and it failed to update its supplemental justification documents. While the Defense-Wide Review was conducted on a short timeline, the committee believes that the Congress must receive far more robust explanatory materials not only to fulfill its duties but also to ensure that the overall Defense-Wide Review process aligns the Department with the National Defense Strategy. The committee further notes that the data and justification material necessary to enable congressional oversight of the Defense-Wide Review already exist. Therefore, the committee encourages the Department to work

with the congressional defense committees to establish expectations for Defense-Wide Review 2.0 justification materials well in advance of the submission of the budget request for fiscal year 2022.

Enhancing security cooperation

The committee notes that security cooperation is a fundamental element of the National Defense Strategy and that engagement, development, training, and education with partner military forces is crucial to successfully strengthening alliances and attracting new partners. The committee further notes that reforms made in the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) and subsequent Department of Defense Instruction 5132.14, “Assessment, Monitoring, and Evaluation Policy for the Security Cooperation Enterprise,” dated January 12, 2017, have resulted in important improvements to security cooperation and that the framework for the assessment, monitoring, and evaluation (AM&E) has enhanced the Department’s transparency, effectiveness, and performance management of these partner engagements.

The committee expresses its support for the ongoing implementation of the AM&E framework and highlights its added importance in light of increasing global power competition. The committee also encourages further investment in security cooperation and engagement and continued support within the Department for these efforts.

Incentives to promote Department of Defense audit activities

The committee notes that the Department of Defense (DOD) has begun to undertake focused and coordinated activities to try to meet the mandate of the Chief Financial Officers Act of 1990 (Public Law 101–576), which requires annual audits of financial statements for Federal agencies. The committee also notes that, although the DOD has significantly more resources and access to expertise than most Federal agencies, after 30 years of effort, the DOD remains the only agency yet to obtain a “clean” audit opinion on its financial statements.

The committee believes that DOD’s progress toward achieving this clean audit opinion will continue to be hampered by a lack of internal organizational incentives to invest the resources and leadership attention required to change the systems, processes, and culture that define the currently unauditible DOD enterprise.

The committee notes that the establishment of internal organizational budgetary incentives, such as the ability for the military services and agencies to recoup and reapply the savings derived from correcting issues uncovered by audit activities to agency priorities or to activities that could help achieve and maintain clean audit status, would be beneficial to the overall audit effort.

The committee therefore directs the Deputy Secretary of Defense to consider and develop incentives, including budgetary incentives, that would encourage the military services and agencies to increase efforts to achieve a clean financial audit status and to develop the capabilities, expertise, and practices to maintain that clean status over time.

Intelligence, surveillance, and reconnaissance support

The committee understands that resource limitations may impact the ability of the Department of Defense to conduct intelligence, surveillance, and reconnaissance (ISR) activities in support of global counternarcotics and counter-illicit trafficking operations. The committee further understands that there may be opportunities to enhance ISR capabilities in support of these missions through modifications to and increased maintenance of currently fielded systems, including land-based radar and communications intercept technology, or through the leasing of such systems. The committee encourages the Department to explore opportunities in this area in order to provide increased area coverage and capabilities for counternarcotics, counter-illicit trafficking, and other missions, as appropriate.

Inventory of systems integral to the Planning, Programming, Budgeting, and Execution process (sec.)

The committee directs the Under Secretary of Defense (Comptroller), in consultation with the Chief Information Officer, the Chief Data Officer, and such other officers and employees of the Department of Defense as the Secretary of Defense may designate, to deliver a report to the congressional defense committees, not later than October 1, 2020, on the information systems integral to managing and sharing data related to the Planning, Programming, Budgeting, and Execution (PPBE) process.

The report should include a compilation of discrete information technology systems used to manage and share programming and budgetary data throughout the Department of Defense, with information identifying each system's deployment by component and the phases of the PPBE process to which each system contributes. Accompanying information may include the initial operational capability dates, modernization efforts to date, and future modernization plans for such systems.

The committee is concerned that the systems undergirding the Department of Defense PPBE process do not enable the standardization of relevant budgetary and programmatic data across the Department. While the internal sharing of such information has improved in recent years, the custom data elements created by various components act as a significant barrier to further collaboration and efficiency. Improved data standardization across the Department will decrease repetitive work, enable new types of data visualization, and improve the ability of senior leadership to access information in a timely fashion.

Mission-based budgeting (sec.)

The committee notes that identifying or categorizing program elements by specific mission or combatant command could provide immense value to both the Department of Defense and the Congress in considering changes to the defense budget. The Major Force Programs provide little analytical value as currently constructed. Program elements, the building blocks of the budget, are dispersed among several accounts and sub-activity groups, making the aggregation of relevant activities—from hypersonic strike weapons to artificial intelligence programs, for example—to under-

stand mission capabilities and gaps extremely time-consuming and difficult.

The committee understands that certain components have expanded their use of mission-based budgeting, such as the Chief Information Officer's work in identifying cyber-related program elements. However, the potential for expanding this practice remains great, particularly for joint capability portfolios such as integrated air and missile defense, counter-unmanned aerial systems, long-range precision strike, and emerging technologies.

The committee believes that the expanded use of mission-based budgeting could substantially improve the visibility of certain areas of the Department's budget without any change to the underlying structure of the budget itself.

Presentation of defense budget materials by military services

The committee is concerned that the Department of Defense may be making decisions regarding the budget requests of each military service without adequate consideration of mission-specific funding requirements. The committee notes that the division of the defense budget between the military services should be primarily based on strategic considerations. The committee believes that more accurate presentation of service budgets would help the Secretary of Defense analyze the budget proposals prepared by each of the military departments and adjudicate the amounts of funding recommended for each of the services based on factors such as relevance to implementation of the National Defense Strategy, opportunities for technological breakthroughs, efficiency and accountability for previous years' funding, and similar objective criteria.

To facilitate the extent to which the Office of the Secretary of Defense follows this direction, the committee directs that the Secretary of Defense shall include in any budget overview documents provided to Congress with the fiscal year 2022 budget, and all subsequent budgets, a description of the amounts and shares of the defense budget recommended to each of the military services or departments, the defense-wide accounts, and any other or miscellaneous recipients of Department of Defense budget requests.

The committee additionally directs that the amounts and shares for each military service or department reported pursuant to this direction shall not include amounts that are not directly related to the budgets of each service or department, such as funding that is subsequently redirected to general defense-wide needs or for other national security purposes.

Further, the committee directs the Secretary of Defense to provide a briefing on the implementation of revised budget overview documents to the congressional defense and intelligence committees. This briefing should be delivered no later than November 1, 2020.

Finally, the committee directs the Secretary of Defense to consult with the appropriate counterintelligence officials in preparation of these exhibits.

Reciprocity of security clearances

The committee is concerned that issues remain concerning extended delays or impediments in the transfer of security clearances between agencies and departments of the U.S. Government.

The committee understands that organizations “receiving” a request to accept clearances and provide access have the authority to reject automatic approval and to conduct their own adjudication if the individual in question has what is called a “condition” or “exception” code in his or her security file or if “new information” relating to one or more of the standard adjudicative guidelines has emerged since the individual was last approved for access. A condition or exception code indicates that the individual is not in compliance with one or more adjudicative standards but has received a waiver. The receiving or “gaining” organization, in such cases, has the right to review the specific issue and how it was handled and resolved by the agency or department currently holding the clearance and providing access to classified information.

The committee understands that these conditions or exception codes are not standardized and vary across government organizations and, in some circumstances, individuals may not be aware that they have such codes in their files.

Therefore, the committee directs that the Security Executive Agent and the Under Secretary of Defense for Intelligence and Security shall conduct a review that includes the following actions: (1) Compile statistics based on a representative sample on the prevalence of condition codes that result in above average durations for approval of clearance and access transfer requests and in outright rejections of requested transfers; (2) Assess the degree of consistency and rigor across agencies and departments in the use of these condition codes; (3) Develop and evaluate the merits of options to mitigate or even eliminate this limitation on reciprocity, including improved documentation of and the sharing of information about the circumstances or context for activating a condition code; and (4) Produce recommendations for reforms. The results of this review shall be provided to the congressional defense and intelligence committees no later than February 1, 2021.

Civilian casualties

The committee notes that civilian casualties are a tragic and unavoidable part of war and recognizes that the Department of Defense endeavors to conduct all military operations in compliance with the international law of armed conflict and the laws of the United States, including the principles of distinction, proportionality, and the requirement to take feasible precautions in planning and conducting operations to reduce the risk of harm to civilians and civilian objects.

The committee believes that protection of civilians and civilian objects during military operations is a moral and ethical imperative and commends the Department of Defense for the measures it has implemented and is currently implementing to prevent, mitigate, track, investigate, learn from, respond to, and report civilian casualties resulting from United States military operations. The committee notes that the Department has submitted to the Congress three successive annual reports on civilian casualties resulting

from United States military operations for calendar years 2017, 2018, and 2019 and has updated reports as appropriate. Additionally, the committee commends the United States Africa Command for announcing on March 31, 2020, that the command would be issuing a new quarterly report on the status of ongoing civilian casualty allegations and assessments. Collectively, these efforts increase public transparency regarding civilian casualty allegations that are reported to the command and demonstrate the constant commitment of the United States Armed Forces to minimizing civilian harm in the conduct of military operations.

In support of its broader efforts to prevent and respond to allegations of civilian casualties, the committee encourages the Department to redouble efforts to:

- (1) Establish and implement the policy of the Department relating to civilian casualties resulting from United States military operations, as required by section 936 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232);

- (2) Issue regulations for the implementation of section 1213 of the National Defense Authorization for Fiscal Year 2020 (Public Law 116–92) for ex gratia payments for damage, personal injury, or death that is incident to the use of force by the United States Armed Forces, a coalition that includes the United States, a military organization supporting the United States, or a military organization supporting the United States or such coalition;

- (3) Ensure that the geographic combatant commands have the requisite personnel and resources to appropriately integrate the observance of human rights and the protection of civilians and civilian objects in all activities be the commands;

- (4) Promote the observance of human rights and the protection of civilians and civilian objects through engagements with foreign partner forces, including in connection with train and equip programs; advise, assist, accompany, and enable missions; and executing fully combined and coalition operations; and

- (5) Increase coordination with the Department of State in any country in which the United States Armed Forces are conducting military operations in order to assist in the response to reports of civilian casualties resulting from such military operations.

United States Army High Containment Facility at Fort Detrick

The committee notes that Fort Detrick currently houses the military's primary High Containment Bio Safety Level Four (BSL 4) Facility, which is nearing its end-of-life. These unique facilities serve to conduct research on pathogenic agents that pose extreme health risks to the military and homeland, such as COVID–19. Recently, the facility has been shut down by the Centers for Disease Control over concern about its ability to safely handle waste streams from the aging facility. The waste handling facility is separate from the main facility, and it too is aging and has broken down several times.

Over the past 10 years, the Army has been constructing a modern 30,000 square foot High Containment Facility next to the existing one in order to replace it. This new facility, which has several unique handling features and wings, is being built at a cost of over \$1 billion. However, the construction and final operations have been delayed several times, first by a fire from welding during construction and more recently because of dependence on the aging waste handling facility that the current High Containment Facility relies upon and which has been unreliable. The U.S. Army's Future Command is now responsible for operating the High Containment Facilities, both the current one and that under construction.

Therefore, the committee directs the Secretary of the Army to report to the congressional defense committees, no later than February 28, 2021, on: (1) The expected lifetime and annual cost of operating the current High Containment Facility; (2) Actions, cost, and timelines to remedy the aging waste handling facility next to it; (3) The amount expended to date on the High Containment Facility under construction; (4) A plan of action for waste handling at the High Containment Facility under construction, including cost, timelines, and impacts if additional delays are incurred; and (5) The expected date to certify full operations of the High Containment Facility under construction, taking into account the current inability to handle waste generated from operations.

The committee notes the unique role that the U.S. Army has had in research of and handling these extremely dangerous pathogens and the importance of this unique responsibility to the Department of Defense and our Nation and encourages swift action to resolve any outstanding issues that have delayed transitioning operations to the High Containment Facility under construction.

Update to Digital Modernization Strategy and investments to improve resiliency in sustaining mission-essential functions

The committee believes that the Department of Defense's need to work remotely as part of the response to the COVID-19 pandemic exposed a decade or more of underinvestment in critical enterprise-wide information technology infrastructure, to include end user devices, network capacity and stability, cloud services, and classified capabilities. The committee acknowledges that the Department of Defense Chief Information Officer formed a task force and acted quickly to mobilize contracting instruments to mitigate near-term gaps, requested appropriate funding from the Congress, and at present seems to have been able to minimize the degradation of continuity of the Department's mission-essential functions. However, the committee is concerned about significant degradation of certain functions—especially those requiring access to classified information—that have not been fully mitigated. Furthermore, the committee believes that, in order to sustain improvements in capacity and resiliency, the Department needs to reexamine its requirements. The committee directs the Chief Information Officer to update the Department's Digital Modernization Strategy and supporting policies and procedures and to submit a report to the congressional defense committees on these actions and specific invest-

ments needed to achieve this resiliency with the budget request for fiscal year 2022.

State Partnership Program foreign travel expenses

The committee is aware that a January 14, 2020, report published by the United States Property and Fiscal Office for Hawaii (report no. 19-002) found that, when the Financial Management Regulation Chapter 18 of Volume 12 was repealed by the Department of Defense, it may have resulted in the removal of a positive legal authority for the National Guard State Partnership Program to fund travel and allowances for members of foreign countries under the State Partnership Program. Therefore, the committee directs the Department to coordinate with the National Guard Bureau to review the issue and provide a report to the committee no later than December 30, 2020, identifying any potential discrepancies discovered and specifying the resolution.

Strategic evaluation of the State Partnership Program

The committee notes that security cooperation is a fundamental element of the National Defense Strategy and that engagement, development, training, and education with partner military forces is crucial to successfully strengthening alliances and attracting new partners. In particular, the committee highlights the effectiveness of the State Partnership Program in cultivating positive relationships with partner forces and enhancing long-term interoperability and notes the efforts made by the Department to improve security cooperation. The committee believes that global power competition necessitates an effort to expand the competitive space and encourages the Office of the Secretary of Defense and the National Guard Bureau, in consultation with the Department of State, combatant commanders, and adjutants general, to prioritize expansion of partnerships in regions that offer new opportunities for U.S. engagement where it may traditionally have been less present, in alignment with the goals of the National Defense Strategy. The committee is also aware that a strategic evaluation of the State Partnership Program is being conducted by the Department of Defense and expresses its support for an objective analysis with the aim of improving, expanding, and enhancing the program. The committee expresses its support for the effort and encourages the Department to fully share the results with the Committees on Armed Services of the Senate and the House of Representatives and to collaborate with these committees to implement applicable policy recommendations that result from the study.

TITLE XI—CIVILIAN PERSONNEL MATTERS

Subtitle A—Department of Defense Matters

Enhanced pay authority for certain acquisition and technology positions in the Department of Defense (sec. 1101)

The committee recommends a provision that would amend subchapter I of chapter 87 of title 10, United States Code, to permanently authorize an enhanced pay authority for acquisition and technology positions in the Department of Defense. The provision would authorize up to 20 total positions within the Office of the Secretary of Defense and the military departments that may have a maximum pay rate set at 150 percent of level 1 of the Executive Schedule.

Enhanced pay authority for certain research and technology positions in the science and technology reinvention laboratories of the Department of Defense (sec. 1102)

The committee recommends a provision that would amend chapter 139 of title 10, United States Code, to permanently authorize an enhanced pay authority for research and technology positions in the Department of Defense. The provision would authorize up to 15 total positions within the military departments that may have a maximum pay rate set at 150 percent of level 1 of the Executive Schedule.

Extension of enhanced appointment and compensation authority for civilian personnel for care and treatment of wounded and injured members of the Armed Forces (sec. 1103)

The committee recommends a provision that would amend section 1599c(b) of title 10, United States Code, to extend the enhanced appointment and compensation authority for civilian personnel for the care and treatment of wounded and injured members of the Armed Forces through December 31, 2025.

Extension of overtime rate authority for Department of the Navy employees performing work aboard or dockside in support of the nuclear-powered aircraft carrier forward deployed in Japan (sec. 1104)

The committee recommends a provision that would amend section 5542 of title 5, United States Code, to extend until September 30, 2023, the authority of the Secretary of the Navy to pay overtime rates to civilian employees performing temporary duty in Japan in support of the forward deployed nuclear aircraft carrier.

Expansion of direct hire authority for certain Department of Defense personnel to include installation military housing office positions supervising privatized military housing (sec. 1105)

The committee recommends a provision that would amend section 9905 of title 5, United States Code, to authorize direct hire authority for installation military housing office positions responsible for supervising privatized military housing projects.

Extension of sunset of inapplicability of certification of executive qualifications by qualification certification review board of Office of Personnel Management for initial appointments to Senior Executive Service positions in Department of Defense (sec. 1106)

The committee recommends a provision that would amend section 1109 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232), to extend by 3 years the sunset date of the Department of Defense’s temporary exemption from Office of Personnel Management qualification certification review boards for individuals appointed to senior executive service positions within the Department.

During the first year of this temporary authority, 15 qualified individuals were appointed to Department of Defense senior executive service positions in financial management, human resources, mathematics, and acquisition organizations. Average time-to-hire was reduced by nearly 140 days. This authority allowed the Department to utilize a high quality selection process, coupled with a streamlined application process, to reduce hiring timelines, all while continuing to ensure that candidates demonstrate a mastery of the competencies most valued and attributed to successful executives.

Pilot program on enhanced pay authority for certain high-level management positions in the Department of Defense (sec. 1107)

The committee recommends a provision that would authorize the Department of Defense to establish a pilot program to offer higher compensation than normally allowed by the executive schedule for limited numbers of positions requiring extremely high levels of experience managing complex organizations.

Pilot program on expanded authority for appointment of recently-retired members of the Armed Forces to positions in the Department of Defense (sec. 1108)

The committee recommends a provision that would authorize the Secretary of Defense to initiate a 3-year pilot program to hire retired servicemembers within 180 days of retirement into positions at a pay grade no higher than GS–13 of the general schedule. The provision would also require positions utilizing the pilot authority to have direct hire authority and a certification of a potential lack of qualified applicants for the vacant position before a recently retired servicemember can be hired. The provision would require the Secretary of Defense to submit a report to the congressional de-

fense committees on the use of the pilot authority 2 years after the commencement of a pilot program.

The committee envisions that this provision would be used broadly by the military departments to alleviate hiring challenges due to a variety of circumstances. The Secretary concerned may certify that a position, or set of positions, lacks sufficient numbers of potential applicants based on geography, unique job requirements, security clearance restrictions, or any other factor. In addition, the committee emphasizes that the authority to make the required certification may be delegated to a local military or civilian official with a pay grade equal to or above O-6.

Direct hire authority and relocation incentives for positions at remote locations (sec. 1109)

The committee recommends a provision that would amend chapter 81 of title 10, United States Code, to provide a temporary direct hire authority to positions in the competitive service in geographically remote locations and locations with extreme climate conditions. The provision would also provide a relocation incentive to positions covered by the direct hire authority.

Modification of direct hire authority for certain personnel involved with Department of Defense maintenance activities (sec. 1110)

The committee recommends a provision that would amend section 9905 of title 5, United States Code, to provide direct hire authority for positions that perform support functions for depot-level maintenance and repair.

Fire Fighters Alternative Work Schedule demonstration project for the Navy Region Mid-Atlantic Fire and Emergency Services (sec. 1110A)

The committee recommends a provision that would require the Commander of Navy Region Mid-Atlantic to establish and carry out a 5-year fire fighter alternative work schedule demonstration project. The demonstration project would require tours of duty to be scheduled at least 2 weeks in advance and that tours of duty use a regularly recurring pattern of 48-hour shifts followed by 48 or 72 consecutive non-work hours. The provision would also require the Commander of Navy Region Mid-Atlantic to submit to the Committees on Armed Services of the Senate and the House of Representatives a report on effects of the demonstration project no later than 180 days after the demonstration project is terminated.

Subtitle B—Government-Wide Matters

One-year extension of temporary authority to grant allowances, benefits, and gratuities to civilian personnel on official duty in a combat zone (sec. 1111)

The committee recommends a provision that would extend by 1 year the discretionary authority of the head of a Federal agency to provide allowances, benefits, and gratuities comparable to those provided to members of the Foreign Service to the agency's civilian employees on official duty in a combat zone.

One-year extension of authority to waive annual limitation on premium pay and aggregate limitation on pay for Federal civilian employees working overseas (sec. 1112)

The committee recommends a provision that would amend section 1101 of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 (Public Law 110–417), as most recently amended by section 1105 of National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), to extend through 2021 the authority of heads of executive agencies to waive the limitation on the aggregate of basic and premium pay of employees who perform work in an overseas location that is in the area of responsibility of the Commander, U.S. Central Command (CENTCOM), or in a location that was formerly in CENTCOM but has been moved to the area of responsibility of the Commander, U.S. Africa Command, in support of a military operation or an operation in response to a declared emergency.

Technical amendments to authority for reimbursement of Federal, State, and local income taxes incurred during travel, transportation, and relocation (sec. 1113)

The Committee recommends a provision that would amend section 5724b of title 5, United States Code, to make a technical correction to authority provided by section 1114 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) relative to the reimbursement of Federal, State, and local income tax expenses incurred by Federal civilian employees incident to government-directed travel, transportation, and relocations.

Items of Special Interest

Classified ready workforce

The committee is aware of the challenges the Department of Defense (DOD) faces when recruiting and retaining a diverse, high-skilled science, technology, engineering, and math (STEM) workforce. The committee further recognizes that the Department can increase efforts to recruit its STEM workforce from universities with minority-majority and historically under-served student populations. Therefore, the committee directs the Secretary of Defense to provide a briefing, by December 31, 2020, to the Committees on Armed Services of the Senate and the House of Representatives on how the Department of Defense can partner with Hispanic-serving land-grant institutions to create a talent development program that provides experiential learning through internship and co-op programs within the military departments and other DOD components. The briefing shall include information on how such programs can include pathways for security clearances that would serve both the DOD and students upon entry into the workforce.

Report prior to transfer of Defense Finance and Accounting Service functions

The committee believes the Defense Finance and Accounting Service (DFAS) performs a critical function in service to military members, their families, and survivors. Continuity in the delivery

of these services is important as military families, retirees, and survivors depend on timely delivery of pay and benefits.

The committee directs the Secretary of Defense, prior to a decision under any applicable provision of law, to transfer any function currently performed by DFAS to a commercial provider of finance, accounting, or similar services, to submit a report to the Committees on Armed Services of the Senate and the House of Representatives setting forth the quantitative and business case for the transfer, including the extent such transfer would yield cost savings or improved service to the DFAS customer base.

TITLE XII—MATTERS RELATING TO FOREIGN NATIONS

Subtitle A—Assistance and Training

Authority to build capacity for additional operations (sec. 1201)

The committee recommends a provision that would modify section 333 of title 10, United States Code, relating to the authority of the Secretary of Defense to conduct or support programs to provide training and equipment to the national security forces of one or more foreign countries by adding cyberspace operations to the list of authorized functional areas in which such support may be provided.

The committee notes that the Secretary has previously used the authority under section 333 to conduct cyber-related activities to build partner capacity (BPC) but notes that these activities were couched within the span of other enumerated operations under section 333. The committee believes that, while this support was appropriate, the lack of an explicit authority for cyber-related BPC complicated congressional oversight as well as inhibits the ability of the Department of Defense to conduct the deliberate planning necessary for the long-term effectiveness of these activities.

Authority to build capacity for air sovereignty operations (sec. 1202)

The committee recommends a provision that would modify section 333 of title 10, United States Code, relating to the authority of the Secretary of Defense to conduct or support programs to provide training and equipment to the national security forces of one or more foreign countries by adding air sovereignty operations to the list of authorized functional areas in which such support may be provided.

The committee notes that, in Department of Defense Joint Publication 1–02, as of April 12, 2001, air sovereignty is defined as “a nation’s inherent right to exercise absolute control and authority over the airspace above its territory.” The committee believes that the addition of air sovereignty operations to the list of support authorized under section 333 is appropriate and consistent with the objectives outlined in the National Defense Strategy. The committee notes, however, that the amounts available for activities under section 333 are limited and therefore expects the Department to exercise discretion when considering proposals under the expanded authority, particularly any proposals that may involve high-cost, complex weapons systems.

Modification to the Inter-European Air Forces Academy (sec. 1203)

The committee recommends a provision that would modify section 350(b) of title 10, United States Code, to authorize the Secretary of the Air Force to expand military education and training at the Inter-European Air Forces Academy to military personnel of countries that are both within the United States Africa Command area of responsibility and eligible for assistance under chapter 5 of part II of the Foreign Assistance Act of 1961 (22 U.S.C. 2347 et seq.). The provision would expand eligibility beyond countries that are members of the North Atlantic Treaty Organization or signatories to the Partnership for Peace Framework Documents.

Modification to support of special operations for irregular warfare (sec. 1204)

The committee recommends a provision that would modify section 1202 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91; 131 Stat. 1639), as most recently amended by section 1207 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), by raising the annual funding limitation to \$15.0 million.

Extension and modification of authority to support border security operations of certain foreign countries (sec. 1205)

The committee recommends a provision that would modify section 1226 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as most recently amended by section 1213 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232), to extend the authority to support border security operations of certain foreign countries through December 31, 2023. The provision would also clarify the source of funds available for support pursuant to this authority in order to improve oversight of such expenditures.

Modification of authority for participation in multinational centers of excellence (sec. 1206)

The committee recommends a provision that would amend section 344 of title 10, United States Code, by modifying the authority for participation in multinational centers of excellence.

Implementation of the Women, Peace, and Security Act of 2017 (sec. 1207)

The committee recommends a provision that would require the Secretary of Defense to undertake specified activities consistent with the Women, Peace, and Security Act of 2017 (Public Law 115–68) and to provide an annual report to Congress on the progress made in implementation.

Ted Stevens Center for Arctic Security Studies (sec. 1208)

The committee recommends a provision that would require the Secretary of Defense, in coordination with the Secretary of State, to submit a plan, not later than 90 days after the date of the enactment of this Act, to establish a Department of Defense Regional

Center for Security Studies for the Arctic. Further, not earlier than 30 days after the submission of the required plan and subject to the availability of appropriations, the provision would provide discretionary authority to the Secretary to establish and administer such a center.

Functional Center for Security Studies in Irregular Warfare (sec. 1209)

The committee recommends a provision that would require the Secretary of Defense, in coordination with the Secretary of State, to submit a report not later than 90 days after the date of the enactment of this Act that assesses the merits and feasibility of establishing and administering a Department of Defense Functional Center for Security Studies in Irregular Warfare. Further, not earlier than 30 days after the submission of the required plan and subject to the availability of appropriations, the provision would provide discretionary authority to the Secretary to establish and administer such a center.

Subtitle B—Matters Relating to Afghanistan and Pakistan

Extension and modification of authority for reimbursement of certain coalition nations for support provided to United States military operations (sec. 1211)

The committee recommends a provision that would extend the authority for reimbursement of certain coalition nations for support provided to United States military operations through December 31, 2021.

Extension and modification of Commanders' Emergency Response Program (sec. 1212)

The committee recommends a provision that would extend the authorization for the Commanders' Emergency Response Program in Afghanistan through December 31, 2021, and would authorize \$2.0 million for that program for use during calendar year 2021.

Extension and modification of support for reconciliation activities led by the Government of Afghanistan (sec. 1213)

The committee recommends a provision that would extend the authorization for the Department of Defense to provide support for bottom-up, Government of Afghanistan-led reconciliation activities. The provision would modify the existing authority to ensure that covered support can only be provided for reconciliation activities that include the participation of the Government of Afghanistan and do not restrict the participation of women. The provision would also prohibit Taliban members' receipt of reimbursement for travel or lodging expenses and stipends or per diem payments. Finally, the provision would prohibit the Department from providing covered support until it provides the implementation framework required by section 1218 of the National Defense Authorization Act of Fiscal Year 2020 (Public Law 116–92), due to the Congress on March 19, 2020.

Sense of Senate on special immigrant visa program for Afghan allies (sec. 1214)

The committee recommends a provision that would express support for the special immigrant visa program for Afghan allies. The committee views this program as vital to the United States mission in Afghanistan. Afghans routinely risk their lives to assist United States military and diplomatic personnel and further U.S. interests. The committee urges the United States Government to clear the backlog in processing special immigrant visa applications and notes that, under the Afghan Allies Protection Act of 2009 (8 U.S.C. 1101 note), applications for special immigrant status should be processed within 270 days.

Sense of Senate and report on United States presence in Afghanistan (sec. 1215)

The committee recommends a provision that would express the sense of the Senate on the United States' presence in Afghanistan and would require the Secretary of Defense to submit a report on the external threat posed by extremist groups in Afghanistan to the homeland, and other matters, by September 1, 2020.

Subtitle C—Matters Relating to Syria, Iraq, and Iran

Extension of authority and limitation on use of funds to provide assistance to counter the Islamic State of Iraq and Syria (sec. 1221)

The committee recommends a provision that would extend the authority to provide assistance to Iraq to counter the Islamic State of Iraq and Syria through December 31, 2021. The provision would authorize the use of not more than \$322.5 million in Operation & Maintenance, Defense-wide, Overseas Contingency Operations funds for such purposes. The provision would also limit the obligation or expenditure of 75 percent of the authorized funding until the Secretary of Defense provides a plan to the congressional defense committees for fully transitioning security assistance for the Iraqi Security Forces from the Counter-Islamic State of Iraq and Syria Train and Equip Fund to standing security assistance authorities managed by the Defense Security Cooperation Agency and State Department by the end of fiscal year 2022.

The committee supports continued assistance to the Iraqi Security Forces, including the Counter Terrorism Service (CTS) and the Ministry of Peshmerga. However, the committee believes that traditional capacity-building activities are more appropriately funded through standing security assistance authorities found in titles 10 and 22 of United States Code. The committee notes that, elsewhere in this report, the committee recommends a transfer of \$322.5 million to the Defense Security Cooperation Agency for such purposes.

Extension and modification of authority to provide assistance to vetted Syrian groups and individuals (sec. 1222)

The committee recommends a provision that would extend the authority to provide assistance to vetted Syrian groups through 2021 under section 1209 of the Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015

(Public Law 113–291), as amended. The provision would also consolidate reporting elements into the standing requirement for quarterly reports on the use of the authority.

The committee supports continued cooperation with the Syrian Democratic Forces (SDF) to maintain the gains made against the Islamic State of Iraq and Syria (ISIS) in northeastern Syria and appreciates the sacrifices that the SDF has made in defeating the so-called territorial caliphate. The committee believes that the safe, humane detention of ISIS foreign terrorist fighters and repatriation of such fighters to their countries of origin should remain a top priority for the United States and international community, and the committee continues to support the use of authorized funding for such purposes.

Extension and modification of authority to support operations and activities of the Office of Security Cooperation in Iraq (sec. 1223)

The committee recommends a provision that would extend the authorization for the Office of Security Cooperation in Iraq through fiscal year 2021. The provision would reduce the funds available for this authority from \$30.0 million to \$15.0 million. The committee expects the Office of Security Cooperation in Iraq to continue its transition to a normalized security cooperation office and directs the Department of Defense to report on its progress in implementing this transition.

Subtitle D—Matters Relating to Europe and the Russian Federation

Extension of limitation on military cooperation between the United States and the Russian Federation (sec. 1231)

The committee recommends a provision that would modify section 1232(a) of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) to extend through fiscal year 2021 the limitation on military cooperation between the United States and the Russian Federation.

Prohibition on availability of funds relating to sovereignty of the Russian Federation over Crimea (sec. 1232)

The committee recommends a provision that would state that none of the funds authorized to be appropriated by this Act for fiscal year 2021 for the Department of Defense may be obligated or expended to, and that the Department may not, implement any activity that recognizes the sovereignty of the Russian Federation over Crimea.

Modification and extension of Ukraine Security Assistance Initiative (sec. 1233)

The committee recommends a provision that would extend through December 31, 2024, the authority under section 1250 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as amended by section 1244 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), for the Secretary of Defense, with the concurrence of the Secretary

of State, to provide security assistance, including defensive lethal assistance, and intelligence support to military and other security forces of the Government of Ukraine. The provision would authorize up to \$250.0 million in fiscal year 2021 to provide security assistance to Ukraine, of which \$125.0 million would be available only for lethal assistance.

The committee continues to believe that defense institutional reforms are critical to sustaining capabilities developed using security assistance provided under this and other authorities. Moreover, defense institutional reforms will ultimately enable a more effective defense of Ukraine's sovereignty and territorial integrity and allow Ukraine to achieve its full potential as a strategic partner of the United States. Therefore, the provision would prohibit the obligation or expenditure of 50 percent of the funds authorized to be appropriated in fiscal year 2021 under this authority until the Secretary of Defense, in coordination with the Secretary of State, certifies that Ukraine has taken substantial action to make defense institutional reforms. The provision would also include additional areas of reform to be considered with respect to such a certification, including: transformation of command and control structures and roles in line with North Atlantic Treaty Organization principles and improvement of human resources management, including to support career management reforms, enhanced social support to military personnel and their families, and professional military education systems.

Report on capability and capacity requirements of military forces of Ukraine and resource plan for security assistance (sec. 1234)

The committee recommends a provision that would require the Secretary of Defense and the Secretary of State, not later than 180 days after the date of the enactment of this Act, to jointly submit to certain committees of Congress a report on the capability and capacity requirements of the military forces of Ukraine. The provision would specify a number of elements to be addressed in the report.

The provision would also require the Secretary of Defense and the Secretary of State, not later than February 15, 2022, to jointly submit to certain committees of Congress a resource plan for United States security assistance with respect to Ukraine in fiscal year 2023 and the 4 succeeding fiscal years.

Sense of Senate on North Atlantic Treaty Organization enhanced opportunities partner status for Ukraine (sec. 1235)

The committee recommends a provision that would express the sense of the Senate that the United States should support the designation of Ukraine as an enhanced opportunities partner as part of the Partnership Interoperability Initiative of the North Atlantic Treaty Organization.

Extension of authority for training for Eastern European national security forces in the course of multilateral exercises (sec. 1236)

The committee recommends a provision that would extend through December 31, 2023, the authority provided in section 1251 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92), as amended by section 1247 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), for the Secretary of Defense, with the concurrence of the Secretary of State, to provide multilateral or regional training, and pay the incremental expenses of participating in such training, for countries in Eastern Europe that are signatories to the Partnership for Peace Framework Documents but not members of the North Atlantic Treaty Organization (NATO) or that became NATO members after January 1, 1999.

Sense of Senate on Kosovo and the role of the Kosovo Force of the North Atlantic Treaty Organization (sec. 1237)

The committee recommends a provision that would express the sense of the Senate on matters relating to Kosovo and the role of the Kosovo Force (KFOR) of the North Atlantic Treaty Organization (NATO).

The committee believes that the United States should continue to support the diplomatic efforts of Kosovo and Serbia to reach a historic agreement to normalize relations with mutual recognition as a central element. Such an agreement is in the interest of both countries and would enhance security and stability in the western Balkans.

The committee recognizes that the KFOR continues to play an indispensable role in maintaining the security and stability that are the essential predicates for the success of Kosovo's and Serbia's diplomatic efforts to achieve normalization of relations. While the participation of the United States Armed Forces in the KFOR is foundational to the credibility and success of KFOR's mission, the KFOR also represents a positive example of burden-sharing. NATO allies and other European partners contribute over 80 percent of the troops for the mission. Therefore, together with our allies and partners, the United States should maintain its commitment to the KFOR and take all appropriate steps to ensure that the KFOR has the necessary personnel, capabilities, and resources to perform its critical mission.

Additionally, the committee believes that the United States should continue to support the Kosovo Security Force's gradual transition to a multi-ethnic army for the Republic of Kosovo that is interoperable with NATO members through an inclusive and transparent process that respects the rights and concerns of all of Kosovo's citizens, promotes regional security and stability, and supports Kosovo's aspirations for eventual full membership in the NATO.

Sense of the Senate on strategic competition with the Russian Federation and related activities of the Department of Defense (sec. 1238)

The committee recommends a provision that would express the sense of the Senate that long-term strategic competition with the Russian Federation is a principal priority for the Department of Defense that requires sustained investment due to the magnitude of the threat posed to United States security, prosperity, and alliances and partnerships. The provision would further express the sense of the Senate concerning steps that the Department of Defense should take to enhance deterrence against Russian aggression and counter Russian activities short of armed conflict.

Report on Russian Federation support of racially and ethnically motivated violent extremists (sec. 1239)

The committee recommends a provision that would require the Secretary of Defense, in consultation with the head of any other relevant Federal department or agency, to submit a report to the appropriate congressional committees on Russian support to racially- and ethnically-motivated violent extremist groups and networks in Europe and the United States. The groups or networks to be covered in the report include groups or networks: (1) Targeted or recruited by the Russian intelligence services; (2) That have received support, including training, messaging support on social media platforms, and financial or other support from Russia, its agents, or other Russian entities acting at the direction of or for the benefit of the Russian Government; and (3) That have leadership or bases of operations located within Russia and that operate or maintain chapters or a network of groups in Europe or the United States. The report would also require the Secretary to provide any recommendations for mitigating the security threat posed by these groups or networks and countering Russian support for such groups or networks.

The committee is concerned about the growing national security threat arising from Russia's support, both directly and indirectly, for racially- and ethnically-motivated violent extremist groups in Europe and the United States. Russia's continued support of such groups or networks, whether through direct support, information warfare operations to amplify and inflame ethnic and religious tensions, and tolerating their operations on Russian soil, poses a significant risk to societal stability and democratic institutions in Europe and the United States.

Participation in European program on multilateral exchange of surface transportation services (sec. 1240)

The committee recommends a provision that would authorize the Secretary of Defense to participate in a Surface Exchange of Services program of the Movement Coordination Center Europe.

Participation in programs relating to coordination or exchange of air refueling and air transportation services (sec. 1241)

The committee recommends a provision that would codify permanently the authority of the Secretary of Defense to participate in

programs relating to coordination or exchange of air refueling and air transportation services.

Subtitle E—Matters Relating to the Indo-Pacific Region
Pacific Deterrence Initiative (sec. 1251)

The committee recommends a provision that would require the Secretary of Defense to carry out the Pacific Deterrence Initiative (PDI) to ensure the effective implementation of the National Defense Strategy with respect to the Indo-Pacific region. The provision would describe the activities to be carried out under the PDI: (1) Activities to increase the lethality of the Joint Force in the Indo-Pacific region; (2) Activities to enhance the design and posture of the Joint Force in the Indo-Pacific region; (3) Activities to strengthen alliances and partnerships; and (4) Activities to carry out a program of exercises, experimentation, and innovation for the Joint Force in the Indo-Pacific region. The provision would authorize \$1.4 billion to be appropriated for the Secretary to carry out PDI in fiscal year 2021, as specified in the funding table in section 4502.

The provision would also authorize \$5.5 billion to be appropriated for the Secretary to carry out the PDI in fiscal year 2022. Not later than February 15, 2021, the provision would require the Secretary, in consultation with the Commander, U.S. Indo-Pacific Command, to submit to the congressional defense committees a plan to expend not less than the amounts authorized to be appropriated for the Secretary to carry out the PDI in fiscal year 2022.

The provision would repeal section 1251 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91), as most recently amended by section 1253 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232), which established an authority for an “Indo-Pacific Stability Initiative.”

The committee notes that the provision would emphasize that specific activities to be carried out under the PDI, particularly those related to the lethality of the Joint Force and the design and posture of the Joint Force, should be focused in and with respect to locations west of the International Date Line. In this way, the committee believes that the PDI will bolster the “contact” and “blunt” layers described by the Global Operating Model of the National Defense Strategy to maintain the credibility of American deterrence against adversarial aggression in the Indo-Pacific region.

The committee encourages the Secretary of Defense to consider whether a named operation in the Indo-Pacific would improve the execution of the PDI, including through more predictable and sustainable funding, improved joint planning and coordination of training and exercise activities, and increased support for deployments of rotational forces.

The committee notes that the PDI is designed to further the strategic and policy objectives articulated by Congress in the Asia Reassurance Initiative Act (Public Law 115–409) and by the executive branch in the National Security Strategy, the “Free and Open Indo-Pacific” strategy of the Department of State, the National Defense

Strategy, and the Indo-Pacific strategy report of the Department of Defense.

The committee notes that the provision would require the Department of Defense to submit detailed budgetary display information associated with the PDI in future budget requests. The committee believes that the availability of budgetary data organized according to regional missions and the priorities of the combatant commands is critical for the ability of the Department and the Congress to assess the implementation of the National Defense Strategy. Furthermore, a budgetary display is included elsewhere in this Act that captures spending related to the PDI. The committee encourages the Department of Defense to continue working with the Congress to improve budgetary transparency in support of its oversight responsibilities.

Sense of Senate on the United States-Vietnam defense relationship (sec. 1252)

The committee recommends a provision that would commemorate the 25th anniversary of the normalization of diplomatic relations between the United States and Vietnam and express support for deepening defense cooperation between the United States and Vietnam, including with respect to maritime security, cybersecurity, counterterrorism, information sharing, humanitarian assistance and disaster relief, military medicine, peacekeeping operations, defense trade, and other areas.

Authority to transfer funds for Bien Hoa dioxin cleanup (sec. 1253)

The committee recommends a provision that would allow the Secretary of Defense to transfer not more than \$15.0 million in fiscal year 2021 to the Secretary of State, to be used by the United States Agency for International Development for the Bien Hoa dioxin cleanup in Vietnam.

Cooperative program with Vietnam to account for Vietnamese personnel missing in action (sec. 1254)

The committee recommends a provision that would authorize the Secretary of Defense to carry out a cooperative program with the Ministry of Defense of Vietnam to assist in accounting for Vietnamese personnel missing in action.

Provision of goods and services at Kwajalein Atoll, Republic of the Marshall Islands (sec. 1255)

The committee recommends a provision that would authorize the Secretary of the Army to provide goods and services, including inter-atoll transportation, at Kwajalein Atoll, Republic of the Marshall Islands (RMI), to the RMI government and other eligible patrons. The provision would also require the Secretary of the Army to provide a briefing on the use of the authority under section 7596(a) of title 10, United States Code, as would be added by the provision, in fiscal year 2021, including a written summary describing the goods and services provided on a reimbursable basis and the goods and services provided on a non-reimbursable basis.

Authority to establish a Movement Coordination Center Pacific in the Indo-Pacific region and participate in an Air Transport and Air-to-Air Refueling and other Exchanges of Services program (sec. 1256)

The committee recommends a provision that would authorize the Secretary of Defense, with the concurrence of the Secretary of State, to establish a Movement Coordination Center Pacific and enable the participation of the Department of Defense in an Air Transport and Air-to-Air Refueling and other Exchanges of Services (ATARES) program of the Center.

Training of ally and partner air forces in Guam (sec. 1257)

The committee recommends a provision that would commend the memorandum of understanding agreed to by the United States and the Republic of Singapore on December 6, 2019, to establish a fighter jet training detachment in Guam. The provision would require that, not later than 1 year after the date of the enactment of this Act, the Secretary of Defense submit to the congressional defense committees a report assessing the merit and feasibility of entering into agreements similar to the aforementioned memorandum of understanding with other United States allies and partners in the Indo-Pacific region, to include Japan, Australia, and India.

Statement of policy and sense of Senate on the Taiwan Relations Act (sec. 1258)

The committee recommends a provision that would state the policy of the United States with respect to upholding its obligations under the Taiwan Relations Act (Public Law 96–8).

Among other things, the provision would emphasize that the Taiwan Relations Act and the “Six Assurances” continue to provide the foundation of United States-Taiwan relations.

The provision would reiterate the commitment of the United States under the Taiwan Relations Act to maintain the capacity “to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan,” including the capacity of the United States Armed Forces to deny an operation by the People’s Republic of China to rapidly seize control of Taiwan and present the United States with a “fait accompli.”

The provision would state that it is the policy of the United States to deepen, to the fullest extent short of establishing diplomatic relations the extensive, close, and friendly relations of the United States with Taiwan, including defense relations.

Finally, the provision would express the sense of the Senate that the Secretary of Defense should ensure that policy guidance to the Department of Defense related to United States-Taiwan defense relations is fully consistent with the statement of policy contained in the provision and issue new policy guidance required to carry out such policy.

Sense of Congress on port calls in Taiwan with the USNS *Comfort* and USNS *Mercy* (sec. 1259)

The committee recommends a provision that would express the sense of Congress that the Department of Defense should conduct port calls in Taiwan with the USNS *Comfort* and USNS *Mercy*.

Limitation on use of funds to reduce total number of members of the Armed Forces serving on active duty who are deployed to the Republic of Korea (sec. 1260)

The committee recommends a provision that would, among other things, prohibit funds authorized to be appropriated by this Act to be obligated or expended to reduce the total number of members of the Armed Forces serving on Active Duty and deployed to the Republic of Korea to fewer than 28,500.

Sense of Congress on co-development with Japan of a long-range ground-based anti-ship cruise missile system (sec. 1261)

The committee recommends a provision that would express the sense of Congress that the Department of Defense should prioritize consultations with the Ministry of Defense of Japan to determine whether a ground-based, long-range anti-ship cruise missile system would meet shared defense requirements of the United States and Japan and, if so, that the United States and Japan should consider co-development of such a system.

Subtitle F—Reports

Review of and report on overdue acquisition and cross-servicing agreement transactions (sec. 1271)

The committee recommends a provision that would require the Secretary of Defense to produce a report on all unreimbursed and overdue Acquisition and Cross-Servicing (ACSA) transactions valued at \$1.0 million or more. The provision would also require a plan for securing reimbursement from the relevant foreign partner and a summary of actions taken by the Department to improve record-keeping related to ACSA transactions.

Report on burden sharing contributions by designated countries (sec. 1272)

The committee recommends a provision that would modify section 2350j of title 10, United States Code, by requiring an annual report on burden sharing contributions received from designated countries under this authority and the purposes for which such contributions were used.

The committee notes that section 2350j of title 10, United States Code, authorizes the Secretary of Defense, after consultation with the Secretary of State, to accept cash contributions from any country or regional organization designated for specified purposes. The committee lacks sufficient visibility into reimbursements made pursuant to this authority and believes that the report required by this provision will better enable the committee to conduct appropriate oversight.

Report on risk to personnel, equipment, and operations due to Huawei 5G architecture in host countries (sec. 1273)

The committee recommends a provision that would require the Secretary of Defense, not later than 1 year after the date of the enactment of this Act, to submit to the congressional defense committees a report that contains an assessment of: (1) The risk to personnel, equipment, and operations of the Department of Defense in host countries posed by the current or intended use by such countries of a 5G telecommunications architecture provided by Huawei Technologies Co., Ltd.; and (2) Measures required to mitigate this risk, including the merit and feasibility of the relocation of certain personnel or equipment of the Department of Defense to another location without the presence of a 5G telecommunications architecture provided by Huawei Technologies Co., Ltd.

Subtitle G—Other Matters

Reciprocal patient movement agreements (sec. 1281)

The committee recommends a provision that would authorize the Secretary of Defense, with the concurrence of the Secretary of State, to enter into a bilateral or multilateral memorandum of understanding or other formal agreement with one or more governments of certain partner countries concerning reciprocity with respect to patient movement personnel, services, and equipment. The provision would require the Secretary of Defense, before entering into a memorandum of understanding or other formal agreement, to certify in writing that the professional credentials, certifications, licenses, and approvals for patient movement personnel and patient movement equipment of the partner country meet or exceed the equivalent standards of the United States for similar personnel and equipment and will provide for a level of care comparable to, or better than, the level of care provided by the Department of Defense. The provision would require that such a certification be submitted to the appropriate congressional committees not later than 15 days after the date on which the Secretary of Defense makes the certification and be reviewed and recertified by the Secretary of Defense not less frequently than annually.

Extension of authorization of non-conventional assisted recovery capabilities (sec. 1282)

The committee recommends a provision that would modify section 943(g) of the National Defense Authorization Act for Fiscal Year 2009 (Public Law 110–417), as most recently amended by section 1282(a) of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328), by extending for 3 years the authority of the Department of Defense to engage in Non-Conventional Assisted Recovery activities.

Extension of Department of Defense support for stabilization activities in national security interest of the United States (sec. 1283)

The committee recommends a provision that would modify section 1210A(h) of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) by extending the authority for the

Department of Defense to provide specified support for stabilization activities in the national security interest of the United States through December 31, 2021.

Notification with respect to withdrawal of members of the Armed Forces participating in the Multinational Force and Observers in Egypt (sec. 1284)

The committee recommends a provision that would require the Secretary of Defense to submit a report to the congressional defense committees and the Committee on Foreign Relations of the Senate and the Committee on Foreign Affairs of the House of Representatives 30 days prior to a reduction in the total number of members of the Armed Forces deployed to the Multinational Force and Observers (MFO) in Egypt to fewer than 430 members. The report would include: a detailed accounting of the number of members of the Armed Forces to be withdrawn from the MFO in Egypt and the capabilities that such members of the Armed Forces provide in support of the mission; an explanation of national security interests of the United States served by such a reduction and an assessment of the effect, if any, such a reduction is expected to have on the security of United States partners in the region; a description of consultations performed by the Secretary with the other countries that contribute military forces to the MFO; an assessment of whether other countries, including the countries that contribute military forces to the MFO, will increase their contributions of military forces to compensate for the capabilities withdrawn by the United States; and an explanation of any anticipated negative impact of such a reduction on the ability of the MFO in Egypt to fulfill its mission of supervising the implementation of the security provisions of the 1979 Treaty of Peace between Egypt and Israel and employing best efforts to prevent any violation of the terms of such treaty and the manner in which any such negative impact will be mitigated.

The committee strongly supports maintaining U.S. military support to the MFO. The 1979 Egyptian-Israeli peace treaty represents an anchor of stability in an unpredictable region. The MFO has been essential to supervising the implementation of the treaty's security provisions and employing best efforts to prevent violations of its terms. The committee believes that American leadership of the MFO, including adequate U.S. force contributions, is essential to the MFO's credibility with Egypt and Israel and is also vital to encouraging 12 other partners to contribute troops to the force. The committee is concerned that a significant drawdown from the MFO would create new challenges in the implementation of the peace treaty, resulting in a less stable Middle East and making it more difficult to implement the National Defense Strategy.

Modification to initiative to support protection of national security academic researchers from undue influence and other security threats (sec. 1285)

The committee recommends a provision that would amend section 1286 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115-232) to include requirements for briefings to appropriate senior officials of institutes of

higher education on the espionage risks posed by near-peer strategic competitors.

Establishment of United States-Israel Operations-Technology Working Group (sec. 1286)

The committee recommends a provision that would direct the Secretary of Defense, in consultation with the Minister of Defense of Israel, to establish, not later than 1 year after the date of the enactment of this Act, a United States-Israel Operations-Technology Working Group.

Items of Special Interest

Barriers to security cooperation

The committee acknowledges that, while the Department of Defense (DOD) maintains strong bi- and multilateral security cooperation programs with key partners and allies involved in the Indo-Pacific region, these capacity building efforts could be enhanced through more proactive planning and cooperation with allies and partners that capitalize on each country's comparative strengths. Improved coordination among the security cooperation activities of allies and partners in the Indo-Pacific region would allow each partner to maximize its contributions to regional security and interoperability with U.S. forces while more efficiently distributing limited resources. Medium- and long-range planning to meet shared operational requirements and security cooperation planning stand out as areas in which early coordination with partners, such as Japan, Australia, New Zealand, and the United Kingdom, could pay significant dividends.

Therefore, not later than October 1, 2020, the committee directs the DOD to commission a study conducted by a Federally Funded Research and Development Corporation to examine: (1) Key allies' and partners' comparative strengths in meeting shared operational requirements and security cooperation objectives with other partner nations; (2) The ways the DOD can draw on partner nations' comparative strengths to meet shared security objectives; (3) An assessment of the U.S. operational and policy barriers that inhibit more expansive cooperation; and (4) Recommendations for how to alter U.S. policies, guidance, and procedures, including security cooperation planning processes, to better capitalize on partners' comparative strengths.

Defense cooperation with Estonia, Latvia, and Lithuania

The committee commends Estonia, Latvia, and Lithuania for meeting their commitments as North Atlantic Treaty Organization (NATO) allies to spend at least 2 percent of gross domestic product on defense, focusing their investments on the capabilities necessary to deter and resist Russian aggression, and improving coordination on defense requirements and procurement. However, despite these efforts, the committee recognizes that each nation has unmet defense requirements that are unlikely to be met solely through their individual national defense budgets. That is why, among other steps, the Congress, in section 1246 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-120), required

the Secretary of Defense and the Secretary of State to jointly conduct a comprehensive, multilateral assessment of the military requirements of Lithuania, Latvia, and Estonia to deter and resist aggression by the Russian Federation and to report to the Congress on the results of that assessment. The committee underscores the importance of this assessment, which is intended to provide a substantive foundation for expanded defense cooperation between the United States and Estonia, Latvia, and Lithuania, including in such areas as maritime situational awareness, ammunition, Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance, and special forces. Therefore, the committee directs the Secretary of Defense to provide, not later than August 15, 2020, a briefing on the status of the assessment and report required by section 1246 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–120), including any interim recommendations of the Secretary.

Destabilizing activities of the Russian Federation

The committee remains concerned about activities of the Russian Federation that could have a destabilizing impact on the political and security environment in the U.S. European Command area of responsibility.

The committee notes that the Russian Federation has played a destabilizing role in the relationship between Kosovo and Serbia, undermined the sovereignty of Bosnia and Herzegovina, provided support to transnational extremist groups, and consistently worked to undermine the North Atlantic Treaty Organization alliance and European Union. In the western Balkans, in particular, this has included the Russian Federation's supporting a coup attempt in Montenegro and promoting discord in North Macedonia as each country was preparing to join the NATO alliance.

Accordingly, the committee directs the Secretary of Defense to provide a briefing to the committee, no later than October 30, 2020, on efforts by U.S. European Command to promote U.S. security cooperation with countries in the western Balkans and to reduce their dependence on Russian weapon systems.

Forward deployed naval forces in Europe

The committee continues to support additional forward-basing of United States Navy destroyers in Rota, Spain. The ships currently stationed in Spain are among the most dynamically-employed assets of U.S. global maritime presence—performing ballistic missile defense missions, carrying out strikes in Syria, boosting U.S. presence across the European theater in support of allies and partners, and monitoring increasing Russian naval activities. At the same time, these ships have maintained some of the highest readiness rates of ships in the Navy, in part due to rigorous maintenance practices.

The committee is concerned that increasing Russian naval activity in the European theater, which is at its highest level since the Cold War, presents a significant challenge to the implementation of the National Defense Strategy in the European theater. The committee is also aware of the significant advances in Russian naval capability, especially undersea.

Due in part to these developments, the Commander, U.S. European Command, testified to the committee in February 2020 that he supports increasing from four to six the number of destroyers based in Rota, Spain. The Commander said that, based on the European Deterrence Initiative investments, Rota, Spain, facilities could support two more destroyers immediately. He also said that the two ships would “improve our ability to get indications and warnings in the potential battle space and also dramatically improve our ability to better command and control.” In March 2020, the Chief of Naval Operations also endorsed the additional naval presence before the committee. The committee finds the arguments of senior defense leadership to increase naval presence in Europe, and the mission flexibility it would provide, compelling.

Therefore, the committee directs the Chief of Naval Operations and the Commander, U.S. European Command, not later than 15 days after the fiscal year 2022 budget request is submitted to the Congress, to provide a briefing to the Committees on Armed Services of the Senate and House of Representatives on the plan to base two additional destroyers at Rota, Spain. This brief shall include a detailed explanation, by fiscal year, of actions and the associated funding that will lead to the forward stationing of six destroyers based in Rota as soon as practicable.

GAO briefing of the USMC distributed laydown

Section 1260K of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) directed the Department of Defense to submit a report on the implementation of the planned distributed lay-down of members of the United States Marine Corps in Okinawa, Guam, Hawaii, Australia, and other locations. The committee is aware that the estimated cost of the distributed lay-down continues to increase and that the projected completion date continues to be delayed. The committee seeks to ensure the proper alignment of the Department’s plans concerning Marine Corps resources, capabilities, and posture to adequately prepare these forces for possible contingencies in the Indo-Pacific region. The committee also recognizes the significant implications of the Commandant’s Planning Guidance issued in July 2019 and the subsequent Force Design 2030 report issued in March 2020 with respect to force design, operational concepts, and posture.

Accordingly, the committee directs the Comptroller General of the United States to review the report required above and submit to the Committees on Armed Services of the Senate and the House of Representatives an assessment of the matters contained in the report, including an assessment of: (1) The extent to which DOD’s report addressed the mandated reporting elements; (2) The status of DOD’s implementation for the planned distributed laydown; and (3) Any other matters the Comptroller General determines are relevant.

The committee further directs the Comptroller General to provide an interim briefing to the Committees on Armed Services of the Senate and the House of Representatives, not later than 90 days after the date on which the DOD submits its report, on preliminary findings of the Comptroller General’s review and to present final results to the Committees on Armed Services of the

Senate and the House of Representatives in a format and time-frame agreed to subsequent to the briefing.

Global Engagement Center

The committee notes that the Global Engagement Center (GEC) is responsible for directing, leading, synchronizing, integrating, and coordinating efforts of the U.S. Government to recognize, understand, expose, and counter foreign state and foreign non-state propaganda and disinformation efforts aimed at undermining or influencing the policies, security, or stability of the United States and United States allies and partner nations. The growing use of propaganda and disinformation by adversaries, particularly Russia and China, to undermine U.S. interests make the activities of the GEC all the more important to support the National Security Strategy and complement the objectives of the National Defense Strategy. The committee notes that, since the establishment of the GEC in the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328), the Department of Defense has provided limited financial support to the GEC in order to facilitate activities that directly support the objectives of both the Department of Defense and the Department of State. The committee believes that this cooperation is a critical component of an effective whole-of-government approach to identify and counter increasingly aggressive operations by our adversaries in the information domain and encourages the Department of Defense and the GEC to continue their cooperative relationship.

The committee believes that, as the GEC continues to mature organizationally and receives greater and more predictable funding from the Department of State, the Department of Defense should focus its efforts on institutionalizing its cooperative relationship with the GEC. The committee believes that the activities of the GEC are complementary to Department of Defense objectives outlined in the National Defense Strategy.

Increasing exchange student slots at military institutions

The committee notes that there are opportunities to increase student exchange programs to Southeast Asian nations at the U.S. Military Academy, the Naval Academy, the Air Force Academy, Merchant Marine Academies, Reserve Officers' Training Corps programs, and other educational institutions affiliated with the military. Military exchange programs foster and develop robust alliances and partnerships, and the committee encourages the Department to seek opportunities with the Department of State to increase training opportunities with our military partners in the Indo-Pacific region. The committee urges the Department to give this issue a thorough review and to continue to work collaboratively with the Congress to further identify where exchange programs can be useful toward cultivating long-lasting alliances as required by the National Defense Strategy.

Interagency Cooperation for Addressing Great Power Competition in the Arctic

The committee notes that the strategic importance of the Arctic continues to increase as the United States and other countries rec-

ognize the military and geopolitical significance of the Arctic's sea lanes and choke points and the potential for power projection into multiple regions. The committee notes that Russia has focused on the development of its Arctic capabilities and has made significant investments in its military infrastructure in the Arctic. The committee also notes that China—a non-Arctic state—has expanded its interest and reach into the Arctic, recently releasing its own Arctic Strategy, declaring itself a “near-Arctic nation,” investing in nuclear-powered icebreakers, and pursuing military cooperation with Russia in the region. The committee notes the importance of an interagency cooperative approach to address the great power competition issues germane to the Arctic, including the State Department's role on the Arctic Council and coordination with the United States' Arctic North Atlantic Treaty Organization allies, the U.S. intelligence community's role in maintaining intelligence, surveillance, and reconnaissance operations in the region to inform decision-making, and the Department of Defense's role in maintaining the readiness of U.S. forces capable of working with the U.S. Coast Guard in maintaining freedom of movement, to the maximum extent possible, in the Arctic and the defense of the U.S. homeland. The committee is aware that other Federal agencies, including the Departments of Commerce, Interior, and Homeland Security and the National Science Foundation, have significant roles in policy issues and activities related to the Arctic.

Therefore, the committee encourages the Department of Defense to maintain and strengthen communication and cohesion of efforts related to the Arctic region across all U.S. Government agencies. Furthermore, the committee encourages the Department of Defense to stand up a joint interagency task force to help better coordinate efforts in the Arctic region.

PDI: State Partnership Program

The committee recognizes the benefit of relationships established through the National Guard State Partnership Program (SPP) and its foreign partners, especially in the Indo-Pacific. These partnerships serve as a basis for enhancing interoperability with U.S. forces, to include, but not limited to, military, medical, humanitarian relief, and disaster assistance activities in support of the National Defense Strategy pillar of Strengthening Alliances and Attracting New Partners. Given the Department's focus on the Indo-Pacific region, the committee believes that the Department should fully fund all SPP partnerships in the Indo-Pacific area of responsibility in coordination with the Commander, U.S. Indo-Pacific Command.

Support for Peshmerga

The committee notes that the United States-led coalition known as the Combined Joint Task Force-Operation Inherent Resolve (CJTF-OIR), in partnership with the Iraqi Security Forces (ISF), including the Kurdish Peshmerga, successfully liberated all Iraqi territory from the control of the Islamic State of Iraq and Syria (ISIS). While the committee applauds this notable achievement, it also expresses concern that ISIS continues to pose a significant threat to Iraq, the region, and potentially the U.S. homeland.

According to the most recent Lead Inspector General quarterly report for OIR, CJTF–OIR has expressed concern that ISIS continues to wage “low-level insurgency” in both Iraq and Syria, including exploiting disputed territory that remains ungoverned. In its report, the Lead Inspector General highlighted that “the ISF and Peshmerga share security responsibilities in disputed territories, but lack strong cooperation.” According to CJTF–OIR, ISIS “continues leveraging this area to its advantage.” Additionally, the report notes that COVID–19 negatively impacted CJTF–OIR support to the ISF, including disrupting training with partner units.

The committee believes a lasting defeat of ISIS is critical to maintaining a stable and tolerant Iraq in which all faiths, sects, and ethnicities are afforded equal protection and fully integrated into the Government and society of Iraq and supports the provision of U.S. security and other assistance for such purposes. As part of those efforts, the committee supports continued assistance to Kurdish Peshmerga forces with the objective of enabling them to more effectively partner with the ISF, the United States, and other international partners. The committee strongly supports continuation of the partnership between the U.S. military and the Kurdish Peshmerga in furtherance of our shared interests, including through the signing of a new memorandum of understanding between the Department of Defense and the Ministry of Peshmerga. In the coming years, the committee encourages the Department to normalize its support to the Peshmerga by focusing assistance on the reform and professionalization at the ministerial and unit level.

Taiwan National Defense University feasibility report

Not later than November 30, 2020, the Secretary of Defense, in consultation with appropriate counterparts in Taiwan, shall submit to the congressional defense committees a report on the feasibility and advisability of senior officers of the Armed Forces providing educational training at the National Defense University of Taiwan.

U.S. Army force posture in Europe

Improving U.S. Army force posture in Europe is critical for implementing the National Defense Strategy. By adjusting posture, capabilities, and capacity in Europe to the realities of strategic competition with Russia, the United States can bolster deterrence and reduce the risk of executing contingency plans.

The committee commends recent steps to augment Army force posture in Europe, including: the addition of 1,500 permanently-stationed soldiers announced in September 2018; the “Joint Declaration on Defense Cooperation Regarding U.S. Force Posture in the Republic of Poland,” signed in September 2019, including the decision to establish a Division Headquarters (Forward); and the planned activation of Fifth Corps headquarters announced in February 2020, including approximately 200 soldiers to support an operational command post (OCP) in Europe on a rotational basis. The committee underscores the importance of the OCP and its persistent presence in Europe for refining and integrating operational design and planning of joint land operations, especially in concert with regional allies and partners. The OCP is also critical for coordinating and executing efforts to prevail in competition and facili-

tating rapid transition to combat operations in the event of conflict. Therefore, the committee urges the Army and U.S. European Command to prioritize the deployment of the OCP to Europe at the earliest opportunity. The committee also commends the Army's efforts to develop, mature, and field a Multi-Domain Task Force optimized for operations in Europe.

Despite these efforts, as well as the important progress made to improve the posture and readiness of U.S. forces in Europe through the European Deterrence Initiative, the committee continues to believe that there is an urgent requirement for additional Army capability and capacity in several areas, including long-range fires, air and missile defense, logistics and sustainment, warfighting headquarters elements, and electronic warfare. Furthermore, the recent decision by the Secretary of Defense to repurpose funding from critical EDI military construction projects, and thereby deferring these projects for the foreseeable future, sends the wrong message to our allies and could undermine our efforts to deter Russia.

While recognizing the need to balance requirements in the Indo-Pacific region, the committee urges the Secretary of Defense and the Secretary of the Army to prioritize additional permanently-stationed forces in Europe as soon as possible to address these capability gaps and capacity shortfalls. The committee notes that previous defense authorization bills have authorized the additional end strength requested by the Army for this purpose. In the long term, a number of locations may be appropriate for these forces. However, in the short term, the Secretary of Defense and the Secretary of the Army should prioritize locations that can receive new permanently-stationed forces quickly with minimal new infrastructure investment.

United States Africa Command

The committee strongly supports the National Defense Strategy (NDS) and its emphasis on prioritizing competition with the People's Republic of China and the Russian Federation while sustaining efforts to counter the threat posed by violent extremist organizations. The committee notes that the People's Republic of China and the Russian Federation are actively pursuing greater security and economic influence in the U.S. Africa Command (AFRICOM) area of responsibility through the establishment of overseas military infrastructure and bases, arms sales, information and influence operations, and predatory economic practices. At the same time, violent extremist organizations with ties to al-Qaida and the Islamic State of Iraq and Syria remain a potent threat across the African continent and, particularly in West Africa, are significantly expanding their areas of operation. Due to these factors, the committee believes that AFRICOM is a critical component of the Department of Defense's efforts to implement the NDS. In order for these efforts to be effective, the Department must maintain a meaningful military presence on the continent in support of an integrated whole of government approach. As such, the committee urges the Department to appropriately resource AFRICOM, particularly in the areas of personnel, intelligence, surveillance, and reconnaissance capabilities and security cooperation programs.

United States Central Command forces briefing

The committee acknowledges the unique security challenges present in the United States Central Command (CENTCOM) area of responsibility, including Iran's malign and destabilizing behavior, violent extremist organizations, and the need to reassure U.S. allies and partners. However, the committee is concerned that the number of troops and high-demand, low-density capabilities deployed to the region detract from the U.S. military's ability to meet requirements in other regions and are in conflict with the goals articulated in the National Defense Strategy.

Therefore, not later than September 30, 2020, the committee directs the Secretary of Defense to provide to the congressional defense committees a briefing on the following: (1) A prioritized list of missions for which forces are deployed to the CENTCOM area of responsibility; (2) The risks and scenarios considered when deploying capabilities to the region; (3) How the Department of Defense defines deterrence of Iran, including deterrence of ballistic missile attacks and asymmetric threats from terrorist and proxy groups supported by the Government of Iran; (4) How the Department assesses whether Iran is deterred, from what, and to what degree; (5) How the Department assesses the contributions of individual Department assets to the deterrence of Iran; and (6) Which, if any, assets could be removed from the CENTCOM area of responsibility without substantially reducing the military's ability to advance its priority missions.

United States Indo-Pacific Command Fusion Centers

The committee recognizes the critical strategic role that multilateral facilities and organizational structures play in strengthening alliances and partnerships in the Indo-Pacific region. The second line of effort outlined in the National Defense Strategy (NDS) states, "By working together with allies and partners we amass the greatest possible strength for the long-term advancement of our interests, maintaining favorable balances of power that deter aggression and support the stability that generates economic growth." The independent assessment submitted to the Congress by the Commander, U.S. Indo-Pacific Command, in response to section 1253 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92), details the resources and capabilities required to fully implement the NDS in the Indo-Pacific region, to include investments in the Counter Terrorism Information Facility in Singapore, the Oceania Fusion Center, and the Indo-Pacific Maritime Coordination Center as well as supporting investments in Mission Partner Environment that provide multinational command and control. The committee recognizes that these fusion centers serve the critical function of enhancing intelligence support, promoting practical information sharing, and facilitating logistics cooperation to enable allied and partner nations confronting maritime and other operational challenges.

The committee strongly believes that fortifying the institutional linkages with allies and partners such as these is an important contribution to NDS implementation. Therefore, the committee expects the Department of Defense to devote appropriate focus and

resources to multinational fusion centers and other organizational structures, including in future budget requests.

Use of the Secretarial Designee Program for rehabilitation of Ukrainian wounded warriors

Section 1234 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) expanded the use of the Secretarial Designee Program to provide for Ukrainian soldiers' receipt of treatment at Department of Defense military treatment facilities when the necessary care cannot be provided in Ukraine. The committee notes that implementation issues have arisen with regards to covering non-medical expenses in connection with such treatment that have been approved in previous instances under the Emergency and Extraordinary Expense authority. The committee urges the Secretary of Defense to coordinate with senior Ukrainian defense officials to resolve these issues, including, but not limited to, examining alternative sources of funding for these non-medical expenses. Further, the committee encourages the Secretary of Defense, in coordination with the Secretary of State, to provide assistance to Ukraine in developing its capacity to care for wounded members of the Ukrainian Armed Forces within Ukraine, including by providing education and training for Ukrainian military medical personnel and healthcare specialists. The Department of Defense should continue to consider Secretarial Designee Program requests to provide specialized care in U.S. military medical treatment facilities in the areas of polytrauma, amputations, burn treatment, prosthetics, and rehabilitation on a case-by-case basis.

TITLE XIII—COOPERATIVE THREAT REDUCTION

Funding allocations for Department of Defense Cooperative Threat Reduction Program (sec. 1301)

The committee recommends a provision that would authorize \$288.5 million for the Cooperative Threat Reduction (CTR) program, define the funds as authorized to be appropriated in section 301 of this Act, and authorize CTR funds to be available for obligation for fiscal years 2021, 2022, and 2023.

TITLE XIV—OTHER AUTHORIZATIONS

Subtitle A—Military Programs

Working capital funds (sec. 1401)

The committee recommends a provision that would authorize the appropriations for the defense working capital funds at the levels identified in section 4501 of division D of this Act.

Chemical Agents and Munitions Destruction, Defense (sec. 1402)

The committee recommends a provision that would authorize the appropriations for Chemical Agents and Munitions Destruction, Defense, at the levels identified in section 4501 of division D of this Act.

Drug Interdiction and Counterdrug Activities, Defense-wide (sec. 1403)

The committee recommends a provision that would authorize the appropriations for Drug Interdiction and Counterdrug Activities, Defense-wide, at the levels identified in section 4501 of division D of this Act.

Defense Inspector General (sec. 1404)

The committee recommends a provision that would authorize the appropriations for the Office of the Inspector General of the Department of Defense at the levels identified in section 4501 of division D of this Act.

Defense Health Program (sec. 1405)

The committee recommends a provision that would authorize appropriations for the Defense Health Program activities at the levels identified in section 4501 of division D of this Act.

Subtitle B—Armed Forces Retirement Home

Authorization of appropriations for Armed Forces Retirement Home (sec. 1411)

The committee recommends a provision that would authorize an appropriation of \$64.3 million from the Armed Forces Retirement Home Trust Fund for fiscal year 2021 for the operation of the Armed Forces Retirement Home.

Periodic inspections of Armed Forces Retirement Home facilities by nationally recognized accrediting organization (sec. 1412)

The committee recommends a provision that would amend section 1518 of the Armed Forces Retirement Home Act of 1991 (24 U.S.C. 418) to require the Chief Operating Officer (COO) to request the inspection of each facility by a nationally recognized civilian accrediting organization, in accordance with section 1511(g) of such Act, on a frequency consistent with the standards of the organization. The provision would require the COO and the administrator of a facility under inspection to make, in a timely manner, all staff, other personnel, and facility records available to the civilian accrediting organization for purposes of the inspection. Not later than 60 days after an inspection, the COO would submit a report to the Secretary of Defense, the Senior Medical Advisor, and the Advisory Council containing the results of the inspection and a plan to address recommendations or other matters specified in the report. The provision would remove the requirement for a periodic inspection of the retirement home's facilities by the Department of Defense Inspector General.

Expansion of eligibility for residence at the Armed Forces Retirement Home (sec. 1413)

The committee recommends a provision that would amend section 1512(a) of the Armed Forces Retirement Home Act of 1991 (24 U.S.C. 412 (a)) to expand eligibility for residence at the Armed Forces Retirement Home.

Subtitle C—Other Matters

Authority for transfer of funds to Joint Department of Defense—Department of Veterans Affairs Medical Facility Demonstration Fund for Captain James A. Lovell Health Care Center, Illinois (sec. 1421)

The committee recommends a provision that would authorize the Secretary of Defense to transfer \$130.4 million from the Defense Health Program to the Joint Department of Defense—Department of Veterans Affairs Medical Facility Demonstration Fund, established by section 1704 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84), for the operation of the Captain James A. Lovell Federal Health Care Center.

Budget Items

Working Capital Fund reductions

The budget request included various amounts for the individual military services' Working Capital Fund budgets.

The committee believes that the organic industrial base directly supports the National Defense Strategy by restoring and maintaining the equipment and weapon systems of the Department of Defense (DOD) and directly supporting warfighter readiness. The committee notes that depot maintenance carryover consists of funded orders that are not completed by the end of the fiscal year. In an era of budget uncertainty and frequently late appropriations,

having an appropriate amount of carryover on-hand can provide a continuous and effective means of continuing production across fiscal years in the event of a continuing resolution. The committee notes, however, that excessive carryover, as determined by specific service range limits, should not be construed as appropriate carryover. Rather, appropriate carryover is the amount that falls between the high and low thresholds.

Traditionally, the committee has been reluctant to reduce any military service carryover accounts, as indiscriminate cuts to carryover directly correlates to the loss of work at DOD depots, shipyards, and air logistics centers, which in turn negatively impacts units and the warfighter. This year, however, in light of the COVID-19 global pandemic, organic industrial base facilities were forced to stop work, leading to a significant carryover buildup. The committee notes that, in some cases, carryover estimates ranged from \$500.0 million to \$750.0 million over the allowed threshold.

Accordingly, the committee recommends the following decreases to the specified military service Working Capital Fund accounts: \$50.0 million to Army Working Capital Fund and \$100.0 million to Air Force Working Capital Fund.

Despite these recommended reductions for this fiscal year, the committee remains steadfast in its belief that healthy carryover within the specified thresholds is crucial to success of the Nation's organic industrial base.

Air Force cash corpus for energy optimization

The budget request included \$95.7 million in Working Capital Fund, Air Force.

The committee continues to note the urgent requirement to constantly innovate and improve combat capability and operational effectiveness for the warfighter via targeted and competitive operational energy. As such, the committee continues to support section 337 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92), which authorized the Secretary of Defense and the military departments to use working capital funds for expenses directly related to conducting a pilot program for energy optimization initiatives for weapon system platforms or major end items in order to improve efficiency and maintainability, extend useful service life, lower maintenance costs, or provide performance enhancement.

Accordingly, the committee recommends an increase of \$10.0 million in Air Force Working Capital Fund account 493003F, line 110, to create a cash corpus for the purposes of energy optimization initiatives.

PDI: Joint Interagency Task Force—West

The budget request included \$546.2 million in Drug Interdiction and Counterdrug activities for SAG 1FU1 Counter-Narcotics Support.

The committee is concerned that the Department of Defense is planning to disestablish Joint Interagency Task Force—West (JIATF-W) by fiscal year 2023 and, consistent with those plans, reduced the amounts requested in the budget submission for support to JIATF-W in fiscal year 2021. The committee is concerned that

a clear plan for the transition of the roles and responsibilities of JIATF–W for counternarcotics and counter-illicit trafficking activities in the Indo-Pacific Command area of responsibility, should JIATF–W be disestablished, does not exist. Furthermore, the committee notes that pre-cursor chemicals used in the production of deadly drugs like synthetic heroin and methamphetamine that threaten the health and safety of American citizens and others around the world originate in and are trafficked from the Indo-Pacific Command area of responsibility. Absent greater clarity from the Department of Defense as to how it intends to ensure that there is not a degradation in its ability to support this important mission, the committee believes that it is imprudent to disestablish JIATF–W.

Therefore, the committee recommends an increase of \$15.8 million in Drug Interdiction and Counterdrug activities for SAG 1FU1 for JIATF–W. Of the increase of \$15.8 million in Drug Interdiction and Counterdrug activities, \$13.0 million shall be for project number 3309, Joint Interagency Task Force—West, and \$2.8 million shall be for project number 9202, U.S. Indo-Pacific Command Counternarcotics Operational Support.

The committee further directs the Secretary of Defense to submit, not later than 180 days after the date of the enactment of this Act, to the Committees on Armed Services of the Senate and the House of Representatives a report on the JIATF–W. The report shall include the following:

(1) A description of the current roles and responsibilities of JIATF–W;

(2) A description of the manner in which the roles and responsibilities of the JIATF–W meet the counternarcotics requirements of the Department of Defense in the area of responsibility of U.S. Indo-Pacific Command; and

(3) A comprehensive plan for either of the following eventualities (whichever the Secretary determines most effective in meeting the counternarcotics and counter-illicit trafficking requirements of the Department of Defense in the U.S. Indo-Pacific Command area of responsibility):

(A) The continuing operation of the JIATF–W in fiscal year 2021 and thereafter; or

(B) A mechanism to meet the counternarcotics requirements of the Department in the area of responsibility of the United States Indo-Pacific Command if the JIATF–W ceases operations as a component within the Department, including specific and detailed information on the resources that the Department anticipates providing to the Commander, U.S. Indo-Pacific Command, to meet the counternarcotics mission of that Command in a manner that does not divert resources from other mission requirements of that Command.

Pilot program on civilian and military partnerships to enhance interoperability and medical surge capability and capacity of National Disaster Medical System

The budget request included \$32.7 billion for Defense Health Program, of which \$1.9 billion was for SAG 7 Base Operations/Communications.

The committee recognizes the importance of developing strong military-civilian partnerships to enhance and expand the capabilities and capacities of the National Disaster Medical System. These partnerships would: (1) Provide additional training platforms to improve the clinical readiness skills of military medical providers; (2) Expand the Nation's capacity to redistribute mass casualties of war to civilian medical centers; and (3) Establish an enduring framework for a well-coordinated Federal response to pandemics, such as COVID-19, or to nuclear, radiological, biological, and chemical threats.

Therefore, the committee recommends an increase of \$5.0 million in Defense Health Program for SAG 7 for a pilot program on civilian and military partnerships to enhance interoperability and medical surge capability and capacity of National Disaster Medical System.

TITLE XV—AUTHORIZATION OF ADDITIONAL APPROPRIATIONS FOR OVERSEAS CONTINGENCY OPERATIONS

Subtitle A—Authorization of Additional Appropriations

Purpose (sec. 1501)

The committee recommends a provision that would establish this title and make available authorized appropriations upon enactment of this Act for the Department of Defense, in addition to amounts otherwise authorized in this Act.

Overseas contingency operations (sec. 1502)

The committee recommends a provision that would designate authorization of appropriations in this title as overseas contingency operations.

Procurement (sec. 1503)

The committee recommends a provision that would authorize the additional appropriation for procurement activities at the levels identified in section 4102 of division D of this Act.

Research, development, test, and evaluation (sec. 1504)

The committee recommends a provision that would authorize the additional appropriation for research, development, test, and evaluation activities at the levels identified in section 4202 of division D of this Act.

Operation and maintenance (sec. 1505)

The committee recommends a provision that would authorize the additional appropriation for operation and maintenance activities at the levels identified in section 4302 of division D of this Act.

Military personnel (sec. 1506)

The committee recommends a provision that would authorize the additional appropriation for military personnel activities at the levels identified in section 4402 of division D of this Act.

Working capital funds (sec. 1507)

The committee recommends a provision that would authorize the additional appropriation for the Defense Working Capital Funds at the levels identified in section 4502 of division D of this Act.

Drug Interdiction and Counter-Drug Activities, Defense-wide (sec. 1508)

The committee recommends a provision that would authorize the additional appropriation for the Drug Interdiction and Counter-

Drug Activities, Defense-wide, at the levels identified in section 4502 of division D of this Act.

Defense Inspector General (sec. 1509)

The committee recommends a provision that would authorize the additional appropriation for the Office of the Inspector General of the Department of Defense identified in section 4502 of division D of this Act.

Defense Health Program (sec. 1510)

The committee recommends a provision that would authorize the additional appropriation for the Defense Health Program activities identified in section 4502 of division D of this Act.

Subtitle B—Financial Matters

Treatment as additional authorizations (sec. 1521)

The committee recommends a provision that would state that the amounts authorized to be appropriated in this title are in addition to amounts otherwise authorized to be appropriated by this Act.

Special transfer authority (sec. 1522)

The committee recommends a provision that would allow the Secretary of Defense to transfer up to \$2.0 billion of overseas contingency operations funding authorized for fiscal year 2021 in this title to unforeseen higher priority needs in accordance with normal reprogramming procedures. This transfer authority would be in addition to the authority provided to the Secretary elsewhere in this Act.

Subtitle C—Other Matters

Afghanistan Security Forces Fund (sec. 1531)

The committee recommends a provision that would authorize the appropriation of funds for the Afghanistan Security Forces Fund for fiscal year 2021. The provision would also require an assessment of the Afghan government's progress on shared security goals and fulfillment of the commitments under the Joint Declaration between the Islamic Republic of Afghanistan and the United States of America for Bringing Peace to Afghanistan, which was issued on February 29, 2020. The committee believes that an intra-Afghan dialogue is the best path for peace in Afghanistan and urges all parties to work through their disputes so that the intra-Afghan dialogue can proceed. The committee also believes that continued support for the Afghan security forces is important for achieving stability and security in Afghanistan, including the conduct of shared U.S.-Afghan counterterrorism activities.

Transition and enhancement of inspector general authorities for Afghanistan reconstruction (sec. 1532)

The committee recommends a provision that would amend section 1229 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181) to provide for the transition to the lead Inspector General for Operation Freedom's Sentinel of duties, re-

sponsibilities, and authorities for serving as the independent and objective means of keeping the Secretary of State and the Secretary of Defense fully and currently informed about problems and deficiencies relating to programs and operations for the reconstruction of Afghanistan.

Budget Items

Procurement of PAC-3 MSE missiles

The budget request included \$779.8 million in line number 3 of Missile Procurement, Army (MPA), for MSE Missiles, of which \$176.6 million was included in the Overseas Contingency Operations account for the European Deterrence Initiative (EDI).

While the committee strongly supports procurement of additional MSE missiles to meet the global requirement, activities funded through EDI should directly support requirements in the U.S. European Command (EUCOM) area of responsibility. The committee understands that the 46 MSE missiles requested in EDI would be subject to global allocation to the combatant commands at the discretion of the Secretary of Defense, just as the 122 missiles requested under the Army's base budget would be so distributed. The committee does not believe that procurement of globally interchangeable assets, like munitions, without a commitment that they will be prepositioned at locations in Europe or otherwise allocated to EUCOM upon delivery, is an appropriate use of EDI funding.

Accordingly, the committee recommends a decrease of \$176.6 million in line number 3 of MPA for MSE Missiles in the Overseas Contingency Operations account for EDI.

EDI: NATO Response Force (NRF) networks

The budget request included \$70.0 million in line number 62 of Other Procurement, Army (OPA), Overseas Contingency Operations (OCO), for Installation Info Infrastructure Mod Program, of which no funds were for intermediate basing and life support for Multi-Domain Task Forces.

The unfunded priorities list submitted by the Commander, U.S. European Command, included additional funding for North Atlantic Treaty Organization Response Force Network efforts in support of the Multi-Domain Task Force.

Therefore, the committee recommends an increase of \$6.0 million in line number 62 of OPA OCO for NATO Response Force Network efforts in support of the Multi-Domain Task Force.

EDI: Improvements to living quarters for rotational forces in Europe

The budget request included \$56.4 million in line number 145 of Other Procurement, Army (OPA), Overseas Contingency Operations (OCO), for Force Provider.

The unfunded priority lists submitted by the Chief of Staff of the Army and the Commander, U.S. European Command, included additional funding for improvements to living quarters for rotational forces in Europe.

Therefore, the committee recommends an increase of \$73.4 million in line number 145 of OPA OCO for improvements to living quarters for rotational forces in Europe.

EDI: Mission Partner Environment (MPE)

The budget request included no funds in line number 65 of Research, Development, Test, and Evaluation (RDT&E), Air Force, Overseas Contingency Operations (OCO), for Mission Partner Environments.

The unfunded priorities list submitted by the Commander, U.S. European Command, included additional funding for Mission Partner Environment connectivity work in support of the Multi-Domain Task Force.

Therefore, the committee recommends an increase of \$6.5 million in line number 65 of RDT&E, Air Force, OCO, for Mission Partner Environment connectivity work in support of the Multi-Domain Task Force.

EDI: Support to deterrent activities

The budget request included \$2.5 billion in Operation and Maintenance, Army (OMA), Overseas Contingency Operations (OCO), for SAG 114 Theater Level Assets.

The unfunded priorities list submitted by the Commander, U.S. European Command, included additional funding for support to deterrent activities.

Therefore, the committee recommends an increase of \$2.7 million in OMA OCO for SAG 114 for support to deterrent activities.

EDI: Support to deterrent activities

The budget request included \$5.7 billion in Operation and Maintenance, Army (OMA), Overseas Contingency Operations (OCO), for SAG 121 Force Operations Readiness Support.

The unfunded priorities list submitted by the Commander, U.S. European Command, included additional funding for support to deterrent activities.

Therefore, the committee recommends two separate increases of \$3.0 million and \$1.5 million in OMA OCO for SAG 121, specifically for support to deterrent activities.

Commander's Emergency Response Program

The budget request included \$2.5 million in Operation and Maintenance, Army (OMA), Overseas Contingency Operations (OCO), for SAG 136 Commander's Emergency Response Program (CERP).

The committee notes that CERP is no longer being used to make "hero payments" and that such payments, when needed, should be funded via the Afghanistan Security Forces Fund or from the Government of Afghanistan.

Therefore, the committee recommends a reduction of \$500,000 in OMA OCO for SAG 136 for CERP.

EDI: Continuity of operations

The budget request included \$120.0 million in Operation and Maintenance, Army (OMA), Overseas Contingency Operations (OCO), for SAG 142 U.S. European Command.

The unfunded priorities list submitted by the Commander, U.S. European Command, included additional funding for continuity of operations work in support of the Multi-Domain Task Force.

Therefore, the committee recommends an increase of \$2.1 million in OMA OCO for SAG 142 for continuity of operations work in support of the Multi-Domain Task Force.

EDI: Modernizing Mission Partner Environment (MPE)

The budget request included \$120.0 million in Operation and Maintenance, Army (OMA), Overseas Contingency Operations (OCO), for SAG 142 U.S. European Command.

The unfunded priorities list submitted by the Commander, U.S. European Command, included additional funding for Mission Partner Environment efforts in support of the Multi-Domain Task Force.

Therefore, the committee recommends an increase of \$22.0 million in OMA OCO for SAG 142 for BICES work and CENTRIX and Seagull migration in support of the Multi-Domain Task Force.

EDI: Globally Integrated Exercise 20–4/Austere Challenge 21.3

The budget request included \$728.0 million in Operation and Maintenance, Marine Corps, Overseas Contingency Operations (OCO), for SAG 1A1A Operational Forces.

The unfunded priorities list submitted by the Commander, U.S. European Command, included additional funding for the Globally Integrated Exercise 20–4/Austere Challenge 21.3.

Therefore, the committee recommends an increase of \$10.0 million in Operation and Maintenance, Marine Corps, OCO, for SAG 1A1A for the Globally Integrated Exercise 20–4/Austere Challenge 21.3.

EDI: Marine European training program

The budget request included \$728.0 million in Operation and Maintenance, Marine Corps, Overseas Contingency Operations (OCO), for SAG 1A1A Operational Forces.

The unfunded priorities list submitted by the Commander, U.S. European Command, included additional funding for the Marine European training program.

Therefore, the committee recommends an increase of \$7.5 million in Operation and Maintenance, Marine Corps, OCO, for SAG 1A1A for the Marine European training program.

Transfer from base

The budget request included \$7.2 billion in Operation and Maintenance, Air Force, Overseas Contingency Operations, SAG 011W for Contractor Logistics Support and System Support.

The committee recommends an increase of \$30.5 million to to Operation and Maintenance, Air Force, Overseas Contingency Operations, SAG 011W for Contractor Logistics Support and System Support as a transfer. The committee notes a corresponding decrease elsewhere in this report.

Office of Security Cooperation in Iraq

The budget request included \$100.8 million in Operation and Maintenance, Air Force, for SAG 42G Other Servicewide Activities, Overseas Contingency Operations, of which \$30.0 million was for the Office of Security Cooperation-Iraq (OSC-I).

The committee expects the OSC-I to continue its transition to a normal security cooperation office, including by transitioning funding for its operations to the Foreign Military Financing Administrative Fund and the Foreign Military Sales Trust Fund Administrative Surcharge Account.

Therefore, the committee recommends a reduction of \$15.0 million in Operation and Maintenance, Air Force, for SAG 42G, Overseas Contingency Operations, for the OSC-I. The committee notes that there is a corresponding legislative provision elsewhere in this Act.

Contractor logistics support

The budget request included \$355.0 million in Operation and Maintenance, Defense-wide, Overseas Contingency Operations (OCO), for SAG 1PL7 Special Operations Command Maintenance.

The committee notes that the availability of intelligence, surveillance, and reconnaissance (ISR) capabilities remains a perennial shortfall across the geographic combatant commands. The committee notes that, despite this, the budget request for fiscal year 2021 cuts the contractor logistics support necessary for the deployment of manned ISR aircraft operated by U.S. Special Operations Command (SOCOM) without identifying a follow-on ISR solution to mitigate the loss in capability in fiscal year 2021.

Additionally, the committee notes that the budget request for fiscal year 2021 and the future years defense program includes proposals to modify the composition of SOCOM's airborne ISR fleet through the acquisition of new platforms and the divestment of platforms currently in its inventory. The committee is concerned that there does not exist an overarching strategy to guide SOCOM's airborne ISR acquisition efforts, particularly one that clearly identifies current or anticipated special operations-peculiar capability gaps and describes future manned and unmanned ISR requirements. The committee believes that it is not prudent to divest of important ISR capabilities without a clearly articulated strategy for how critical ISR requirements will be satisfied in the near-, mid-, and long-term. The committee notes that elsewhere in this Act, there is a provision that would require the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict and the Commander, SOCOM, to jointly submit to the congressional defense committees an acquisition roadmap to meet the manned and unmanned airborne ISR requirements of United States Special Operations Forces.

Therefore, the committee recommends an increase of \$27.0 million in Operation and Maintenance, Defense-wide, OCO, for SAG 1PL7 for contractor logistics support for manned ISR aircraft.

Defense Security Cooperation Agency for Iraq Train and Equip Requirements

The budget request included \$1.6 billion in Operation and Maintenance, Defense-wide (OMDW), Overseas Contingency Operations (OCO), for SAG 4GTD Defense Security Cooperation Agency, of which no funds were for Iraq Train and Equip Requirements.

The committee believes that, as the United States seeks to normalize its security assistance relationship with the Government of Iraq, traditional capacity building activities should be funded via standing authorities for such purposes, such as section 333 of title 10, United States Code, rather than through authorities such as the Counter-Islamic State of Iraq and Syria Train and Equip Fund.

Therefore, the committee recommends an increase of \$322.5 million in OMDW, OCO, for SAG 4GTD for Iraq Train and Equip Requirements. The committee notes that, elsewhere in this report, the committee recommends a commensurate decrease in OMDW, OCO, for SAG 110 Counter ISIS Train and Equip Fund.

Counter-Islamic State of Iraq and Syria Train and Equip Fund

The budget request included \$845.0 million in Operation and Maintenance, Defense-wide (OMDW), Overseas Contingency Operations (OCO), for the Counter-Islamic State of Iraq and Syria Train and Equip Fund, of which \$645.0 million was for SAG 110 Iraq Train and Equip Requirements.

The committee understands that a substantial portion of the funds requested for Iraq Train and Equip Requirements is for capacity building of the Iraqi Security Forces as opposed to operational support and immediate reconstitution of units degraded in the fight against the Islamic State of Iraq and Syria. The committee believes that, as the United States seeks to normalize its security assistance relationship with the Government of Iraq, traditional capacity building activities should be funded via standing authorities for such purposes, such as section 333 of title 10, United States Code.

Therefore, the committee recommends a decrease of \$322.5 million in OMDW, OCO, for SAG 110 Iraq Train and Equip Requirements. The committee notes that, elsewhere in this report, the committee recommends a commensurate increase for the Defense Security Cooperation Agency for Iraq Train and Equip Requirements.

TITLE XVI—STRATEGIC PROGRAMS, CYBER, AND INTELLIGENCE MATTERS

Subtitle A—Space Activities

Resilient and survivable positioning, navigation, and timing capabilities (sec. 1601)

The committee recommends a provision that would require the Secretary of Defense to: (1) Prioritize mission elements, platforms, and weapon systems that require position, navigation, and timing (PNT) and are critical to operations; (2) Mature, test, and produce sufficient quantities of equipment that can generate or process available resilient alternative PNT signals to equip the prioritized force elements; and (3) Integrate and deploy such equipment into the prioritized operational systems, platforms, and weapons.

In addition, the provision would require the Secretary, not later than January 1, 2021, to submit a plan to the congressional defense committees for achieving these goals, including budget requirements, and to begin implementation in fiscal year 2021.

The committee further directs the Secretary of Defense to coordinate with the National Security Council, the Department of Homeland Security, the Department of Transportation, and other appropriate departments and agencies to encourage civilian and commercial adoption of Department of Defense-developed technologies and capabilities for resilient alternative PNT to back up the Global Positioning System.

Distribution of launches for phase two of acquisition strategy for National Security Space Launch program (sec. 1602)

The committee recommends a provision that would encourage National Security Space Launch program (NSSL) phase 2 procurement. The committee supports the U.S. Government's approach for launch service agreements as well as its phase 2 launch service procurement. The procurement must be conducted in a manner that awards national security space launches that are sufficient to ensure healthy competitors and strong contributors to the space industrial base.

Development efforts for National Security Space Launch providers (sec. 1603)

The committee recommends a provision that would require the Secretary of the Air Force to establish a program to develop technologies and systems to enhance phase three National Security Space Launch requirements and enable further advances in launch capability associated with the insertion of national security payloads into relevant classes of orbits.

Timeline for nonrecurring design validation for responsive space launch (sec. 1604)

The committee recommends a provision that would require the Department of Defense to complete non-recurring design validation of previously flown space hardware for use pursuant to the phase 2 acquisition strategy and other national security space missions within 540 days of the date that the Secretary of the Air Force selects two providers for National Security Space Launch. The committee directs the Secretary of the Air Force to submit a report, no later than February 28, 2021, to the congressional defense committees on the progress that the Department is making with all non-recurring design validation efforts as proposed in this provision, including justification for any deviation from the New Entrant Certification Guide. The report shall also include information on non-recurring design validation work for providers not selected for phase 2.

The committee further directs the Secretary of the Air Force to provide a separate report to the congressional defense committees, no later than 540 days after the selection of phase 2 launch providers, on efforts to ensure that cooperative research and development agreements are maintained in force for launch providers that are not selected for the phase 2 launch acquisition to ensure that, if and when a phase 3 acquisition is begun, collaborative efforts will not have to be re-started.

Tactically responsive space launch operations (sec. 1605)

The committee recommends a provision that would require the Secretary of the Air Force to develop a program for tactically responsive space. In fiscal year 2020, the Congress appropriated approximately \$19 million for this effort; however, the long-term trajectory of the program remains uncertain. The proposed language would provide guidance and authority to that end.

The committee continues to believe that demonstrating tactically responsive launch operations that leverage new and innovative commercial capabilities will enable Department of Defense space domain mission assurance and strategic deterrence objectives. The committee recognizes the strategic value of mobile launch capability to mitigate risks from adversary threats and natural disasters to traditional fixed range launch infrastructure and therefore encourages the Department of Defense to support operationally relevant demonstrations.

The committee believes enhancing the resilience of national security space systems is a critical priority due to the increasing reliance on space in U.S. military operations and growing threats to U.S. space superiority. Tactically responsive launch provides great value, enabling flexible military space operations and the strategic ability to reconstitute space systems. The committee expects the Department of Defense and the Space Force to continue prioritizing adequate funding to test, train, and operationalize these capabilities.

Conforming amendments relating to reestablishment of Space Command (sec. 1606)

The committee recommends a provision that would align space-relevant congressional reporting requirements under United States Space Command.

Space Development Agency development requirements and transfer to Space Force (sec. 1607)

The committee recommends a provision that would require the Director of the Space Development Agency to lead: (1) The development and demonstration of a proliferated low-earth orbit sensing, tracking, and data transport architecture; and (2) The integration of next generation space capabilities, such as a hypersonic and ballistic missile-tracking space sensor payload. The provision would also require the Space Development Agency to be transferred from the Office of the Secretary of Defense to the United States Space Force no later than October 1, 2022.

Space launch rate assessment (sec. 1608)

The committee recommends a provision that would require the Secretary of the Air Force, for the next 5 years, to submit to the Congress every 2 years a report detailing certain information germane to the number and subcategories of space launches across the Federal Government. The Secretary should use the results of the assessment to inform the acquisition strategy for the National Security Space Launch program.

Report on impact of acquisition strategy for National Security Space Launch program on emerging foreign space launch providers (sec. 1609)

The committee recommends a provision that would require the Secretary of the Air Force to submit to the Congress a report, no later than January 1, 2021, on the impact of the acquisition strategy for the National Security Space Launch program on the potential for foreign countries, including the People's Republic of China, to enter the global commercial space launch market.

Subtitle B—Cyberspace-Related Matters

Modification of position of Principal Cyber Advisor (sec. 1611)

The committee recommends a provision that would amend section 932 of the National Defense Authorization Act for Fiscal Year 2014 (Public Law 113–66) by updating the responsibilities of the Principal Cyber Advisor.

The Principal Cyber Advisor has been a key driver of the Department's development and implementation of its 2018 cyber strategy. As a coordinator and advocate of cyber equities in the science and technology, acquisition, intelligence, policy, and operational worlds, the Principal Cyber Advisor has successfully ensured that the Department's cyber policies and programs are coherent, that cybersecurity concerns are respected, that the Department's senior leadership is informed and engaged on critical cyber issues, and that the Department makes meaningful contributions to the Nation's cyber-

security. The committee is aware of the model that the Principal Cyber Advisor has employed to govern its cyber programs and policy—the establishment of a permanent team in the office of the Principal Cyber Advisor to support the rotating cyber cross-functional team—and encourages the Secretary of Defense to continue resourcing this implementation.

Framework for cyber hunt forward operations (sec. 1612)

The committee recommends a provision that would require the Secretary of Defense to develop a comprehensive framework to enhance the consistency and execution of cyber hunt forward operations.

The committee is supportive of the Department of Defense's novel hunt forward operations and is encouraged by its innovative approaches to finding new ways to impose costs on cyber adversaries. However, in the course of performing its oversight, the committee has learned of a number of issues that Cyber Command has encountered: insufficient coordination across the Federal Government, inadequate manning and time spent abroad, and the inability to access relevant networks. The committee sees value in the prescription of such a framework in institutionalizing these missions within the Department and forcing commanders to assess the costs, potential gains, and requirements of hunt forward missions. The committee does not seek to delay or else discourage the performance of these missions; to the contrary, the committee hopes that the framework will enable Cyber Command's execution of more successful missions at an increased operational tempo.

The committee is especially interested in the development of relevant metrics for evaluating the success of hunt forward missions. In particular, the committee recognizes the fleeting value of intelligence in the cyber domain—malware can be reengineered, infrastructure can be reestablished, and tactics, techniques, and procedures can be recycled, rendering signatures, firewall configurations, and other defensive countermeasures calibrated to particular threats less than effective. The committee therefore encourages to the Department to pay particular attention to: metrics to define the utility of the intelligence gained from hunt forward missions; threat sharing programs to best utilize this intelligence; malware analysis programs to render adversary countermeasures ineffective; and potential synergies with building partner capacity programs.

Modification of scope of notification requirements for sensitive military cyber operations (sec. 1613)

The committee recommends a provision that would amend section 395 of title 10, United States Code, by changing the requirements for notification of sensitive military cyber operations. Specifically, the provision would require the Secretary of Defense to notify the congressional defense committees of operations that are intended to achieve a cyber effect against a foreign terrorist organization or a country, including its armed forces and the proxy forces of that country located elsewhere, with which the Armed Forces of the United States are not involved in hostilities or with respect to which the involvement of the Armed Forces of the United States

in hostilities has not been acknowledged publicly by the United States.

Modification of requirements for quarterly Department of Defense cyber operations briefings for Congress (sec. 1614)

The committee recommends a provision that would update the requirements of the Department of Defense's quarterly cyber operations briefings to Congress, codified in section 484 of title 10, United States Code. The provision would require the Under Secretary of Defense for Policy, the Commander of United States Cyber Command, and the Chairman of the Joint Chiefs of Staff, or designees from each of their offices, to provide the quarterly briefings. The provision would also require the briefings to specifically cover recent presidential directives, delegations of authority, and operational challenges and would require the briefers to present certain documentation at the briefings.

Current statute dictates that the quarterly cyber operations briefings "cover all offensive and significant defensive military operations in cyberspace carried out by the Department of Defense during the immediately preceding quarter." This provision would make no changes to this requirement. However, the committee has been consistently frustrated by the Department's unwillingness to keep the committee apprised of cyber operations conducted to gain access to adversary systems, including those conducted pursuant to standing military plans against military targets. The committee believes that it is critical that the committee is informed as to what targets are being developed, at what stage these operations stand, and what cyber effects are available to combatant commanders.

Therefore, the committee expects the Department to fully follow the letter of the law in providing these briefings to the Congress by supplying the congressional defense committees details as to the operational activities of the Department's offensive forces even short of effects, including, as appropriate, the specific intent of and progress made in operations targeting adversary cyber and military actors.

Rationalization and integration of parallel cybersecurity architectures and operations (sec. 1615)

The committee recommends a provision that would require an assessment led by the Commander, U.S. Cyber Command, with the concurrence of the Chief Data Officer (CDO), Department of Defense Chief Information Officer (CIO), and the Principal Cyber Adviser (PCA), of the gaps between the architectures, concepts of operation, situational awareness, command and control, tools, systems, and network instrumentation of the Cyber Mission Forces and the Cybersecurity Service Providers (CSSPs). The provision would specifically require identification of opportunities for the integration and rationalization of commercial security information and event management (SIEM) systems and the government-developed Big Data Platform (BDP) capability. The provision would also require the Commander, U.S. Cyber Command, CIO, CDO, and PCA to jointly recommend corrective actions to the Secretary of Defense in preparation of the budget request for fiscal year 2023.

The committee understands that, under the current concept of operations, Cyber Protection Teams (CPTs) are called in to respond to intrusions on DOD networks, while CSSPs are responsible for day-to-day protection of DoD networks. However, over the last decade, CSSPs' responsibilities and capabilities have evolved from the performance of relatively primitive check-list compliance management to the execution of far more sophisticated cybersecurity operations. CSSPs are increasingly capable of active asset discovery, vulnerability scanning, active and automated patch management, behavior-based intrusion detection, agent-based remediation and compliance enforcement for endpoints and hosts, network mapping, and deploying sensors to generate metadata records on endpoint and network activity. In addition, the CSSPs have widely deployed leading commercial SIEM systems, which store network activity metadata and allow operators to query and analyze those data to detect signs of compromise and spreading infections. The committee is aware that the operations of the CPTs are mostly independent of the CSSPs, resulting in overlap, gaps, and unrealized opportunities for synergies and mutual support. The committee believes that the capabilities and operations of CPTs and CSSPs ought to be complementary, so that CPTs can utilize and build on the foundational capabilities and tools of the CSSPs. For example, integration of CSSP and CPT architectures and concepts of operations may enable CPTs to operate remotely and to commence operations immediately without prior knowledge of the network to be defended.

The committee understands that, in support of the CPTs, the Department of Defense Information Network (DODIN) has been instrumented to collect metadata (such as Domain Name System records, netflow records, and log records) for storage in and analysis by algorithms resident on BDP instances, as part of the Unified Platform program. The committee also understands that, in support of the CSSPs, the DODIN has been instrumented independently to collect the same types of metadata for storage and analysis by proliferated SIEM systems. However, in general, BDP and SIEM instances and their analytic tools are not interoperable, and metadata collection is both redundant and incomplete across the two architectures. Additionally, the committee notes that additional metadata collection operations occurring at the middle tier of the DODIN, where Joint Regional Security Stacks are deployed, presents yet another example of duplication and gaps in the collection, storage, and analysis performed with SIEM systems and BDPs.

Therefore, the committee believes that all of these efforts should be combined into an integrated architecture that will make the DOD cybersecurity enterprise more effective and efficient and will provide substance to the new overarching concept of the Cyber Operations Forces.

Modification of acquisition authority of Commander of United States Cyber Command (sec. 1616)

The committee recommends a provision that would amend section 807 of the National Defense Authorization Act of Fiscal Year 2016 (Public Law 114-92; 10 U.S.C. 2224 note) by: (1) Removing

the cap on the Commander of Cyber Command's obligation and expenditure; (2) Striking the sunset on the authority; and (3) Striking the inapplicability of the authority to major defense acquisition programs.

The committee believes that Cyber Command's expanded mission and responsible use of this acquisition authority justify the removal of these constraints. However, the committee expects the Commander, U.S. Cyber Command, not to undertake expansive acquisition efforts, including major defense acquisition programs, without compelling basis. Cyber Command possesses neither the capacity nor the expertise nor the mission to manage large acquisition programs; the military services, in contrast, have substantial acquisition programs, experience, and capacity. The committee recognizes that the realization of the Joint Cyber Warfighting Architecture (JCWA) has exposed certain coordination gaps in the distribution of acquisition responsibilities across Cyber Command and the military services. Elsewhere in this report, the committee directs the Department to develop a governance plan for the coordination and oversight of the JCWA. The committee does not believe that such issues justify Cyber Command's taking on substantial acquisition activities of its own and expects the military services to remain the executive agents for major cyber acquisition programs. The committee therefore expects Cyber Command to judiciously exercise this expanded authority.

Assessment of cyber operational planning and deconfliction policies and processes (sec. 1617)

The committee recommends a provision that would require, no later than November 1, 2021, the Principal Cyber Advisor and the Commander, U.S. Cyber Command, to jointly conduct and complete an assessment on the operational planning and deconfliction policies and processes that govern Department of Defense cyber operations.

The committee is aware of a number of issues afflicting the Department's planning and deconfliction of cyber operations, which involve a great deal of coordination across the combatant commands and intelligence community. The committee seeks to ensure that these processes and policies enable the rapid execution of cyber operations, facilitate decision-making that appropriately balances relevant equities, and ensure that Cyber Command possesses the necessary data and capabilities to execute Department of Defense missions.

Pilot program on cybersecurity capability metrics (sec. 1618)

The committee recommends a provision that would require the Secretary of Defense, through the DOD Chief Information Officer and Commander of United States Cyber Command, to conduct a pilot program to develop and apply speed-based metrics to measure the performance and effectiveness of Department of Defense (DOD) security operations centers and cyber security service providers. The provision also requires the Secretary of Defense to brief the Committees on Armed Services of the Senate and the House of

Representatives, no later than December 1, 2021, on the findings of the pilot program.

The committee is aware of a growing practice in commercial industry of implementing speed-based cybersecurity metrics. The goal of these metrics is to assess an organization's ability to respond to a cyber intrusion as quickly as possible, thereby minimizing the impact that a malicious cyber actor can have. The committee is aware that these speed-based cybersecurity metrics often measure the time to detect an intrusion, the time to investigate an incident, and the time to respond to the intrusion, which are benchmarked against the average times required by malicious cyber actors to penetrate and compromise defended networks. The committee believes that understanding and applying speed-based cybersecurity metrics are a necessary component of assessing and improving the cybersecurity performance of the DOD. Implementing speed-based cybersecurity metrics will allow the Department to understand where improvements need to be made and will be increasingly important as malicious cyber actors begin to incorporate automation, machine learning, and artificial intelligence into their attack operations, thus requiring a response at the speed of a machine, not a person.

The committee understands that the metrics used to assess the Cyber Mission Forces broadly reflect the importance of rapidly detecting and mitigating adversary activity and timely mission execution. While the provision applies only to DOD security operations centers and cybersecurity service providers, the committee encourages the Commander, U.S. Cyber Command, to explicitly evaluate the Cyber Mission Forces on their ability to expeditiously execute offensive and defensive missions with little or no warning and to incorporate lessons learned from this pilot program, as appropriate.

Assessment of effect of inconsistent timing and use of Network Address Translation in Department of Defense networks (sec. 1619)

The committee recommends a provision that would require the Chief Information Officer (CIO) to assess, by March 1, 2021, potential challenges to cybersecurity analysis and remediation. The provision would also require the CIO and the Principal Cyber Adviser to submit a recommendation to the Secretary of Defense to address the results of the assessment and to provide a briefing to the congressional defense committees by April 1, 2021.

The committee is concerned that the variability in timing across Department of Defense (DOD) networks may seriously impair the ability of network defenders to detect intrusions and malicious network activity using correlation techniques that depend upon the accuracy of event sequences captured in immense sets of metadata from distributed sensors.

The committee is also concerned about the adverse effects on cybersecurity caused by the use of Network Address Translation (NAT). NAT is a technique to service multiple hosts or endpoint devices with a single Internet Protocol (IP) address for communications external to the organization. The committee understands that some DOD components organize their networks with multiple layers of NAT so as to conserve IP addresses—an advantageous effi-

ciency as IP version 4 address space dwindles. However, if network defenders do not have real-time access to the underlying translation of unique IP addresses at the NAT site, it is extremely difficult to correlate an indication of compromise with a specific endpoint or host for investigation and remediation. For example, defenders may not be able to correlate a detection of malicious software that “detonated” in a sandbox at an Internet access point with a specific host if that host’s identity is hidden behind a NAT site.

Matters concerning the College of Information and Cyberspace at National Defense University (sec. 1620)

The committee recommends a provision that would require the Under Secretary of Defense for Policy to conduct an assessment of the educational requirements for military and civilian leaders in the cyber and information domains and the role that National Defense University’s (NDU’s) College of Information and Cyberspace (CIC) plays in meeting those needs and requirements. The provision would prohibit the Secretary of Defense from taking any action on the CIC until the findings of this assessment are presented to the congressional defense committees in a report with appropriate recommendations no later than February 1, 2021.

The committee is aware of discussions underway to eliminate the CIC as an independent college at the NDU and offer cyberspace and information warfare-relevant curricula as electives available at NDU’s other colleges. The committee notes that section 2165 of title 10, United States Code, establishes the CIC in law as a constituent institution of the NDU and that any action to eliminate, subsume into another college, or institutionally diminish the CIC requires a change in law. The institutionalization of the CIC in the United States Code was a deliberate choice of the Congress and a recognition of the importance of graduate education in the complex disciplines involved in cyber and information warfare. Given the certain importance of cyber warfare in future conflicts, as emphasized in the National Defense Strategy, the committee sees moves to eliminate the CIC as myopic and lacking justification. The committee, therefore, expects the Department to fully resource the CIC and correct any staffing shortfalls currently in effect, until the Congress receives the findings and recommendations of the assessment.

Modification of mission of cyber command and assignment of cyber operations forces (sec. 1621)

The committee recommends a provision that would amend section 167b of title 10, United States Code, by further specifying the principal mission of the United States Cyber Command and by modifying the assignment of cyber forces to address forces that are assigned to Cyber Command and forces that are assigned to other combatant commands or service-retained. This provision would update these items in United States Code to be consistent with the definition of the Department of Defense (DOD) Cyber Operations Forces (COF) outlined in the December 2019 memorandum from the Secretary of Defense.

The committee is aware of the December 12, 2019, memorandum from the Secretary of Defense regarding the definition of the DOD COF. The committee is pleased with the clarity provided by the memorandum on the different operational groups within the DOD and supports a consistent, methodical approach to organizing, training, and equipping each of these cyber forces.

Integration of Department of Defense user activity monitoring and cybersecurity (sec. 1622)

The committee recommends a provision that would require the Secretary of Defense to integrate: the plans, capabilities, and systems for user activity monitoring (UAM) and for endpoint cybersecurity and the collection of metadata on network activity for cybersecurity to enable mutual support and information sharing. The provision would require the Secretary of Defense to brief the congressional defense committees, no later than October 1, 2021, on the plans and actions taken to carry out this provision.

The committee is aware that the principal tools for UAM for insider threat missions are keystroke loggers, which record all user actions on keyboards. This tool has been primarily deployed on classified Department of Defense (DOD) networks. However, the committee is aware of assessments indicating that monitoring user activity on unclassified networks connected to the global Internet could be as important as, if not more important than, monitoring activity on closed classified networks. The committee understands that keystroke logging and analysis is data-intensive and relatively expensive, inhibiting deployment on unclassified networks.

The committee is also aware that cybersecurity metadata currently collected on unclassified DOD networks may be an inherently rich source of information about user activity that could be beneficial to the performance of insider threat missions. Likewise, the comprehensive UAM data collected for the insider threat mission may be useful data for the performance of cybersecurity missions. Currently, these two missions—and the data that are collected and analyzed to support them—are managed separately and are not integrated.

Defense industrial base cybersecurity sensor architecture plan (sec. 1623)

The committee recommends a provision that would task the Department of Defense Principal Cyber Advisor (PCA), in consultation with the Department of Defense Chief Information Officer, the Under Secretary of Defense for Acquisition and Sustainment, the Under Secretary of Defense for Intelligence and Security, and the Commander, U.S. Cyber Command, to develop a comprehensive plan, by February 1, 2021, for the deployment of commercial-off-the-shelf solutions on supplier networks to monitor the public-facing Internet attack surface of members of the defense industrial base (DIB). The provision would also require the PCA to provide a briefing on the plan to the Committees on Armed Services of the Senate and the House of Representatives by March 1, 2021.

The committee is aware of the challenges that the Department faces in trying to improve the cybersecurity of the more than 300,000 Department of Defense (DOD) suppliers and a growing

number of smaller sub-tier suppliers that make up the U.S. DIB. Elsewhere in this report, the committee applauds the Department's efforts to implement the Cybersecurity Maturity Model Certification to provide a standard basis for cybersecurity assessments but emphasizes that section 1648 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) requires the Department to take a multi-faceted approach to ensuring superior cybersecurity while taking care to ensure that the solutions imposed on industry do not represent an overly difficult burden to small and medium-sized businesses.

The committee understands that one of the elements of a comprehensive framework for improving the cybersecurity of the DIB could be the utilization of commercial off-the-shelf (COTS) solutions for independently monitoring the public-facing Internet attack surface of DIB suppliers. Commercially-available solutions can identify and catalog DIB assets and continuously monitor networks for risks and potential vulnerabilities while also striking the appropriate balance between the need for visibility and accountability for supplier cybersecurity and the prohibitive cost and invasiveness of more intrusive approaches.

The committee is aware of current efforts undertaken by the Defense Counterintelligence and Security Agency to adopt COTS solutions for monitoring the public-facing Internet attack surfaces of National Industrial Security Program participants and encourages the Department to look for opportunities to increase the deployment of COTS solutions to collect cybersecurity data from DIB contractor participants.

However, the committee is concerned that these efforts are not being adequately coordinated across the Department and that there is a lack of a defined architecture, concept of operations, and governance structure that would allow the Department to take advantage of existing cybersecurity capabilities in the analysis of cybersecurity data produced by these sensors. The committee also seeks to ensure that the selection and implementation of these sensors are informed by the Department's leading cybersecurity organizations' policies and programs for enhancing the cybersecurity of the DIB. The committee encourages the Department, in defining the governance structure, to define a single official that would be responsible for this effort.

Extension of Cyberspace Solarium Commission to track and assess implementation (sec. 1624)

The committee recommends a provision that would extend the Cyberspace Solarium Commission (CSC) for an additional 16 months to allow the CSC to monitor, assess, and report on the implementation of the CSC's recommendations. The provision would also require the CSC to submit an annual report on its activities to Congress.

The committee is aware of the recommendations in the CSC's final report. The final report includes over 75 recommendations to improve the United States Government's cyber policies, governance, and capabilities. The committee also notes the recommendation from the CSC that the Congress should consider ways to mon-

itor and assess the implementation of the CSC report's recommendations.

Review of regulations and promulgation of guidance relating to National Guard responses to cyber attacks (sec. 1625)

The committee recommends a provision that would require the Secretary of Defense, in coordination with the Secretary of Homeland Security, to review, and if necessary update, regulations and guidance relevant to the National Guard's responsibilities and available capabilities in cyber incident response.

The committee is aware of the recommendations in the Cyberspace Solarium Commission's final report. The final report recommends that the Department of Defense clarify the National Guard's responsibilities and available capabilities in cyber incident response.

Improvements relating to the quadrennial cyber posture review (sec. 1626)

The committee recommends a provision that would implement the Cyberspace Solarium Commission's recommendation to amend section 1644 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91) to add a force structure assessment of the Department of Defense's Cyber Operations Forces to future cyber posture reviews.

The committee is aware of the recommendations in the Cyberspace Solarium Commission's final report. The final report recommends that the Department of Defense conduct a force structure assessment of the Cyber Mission Forces and review the delegation of authorities for cyber operations. The committee believes that it is an appropriate time to make such assessments.

Report on enabling United States Cyber Command resource allocation (sec. 1627)

The committee recommends a provision that would require the Secretary of Defense, not later than January 15, 2021, to submit a report to the congressional defense committees, detailing the actions that the Secretary will undertake to ensure that the Commander, U.S. Cyber Command, has enhanced authority, direction, and control of the Cyber Operations Forces and of the equipment budget that enables Cyber Operations Forces' operations and readiness, beginning with fiscal year 2024 budget request.

The committee is aware of the recommendations in the Cyberspace Solarium Commission's final report. The final report expresses concern about providing United States Cyber Command with acquisition authorities over goods and services unique to the Command's needs through a Major Force Program funding category. The committee agrees with the importance of ensuring that United States Cyber Command has the flexibility and agility to control acquisitions for both the forces assigned to it and the Cyber Operations Forces.

Evaluation of options for establishing a cyber reserve force (sec. 1628)

The committee recommends a provision that would implement the Cyberspace Solarium Commission's recommendation to require the Secretary of Defense, not later than December 31, 2021, to assess options for establishing a cyber reserve force. The provision would also require the Secretary of Defense to provide to the congressional defense committees a report on the assessment, not later than February 1, 2022.

The committee is aware of the recommendations in the Cyberspace Solarium Commission's final report. The final report recommends assessing the need for, and requirements of, a military cyber reserve, its possible composition, and its structure, including how different types of reserve models, e.g., traditional uniformed reserve models as well as non-traditional civilian and uniformed reserve models, could address broader talent management issues. The committee believes that a cyber reserve force could provide a capable surge capacity and enable the Department of Defense to draw on cyber talent that currently resides in the private sector. The committee encourages the Department to consider a uniformed military reserve that does not contain the same kinds of drilling, grooming, or physical expertise requirements as a traditional uniformed reserve.

Ensuring cyber resiliency of nuclear command and control system (sec. 1629)

The committee recommends a provision that would require the Secretary of Defense, not later than October 1, 2021, to submit a comprehensive plan, including a schedule and resourcing plan, for the implementation of the findings and recommendations included in the first report submitted under section 499(c)(3) of title 10, United States Code.

The committee is aware of the recommendations in the Cyberspace Solarium Commission's final report. The final report expresses concern about the cyber survivability and resiliency of U.S. weapon systems, including nuclear forces, and the committee especially agrees with the report's emphasis on ensuring cyber resiliency of the nuclear command and control system.

Modification of requirements relating to the Strategic Cybersecurity Program and the evaluation of cyber vulnerabilities of major weapon systems of the Department of Defense (sec. 1630)

The committee recommends a provision that would require the Secretary of Defense to establish policies and requirements for each major weapon system, and the priority critical infrastructure essential to the proper functioning of major weapon systems in broader mission areas, to be re-assessed for cyber vulnerabilities. The provision would also make a number of amendments to section 1640 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91; 10 U.S.C. 2224 note), which required the development of a plan for the establishment of the Strategic Cybersecurity Program (SCP).

The committee is aware of the recommendations in the Cyberspace Solarium Commission's final report. The report recommended the amendment of section 1647 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114-92) to require the development of an after-action report and plan in order to ensure that weapon systems are serially assessed for cybersecurity vulnerabilities.

The committee understands that the Department of Defense has been slow to implement the SCP but believes that, if realized consistent with congressional intent, it would provide great value in improving cybersecurity across entire mission sets through mission thread analysis and design review. The committee is disappointed by the lack of leadership on the SCP exhibited by the National Security Agency in the past but is aware of the establishment of the Cyber Security Directorate (CSD) in the last year, whose mission mirrors that of the SCP, and looks forward to understanding how the SCP will be positioned within and resourced by the CSD. The committee therefore urges the Department to amend and fortify this program, as prescribed in this provision.

Defense industrial base participation in a cybersecurity threat intelligence sharing program (sec. 1631)

The committee recommends a provision that would require the Secretary of Defense to establish a threat intelligence sharing program to share threat intelligence with and obtain threat intelligence from the defense industrial base. Such a program: (1) Could be mandatory or encouraged, at the discretion of the Secretary; (2) Would feature tiered requirements for companies based on their position within the defense industrial base; and (3) Could be a new program or an augmentation of an existing program.

The committee is aware of the recommendations in the Cyberspace Solarium Commission's final report. The final report expresses concern about the Department of Defense's visibility into the cyber threats facing defense industrial base companies and these companies' ability to defend themselves.

Assessment on defense industrial base cybersecurity threat hunting (sec. 1632)

The committee recommends a provision that would require the Secretary of Defense to conduct an assessment of the adequacy of threat hunting elements of the Cyber Maturity Model Certification (CMMC) program and the need for continuous threat monitoring operations. The provision would also require the Secretary to brief the Committees of Armed Services of the Senate and the House of Representatives on the assessment's findings no later than February 1, 2022.

The committee is aware of the recommendations in the Cyberspace Solarium Commission's final report. The final report recommends that the Department of Defense establish a program to identify cybersecurity threats on the networks of defense industrial base (DIB) companies. While the committee commends the Department's efforts to address cybersecurity risks to the DIB, the committee is concerned that the CMMC program does not require DIB companies, levels one through three, to have a threat hunting capa-

bility. The committee encourages the Department to also consider whether this program would be appropriate for Federally funded research and development centers.

Assessing risk to national security of quantum computing (sec. 1633)

The committee recommends a provision that would implement the Cyberspace Solarium Commission's recommendation to address the risks to National Security Systems (NSSs) posed by quantum computing by requiring the Secretary of Defense to: (1) Complete an assessment of current and potential threats to critical NSSs and the standards used for quantum-resistant cryptography; and (2) Provide recommendations for research and development activities to secure NSSs. The provision would also require the Secretary to provide a briefing to the congressional defense committees on the assessment and recommendations no later than February 1, 2023.

Additionally, the committee is aware that commercial industry is also developing quantum-resistant encryption technology that may provide a capability that can enhance the security of both new and legacy systems without sacrificing overall system performance. Therefore, the committee directs the Director of the Defense Information Systems Agency to separately assess available commercial off-the-shelf quantum-resistant encryption technology solutions and provide a briefing to the congressional defense committees not later than February 1, 2021, on the applicability of such solutions to the Department of Defense's needs. The committee has consistently encouraged the Department, where appropriate and feasible, to take advantage of commercial-off-the-shelf capabilities for securing its networks and believes that the rapid leveraging of innovative commercial technology could play a vital part in the Department's approach to addressing the risks posed by quantum computing.

Applicability of reorientation of Big Data Platform program to Department of Navy (sec. 1634)

The committee recommends a provision that would amend section 1651 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-91), which established a number of requirements for the Department of Defense's use of the Big Data Platform, by specifying that the requirements enumerated in that section also apply in full to the Department of the Navy's Sharkcage and associated programs, which function as the Navy's analogue to the Big Data Platform capability.

Expansion of authority for access and information relating to cyber attacks on operationally critical contractors of the Armed Forces (sec. 1635)

The committee recommends a provision that would amend section 391 of title 10, United States Code, to extend the ability of the Department of Defense (DOD) to react immediately to reports of intrusions that may affect critical DOD data. The committee understands the importance of commercial service providers to the DOD and believes that the security and integrity of these providers are absolutely critical to the effective management of the worldwide logistics enterprise, especially during a contingency or wartime.

Therefore, the committee believes that the same level of proactive DOD support in responding to cyber incidents should be authorized with respect to these providers as that authorized for cleared defense contractors. The committee notes that the Department of Defense has requested the inclusion of this authority in two consecutive National Defense Authorization Acts.

Requirements for review of and limitations on the Joint Regional Security Stacks activity (sec. 1636)

The committee recommends a provision that would require the Secretary of Defense to conduct a baseline review of the Joint Regional Security Stacks (JRSS) activity to determine whether the initiative should continue, but as a program of record, or should be replaced by an improved design and modern technology. If the Secretary determines that JRSS should continue, the Secretary would be required to develop a plan to transition JRSS to a program of record, to which all standard acquisition requirements and processes would be applicable. The provision would also prohibit any operational deployment of JRSS to the Secret Internet Protocol Network in fiscal year 2021. Finally, the provision would require the Secretary of Defense to provide the results of the JRSS review to the congressional defense committees by December 1, 2021, which would include a plan to either transition JRSS to a program of record or to seek a JRSS replacement.

The committee further directs that the Secretary of Defense, in conducting the assessment required by the provision, investigate and answer the following questions: (1) Is the Department of Defense Information Network properly architected to achieve JRSS' intended network middle tier security and network functions; (2) Is the JRSS hardware and software stack technologically obsolete?; (3) If JRSS were to be properly manned with proficiently trained personnel, can it perform the security functions it was intended to provide within affordable manning and training resources?; (4) What are the required security functions that can be measured and subjected to operational testing?; (5) Is the collection of cybersecurity-related data and metadata enabled at JRSS nodes being consumed by other cybersecurity systems—for example, the Big Data Platform and Security Information and Event Management capabilities?; (6) Is JRSS performing its network management functions well, and should the security functions of JRSS be terminated in favor of other solutions and investments?

The committee notes that multiple reports of the Director, Operational Test and Evaluation, and the Department of Defense Inspector General have highlighted problems with the ability of JRSS to accomplish its intended purpose of traffic management and security functions for the network middle tier. Operational testing and audits have concluded that JRSS is not operationally suitable and not capable of helping network defenders to detect and respond to operationally realistic cyber attacks.

Independent assessment of establishment of a National Cyber Director (sec. 1637)

The committee recommends a provision that would require the Secretary of Defense, in coordination with the Secretary of Home-

land Security, not later than December 1, 2020, to seek to enter into an agreement with an independent organization to conduct an assessment on the feasibility and advisability of establishing a National Cyber Director. The provision would also require the Secretary of Defense to provide to the appropriate congressional committees a report on the assessment not later than March 1, 2021.

The committee is aware of the recommendation in the Cyberspace Solarium Commission's final report for the establishment of a National Cyber Director. The committee agrees with the need for improved coordination of cybersecurity policy and operations across the Federal Government but believes that there are additional questions that need to be answered prior to the establishment of a National Cyber Director.

Modification of authority to use operation and maintenance funds for cyber operations-peculiar capability development projects (sec. 1638)

The committee recommends a provision that would modify the authority to use Operation and Maintenance (O&M) funds for cyber operations-peculiar capability development projects to allow the Secretaries of the military departments to each obligate and expend funds under this authority up to a total of \$20.0 million per year. The provision would also allow the Commander, U.S. Cyber Command, to use O&M funds for cyber operations-peculiar capability development projects under this authority up to a total of \$6.0 million per year.

Section 1640 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92) allowed the Secretaries of the military departments to use up to \$3.0 million annually of money authorized for appropriation for O&M to develop cyber operations-peculiar capabilities. This allowed the Department of Defense to use its O&M funds for the rapid creation, testing, fielding, and operation of cyber capabilities that would be developed and used within the 1-year appropriation period.

The committee is aware that the development of cyber capabilities must be dynamic to allow the Department to rapidly respond to the evolving cyber threat. The committee encourages the military services to use this authority to its full extent and to ensure that future year budget requests appropriately account for these funds in their O&M requests.

Personnel management authority for Commander of United States Cyber Command and development program for offensive cyber operations (sec. 1639)

The committee recommends a provision that would provide to the Commander, United States Cyber Command, the same personnel management authority provided to the Director of the Defense Advanced Research Projects Agency (DARPA), the Director of the Strategic Capabilities Office (SCO), and the Director of the Joint Artificial Intelligence Center to facilitate the hiring of technical talent. The provision would allow the Commander to pay up to 10 computer scientists, data scientists, engineers, mathematicians, and computer network exploitation specialists at rates of basic pay authorized for senior-level positions under section 5376 of title 5,

United States Code—pay that would allow Cyber Command to be significantly more competitive with commercial industry and on par with the intelligence community for top-level talent. The provision would also require the Commander, U.S. Cyber Command, to establish a or augment an existing program, using such talent, to: (1) Develop accesses, tools, vulnerabilities, and tactics, techniques, and procedures (TTPs) fit for military operations; (2) Decrease the reliance of the Command on accesses, tools, and expertise provided by the intelligence community; and (3) Coordinate development activities with and facilitate transition of capabilities from the DARPA, SCO, and intelligence community.

The committee strongly believes that, in order to develop capabilities and execute the missions envisioned in the National Defense Strategy and 2018 Department of Defense Cyber Strategy, Cyber Command must bolster the expertise resident in the Command. Today, Cyber Command is largely reliant on the technical expertise of the National Security Agency (NSA), the Defense Information Systems Agency, and, to a lesser extent, the Department of Defense's research and engineering community.

Cyber Command's operations, for example, are modeled after the intelligence operations of the NSA, often relying on tailored or signals intelligence-derived access. This means that Cyber Command is frequently reliant on intelligence community-provided access, which makes Cyber Command a dependent of intelligence community partners that prize these accesses for their own missions. These Cyber Command operations also typically use NSA-developed tools and TTPs, which prioritize stealth and are often more precise and exacting than is strictly necessary for Cyber Command effects operations.

The committee believes that the inability to attract and retain technical experts based on the available pay scale is one substantial barrier to reducing this reliance and thus intends for this provision to bolster the technical expertise available in-house to the Commander, U.S. Cyber Command, and for these experts to facilitate the development of access and capabilities for which Cyber Command is reliant on others today.

Implementation of information operations matters (sec. 1640)

The committee recommends a provision that would limit the availability of specified funds until the Secretary of Defense submits to the Committees on Armed Services of the Senate and the House of Representatives the report required by subsection (h)(1) of section 1631 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) and the strategy and posture review required by subsection (g) of such section.

Report on Cyber Institutes Program (sec. 1641)

The committee recommends a provision that would amend section 1640 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232) by requiring the Secretary of Defense to submit a report, by September 30, 2021, to the Committees on Armed Services of the Senate and the House of Representatives on the effectiveness of Cyber Institutes and on op-

portunities to expand Cyber Institutes to additional institutions of higher learning that have a Reserve Officers' Training Corps program.

Assistance for small manufacturers in the defense industrial supply chain on matters relating to cybersecurity (sec. 1642)

The committee recommends a provision that would allow the Secretary of Defense, in consultation with the Director of the National Institute of Standards and Technology, to award financial assistance to Manufacturing Extension Program centers for the purpose of providing cybersecurity services to small manufacturers.

Subtitle C—Nuclear Forces

Modification to responsibilities of Nuclear Weapons Council (sec. 1651)

The committee recommends a provision that would provide to the Nuclear Weapons Council the authority to review proposed capabilities and validate requirements for nuclear warhead programs.

Responsibility of Nuclear Weapons Council in preparation of National Nuclear Security Administration budget (sec. 1652)

The committee recommends a provision that would clarify the role of the Nuclear Weapons Council (NWC) in the planning, programming, budgeting, and execution process of the National Nuclear Security Administration, including by specifying NWC participation at each stage of preparing the budget.

Modification of Government Accountability Office review of annual reports on nuclear weapons enterprise (sec. 1653)

The committee recommends a provision that would better align the Government Accountability Office review of the annual report on the nuclear weapons enterprise required by section 492a of title 10, United States Code, commonly known as the "1043 Report," with the schedule for submission of that report.

Prohibition on reduction of the intercontinental ballistic missiles of the United States (sec. 1654)

The committee recommends a provision that would prohibit the obligation or expenditure of fiscal year 2021 funds to reduce deployed U.S. intercontinental ballistic missiles' responsiveness, alert level, or quantity to fewer than 400. The provision would provide an exception to this prohibition for activities related to maintenance and sustainment and activities to ensure safety, security, or reliability.

Sense of the Senate on nuclear cooperation between the United States and the United Kingdom (sec. 1655)

The committee recommends a provision that would express the sense of the Senate on nuclear cooperation between the United States and the United Kingdom.

Subtitle D—Missile Defense Programs**Iron Dome short-range rocket defense system and Israeli cooperative missile defense program co-development and co-production (sec. 1661)**

The committee recommends a provision that would authorize not more than \$73.0 million for the Missile Defense Agency (MDA) to provide to the Government of Israel to procure components for the Iron Dome short-range rocket defense system through co-production of such components in the United States. The provision would also authorize \$50.0 million for the MDA to provide to the Government of Israel for the procurement of the David's Sling Weapon System and \$77.0 million for the Arrow 3 Upper Tier Interceptor Program, including for co-production of parts and components in the United States by U.S. industry. The provision would also provide a series of certification requirements relating to implementation of the below relevant bilateral agreements before disbursement of these funds. These funds are a subset of the \$500.0 million total authorized to be appropriated for cooperative missile defense programs with Israel within this Act.

The committee acknowledges that the September 14, 2016, Memorandum of Understanding (MOU) between the United States and Israel commits \$500.0 million in U.S. funding for cooperative missile defense programs annually, beginning in fiscal year 2019 and ending in fiscal year 2028. According to the MOU, the United States and Israel jointly understand that any U.S. funds provided for such programs should be made available according to separate bilateral agreements for the Iron Dome, David's Sling, and Arrow 3 Upper Tier Interceptor Program and should maximize co-production of parts and components in the United States at a level equal to or greater than 50 percent of U.S.-appropriated funds for production. Additionally, Israel commits not to seek additional missile defense funding from the United States for the duration of the MOU, except in exceptional circumstances as may be jointly agreed by the United States and Israel. The committee expects to continue to receive annual updates on all cooperative defense programs, as delineated in the MOU, to include progress reports and spending plans as well as the top-line figures of the Israel Missile Defense Organization budget for these programs.

Acceleration of the deployment of hypersonic and ballistic tracking space sensor payload (sec. 1662)

The committee recommends a provision that would require the Secretary of Defense to assign primary responsibility for the development and deployment of a hypersonic and ballistic tracking space sensor (HBTSS) payload to the Director of the Missile Defense Agency (MDA) through the end of fiscal year 2022. It would also require the Secretary to determine whether responsibility for the development and deployment of an HBTSS payload should transition to the U.S. Space Force after fiscal year 2022 and, if such a determination is made, submit a transition plan along with the determination.

The provision would also require the Under Secretary of Defense (Comptroller) and the Director, Cost Assessment and Program

Evaluation, to submit a certification with the fiscal year 2022 budget request as to whether the HBTSS program is sufficiently funded in the future years defense program and would prohibit the obligation or expenditure of more than 50 percent of funds authorized to be appropriated for travel of the Office of the Under Secretary of Defense for Research and Engineering until that certification is submitted.

The provision would also require the Director of the MDA to begin on-orbit testing of an HBTSS payload no later than December 31, 2022. Finally, the provision would require the Chair of the Joint Requirements Oversight Council (JROC) to submit to the congressional defense committees an assessment of whether the various Department of Defense efforts for space-based sensing and tracking are aligned with JROC-validated requirements.

Extension of prohibition relating to missile defense information and systems (sec. 1663)

The committee recommends a provision that would extend through 2026 the limitations on providing certain sensitive missile defense information to the Russian Federation and on integrating missile defense systems of the Russian Federation and the People's Republic of China into those of the United States.

Report on and limitation on expenditure of funds for layered homeland missile defense system (sec. 1664)

The committee recommends a provision that would require the Director of the Missile Defense Agency (MDA) to submit a report to the congressional defense committees no later than March 1, 2021, on the layered homeland missile defense system proposed in the President's fiscal year 2021 budget request. The report would include cost estimates, schedule options, requirements, and an analysis of possible architecture solutions, in addition to relevant policy considerations. The provision would prohibit the obligation or expenditure of more than 50 percent of fiscal year 2021 funds authorized for this purpose until the required report is submitted.

The committee supports the Department of Defense's efforts to seek additional homeland missile defense coverage in the mid-2020s; however, the committee notes that the Department has provided very little information or analysis to support this proposal, despite including substantial funding within the MDA budget for this purpose. The \$260.0 million as requested is authorized elsewhere in this Act.

Extension of requirement for Comptroller General review and assessment of missile defense acquisition programs (sec. 1665)

The committee recommends a provision that would extend through 2026 the requirement originally contained in section 232(a) of the National Defense Authorization Act for Fiscal Year 2012 (Public Law 112-81), as amended, for the Comptroller General of the United States to review the Missile Defense Agency's acquisition programs. The provision would also allow the Comptroller General to identify related emerging issues in this area and pro-

vide briefings or reports to the congressional defense committees as necessary.

Repeal of requirement for reporting structure of Missile Defense Agency (sec. 1666)

The committee recommends a provision that would repeal the requirement in section 205 of title 10, United States Code, for the Missile Defense Agency (MDA) to report to the Under Secretary of Defense for Research and Engineering. The provision would not mandate an alternative organizational location for the MDA.

Ground-based midcourse defense interim capability (sec. 1667)

The committee recommends a provision that would require the Secretary of Defense to carry out a program to develop an interim ground-based interceptor (GBI) capability with delivery of 20 new interceptors by 2026. The Secretary would be able to waive this requirement under certain circumstances, in which case the provision would require a report to the congressional defense committees explaining the rationale for the decision, an estimate of projected rogue nation threats to the U.S. homeland, and an updated schedule for the development and deployment of the Next Generation Interceptor. The Secretary would only be permitted to delegate this waiver authority to the Deputy Secretary of Defense if the Secretary is recused. Finally, the provision would require the Director of the Missile Defense Agency to submit the funding profile required for an interim GBI program along with the budget request for fiscal year 2022.

Items of Special Interest

Bi-static radar

The committee is encouraged by the Department of Defense's focus on bi-static radars. These radars can perform important functions for the Joint Force, including early warning, queuing for sensors, and potentially detection of hypersonic weapons. The committee directs the Under Secretary of Defense for Research and Engineering, in consultation with the Director of the Defense Intelligence Agency, to submit a report to the Committees on Armed Services of the Senate and the House of Representatives, no later than March 3, 2021, on: (1) The use and development of these radars globally; and (2) How these systems are currently used in the Department of Defense and their potential to be used across the future years defense program.

Clearance process for National Nuclear Security Administration employees and contractors working on the Long Range Stand Off Weapon

The acquisition of the Long Range Stand Off Weapon (LRSO) is a joint effort between the Department of the Air Force for the airframe and the National Nuclear Security Administration (NNSA) for the W80-4 warhead. Synchronization between the Air Force and the NNSA is critical for the success of this program. In order to maintain this synchronization, NNSA employees and contractors must be able to obtain timely clearances to work with the Air Force.

Therefore, the committee directs the Secretary of the Air Force, in coordination with the Administrator of the NNSA, to brief the congressional defense committees no later than February 28, 2021, on the process underway for clearing NNSA employees and contractors into the LRSO program in a timely fashion to avoid programmatic delays. The briefing shall include details on the backlog at the time of the briefing, the estimated time to clearance, and the future number and types of clearances required beyond the backlog that already exists.

Comptroller General review of Department of Defense Cybersecurity Maturity Model Certification implementation

The committee recognizes the risk that malicious cyber actors pose to the Department of Defense defense industrial base (DIB) and the broader commercial sector. The National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) included a provision directing the Secretary of Defense to develop a framework to enhance the cybersecurity of the DIB. The committee is aware of the steps the Department has taken to strengthen the cybersecurity of its contractors over the last year. However, the committee has concerns about aspects of the Department’s plans to incorporate the Cybersecurity Maturity Model Certification (CMMC) as a procurement requirement in certain contracts beginning in 2020 and in all contracts by 2026. Specifically, the committee is concerned about how the Department will provide oversight of the certification process to control contract and acquisition costs and ensure that, while enhancing cybersecurity, the requirement does not create unnecessary barriers to competitiveness, particularly for small businesses.

Therefore, the committee directs the Comptroller General of the United States to review the Department’s implementation of the CMMC program and assess the extent to which the CMMC framework is positioned to meet its stated goals and the appropriate requirements for the DIB framework specified in section 1648 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92). This evaluation should incorporate perspectives of companies across the defense industrial base and include analysis of the Department’s oversight responsibilities, the role of non-governmental entities in managing and executing the program, and assessment of the Department’s incorporation of lessons learned from the pilot programs. The Comptroller General should also assess the Department’s plans to expand the requirement to all contracts and associated costs and the steps the Department has taken to ensure a consistent acquisition approach across all military services and components. The committee directs the Comptroller General to brief preliminary observations to the congressional defense committees no later than May 31, 2021, with a final report to follow on a mutually agreed date.

Comptroller General review of the Air Force’s nuclear certification program

Under Air Force Instruction 63–125 (dated January 16, 2020), Air Force nuclear certification occurs “when a determination is

made by the Air Force that procedures, equipment, software, and facilities are sufficient to perform nuclear weapon functions and personnel and organizations are capable of performing assigned nuclear missions.” Implementation of this direction is particularly important in order to ensure that nuclear certification and its requirements are synchronized during the engineering and manufacturing development phase of nuclear-capable weapons system acquisitions.

Therefore, the committee directs the Comptroller General of the United States to review the implementation of Air Force Instruction 63–125, in order to determine the extent to which the Air Force has: (1) Allocated sufficient personnel to implement the Instruction within current and future nuclear acquisition programs; (2) Synchronized requirements generated by the certification process with requirements within the acquisition programs themselves; and (3) Applied lessons learned on staffing from ongoing acquisition programs to ensure that future nuclear modernization programs are not encumbered by the certification process.

The Comptroller General shall provide an initial briefing to the congressional defense committees no later than February 26, 2021, with a final report to be provided on a date mutually agreeable to both parties.

Continued Comptroller General review of Ground-Based Strategic Deterrent program

Over the next decade, the Department of the Air Force will continue to design, develop, and field the Ground-Based Strategic Deterrent (GBSD) to replace the fielded Minuteman III intercontinental ballistic missile. Regular and sustained reviews by the Government Accountability Office, as established by the Senate report accompanying S. 2943 (S. Rept. 114–255) of the National Defense Authorization Act for Fiscal Year 2017, have been essential to congressional oversight of this program.

Accordingly, to ensure that this review process continues, the committee directs the Comptroller General of the United States to continue these reviews until the program reaches Milestone C, and to brief the congressional defense committees on a periodic basis mutually agreeable to both parties.

Continued Comptroller General review of nuclear command, control, and communications systems

The modernization of nuclear command, control, and communications systems includes three major activities: maintaining the current equipment and architecture, acquiring replacements for elements of the existing architecture in the next decade, and developing a new architecture to be fielded over the next several decades. Over the past several years, the Government Accountability Office has conducted a regular review of these efforts to inform the congressional defense committees on the progress that the Department of Defense has made in achieving these three goals.

To ensure that the committee continues to benefit from this information, the committee directs the Comptroller General of the United States to continue these reviews through fiscal year 2023, and to brief the congressional defense committees on a periodic basis mutually agreeable to both parties.

Coordination and oversight of the Joint Cyber Warfighting Architecture components

The committee is aware that the major components of the Joint Cyber Warfighting Architecture (JCWA) are being designed and developed by service executive agents. The committee also understands that the JCWA is a unique “system of systems”—a collection of programs not under the control of a single acquisition executive—and that each of these programs serves the Joint Force. The customer for the capabilities of the JCWA components is not a single service but rather the Cyber Operations Forces as a whole, and the Commander, U.S. Cyber Command, is responsible for the requirements of capabilities to be used by the Cyber Operations Forces.

The committee is concerned that there is not adequate oversight and coordination of the JCWA component program offices and believes that deliberate oversight must be exercised to ensure that acquisition priorities and objectives are aligned to Cyber Command mission needs. Furthermore, the lack of overall systems engineering and systems integration authorities and competencies for the JCWA as a whole are inconsistent with sound systems acquisition practice.

Therefore, the committee directs the Principal Cyber Advisor (PCA), no later than December 1, 2020, in consultation with the Under Secretary of Defense for Acquisition and Sustainment, the Chief Information Officer, the Commander, U.S. Cyber Command, and the Vice Chairman of the Joint Chiefs of Staff, to develop a governance plan for coordination and oversight of the JCWA. The governance plan shall include: (1) A structure and process to enable the proper integration of the JCWA components as a functional system of systems that can readily adapt to cyber mission needs; and (2) A mechanism to ensure that the JCWA component program offices are responsive to the needs of the Joint Force as represented by Cyber Command. The committee directs the PCA and the Commander, U.S. Cyber Command, to brief the congressional defense committees no later than December 1, 2020, on the governance plan and its planned implementation.

Cyber training capabilities for the Department of Defense

The committee is aware of the growing need for different types of cybersecurity training in the Department of Defense for personnel outside of the Cyber Mission Forces (CMF). Examples of cybersecurity training includes that for: civilians in the Cyber Excepted Service (CES) personnel system engaged in cybersecurity roles and missions, personnel in the Cybersecurity Service Provider (CSSP) organizations, and cloud security personnel. The committee is aware of the Persistent Cyber Training Environment (PCTE), a training environment that has been developed primarily to meet the needs of the CMF. The committee is concerned that the Department requires additional cybersecurity training and assessment capabilities to meet the diverse training needs of the Department. The committee believes that the Department requires modern, scalable, and affordable automated means to evaluate the expertise of prospective employees, establish individualized training for existing

employees, test the proficiency of employees post-training, and assess readiness to address this growing need.

Therefore, the committee directs the Principal Cyber Advisor, in coordination with the Director of Cost Assessment and Program Evaluation and the Chief Information Officer, not later than February 1, 2021, to provide to the congressional defense committees a briefing on the enhanced cybersecurity training needs of the Department of Defense and viable solutions to meet those needs. The briefing shall include: an overview of the training requirements of CES personnel, CSSP organizations, and cloud security personnel; an assessment of the applicability of PCTE capabilities to these requirements; and an assessment of alternative methods to meet these requirements, including commercial cloud-based solutions.

Cyber vulnerability of the Air Force Satellite Control Network

The Air Force Satellite Control Network (AFSCN) commands and controls a large array of national security satellites. Like many other systems in the Department of Defense, the network was first deployed well before there was a full understanding of the current cyber threats and necessary cybersecurity protections. Given the importance of the AFSCN, the committee directs the Secretary of the Air Force to provide a briefing to the congressional defense committees, not later than March 31, 2021, on the cyber vulnerability of the AFSCN for both ground and space elements and how continuous assessment and mitigation of these vulnerabilities are being included in broader Air Force efforts to address cyber vulnerabilities. Additionally, the briefing should address what resources would be required over the next 5 years to adequately protect the AFSCN.

Demonstration of interoperability and automated orchestration of cybersecurity systems

The committee directs the Secretary of Defense to sponsor a demonstration of commercial technologies and techniques for enabling interoperability among cybersecurity systems and tools and for machine-to-machine communications and automated workflow orchestration. This demonstration should include comply-to-connect products, the Assured Compliance Assessment Solution, the Automated Continuous Endpoint Monitoring program, the Sharkseer perimeter defense system, and other Department of Defense cybersecurity systems. The committee urges the Secretary to coordinate this demonstration with the speed metrics pilot and the demonstration of the Systems of Systems Technology Integration Tool Chain for Heterogeneous Electronic Systems interoperability technology recommended elsewhere in this report.

In executing this demonstration, the committee urges the Secretary to make effective use of the expertise and resources of the National Security Agency Integrated Adaptive Cyber Defense program and the University Affiliated Research Center (the Applied Research Laboratory of the Johns Hopkins University) that supports this program. The committee also encourages the Department to consider the common messaging fabrics and orchestration technologies enabled by them when acquiring additional tools and es-

establishing new cybersecurity capabilities at all tiers of the Department of Defense Information Network (DODIN); these orchestration technologies are only as useful as their input technologies, and the Department must evaluate products for ease-of-integration during the source selection process.

The committee understands that the critical cybersecurity development programs and tools that will constitute the Department's future Joint Cybersecurity Warfighting Architecture, such as the Joint Cyber Command and Control system and the Unified Platform, are not currently engineered to automatically connect to the plethora of other Department of Defense cybersecurity systems, which are themselves not connected, via any of the messaging fabrics that are now commonplace in industry. The committee believes that orchestration technologies will be a critical component of the future DODIN architecture and encourages the Department to exercise foresight by undertaking the engineering work, acquisitions, and standardization required to integrate these programs and technologies.

The committee directs the Secretary to brief the congressional defense committees on the plans for the demonstration by March 15, 2021, and the results of the demonstration by December 15, 2021.

Department of Defense cyber hygiene

The committee is aware that the U.S. Government Accountability Office (GAO) has recently assessed the Department of Defense's (DOD's) progress in implementing cyber hygiene practices and found that the DOD had not fully implemented three of its key initiatives and practices aimed at improving cyber hygiene. The DOD had also developed lists of its adversaries' most frequently used techniques and practices to combat them. Nevertheless, the DOD does not know the extent to which DOD components are using these practices.

The committee is concerned that, while DOD leadership recognizes that certain cyber hygiene and other basic cybersecurity practices could effectively protect the Department from a significant number of cybersecurity risks, the Department has not fully implemented its own cybersecurity practices. The committee is aware that the DOD plans to require private sector companies to meet certain cybersecurity requirements through the Cybersecurity Maturity Model Certification (CMMC) framework, but the committee is aware that the DOD components' cybersecurity practices and capabilities frequently lag behind those of commercial companies. The committee is not aware of any DOD Chief Information Officer (CIO) intention to assess its own cybersecurity practices against the CMMC framework, meaning that the DOD CIO is potentially holding contractors to a higher standard than DOD components.

Given the importance of implementing cybersecurity practices that could effectively protect DOD missions, information, systems, and networks, the committee directs the Secretary of Defense, through the DOD CIO and the Commander, Joint Forces Headquarters-Department of Defense Information Network, to assess each DOD component against the CMMC framework and submit a report, no later than March 1, 2021, to the congressional defense

committees that identifies each component's CMMC level and implementation of the cybersecurity practices and capabilities required in each of the levels of the CMMC framework. The report shall include, for each DOD component that does not achieve at least level 3 status (referred to as "good cyber hygiene" in CMMC Model ver. 1.02), a determination as to whether and details as to how: (1) The component will implement relevant security measures to achieve a desired CMMC or other appropriate capability and performance threshold prior to March 1, 2022; and (2) The component will mitigate potential risks until those practices and capabilities are implemented.

The committee further directs the Comptroller General to review this report of the Secretary of Defense and provide a briefing to the congressional defense committees no later than 180 days after its submission to the Congress.

Department of Defense network external visibility

The committee applauds Fleet Cyber Command and Army Cyber Command for using commercial off-the-shelf (COTS) solutions for improved management of Internet connections and activity, which include capabilities for continuous discovery, monitoring, and management of Navy and Army Internet-facing and Internet-connected systems and assets and their activities on the Internet. These COTS services observe networks from the outside as assets communicate on the Internet, which enables network managers to understand what their external attacks surfaces look like and how elements of their networks behave externally. From this vantage point, it is possible to detect previously unknown compromises, unsanctioned connections and configurations, vulnerabilities, and threat activity.

The Department of Defense (DOD) lacks a similar comprehensive understanding of the Internet-connected assets and attack surface across the DOD enterprise; the committee notes in this regard that the DOD only recently discovered that it has twice as many managed connections to the Internet as it thought it did—connections established and maintained by components that were not protected like the other sanctioned Internet Access Points managed by the Defense Information Systems Agency. Despite strides made by Joint Force Headquarters-Departments of Defense Information Network (JFHQ-DODIN) in improving its enterprise-wide visibility of DOD networks, DOD networks are controlled by individual components, with JFHQ-DODIN deriving most of its situational awareness from component reporting. The committee believes that it is critical that JFHQ-DODIN achieve real-time visibility over all DOD networks; adoption of COTS solutions at the enterprise-level offers one solution for providing this enterprise capability.

The committee therefore directs the Commander, JFHQ-DODIN, to provide a briefing, no later than March 1, 2021, on the Department's plans for Internet operations management, including: (1) The role that existing DOD systems and capabilities can play in discovering, monitoring, and managing DOD Internet behavior; (2) The potential further acquisition and use of COTS solutions for Internet operations management; and (3) JFHQ-DODIN's current and planned capabilities and concept of operations for Internet op-

erations management, including the specific responsibilities of DOD components and the headquarters in performing Internet operations management.

Ground vehicle cybersecurity

As the Department of Defense (DOD) undertakes ground vehicle modernization efforts, the committee believes that it is important that the Department implement robust cybersecurity standards and practices during the design process. The committee believes that cybersecurity considerations are of particular importance, given modernization efforts in autonomous driving technology and artificial intelligence: cybersecurity must be a foundational consideration as the Department introduces optionally-manned and autonomous platforms into its fleet of ground vehicles. The committee also believes that the Department should work with industry to apply the best practices and lessons learned from the U.S. commercial automotive industry to develop DOD-specific cyber requirements, including those germane to sourcing of suppliers, vehicle fielding, and sustainment activities.

Therefore, the committee directs the Secretary of Defense to provide a briefing on ground vehicle cybersecurity to the Committees on Armed Services of the Senate and the House of Representatives no later than March 31, 2021. The briefing shall include the following: (1) An overall assessment of ground vehicle cybersecurity, to include current capabilities and related vulnerabilities, cybersecurity design and manufacturing concerns, and associated supply chain issues; (2) Identification of available DOD and commercial automotive cybersecurity technologies that could improve the cybersecurity of DOD's existing fleet of ground vehicles as well as inform the cybersecurity design and production requirements for new ground vehicle programs; (3) Identification of internal and external ground vehicle communication capabilities to enable predictive maintenance, vehicle sustainment planning, remote updating, and cybersecurity protections; and (4) Identification of ground vehicle cybersecurity best practices from both the DOD and commercial automotive industry and processes to incorporate these best practices into existing DOD ground vehicles and the production of new ones. Where appropriate, this briefing should consider ground vehicles as integrated systems-of-systems that include automotive components from vendors, platform integration components from integrators, and mission equipment from government sources.

Homeland Defense Radar-Hawaii

The committee notes that section 1680 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-92) required the Department of Defense to improve missile defense coverage against ballistic missile threats to Hawaii and to protect the operations of the Pacific Missile Range Facility. As a result, the Director of the Missile Defense Agency (MDA) initiated development of the Homeland Defense Radar-Hawaii (HDR-H) to fulfill this requirement. The HDR-H was designed to significantly increase the ability of the Ground Based Interceptors and other missile defense elements to defend Hawaii against rapidly evolving threats of increased size and complexity and to contribute to the overall sensor

architecture supporting the Ground-based Midcourse Defense System. This program was supported by several combatant commanders in testimony to the committee.

Therefore, the committee is deeply concerned by the Department's decision to not request funding for the HDR-H in fiscal year 2021 and notes that this program was included on the unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command. Elsewhere in this report, the committee recommends a restoration of funding to support continuation of this crucial program. Additionally, the committee urges the Department to continue to execute all fiscal year 2020 requirements in support of the HDR-H, consistent with the fiscal year 2020 defense authorization and appropriations acts.

The committee acknowledges that siting issues have caused delays and that the September 30, 2023, completion date, as outlined in section 1687 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115-232), may no longer be achievable. Therefore, the committee directs the Director of the MDA to provide a revised plan to the committee no later than December 1, 2020, that describes an updated timeline for completion, to include site selection, radar procurement, and construction, and to brief the committee on a semi-annual basis thereafter on the program's progress until deployment of the radar. Finally, the committee expects the Department to submit an adequate funding profile for this program in subsequent budget requests.

Hybrid space infrastructure

The committee is aware of the growing advances and proliferation of commercial capability in space-based intelligence, surveillance, and reconnaissance collection. Therefore, in order to take advantage of the emerging U.S. commercial space-based radio frequency (RF) geospatial intelligence and RF data collection capabilities and address existing combatant command requirements, the committee encourages the Space Force to take full advantage of these capabilities to augment organic assets.

Integrated Ground-Based Strategic Deterrent test plan

The Ground-Based Strategic Deterrent (GBSD) weapon system is scheduled to reach a Milestone B decision in the fourth quarter of fiscal year 2020, with an estimated first flight of the missile in the mid-2020s and fielding around 2030. Between first flight and fielding, extensive testing must occur, which is an inherently governmental activity. The Air Force, the vendor awarded the GSBD contract, and the National Nuclear Security Administration (NNSA), which will produce the warhead and Joint Test Assemblies, must all be synchronized across the test campaign, which will likely utilize Vandenberg Air Force Base and the Ronald Reagan Test Site on Kwajalein Atoll in the Marshall Islands. While both locations have been involved in steady state testing of the Minuteman III, the United States has not conducted a concerted test campaign of a new intercontinental ballistic missile weapons system since the Peacekeeper was tested in the 1980s—more than 40 years prior to initial testing of GBSD.

Accordingly, the committee directs the Secretary of the Air Force, in consultation with the Director of Operational Test and Evaluation, to provide a report to the congressional defense committees not later than February 26, 2021, on the planned test campaign for the GBSD weapons system, including the Test and Evaluation Master Plan.

The report shall also include: (1) Critical test milestones integrated between the Air Force, the NNSA, and the contractor; (2) Cybersecurity milestones; (3) Estimated costs; (4) Specific facilities, included those requiring military construction; and (5) Any actions that will be required under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq) and the timing for completing those actions.

Long range launch and range complexes

The committee continues to recognize and encourage the use of launch and range complexes for long-range hypersonic flight tests as well as supporting national security space launch priorities. The committee recognizes the importance of rapid development and testing of hypersonic capabilities and the efforts of the Test Resource Management Center (TRMC) to accelerate the development of launch and downrange tracking facilities, new range complexes such as the Aleutian Test Range, and other U.S.-based long range corridors to support robust testing of both offensive and defensive hypersonic weapons. Additionally, the committee recognizes that certain launch facilities, including the Pacific Spaceport Complex—Alaska, the Mid-Atlantic Regional Spaceport, and Oklahoma Air and Space Port, are available to meet the requirements of the national security space programs of the United States Space Force, Operationally Responsive Space Office, Missile Defense Agency, and other Department of Defense components. The committee notes that these facilities and complexes could improve the resiliency of U.S. launch infrastructure and help ensure consistent access to space to support national security space priorities and the testing of hypersonic weapons.

Maintain independence of Space Rapid Capabilities Office

The committee recognizes the rapidly evolving nature of space technology and the need for the United States to remain at the cutting edge of research and development in the space domain. To meet this need, the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) specifically mandated that the Space Rapid Capabilities Office (Space RCO) maintain a separate organizational form, distinct from mainstream space acquisition organizations and with unique authorities and a direct reporting chain to the Chief of Space Operations. These characteristics have allowed and will continue to allow the Space RCO to push the bounds of performance and rapidly develop and field space capabilities at the best cost to the taxpayer. Space RCO's statutorily required mission is codified in section 2273(a) of title 10, United States Code. Therefore, the committee encourages the Space Force to ensure that Congress' statutorily mandated requirement that the Space RCO remain a separate entity is adhered to as the Space

Force continues to lay out its structure and organization in the near and medium terms.

Matters on Cybersecurity Maturity Model Certification in annual briefings on status of framework on cybersecurity for the United States defense industrial base

The committee directs the Secretary of Defense to provide a briefing to the Committees on Armed Services of the Senate and the House of Representatives no later than December 1, 2020, on the status of the Cybersecurity Maturity Model Certification (CMMC) implementation. The briefing shall be provided annually until December 1, 2026. The briefings shall contain the following information: (1) The current status of mechanisms within the Department of Defense's CMMC framework for fraud prevention, bid protest, and dispute resolution; (2) The current status of processes within the framework for supporting small businesses in achieving and maintaining certification under the CMMC; (3) The current status of measures within the framework to ensure that businesses have fair and timely access to assessments in connection with the CMMC; (4) The overall status of CMMC implementation, including disaggregated data on the number of military service and component contracts modified to include the CMMC requirements; and (5) The number of contractors, per industry code and level of CMMC, that have received certification.

Microelectronics for national security space

The committee has serious concerns about the availability of radiation-hardened, space qualified microelectronics for critical national security space programs. A number of critical space systems currently in development incorporate 45 nm components in their designs, and a loss of supply for these components could result in increased costs, schedule delays, and an erosion of space-based operational capabilities. However, the committee understands that the sole remaining source of these wafers intends to cease production of wafers for new designs at the end of 2020 and to cease production for legacy designs by the end of 2022. While the committee is aware of evolving plans to meet the Nation's long-term need for radiation-hardened microelectronics, the committee remains concerned that alternative strategies may not be in place in time to avoid the potential harmful effects of a disruption in supply.

Therefore, the committee directs the Under Secretary of Defense for Acquisition and Sustainment, in coordination with the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics, to submit to the congressional defense committees a report, not later than December 1, 2020, assessing the anticipated customer demand for 45 nm wafers and options, including an end-of-life buy, to ensure that sufficient supply is available.

Missile field ground support vehicles

The Air Force's Northern Tier intercontinental ballistic missile fields cover large land areas, requiring many all-weather capable ground vehicles. Operations, maintenance, and especially security forces airmen travel long distances to launch facilities in Bearcats and Humvees, some of which have already been heavily used in Af-

ghanistan and which can accumulate tens of thousands of miles annually on unimproved roads. The Air Force has committed to procuring the Joint Light Tactical Vehicle (JLTV) to replace both the Humvee and the Bearcat, but questions remain about the suitability of this vehicle to the mission.

Accordingly, the committee directs the Secretary of the Air Force to provide a report, not later than February 26, 2021, to the congressional defense committees on: (1) The planned acquisition schedule of the JLTV by missile wing; (2) Additional outfitting of the JLTV required for the missile field mission, including whether these additions would be before or after delivery; (3) Planned operational testing of the JLTV for this mission; (4) Per unit cost of the JLTV in its final operational state; (5) Lifetime per unit cost comparison with a generic armed sport utility vehicle (SUV), taking into account the commercial market for spares; and (6) Which requirements, if any, the JLTV would be able to meet for this mission that an armored SUV would not.

Missile warning and sensor integration for the Integrated Tactical Warning and Attack Assessment system

Section 1669 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115–91) required the Secretary of the Air Force to submit to the congressional defense committees a plan specifying a single lead major command to manage the Integrated Tactical Warning and Attack Assessment System as a weapons system consistent with Air Force Policy Directive 10–9, titled “Lead Command Designation and Responsibilities for Weapon Systems,” dated March 8, 2007. That plan, “Air Force Plan to Manage Integrated Tactical Warning and Attack Assessment (ITW/AA) System and Multi-Domain Sensors,” was delivered to the congressional defense committees in February 2019.

The committee further expressed support for, and concern about, this effort in the Senate report accompanying S. 1790 (S. Rept. 116–48) of the National Defense Authorization Act for Fiscal Year 2020, requiring status briefings on the implementation of this plan on March 1, 2020, and September 31, 2020.

Given the importance of this mission, as well as the creation of U.S. Space Command as the combatant command responsible for this mission and related sensor integration, the committee directs the Commander, U.S. Space Command, in consultation with the Commander, U.S. Northern Command, to brief the congressional defense committees by February 28, 2021, on the Commander’s assessment of the progress being made to implement this plan and additional measures needed to ensure that the ITW/AA system is modernized and can utilize non-ITW/AA certified sensors to make an assessment of an attack on the homeland.

In particular, the committee is concerned about the modernization of the Combatant Commanders Integrated Command and Control System (CICCS), which resides in Cheyenne Mountain and is the principal ITW/AA correlation system for validating ITW/AA outputs. This system, which is relying on outdated software from the 1990s, must be modernized consistent with other battle management and control systems found within the Space Force.

As part of the briefing to the congressional defense committees, the committee directs the Commander, U.S. Space Command, to provide information on the status of incorporating modern intelligence assessments into the correlation process through the installation of Joint Worldwide Intelligence Communications Systems terminals in the Cheyenne Mountain facility.

National Cyber Security University

The committee recognizes that an increase in national cybersecurity education, training, and workforce development efforts is necessary for the protection and advancement of U.S. national and economic security in the face of multiple advanced persistent cyber threats. The committee supports the further development of a university consortium with well-established education and research programs in cybersecurity and critical infrastructure protection, designated by the Department of Homeland Security and National Security Agency as Centers of Academic Excellence for cyber operations and cyber defense, and ongoing cybersecurity and critical infrastructure collaborations with the Cybersecurity and Infrastructure Security Agency as effective means to accomplish these workforce development objectives. The committee notes that a consortium that is reflective of and responsive to the Nation's diversity (rural, minority, and veteran populations) will build and amplify a non-traditional workforce, including through technical training and apprenticeships.

Next Generation Overhead Persistent Infrared system

The committee supports the Air Force's plan to transition from the legacy Space-Based Infrared System program by developing a Block 0 constellation consisting of three geosynchronous earth orbit (GEO) satellites and two polar earth orbit satellites. The committee supports the development of all aspects of the Next Generation Overhead Persistent Infrared system. The committee expects that the acquisition approach meets all operational requirements and is responsive to rapidly evolving adversary threat capabilities and operational plans. The committee encourages the Air Force to ensure that funding for the distinct projects are executed in accordance with the budget request.

Nuclear Command, Control, and Communications Enterprise Center

The committee continues to support U.S. Strategic Command's Nuclear Command, Control, and Communications Enterprise Center (STRATCOM NEC) and believes that the sustainment and modernization of the Nation's nuclear command, control, and communications (NC3) architecture is a critical element of the Department of Defense's most important mission: nuclear deterrence. Given the diversity of systems and technology within the NC3 enterprise, success in this effort will involve input and cooperation from a variety of outside stakeholders, including commercial industry. Additionally, innovative modeling tools and concepts utilized by industry have the potential to accelerate efforts through enhanced simulation and testing.

Therefore, the committee directs STRATCOM to include in its next briefing to the congressional defense committees on the plan for future systems-level architecture of the NC3 systems, as required by section 1679 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92), a description of the participation of federally funded research and development centers, university associated research centers, and commercial industry in the development of this architecture so far, as well as an assessment of the potential application of commercial industry modeling and simulation practices, such as the creation of a “digital twin,” to the NC3 enterprise.

Options for the future of the B83–1 gravity bomb

The 2018 Nuclear Posture Review required the National Nuclear Security Administration to sustain the B83–1 gravity bomb past its planned retirement date until a suitable replacement is identified. The committee understands that the Nuclear Weapons Council (NWC) is currently reviewing options to further sustain, life extend, or retire the B83 and will make this decision in time to inform the fiscal year 2022 budget submission.

Therefore, the committee directs the Chairman of the NWC, in consultation with the other members of the Council, to provide a report to the congressional defense committees not later than October 1, 2020, on options for the future of the B83, including notional cost and schedule for a life extension program as well as which targets would no longer be held at risk if no suitable replacement can be fielded before its retirement.

Organic space capability

The committee is aware of continued discussions within the Department of Defense regarding the transfer of personnel and missions from the various military services to the United States Space Force. The committee understands that each military service will require expertise in space, whether organic to the service or as a liaison element from the Space Force.

Therefore, the committee directs the Chairman of the Joint Chiefs of Staff, in consultation with the service chiefs, to report no later than October 31, 2020, to the congressional defense committees what missions and expertise should remain resident and resourced within each service and whether those missions require organic or liaised Space Force personnel.

Pilot program for improving the cybersecurity of disadvantaged small businesses in the defense industrial base

The committee is aware that small and medium-sized businesses in the defense industrial base (DIB) are justifiably concerned about their ability to meet increasing cybersecurity requirements for the protection of Department of Defense (DOD) information and operations. One approach that is much discussed for facilitating companies’ meeting the new standards is to enable them to store and work with DOD data in a protected cloud that meets stringent security accreditation requirements. While this concept could help many companies, for others it would still be difficult to meet the remaining requirements for on-premise security, as they lack the

expertise, resources, and access to services that could assist them. The committee notes that extending the cloud-based architecture for providing secure storage, processing, and transmission of controlled unclassified information through thin-client, virtual desktop technology would make compliance substantially easier and more efficient.

A complicating factor in some areas, particularly outside the contiguous United States (OCONUS), is the lack of locally-based accredited commercial cloud facilities, which results in latencies that make thin-client connections impractical.

The committee is aware that Department of Commerce Manufacturing Extension Partnership (MEP) offices are working with small and medium-sized DIB companies to develop options for local high-bandwidth hosting and computing environments that meet DOD security requirements and are capable of supporting thin-client operations. The committee, therefore, directs the Under Secretary of Defense for Acquisition and Sustainment, in coordination with the MEP offices, to conduct a pilot program to establish a secure hosting environment that supports thin-client services to enable DIB companies to meet most DOD cybersecurity requirements. The pilot program should assess this approach as a model for OCONUS states and territories without local accredited cloud regions as well as to offer thin-client solutions to CONUS-based companies with access to local enterprise cloud services that meet DOD security standards. The committee directs the Under Secretary to provide a briefing on the conduct of this pilot, together with conclusions and recommendations, to the Committees on Armed Services of the Senate and the House of Representatives by December 1, 2022.

Progress regarding cybersecurity framework for the defense industrial base

The committee included a provision in the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92) that required the Secretary of Defense to develop a consistent, comprehensive framework to enhance the cybersecurity of the U.S. defense industrial base. The committee recognizes the release of version 1.0 of the Cybersecurity Maturity Model Certification (CMMC) in January 2020 and is pleased with the progress that has been made in quickly developing and establishing a program to assess the cybersecurity of the defense industrial base (DIB).

The committee believes that the development of an accreditation standard like CMMC is the foundation for the framework that is required to enhance DIB cybersecurity and commends the Office of the Under Secretary of Defense for Acquisition and Sustainment for its diligent outreach to Department of Defense (DOD) stakeholders, University Affiliated Research Centers, Federally Funded Research and Development Centers, and industry during the development of the CMMC. The committee encourages the Department to continue to work with these stakeholders, including small businesses and manufacturers, as it begins to include CMMC requirements in upcoming requests for proposals so as to ensure the robust communication of requirements and expectations.

However, the committee is concerned that many of the other components of the required framework for improving the cybersecu-

riety of the DIB have not materialized as quickly as the CMMC element. The committee believes that addressing the cybersecurity of the DIB will require a multi-faceted strategy to ensure an effective approach that does not represent an overly difficult burden to small and medium-sized businesses. The committee is also concerned that aspects of the framework are being developed independently in different organizations across the Department without centralized leadership or coordination.

Therefore, the committee encourages the Department, led by the Under Secretary of Defense for Acquisition and Sustainment and coordinated by the Principal Cyber Advisor, to accelerate progress on some of the other complementary and equally important aspects of cybersecurity of the DIB, including: the unnecessary flowdown of DOD controlled unclassified information throughout the supply chain; the timely provision of useful cyber threat intelligence to DIB partners; the direct provision of cybersecurity capability or secure development environments to contractors through the DOD or prime contractors; improved program manager security plans; penalties for delinquent contractors; and offensive cyber operations concepts to exploit adversary penetration of DIB contractors.

Qualification of the television as part of the intercontinental ballistic missile weapons system

The Minuteman III Launch Control Center (LCC), which resides in an underground capsule, is defined by the Air Force as part of the Minuteman III weapon system. All components of the weapon system require periodic maintenance and rigorous change specification by the Intercontinental Ballistic Missile System Program Office (SPO). Adding additional equipment to the weapon system definition often requires lengthy analysis by the SPO as well as requirements certification by Air Force Global Strike Command.

One key piece of equipment to the combat crew within the LCC is a flat panel television that provides the ability to email and perform continuing education during the crew's 24-hour alerts. As currently defined, the television is not part of the weapon system, and, when it breaks, the SPO must go to great lengths to find a commercial vendor that can qualify a television to the electromagnetic interference requirements required for the LCC. As a result, a simple flat panel television that can be commercially purchased for several hundred dollars costs several thousand dollars, simply because it is not part of the weapon system. Due to the cost and paperwork, televisions remain broken for lengthy periods of time in LCCs.

Accordingly, and because this item is important to the morale of the combat crews, the committee directs the Secretary of the Air Force to provide a briefing to the congressional defense committees no later than February 26, 2021, on what efforts are being made to make the television part of the weapon system to reduce cost and time to replacement and ensure that the combat crews can perform personal duties to enhance their morale during their free time in a 24-hour shift.

RAND study on space launch

As part of its assessment of future launch capability needs, the Air Force directed the RAND Corporation to assess the long-term market for space launch. The RAND Corporation completed this study in June 2019. The study confirms that maintaining three launch providers in the National Security Space Launch (NSSL) program provides for the least amount of risk, but the current market only provides for the viability of two launch providers. Therefore, the committee believes that the Air Force should make efforts to encourage the continued developmental efforts of at least three providers for phase 3 of the NSSL program.

Recapitalization of the National Airborne Operations Center

The Air Force's fleet of E-4B aircraft serve as the National Airborne Operations Center (NAOC) for the President, the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, and other senior leaders. The fleet constitutes a foundational element of the National Military Command System (NMCS) and provides a highly survivable command, control, and communications center from which to direct U.S. forces, execute emergency war orders, and coordinate actions by civil authorities.

The E-4B fleet first entered service in 1974, and, as the aircraft continues to age, sustainment efforts grow increasingly difficult and costly. Sustaining the fleet as it approaches end of life is becoming particularly challenging as a result of diminishing manufacturing sources and parts obsolescence. These factors contribute to increasing maintenance costs and declining availability rates. The committee is concerned that the path forward for recapitalizing this vital strategic capability remains unclear and notes that the Air Force conducted an analysis of alternatives (AOA) to replace the E-4B in 2008. The committee expects the Department of Defense to expeditiously complete its latest AOA, select a preferred alternative, and make a sustained commitment to recapitalize the capability.

Satellite ground terminal network

The Air Force Satellite Control Network (AFSCN) is a satellite ground terminal network comprised of ground stations and antenna systems distributed around the world, primarily to ensure global command and control of 170 satellites critical for conducting military, intelligence, and civilian government operations. Over the past decade, the Air Force has invested hundreds of millions of dollars to upgrade the network. However, the AFSCN is reaching its capacity to command and control additional satellites planned for fielding in the near term, and, as a result, some existing and new satellite system programs may have to identify and use alternate means for controlling their satellites.

Therefore, the committee directs the Comptroller General of the United States to: (1) Assess the status of the AFSCN, including its capacity for conducting satellite operations for current and future satellites; (2) Determine and analyze any plans to address AFSCN's capacity limitations, including upgrading the existing system or acquiring new satellite control capabilities; and (3) Assess the extent to which acquiring satellite control services from com-

mercial providers can meet DOD's needs. The committee directs the Comptroller General to brief its preliminary observations to the congressional defense committees no later than March 31, 2021.

Small business cybersecurity compliance

The committee acknowledges that the Under Secretary of Defense for Acquisition and Sustainment is currently releasing compliance achievement costing guidance and assessment guidance for implementing Cybersecurity Maturity Model Certification (CMMC) requirements. However, due to the extended Department of Defense (DOD) rollout time, there is concern among small businesses (with less than \$5.0 million in annual revenue) that they will not be able to achieve CMMC compliance in a timely manner without prime contractor assistance.

Therefore, the committee requests that: (1) DOD release assessment guidance for all CMMC levels in order that companies can fully track compliance requirements for CMMC Level 3 and higher; (2) DOD provide cost data and estimates for businesses to be in compliance with the corresponding CMMC level; and (3) DOD publish the training guide and standards for the Accreditation Body and third-party certifiers within 180 days of the enactment of the National Defense Authorization Act for Fiscal Year 2021.

Space Force Training and Readiness Command

The committee recognizes the strategic importance of ensuring that the next generation of space professionals is trained and ready to operate in the space domain. The first Comprehensive Plan for the Organizational Structure of the U.S. Space Force, published in February 2020, called for the establishment of a Space Training and Readiness Command to focus on "doctrine, space training and education, space warfighting concepts, and overall readiness." The committee encourages the establishment of such an organization to advance space warfighting development. The committee also expects that, consistent with the overall objective in standing up the Space Force and as stated in the February 2020 report, it shall integrate with and utilize as much as possible existing Air Force functions and infrastructure to minimize cost and bureaucracy.

The committee commends the Space Force on the combined organizational model planned for the Air Force Research Lab. By combining efforts and managing priorities of both the Air Force and Space Force, the Department of Defense achieves synchronized effects with a very limited bureaucracy. The committee recommends the use of this combined model to the maximum extent possible in places like the Air Warfare Center and the National Air and Space Intelligence Center.

Space technology

The Space Force has been charged with protecting and defending military space assets to build more resilient and defensible architectures and to develop offensive capabilities to challenge adversaries in space. The committee supports the Space Force's efforts thus far to develop partnerships with academic research institutions in different geographic regions and with different military

and intellectual assets in order to establish critical research infrastructure and to develop the necessary workforce of the future.

The committee directs the Space Force to continue working with research institutions in areas such as autonomous platforms and policy, supply chains, and cybersecurity.

Space testing ranges

The committee is concerned with the infrastructure available to operate, test, and train in the space warfighting domain. As the Department of Defense begins to field systems to protect and defend our space assets, it is unclear to the committee what the long-term requirement for ranges capable of operationally assessing these systems is. Therefore, the committee directs the Secretary of the Air Force, in consultation with the Director of Operational Test and Evaluation and the Commander, U.S. Space Command, to develop a 5-year plan for the institution of the necessary ranges, equipment, and personnel to operationally test, train, and operate weapon systems to protect our space assets. This plan shall be briefed to the congressional defense committees no later than January 1, 2021.

Space weather

In recognition of the profound impact that weather forecasting has on daily worldwide military operations and the availability of commercial satellite technology to provide more accurate and timely weather data for joint and combined missions and extreme weather prognosis, the committee directs the Secretary of the Air Force to provide to the congressional defense committees, not later than January 1, 2021, a briefing regarding the utility, benefits, and cost of the application of commercial satellite weather data, including Radio Occultation data, to national security missions.

Training and retention of cyber mission force personnel

The committee is aware that the Cyber Mission Forces (CMF) lack sufficient highly trained personnel due to multiple factors, including insufficient training capacity, the exceptional aptitudes and time required to complete the highest levels of training, and a lack of special policies to retain personnel who have completed the rigorous training and served in the CMF for multiple assignments. The committee is aware that United States Cyber Command, the military services, and the National Security Agency are in the midst of reorganizing the CMF, reforming training regimens and courses, amending retention policies, increasing training capacity, and calibrating mission requirements.

The committee is encouraged by these developments but wants to ensure that they are fully implemented and prove effective. The committee therefore directs the Principal Cyber Adviser (PCA) to oversee and track the progress of these reforms. The committee also directs the PCA and Cyber Command to brief the congressional defense committees not later than October 1, 2020, on the progress made to implement these reforms, including the establishment of key progress milestones.

Transition from Minuteman III to the Ground-Based Strategic Deterrent

The Minuteman weapon system began operational alert in 1962 and has been operating on a continuous alert status since. Many Minuteman III components, such as life support equipment, blast protection, and inertial guidance units, are beyond end of life and cannot be life extended. The replacement for this weapon system, the Ground Based Strategic Deterrent (GBSD), is planned to achieve Milestone B in the fourth quarter of fiscal year 2020, with initial operations beginning around 2030. Over the next decade, the Air Force must maintain continuous alert status of the Minuteman III while simultaneously replacing it with the GBSD across 450 launch facilities and launch control centers, at three missile fields, in order to provide the Commander, U.S. Strategic Command (STRATCOM), with forces to meet deterrence requirements.

Accordingly, the committee directs the Secretary of the Air Force, in consultation with the Commander, STRATCOM, to provide a report to the congressional defense committees, not later than February 26, 2021, on: (1) The drawdown schedule of the Minuteman III weapon system at each missile field, including the removal of the missile from the launch facility as well as the replacement of the launch control centers; (2) The launch facility insertion rate of the GBSD missile at each missile field; (3) The expected date of GBSD full operational capability for each missile wing and squadron; (4) The estimated annual costs of maintaining Minuteman III until its full retirement; and (5) Proposed actions during this transition period to account for any reduction or gaps in operational availability of the land-based leg of the triad in order for STRATCOM to meet its deterrence requirements.

United States Space Command Headquarters

The committee recognizes the bipartisan congressional support for the National Defense Strategy and, with it, the renewed emphasis on space as a contested domain that requires unique operational command and control capabilities. The committee's support for the establishment of the United States Space Force and United States Space Command as a unified combatant command reflect the need for elevated prioritization of the critical threats to our national security in the space domain. In the spirit of these efforts, and given the critical mission of military space operations, the committee directs the Secretary of the Air Force, in coordination with joint military partners and the intelligence community, to provide a report to the committee no later than 60 days after the date of the enactment of this Act, detailing the criteria and process by which the Department intends to determine the permanent site for the United States Space Command Headquarters.

Value of inland spaceports

The committee recognizes the benefits of inland commercial spaceports when coupled with airspace capable of meeting testing requirements of hypersonic and directed energy weapons. Inland commercial spaceports generally operate in remote locations that are less susceptible to airspace conflict and have significantly reduced electromagnetic interference. Moreover, inland spaceports

are less vulnerable to offshore surveillance efforts conducted by adversarial nations and provide increased operational security for sensitive national security missions. Therefore, the committee encourages the Department of Defense to leverage existing inland spaceports with accompanying range and airspace for land-based testing of hypersonic and directed energy weapons. The committee further encourages the military services, in coordination with the Department's Test Resources Management Center, to invest in the testing infrastructure that will be necessary to ensure that these inland spaceports have the capability and capacity to test the military services' next-generation technologies.

Wide Area Surveillance Program Scorpion Sensor System

The committee recognizes the importance of the Wide Area Surveillance (WAS) program and the threat it addresses. As the air picture becomes increasingly complex and threats more diverse, particularly in the U.S. Northern Command and North American Aerospace Defense Command area of responsibility, air battle managers' need for comprehensive situational awareness is also growing. The committee notes that options exist to enhance the WAS Scorpion sensor capability to address new threats and environments while reducing system complexity and cost. The committee further notes that the budget request contained no research and development funding intended for these WAS enhancements. Therefore, the committee encourages the Air Force to consider funding system enhancements that will improve the Battle Control Systems-Fixed air picture for homeland defense, reduce schedule, and lower the cost of manufacturing, fielding, operations, and maintenance.

DIVISION B—MILITARY CONSTRUCTION AUTHORIZATIONS

Summary and explanation of funding tables

Division B of this Act authorizes funding for military construction projects of the Department of Defense (DOD). It includes funding authorizations for the construction and operation of military family housing as well as military construction for the reserve components, the Defense Agencies and Field Activities, and the North Atlantic Treaty Organization Security Investment Program. It also provides authorization for the base closure accounts that fund military construction, environmental cleanup, and other activities required to implement the decisions made in prior base closure rounds. It prohibits any future base realignment closure rounds.

The tables contained in this Act provide the project-level authorizations for the military construction funding authorized in Division B of this Act and summarize that funding by account.

The fiscal year 2021 budget requested \$7.8 billion for military construction and housing programs. Of this amount, \$6.0 billion was requested for military construction, \$1.4 billion for the construction and operation of family housing, \$300.4 million for base closure activities, and \$173.0 million for the North Atlantic Treaty Organization Security Investment Program.

The committee recommends the authorization of appropriations for military construction, housing programs, and base closure activities totaling \$7.8 billion. The total amount authorized for appropriations reflects the committee's continued commitment to investing in the recapitalization of DOD facilities and infrastructure.

Short title (sec. 2001)

The committee recommends a provision that would designate division B of this Act as the "Military Construction Authorization Act for Fiscal Year 2021."

Expiration of authorizations and amounts required to be specified by law (sec. 2002)

The committee recommends a provision that would establish the expiration date for authorizations in this Act for military construction projects, land acquisition, family housing projects, and contributions to the North Atlantic Treaty Organization Security Investment Program as October 1, 2025, or the date of the enactment of an act authorizing funds for military construction for fiscal year 2026, whichever is later.

Effective date (sec. 2003)

The committee recommends a provision that would provide an effective date for titles XXI through XXVII and title XXIX of October 1, 2020, or the date of the enactment of this Act, whichever is later.

TITLE XXI—ARMY MILITARY CONSTRUCTION

Summary

The budget request included authorization of appropriations of \$650.3 million for military construction and \$486.5 million for family housing for the Army for fiscal year 2021.

The committee recommends authorization of appropriations of \$869.5 million for military construction for the Army and \$486.5 million for family housing for the Army for fiscal year 2021.

Further details on projects authorized can be found in section 2101 and section 4601 of this Act.

Authorized Army construction and land acquisition projects (sec. 2101)

The committee recommends a provision that would authorize military construction projects for the active component of the Army for fiscal year 2021. The committee recognizes the Department of Defense's significant unfunded military construction requirements and has included an additional \$286.5 million for many of these projects here. The authorized amount is listed on an installation-by-installation basis.

Family housing (sec. 2102)

The committee recommends a provision that would authorize new construction, planning, and design of family housing units for the Army for fiscal year 2021. This provision would also authorize funds for facilities that support family housing, including housing management offices, housing maintenance, and storage facilities.

Authorization of appropriations, Army (sec. 2103)

The committee recommends a provision that would authorize appropriations for the active component military construction and family housing projects of the Army authorized for construction for fiscal year 2021. This provision would also provide an overall limit on the amount authorized for military construction and family housing projects for the active component of the Army. The state list contained in this report is the binding list of the specific projects authorized at each location.

Modification of authority to carry out fiscal year 2017 project at Camp Walker, Korea (sec. 2104)

The committee recommends a provision that would modify the authorization contained in section 2102(a) of the Military Construction Authorization Act for Fiscal Year 2017 (division B of Public Law 114-92; 129 Stat. 1146) for the construction of an elevated walkway to connect two existing parking garages to connect children's playgrounds at Camp Walker, South Korea.

TITLE XXII—NAVY MILITARY CONSTRUCTION

Summary

The budget request included authorization of appropriations of \$2.0 billion for military construction and \$389.4 million for family housing for the Department of the Navy for fiscal year 2021.

The committee recommends authorization of appropriations of \$1.9 billion for military construction for the Navy and \$414.4 million for family housing for the Navy for fiscal year 2021.

Further details on projects authorized can be found in section 2201 and section 4601 of this Act.

Authorized Navy construction and land acquisition projects (sec. 2201)

The committee recommends a provision that would authorize Navy and Marine Corps military construction projects for fiscal year 2021. The committee recognizes the Department of Defense's significant unfunded military construction requirements and has included an additional \$279.4 million for many of these projects here. The authorized amounts are listed on an installation-by-installation basis.

Family housing (sec. 2202)

The committee recommends a provision that would authorize new construction, planning, and design of family housing units for the Navy for fiscal year 2021. This provision would also authorize funds for facilities that support family housing, including housing management offices, housing maintenance, and storage facilities.

Improvements to military family housing units (sec. 2203)

The committee recommends a provision that would authorize the Secretary of the Navy to improve existing family housing units of the Department of the Navy in an amount not to exceed \$37.0 million.

Authorization of appropriations, Navy (sec. 2204)

The committee recommends a provision that would authorize appropriations for the active component military construction and family housing projects of the Department of the Navy authorized for construction for fiscal year 2021. This provision would also provide an overall limit on the amount authorized for military construction and family housing projects for the active components of the Navy and the Marine Corps. The state list contained in this report is the binding list of the specific projects authorized at each location.

TITLE XXIII—AIR FORCE MILITARY CONSTRUCTION

Summary

The budget request included authorization of appropriations of \$767.1 million for military construction and \$414.2 million for family housing for the Air Force in fiscal year 2021.

The committee recommends authorization of appropriations of \$716.1 million for military construction for the Air Force and \$439.2 million for family housing for the Air Force for fiscal year 2020.

Further details on projects authorized can be found in section 2301 and section 4601 of this Act.

Authorized Air Force construction and land acquisition projects (sec. 2301)

The committee recommends a provision that would authorize Air Force military construction projects for fiscal year 2021. The committee recognizes the Department of Defense's significant unfunded military construction requirements and has included an additional \$228.0 million for many of these projects here. The authorized amounts are listed on an installation-by-installation basis.

Family housing (sec. 2302)

The committee recommends a provision that would authorize new construction, planning, and design of family housing units for the Air Force for fiscal year 2021. This provision would also authorize funds for facilities that support family housing, including housing management offices, housing maintenance, and storage facilities.

Improvements to military family housing units (sec. 2303)

The committee recommends a provision that would authorize the Secretary of the Air Force to improve existing family housing units of the Department of the Air Force in an amount not to exceed \$94.2 million.

Authorization of appropriations, Air Force (sec. 2304)

The committee recommends a provision that would authorize appropriations for the active component military construction and family housing projects of the Air Force authorized for construction for fiscal year 2021. This provision would also provide an overall limit on the amount authorized for military construction and family housing projects for the active component of the Air Force. The state list contained in this report is the binding list of the specific projects authorized at each location.

Modification of authority to carry out fiscal year 2018 project at Royal Air Force Lakenheath (sec. 2305)

The committee recommends a provision that would modify the authorization contained in section 2301(b) of the Military Construction Authorization Act for Fiscal Year 2018 (division B of Public Law 115–91; 131 Stat. 1825) for the construction of a 2,700 square-meter Consolidated Corrosion Control and Wash Rack Facility at Royal Air Force Lakenheath, United Kingdom, by striking “20,000,000” as specified in the funding table of section 4601 of such Act (131 Stat. 1999) and inserting “55,300,000”.

Modification of authority to carry out certain fiscal year 2019 projects (sec. 2306)

The committee recommends a provision that would modify the authorization contained in section 2301(a) of the Military Construction Authorization Act for Fiscal Year 2019 (division B of Public Law 115–232; 132 Stat. 2246) for the construction of: (1) An F–35 Combat Arms Training and Maintenance Range at Eielson Air Force Base, Alaska, to include a 426 square meter non-contained (outdoor) range with a covered and heated firing line; (2) An entrance road and gate complex at Barksdale Air Force Base, Louisiana, consistent with the Unified Facilities Criteria relating to entry control facilities and the construction guidelines for the Air Force, in the amount of \$48,000,000; and (3) An F–35A Addition and Alteration Conventional Munitions MX at Royal Air Force Lakenheath, United Kingdom, to include a 1,206 square meter maintenance facility.

The provision would also amend the table in section 4601 of the Military Construction Authorization Act for Fiscal Year 2019 by striking “\$35,000” and inserting “\$50,000” for Force Protection and Safety, Air Force.

Modification of authority to carry out certain fiscal year 2020 family housing projects (sec. 2307)

The committee recommends a provision that would modify the authorization contained in section 2302 of the Military Construction Authorization Act for Fiscal Year 2020 (division B of Public Law 116–92) for the construction or acquisition of 76 family housing units at Spangdahlem Air Base, Germany.

This provision would also amend section 2303 of the Military Construction Authorization Act for Fiscal Year 2020 by striking “\$53,584,000” and inserting “\$46,638,000”.

Modification of authority to carry out certain fiscal year 2020 projects (sec. 2308)

The committee recommends a provision that would modify the authorization contained in section 2912(a) of the Military Construction Authorization Act for Fiscal Year 2020 (division B of Public Law 116–92) for specific disaster-related recovery projects at: Tyn-dall Air Force Base, Florida; Offutt Air Force Base, Nebraska; and Joint Base Langley-Eustis, Virginia.

TITLE XXIV—DEFENSE AGENCIES MILITARY CONSTRUCTION

Summary

The budget request included authorization of appropriations of \$2.0 billion for military construction for the Defense Agencies for fiscal year 2021.

The committee recommends authorization of appropriations of \$1.8 billion for military construction for the Defense Agencies for fiscal year 2021.

Authorized Defense Agencies construction and land acquisition projects (sec. 2401)

The committee recommends a provision that would authorize military construction projects for the Defense Agencies for fiscal year 2021. The authorized amounts are listed on an installation-by-installation basis.

Authorized Energy Resilience and Conservation Investment Program projects (sec. 2402)

The committee recommends a provision that would authorize the Secretary of Defense to carry out energy conservation projects. Beyond the requested amount of \$142.5 million, additional authorized amounts totaling \$155.4 million are listed on an installation-by-installation basis.

Authorization of appropriations, Defense Agencies (sec. 2403)

The committee recommends a provision that would authorize appropriations for the military construction and family housing projects of the Defense Agencies authorized for construction for fiscal year 2021. This provision would also provide an overall limit on the amount authorized for military construction and family housing projects for the Defense Agencies. The state list contained in this report is the binding list of the specific projects authorized at each location.

TITLE XXV—INTERNATIONAL PROGRAMS

Summary

The Department of Defense requested authorization of appropriations of \$1.4 billion for military construction in fiscal year 2021 for the North Atlantic Treaty Organization (NATO) Security Investment Program and in-kind contributions from the Republic of Korea and the State of Qatar. The committee recommends authorization of appropriations for the requested amount.

Subtitle A—North Atlantic Treaty Organization Security Investment Program

Authorized NATO construction and land acquisition projects (sec. 2501)

The committee recommends a provision that would authorize the Secretary of Defense to make contributions to the North Atlantic Treaty Organization Security Investment Program in an amount equal to the sum of the amount specifically authorized in section 2502 of this title and the amount of recoupment due to the United States for construction previously financed by the United States.

Authorization of appropriations, NATO (sec. 2502)

The committee recommends a provision that would authorize appropriations of \$173.0 million for the U.S. contribution to the North Atlantic Treaty Organization (NATO) Security Investment Program (NSIP) for fiscal year 2021.

This provision would also allow the Department of Defense construction agent to recognize the NATO project authorization amounts as budgetary resources to incur obligations when the United States is designated as the host nation for the purposes of executing a project under the NSIP.

Execution of projects under the North Atlantic Treaty Organization Security Investment Program (Sec. 2503)

The committee recommends a provision would authorize the Secretary of Defense to accept and spend contributions from the North Atlantic Treaty Organization (NATO) or NATO members for various purposes relating to the NATO Security Improvement Program (NSIP). The committee notes that project funding would be limited to appropriations for the NSIP, contributions from the NATO, contributions from NATO members, or a combination of these funds.

The committee understands that, according to the Department of Defense, this provision would decrease both cost and schedule of construction projects exercised under this authority.

Subtitle B—Host Country In-Kind Contributions

Republic of Korea funded construction projects (sec. 2511)

The committee recommends a provision that would authorize the Secretary of Defense to accept 10 military construction projects totaling \$416.0 million from the Republic of Korea as in-kind contributions.

Qatar funded construction projects (sec. 2512)

The committee recommends a provision that would authorize the Secretary of Defense to accept 15 military construction projects totaling \$791.2 million from the State of Qatar as in-kind contributions.

TITLE XXVI—GUARD AND RESERVE FORCES FACILITIES

Summary

The Department of Defense requested authorization of appropriations of \$568.1 million for military construction in fiscal year 2021 for facilities for the National Guard and reserve components.

The committee recommends authorization of appropriations of \$687.7 million for military construction in fiscal year 2021 for facilities for the National Guard and reserve components. The detailed funding recommendations are contained in the state list table included in this report.

Further details on projects authorized can be found in the tables in this title and section 4601 of this Act.

Authorized Army National Guard construction and land acquisition projects (sec. 2601)

The committee recommends a provision that would authorize military construction projects for the Army National Guard for fiscal year 2021. The committee recognizes the Department of Defense's significant unfunded military construction requirements and has included an additional \$49.8 million for many of these projects here. The authorized amounts are listed on an installation-by-installation basis.

Authorized Army Reserve construction and land acquisition projects (sec. 2602)

The committee recommends a provision that would authorize military construction projects for the Army Reserve for fiscal year 2021. The committee recognizes the Department of Defense's significant unfunded military construction requirements and has included an additional \$2.5 million for 1 project here. The authorized amounts are listed on an installation-by-installation basis.

Authorized Navy Reserve and Marine Corps Reserve construction and land acquisition projects (sec. 2603)

The committee recommends a provision that would authorize military construction projects for the Navy Reserve and Marine Corps Reserve for fiscal year 2021. The committee recognizes the Department of Defense's significant unfunded military construction requirements and has included an additional \$12.8 million for 1 of these projects here. The authorized amounts are listed on an installation-by-installation basis.

Authorized Air National Guard construction and land acquisition projects (sec. 2604)

The committee recommends a provision that would authorize military construction projects for the Air National Guard for fiscal year 2021. The committee recognizes the Department of Defense's significant unfunded military construction requirements and has included an additional \$29.5 million for many of these projects here. The authorized amounts are listed on an installation-by-installation basis.

Authorized Air Force Reserve construction and land acquisition projects (sec. 2605)

The committee recommends a provision that would authorize military construction projects for the Air Force Reserve for fiscal year 2021. The committee recognizes the Department of Defense's significant unfunded military construction requirements and has included an additional \$25.0 million for 1 of these projects here. The authorized amounts are listed on an installation-by-installation basis.

Authorization of appropriations, National Guard and Reserve (sec. 2606)

The committee recommends a provision that would authorize appropriations for the reserve component military construction projects authorized for construction for fiscal year 2021 in this Act. This provision would also provide an overall limit on the amount authorized for military construction projects for each of the reserve components of the military departments. The state list contained in this report is the binding list of the specific projects authorized at each location.

Modification of authority to carry out fiscal year 2020 project in Alabama (sec. 2607)

The committee recommends a provision that would modify the authorization contained in section 2601 of the Military Construction Authorization Act for Fiscal Year 2020 (division B of Public Law 116-92) for the construction of an Enlisted Transient Barracks at Anniston Army Depot, Alabama, for the construction of a training barracks at Fort McClellan, Alabama.

TITLE XXVII—BASE REALIGNMENT AND CLOSURE ACTIVITIES

Summary and explanation of tables

The budget request included \$300.4 million for the ongoing cost of environmental remediation and other activities necessary to continue implementation of the 1988, 1991, 1993, 1995, and 2005 base realignment and closure rounds. The committee recommends \$300.4 million for these efforts. The detailed funding recommendations are contained in the state list table included in this report.

Authorization of appropriations for base realignment and closure activities funded through Department of Defense Base Closure Account (sec. 2701)

The committee recommends a provision that would authorize appropriations for fiscal year 2021 for ongoing activities that are required to implement the decisions of the 1988, 1991, 1993, 1995, and 2005 base realignment and closure rounds.

Prohibition on conducting additional base realignment and closure (BRAC) round (sec. 2702)

The committee recommends a provision that would prohibit the Department of Defense from conducting another base realignment and closure (BRAC) round.

The committee notes that, although the Department of Defense did not request authorization to conduct a BRAC round in the request for fiscal year 2021, the Department continues to focus its efforts on studying facility optimization. The committee is encouraged by these efforts and looks forward to reviewing these results prior to the request for any future BRAC round.

TITLE XXVIII—MILITARY CONSTRUCTION AND GENERAL PROVISIONS

Subtitle A—Military Construction Program

Responsibility of Navy for military construction requirements for certain Fleet Readiness Centers (sec. 2801)

The committee recommends a provision that would designate the Navy as the responsible military service for programming, requesting, and executing any military construction (MILCON) requirements for a Fleet Readiness Center (FRC) that is a tenant command aboard a Marine Corps installation.

The committee notes that there is currently apparent ambiguity over this responsibility, which has delayed much needed military construction investment in these facilities and has created readiness concerns related to Marine Corps aviation and the F-35 Joint Strike Fighter variants used by the Air Force, Marine Corps, and Navy. For example, because the Fleet Readiness Center East (FRC East) is a Navy Command located on Marine Corps Air Station Cherry Point, neither the Navy nor the Marine Corps accept ownership of FRC East MILCON project approval and funding. The committee notes that this provision would provide the much needed guidance the Department of the Navy has failed to mandate itself.

Construction of ground-based strategic deterrent launch facilities and launch centers for Air Force (sec. 2802)

The committee recommends a provision that would authorize the Secretary of the Air Force to carry out military construction projects to convert Minuteman III launch facilities and launch centers to ground-based strategic deterrent configurations under certain conditions.

Subtitle B—Military Family Housing

Prohibition on substandard family housing units (sec. 2821)

The committee recommends a provision that would strike the existing language contained in section 2830 of title 10, United States Code, which allows the Secretaries of the military departments to maintain substandard military family housing, and replace it with a prohibition of the Secretaries' leasing any substandard family housing unit.

The committee notes that the effective date of October 1, 2021, would allow the military services ample time to make repairs after their inspection report to the Congress as required under section 3051 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92). The committee further notes that, according to the military services, no service currently has any “sub-

standard” housing and is not reliant on the authority that would be eliminated via this provision.

Technical corrections to privatized military housing program (sec. 2822)

The committee recommends a provision that would provide technical corrections to specific sections of title 30 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92).

Requirement that Secretary of Defense implement recommendations relating to military family housing contained in report by Inspector General of Department of Defense (sec. 2823)

The committee recommends a provision that would require the Department of Defense (DOD) to implement, not later than 90 days after the date of enactment of this Act, the recommendations of the Inspector General of the Department of Defense contained in the report of the Inspector General, dated April 30, 2020, and titled “Evaluation of the DOD’s Management of Health and Safety Hazards in Government-Owned and Government-Controlled Military Family Housing.”

Subtitle C—Project Management and Oversight Reforms

Promotion of energy resilience and energy security in privatized utility systems (sec. 2841)

The committee recommends a provision that would allow Energy Resilience and Conservation Investment Program (ERCIP) projects to be executed on installations with utilities privatization (UP).

Many military installations have already leveraged or plan to leverage UP to achieve cost savings and benefit from commercial best practices. However, because ERCIP is military construction, currently it can only occur in conjunction with utility systems owned solely by the Department of Defense. In order to remove this obstacle and ensure that the Department can improve energy security on all of its installations, this provision would authorize the Department to pair ERCIP and UP.

Consideration of energy security and energy resilience in life-cycle cost for military construction (sec. 2842)

The committee recommends a provision that would require, during the consideration and evaluation of the life-cycle designed cost of a military construction project, consideration, as a facility requirement, of energy security and energy resilience to ensure that the resulting facility is capable of performing its missions in the event of a human-caused disaster or other unplanned event. The committee notes that this consideration would apply to designs for operations centers, hospitals, armories and readiness centers of the National Guard, and facilities for nuclear command and control, integrated strategic and tactical warning and attack assessment, continuity of government, missile defense, air defense, communications, and satellite and missile launch and control.

Subtitle D—Land Conveyances**Renewal of Fallon Range Training Complex land withdrawal and reservation (sec. 2861)**

The committee recommends a provision that would renew the land withdrawal for the lands known as Fallon Range Training Complex as described in section 3015 of the Military Lands Withdrawal Act of 1999 (Public Law 106–65; 113 Stat. 892) and the withdrawal and reservation of lands made by section 3011(a) of such Act (113 Stat. 885) until November 6, 2041.

The committee recognizes the need for the Navy to effectively train sailors and marines in the most realistic environments. However, the committee believes that there is more work to be done with all relevant stakeholders, including other committees of jurisdiction, the Nevada delegation, tribes, hunters, environmentalists, and others. As such, the committee directs the Navy to reengage and develop a new compromise approach that balances training needs with those of all relevant parties.

Renewal of Nevada Test and Training Range land withdrawal and reservation (sec. 2862)

The committee recommends a provision that would renew the land withdrawal for the lands known as the Nevada Test and Training Range as described in section 3015 of the Military Lands Withdrawal Act of 1999 (Public Law 106–65; 113 Stat. 892) and the withdrawal and reservation of lands made by section 3011(b) of such Act (113 Stat. 886) until November 6, 2041.

The committee recognizes the need for the Air Force to effectively train in the most realistic environments. However, the committee is disappointed by the lack of engagement conducted to date by the Air Force and the failure to coordinate with all relevant stakeholders, including other committees of jurisdiction, the Nevada delegation, tribes, hunters, and conservationists. As such, the committee directs the Air Force to reengage and develop a new compromise approach that balances military training needs with that of all relevant parties.

Transfer of land under the administrative jurisdiction of the Department of the Interior within Naval Support Activity Panama City, Florida (sec. 2863)

The committee recommends a provision that would require the Secretary of the Interior to transfer to the Secretary of the Navy 1.23 acres of land within Naval Support Activity, Panama City, Florida, that would convert from public land to land under the administrative jurisdiction of the Secretary of the Navy.

Land conveyance, Camp Navajo, Arizona (sec. 2864)

The committee recommends a provision that would grant the Secretary of the Army permissive authority to transfer not more than 3,000 acres at Camp Navajo, Arizona, to the State of Arizona for the use of training the Army and Air National Guard and defense industrial base economic development purposes.

Subtitle E—Other Matters**Military family readiness considerations in basing decisions (sec. 2881)**

The committee recommends a provision that would require the Secretaries of the military departments to factor military family readiness considerations, among other relevant factors, in future basing decisions. At minimum, the Secretaries would take the following family readiness factors into account in each future basing decision: (1) Interstate portability of professional licensure and certification credentials; (2) Public education; (3) Housing; (4) Healthcare; (5) Intergovernmental support agreements; and (6) Any other considerations in connection with military family readiness specified by the Secretary of Defense.

Additionally, the provision would require each of the Secretaries of the military departments to establish, for each of the military installations under his or her jurisdiction, a basing decision scorecard that incorporates the military family readiness considerations listed in this provision, among other factors the Secretary deemed relevant. The scorecard would be updated annually and available to the public.

Finally, the provision would require the Secretary of Defense to provide a briefing assessing the effect of the military family readiness considerations on basing decisions to the Committees on Armed Services of the Senate and the House of Representatives no later than April 1 of each year, terminating in 2023.

Prohibition on use of funds to reduce air base resiliency or demolish protected aircraft shelters in the European theater without creating a similar protection from attack (sec. 2882)

The committee recommends a provision that would prohibit the obligation or expenditure of funds for any activity that reduces air base resiliency or demolishes protected aircraft shelters in the European theater without creating similar protection from attack until such time as the Secretary of Defense certifies to the congressional defense committees that protected aircraft shelters are not required in the European theater.

Prohibitions relating to closure or returning to host nation of existing bases under the European Consolidation Initiative (sec. 2883)

The committee recommends a provision that would prohibit the obligation or expenditure of Department of Defense funds to implement any activity that closes or returns to host nations any existing bases until such time as the Secretary of Defense certifies that there is no longer a need for a rotational military presence in the European theater.

Enhancement of authority to accept conditional gifts of real property on behalf of military museums (sec. 2884)

The committee recommends a provision that would amend section 2601(e)(1) of title 10, United States Code, by inserting “a military museum,” after “offered to.”

The committee understands that, currently, a military museum must request permission to accept a gift that has a donor's name attached to it, which slows down the intake process, putting them at a competitive disadvantage with respect to other nonprofits. The committee is aware of two such examples where the Air Force Museum is struggling to accept specific donations. The committee applauds the work of the military museums that support and preserve the history of the United States military.

Equal treatment of insured depository institutions and credit unions operating on military installations (sec. 2885)

The committee recommends a provision that would amend section 2667 of title 10, United States Code, to require the Department of Defense (DOD) to ensure that policies governing depository institutions and credit unions operating on military installations are equally applied to all relevant institutions. Additionally, the provision would prohibit any requirement for the Secretaries of the military departments to provide no-cost office space or no-cost land lease to any insured depository institution or insured credit union.

As servicemember financial practices evolve to reflect the growing prevalence of online banking, it makes little sense for the DOD to mandate that the military services provide a subsidy in the form of free rent, utilities, or other logistical support to any particular financial institution. Rather, the Department should ensure that any decision to provide rent concessions to on-base private businesses is justified on the basis of a coherent cost-benefit analysis.

The committee also believes that no particular group of financial institutions should be advantaged or disadvantaged by DOD policy on the basis of its business structure and tax status. Therefore, this provision would require the DOD to develop policy treating all financial institutions equally when determining whether to provide a subsidy in exchange for an on-base location.

Report on operational aviation units impacted by noise restrictions or noise mitigation measures (sec. 2886)

The committee recommends a provision that would require the Secretary of the Air Force or Secretary of the Navy to report to Congress if: (1) Noise restrictions placed on the relevant operational aviation unit affect readiness and combat capability by prohibiting the unit from achieving combat ready status or maintaining aircrew currency; or (2) If required noise mitigation measures become cost prohibitive to the Department of Defense, namely, by exceeding 10 percent of an installation's annual budget.

Items of Special Interest

Army demolition prioritization

The committee notes the importance of balancing the Department of Defense's (DOD's) existing infrastructure with those of the individual military services and remains concerned by the Department's inability to prioritize Facility Sustainment and Restoration Modernization (FSRM) funding for demolition. The committee believes that consistent lack of prioritization of FSRM funding for demolition over a period of years will have both short- and long-

term impacts to successful implementation of the National Defense Strategy.

The committee further notes that the DOD maintains over 550,000 facilities on about 28.0 million acres with an estimated plant replacement value of about \$830.0 billion, which the Government Accountability Office (GAO) has characterized as high-risk since 1997 in part due to sustainment carrying costs of outdated and aging infrastructure.

For instance, the committee is aware that the Martin Army Community Hospital (MACH) at Fort Benning, Georgia was replaced with a new hospital in 2014, yet the old facility stands vacant for the last six years. The committee understands that the Army has both the authority and clearance needed to demolish the old MACH facility but has yet to prioritize its demolition. Furthermore, the committee understands that the old MACH site, assuming demolition does get prioritized, has been identified in the area development plan as the site of a key transportation node. Additionally, the committee is aware of another example of a persistent lack of available demolition funding at the Naval Undersea Warfare Center (NUWC), especially as it relates to the aging infrastructure on Gould Island in Rhode Island. The committee strongly urges the Army and Navy to prioritize and execute their respective appropriate demolition resources for MACH, NUWC, and Gould Island.

The committee believes that it is critical that the DOD make cost-effective decisions to manage its large facilities portfolio, including excess facilities, by appropriately targeting sustainment funds and disposing of or effectively reusing excess facilities where practicable using extant authorities. Even in the absence of a Base Realignment and Closure round, the DOD should effectively use all available and existing authorities to appropriately manage its facilities portfolio.

Army training range coordination in Hawaii

The committee notes that the Army uses leased land to satisfy a portion of its training requirements in Hawaii. The use of such land for training in Hawaii is not only critical to maintaining the readiness of Army forces stationed in Hawaii but also for the Joint Force as the Department of Defense increasingly looks toward the Indo-Pacific region.

The committee understands that the Army is engaged in discussions about the retention of land parcels on both Oahu and Hawaii Island. High level and continued engagement is imperative throughout this process. The committee is concerned about the level of continuity and specialized expertise required to successfully execute the long term effort associated with land retention projects in Hawaii. Therefore, the committee directs the Secretary of the Army to brief the Senate Armed Services Committee by October 1, 2020, on a plan to establish a stable program office under United States Army Pacific that provides the necessary continuity and expertise to ensure successful training land management efforts. Given the regular rotation of military personnel, the committee encourages the Army to consider the appropriate use of career civil servants within the land management program office construct.

Clarification of the use of section 2353 of title 10, United States Code, authority by defense contractors

The committee notes that section 2353 of title 10, United States Code, specifically authorizes defense contractors to construct facilities necessary for the completion of a contract for research and development and to charge the cost to the underlying contract in accordance with the contract cost principles. Specifically, section 2353 states that “[a] contract of a military department for research or development, or both, may provide for the acquisition or construction by, or furnishing to, the contractor, of research, developmental, or test facilities and equipment that the Secretary of the military department concerned determines to be necessary for the performance of the contract.”

The committee believes that the authority clearly envisions two paths toward the construction of research and development facilities. First, a military department may procure new facilities on Federal property using military construction authority. Second, a contractor may construct research and development facilities on contractor property using contractor funds. Section 2353 further provides that, when the military and its contractor agree to pursue the second path and the contractor undertakes construction of new facilities, the contractor shall charge the cost of construction to the underlying contract. This cost, according to section 2353, “shall be subject to the cost principles applicable to allowable contract expenses.” In instances where the contractor is an educational institution, the construction undertaken pursuant to section 2353 authority may be funded via a Special Use Allowance as provided for in Defense Federal Acquisition Regulation Supplement section 235.015–70. Additionally, the contractor construction would be performed on either contractor-owned or contractor-leased (including military installations) land. The committee believes that these funding and construction approaches are fully consistent with section 2353.

Accordingly, the committee believes that it is essential for the military departments to read and apply section 2353 as an explicit statutory authorization for the construction of necessary government-owned or contractor-owned facilities.

Enhancing MQ–9 and MH–139 training capabilities

The committee notes that, in the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232), the Congress authorized \$85 million for an MQ–9 Formal Training Unit Facility at Holloman Air Force Base. The project was designed to train 100 percent of the Air Force’s MQ–9 pilots and to play a critical role in reversing the service’s overall pilot shortage. The United States Central Command has identified the MQ–9 as its top unfunded acquisition priority and has requested more MQ–9 assets for theater intelligence, surveillance, and reconnaissance and strike capabilities. The committee notes that the current training facility faces structural damage and poses health and safety risks. The committee strongly encourages the Secretary of Defense and the Secretary of the Air Force to continue the project’s planning and design to ensure that it is sufficiently advanced for future construction.

The committee also understands that the Air Force is in the process of upgrading its UH-1N Huey fleet to the MH-139 Grey Wolf and that the service plans to train initial MH-139 operators using contract support from the prime contractor. The committee believes that the Air Force should move expeditiously to develop an organic MH-139 training capability to educate the next generation of MH-139 pilots at a base currently operating the UH-1N. In the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116-92), the Congress authorized \$22.4 million for a UH-1N Replacement Facility at Kirtland Air Force Base in preparation for the transition to the MH-139. The committee strongly encourages the Secretary of Defense and the Secretary of the Air Force to ensure that the planning and design for a new 512th Rescue Squadron Operations Facility are sufficiently advanced to ensure the project's inclusion in the fiscal year 2022 budget submission.

F-35 military construction at Dannelly Field

The committee recognizes the critical importance of fully completing the construction of bed-down facilities prior to the delivery of F-35 aircraft to and the adverse impact on readiness of failing to do so for the 187th Fighter Wing. The committee notes that the fiscal year 2021 budget request for the F-35 bed-down facilities at Dannelly Field does not provide sufficient funding for the required bed-down facility construction. The aircraft are scheduled to be delivered in December 2023, although it is possible that the aircraft could begin arriving as much as 6 months earlier. Failure to fund related military construction projects could have significant adverse impacts on the readiness of the 187th Fighter Wing. For example, the committee understands that, according to the Air National Guard, without the required aircraft maintenance unit building, F-35 maintenance will occur in sufficient, but sub-optimal conditions.

Therefore, the committee strongly urges the Department of Defense to request sufficient funds for the aircraft maintenance unit building to ensure this beddown occurs on schedule.

Importance of small arms ranges

The committee notes the importance of small arms ranges in ensuring the readiness of soldiers, sailors, airmen, and marines. The committee notes the Air Force and Air National Guard requirement to maintain small arms proficiency and recognizes that, in the Reserves and National Guard, servicemembers must often travel great distances to conduct this vitally important training.

Accordingly, the committee encourages the Air National Guard to prioritize small arms ranges, particularly those that have previously been authorized, in their military construction requests to ensure that airmen have the resources they need to effectively train and maintain readiness.

Improvements to the management of historic homes

Maintaining and repairing homes that are historic, defined as more than 50-years-old, is costly and time-consuming for the military services and military families living on installations. Historic homes often require the continued use of their original materials in repairs to maintain their historic appearance. The committee un-

derstands that using imitative building materials is an industry standard that can simulate the appearance of and substitute for more expensive historical building materials. Imitative building materials are modern, natural, composite, and synthetic materials. The use of imitative building materials is a priority for replacement of historic building materials with friction and impact surfaces that pose a potential lead-based paint hazard. Imitative building materials could be used with proper planning to ensure that the historic and architectural appearance of historic housing is maintained. The committee encourages the use of imitative building materials for use in the repair, rehabilitation, and renovation of historic housing.

Increasing capacity at Arlington National Cemetery

The committee notes that the projected life of Arlington National Cemetery, with no change to the current planned capacity, is to 2055, even with the execution of the Southern Expansion Project. The committee understands that the Advisory Committee on Arlington National Cemetery's recommended changes to eligibility restrictions, combined with the ongoing expansion project, would provide sufficient capacity until 2151. Finally, the committee understands that both the 2055, under current eligibility requirements, and 2151, under proposed eligibility requirements, capacity dates assume that current force levels are sustained but that no other major conflict would take place.

Accordingly, the committee directs the Secretary of the Army to submit to the Committees on Armed Services of the Senate and the House of Representatives, the Committee on Veterans' Affairs of the Senate, and the Committee on Veterans' Affairs of the House of Representatives a report no later than November 1, 2020, on increasing interment or inurnment capacity at Arlington National Cemetery. The report should include the following: (1) An assessment of how space at Arlington National Cemetery can be optimized within the cemetery beyond actions currently in effect or undertaken before the date of the enactment of this Act; (2) An estimate of the costs associated with converting all of specific parcels of Henderson Hall of Joint Base Myer-Henderson Hall into usable cemetery space; (3) An estimate of the costs associated with converting the military resale lot of Joint Base Myer-Henderson Hall into usable cemetery space; and (4) An assessment of the feasibility and advisability of changing the eligibility requirements for above ground interment at Arlington National Cemetery to be consistent with the eligibility requirements for burial in a national cemetery under the jurisdiction of the National Cemetery Administration.

Kwajalein military construction plan and hospital

In the Senate report accompanying S. 1376 (S. Rept. 114-49) of the National Defense Authorization Act for Fiscal Year 2016, the committee directed the Secretary of the Army to "provide the congressional defense committees an updated report on the Installation Management Command's infrastructure goals and an updated 5-year profile of planned facilities recapitalization for the Kwajalein Atoll with the fiscal year 2017 budget request and subsequent budget requests through fiscal year 2021." These reports have been

important for the committee's tracking investments in this unique asset.

The committee is aware that a hospital for civilians and military personnel was originally included in the budget request for fiscal year 2021 but was later removed. The existing hospital sits 300 feet from the ocean and is exposed to the wind, tide, and elements, including typhoons. The location for its replacement is on the interior of the Atoll and less exposed. In addition, the hospital was built over 40 years ago and is aging. If a worker were to become critically ill, it could take 48–72 hours to transport him or her off the atoll. Replacing this hospital should be a high priority for the Army as it takes care of its families, especially on a remote atoll such as Kwajalein.

Given the importance of Kwajalein for future testing needs of the Ground Based Strategic Deterrent, Hypersonic Strike Systems, and Space Situational Awareness, the committee directs the Secretary of the Army to continue providing these reports through fiscal year 2026. The committee further directs the Secretary of the Army to brief the congressional defense committees on efforts to replace this important facility no later than February 15, 2021.

Maneuver Area Training Equipment Site (MATES)

The committee recognizes the critical role of the Maneuver Area Training Equipment Site (MATES) at Camp Shelby, Mississippi, in providing needed wheel vehicle maintenance for 1,200 M1 Abrams Tanks and M2 Bradley Infantry Fighting Vehicles. The committee notes that the current MATES facility was constructed in 1983 and currently supports vehicles beyond its intended purpose.

The committee is aware that the current design of the MATES facility limits work area and work throughput and poses potential safety issues. Due to its support for three of the five Armored Brigade Combat Teams within the Army National Guard, the committee recommends continued support to modernize the MATES at Camp Shelby to ensure wheeled-vehicle readiness.

Naval Air Station Barbers Point

The committee notes that Naval Air Station (NAS) Barbers Point was closed in 1999 by Base Realignment and Closure action. Pursuant to section 2843 of the John Warner National Defense Authorization Act for Fiscal Year 2007 (P.L. 109–364), approximately 499 acres located at the former NAS Barbers Point were conveyed by authorities for facilitating the development of Ford Island, Hawaii, per section 2814(a)(2) of title 10, United States Code, and the accompanying master plan. While development has progressed over the last 20 years, unfortunately, it has been hampered by an aged electrical system that the Navy still holds. The committee strongly encourages the Navy to use its in-kind fund, established in the Ford Island master development agreement, to invest in new electrical infrastructure to hasten the development efforts at the former NAS Barbers Point.

Pacific Deterrence Initiative: Planning & Design, U.S. Indo-Pacific Command

The committee is concerned that the U.S. force posture in the Indo-Pacific has not sufficiently evolved to support implementation of the National Defense Strategy or to address the strategic and operational challenges posed by the People's Republic of China. Additional resources for planning and design would support acceleration of critical military construction investments in the Indo-Pacific. Furthermore, the unfunded priorities list submitted by the Commander, U.S. Indo-Pacific Command, included additional funding for planning and design.

The committee notes that contained in the 4601 tables of this Act is an increase of \$15.0 million to Military Construction, Defense-wide, for Pacific Deterrence Initiative-Planning and Design, to be utilized specifically by U.S. Indo-Pacific Command.

Strategic basing criteria briefing

The committee understands that military departments do not always disclose the scoring criteria and rankings used to make strategic basing decisions. In this process, the concerned Secretary could make a final subjective decision based on a variety of data, which remain internal to his or her military department. The committee believes that this limits the ability to perform oversight with respect to strategic basing decisions.

Accordingly, the committee directs the Secretaries of the military departments to provide a briefing to the Committee on Armed Services of the Senate no later than December 1, 2020, on all criteria, data, score sheets, and rankings related to strategic basing decisions. The briefing shall include insight into the ranking and scoring process for three basing decisions for each military service made in the last 12 months.

Use of O&M for MILCON without tracking dollars

The committee notes the importance of infrastructure to support the 2018 National Defense Strategy (NDS). The committee further notes that, historically, the military construction budget averages roughly 1.0 to 1.5 percent of the total Department of Defense budget, which highlights the limited resources that the Department devotes to crucial assets both domestically and globally.

The committee notes that, in 2016, the Government Accountability Office (GAO) released a report, titled "Defense Infrastructure: Actions Needed to Enhance Oversight of Construction Projects Supporting Military Contingency Operations" (GAO-16-406), that found that, "[s]ince contingency operations began in Iraq and Afghanistan, the Department of Defense (DOD) has not tracked the universe and cost of all U.S. Central Command (CENTCOM) contingency construction projects supporting operations." The GAO identified operation and maintenance (O&M) funded construction costs for fiscal years 2009-12 of at least \$944.0 million for 2,202 of these projects in Afghanistan, costs that are significant compared with the \$3.9 billion that the DOD reported as enacted for MILCON-funded projects in Afghanistan in the same period. The DOD has routinely used O&M funding to more quickly meet requirements because the MILCON review process can take

up to 2 years. However, the DOD's use of O&M funding, according to the GAO, has posed risks to the financial risk of projects exceeding the statutory O&M maximum, resulting in potential Antideficiency Act (Public Law 97-258) violations. The GAO also found duplication risk in this practice where, in the same fiscal year, O&M funds were used to build a facility and military construction funding was requested, authorized, and appropriated for the same facility.

The committee notes that the Department has not implemented any of the GAO's six recommendations to date. Those recommendations include that the DOD: 1) Track the universe and cost of O&M-funded projects (the DOD did not concur); 2) Review construction projects to ensure that funds were properly used (the DOD did not concur); 3) Examine approaches to shorten project approval times (the DOD partially concurred); 4) Document level-of-construction determinations (the DOD partially concurred); and 5) Require project reviews when missions change (the DOD partially concurred). The GAO maintains that its recommendations are still open and valid.

Accordingly, the committee expects the Secretary of Defense to implement the recommendations of GAO-16-406.

TITLE XXIX—OVERSEAS CONTINGENCY OPERATIONS MILITARY CONSTRUCTION

Summary

The budget request included \$349.8 million for military construction in fiscal year 2021 for overseas contingency operations.

The committee recommends \$349.8 million for military construction in fiscal year 2021 for overseas contingency operations.

Authorized Navy construction and land acquisition projects (sec. 2901)

The committee recommends a provision that would authorize Navy military construction projects for fiscal year 2021 for overseas contingency operations. The authorized amounts are listed on an installation-by-installation basis.

Authorized Air Force construction and land acquisition projects (sec. 2902)

The committee recommends a provision that would authorize Air Force military construction projects for fiscal year 2021 for overseas contingency operations. The authorized amounts are listed on an installation-by-installation basis.

Authorization of appropriations (sec. 2903)

The committee recommends a provision that would authorize Defense Agencies military construction projects for fiscal year 2021 for overseas contingency operations. The authorized amounts are listed on an installation-by-installation basis.

Replenishment of certain military construction funds (sec. 2904)

The committee recommends a provision that would authorize \$3.6 billion in military construction, overseas contingency operations, for the purposes of replenishing funds for previously authorized military construction projects that were repurposed under section 2808 of title 10, United States Code, with the national emergency declared on the southern border under the National Emergencies Act (Public Law 94-412). Under this provision: these transfers are exempt from General Transfer Authority; the transfer amounts may not exceed what was originally expended under section 2808 authority for each project; the aggregate amount after the transfer for any given project cannot exceed the original authorization for appropriation amount; and funds can only be transferred until September 31, 2021.

DIVISION C—DEPARTMENT OF ENERGY NATIONAL SECURITY AUTHORIZATIONS AND OTHER AUTHORIZATIONS

TITLE XXXI—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS

Subtitle A—National Security Programs and Authorizations

National Nuclear Security Administration (sec. 3101)

The committee recommends a provision that would authorize the appropriation of funds for the activities of the National Nuclear Security Administration.

Defense environmental cleanup (sec. 3102)

The committee recommends a provision that would authorize the appropriation of funds for the Department of Energy's defense environmental cleanup activities.

Other defense activities (sec. 3103)

The committee recommends a provision that would authorize the appropriation of funds for the Department of Energy's other defense activities.

Nuclear energy (sec. 3104)

The committee recommends a provision that would authorize the appropriation of funds for the Department of Energy's nuclear energy activities.

Subtitle B—Budget of the National Nuclear Security Administration

Review of adequacy of nuclear weapons budget (sec. 3111)

The committee recommends a provision that would make a number of changes to the budget preparation process of the National Nuclear Security Administration (NNSA). First, the Secretary of Energy would be required to transmit the proposed budget request of the NNSA to the Nuclear Weapons Council (NWC) before the request is submitted to the Office of Management and Budget (OMB). The NWC would then review the budget and determine whether it is adequate to implement Department of Defense (DOD) nuclear weapons objectives. The NWC would submit back to the Secretary of Energy either confirmation of adequacy of the budget or a written description of funding levels and specific initiatives required to make the budget request adequate to implement those objectives.

If the NWC determines that the budget request is inadequate and submits such written description, the Secretary of Energy

would be required to include those funding levels and specific initiatives in the proposed budget submitted to the OMB. The Secretary would include in the submission an annex containing a description of changes made to the proposed NNSA budget through this process. The Secretary would also be required to submit that annex to the Congress along with the President's budget request.

Finally, the Secretary would be required to transmit the complete proposed budget submission to the NWC at the same time as it is submitted to the OMB. After reviewing the submission, the NWC would be required to determine whether it contains the funding levels and initiatives described above and to submit to the Congress either a certification that the budget request is adequate to meet DOD objectives or a statement that it is not.

Treatment of budget of National Nuclear Security Administration (sec. 3112)

The committee recommends a provision that would require the budget of the National Nuclear Security Administration to be submitted in a budget subfunction separate from the other atomic energy defense activities currently funded in the 053 subfunction.

Responsibility of Administrator for Nuclear Security for ensuring National Nuclear Security Administration budget satisfies nuclear weapons needs of Department of Defense (sec. 3113)

The committee recommends a provision that would require the Administrator of the National Nuclear Security Administration (NNSA) to ensure that the NNSA's budget is adequate to satisfy requirements of the Department of Defense related to nuclear weapons programs.

Participation of Secretary of Defense in planning, programming, budgeting, and execution process of National Nuclear Security Administration (sec. 3114)

The committee recommends a provision that would require the Secretary of Defense, acting through the Nuclear Weapons Council, to provide annual guidance to the Administrator of the National Nuclear Security Administration (NNSA) on the development of the President's budget request for the NNSA, including on the future years nuclear security program.

Requirement for updated planning, programming, budgeting, and execution guidance for National Nuclear Security Administration (sec. 3115)

The committee recommends a provision that would require the Administrator for Nuclear Security to issue revised planning, programming, budgeting, and execution (PPBE) guidance for the National Nuclear Security Administration (NNSA) to replace NAP 130.1A in order to better reflect coordination between the NNSA and the Department of Defense (DOD) during the PPBE process.

The committee notes that the current guidance contains no mention of the Nuclear Weapons Council (NWC) or any DOD official. This does not reflect existing requirements in law that mandate the participation of the NWC in the NNSA PPBE process. The com-

mittee also expects the updated guidance to reflect the improvements to coordination with the NWC and the DOD required by other provisions in this Act.

Cross-training in budget processes of Department of Defense and National Nuclear Security Administration (sec. 3116)

The committee recommends a provision that would require the Secretary of Defense and the Administrator of the National Nuclear Security Administration (NNSA) to establish a joint program to cross-train budget and programming personnel from each department in the other's systems and processes.

The committee notes that lack of familiarity, in particular of Department of Defense personnel with NNSA budget structures, has hindered effective communication and cooperation in the past.

Subtitle C—Personnel Matters

National Nuclear Security Administration Personnel System (sec. 3121)

The committee recommends a provision that would authorize the Administrator of the National Nuclear Security Administration (NNSA) to adapt the demonstration project carried out by the NNSA since 2008 into a permanent alternative personnel system.

Inclusion of certain employees and contractors of Department of Energy in definition of public safety officer for purposes of certain death benefits (sec. 3122)

The committee recommends a provision that would make eligible for certain death and dismemberment benefits the National Nuclear Security Administration's nuclear material couriers as well as those designated as members of an emergency response team conducting operations.

This provision would align agents of the Office of Secure Transportation, charged with protecting nuclear material in transit in the United States, with members of other Federal law enforcement elements in cases of death or catastrophic injury in the line of duty. The committee believes that these agents, as well as those who mobilize to render safe a weapon of mass destruction in a U.S. city, for example, deserve similar consideration as others who put their lives on the line in service of protecting the American public.

Reimbursement for liability insurance for nuclear materials couriers (sec. 3123)

The committee recommends a provision that would align officers of the National Nuclear Security Administration's Office of Secure Transportation with other federal law enforcement officers for purposes of professional liability insurance.

Transportation and moving expenses for immediate family of deceased nuclear materials couriers (sec. 3124)

The committee recommends a provision that would make eligible immediate family of officers of the National Nuclear Security Administration's Office of Secure Transportation for compensation for

a last move home in the case of an officer's death in the line of duty.

Extension of authority for appointment of certain scientific, engineering, and technical personnel (sec. 3125)

The committee recommends a provision that would extend special appointment authorities granted to the Department of Energy under the Atomic Energy Defense Act (50 U.S.C. 2701(c)) until September 30, 2021.

Subtitle D—Cybersecurity

Reporting on penetrations of networks of contractors and subcontractors (sec. 3131)

The committee recommends a provision that would require contractors or subcontractors of the National Nuclear Security Administration (NNSA) to report penetrations of their covered networks to the NNSA within 60 days. The provision would require the Administrator for Nuclear Security to define the networks covered by this requirement and to establish procedures for facilitating access to equipment owned or used by the contractors for the purposes of forensic analysis. The provision would make appropriate allowances for protection of trade secrets and personal or commercially-sensitive information.

The committee notes that this provision would align reporting requirements for the NNSA's industrial base with that of the Department of Defense, as established in section 393 of title 10, United States Code.

Clarification of responsibility for cybersecurity of National Nuclear Security Administration facilities (sec. 3132)

The committee recommends a provision that would better align assignment of responsibility for cybersecurity in the National Nuclear Security Administration Act (50 U.S.C. 2401 et seq.) with the current organization of the National Nuclear Security Administration, in which the Associate Administrator for Information Management performs the duties of Chief Information Officer.

Subtitle E—Defense Environmental Cleanup

Public statement of environmental liabilities for facilities undergoing defense environmental cleanup (sec. 3141)

The committee recommends a provision that would require the Secretary of Energy to make public, at the same time as the submission of the President's budget request each year, the environmental liability for each defense nuclear cleanup site.

As noted in the February 2019 Government Accountability Office report titled "Nuclear Waste: DOE Should Take Actions to Improve Oversight of Cleanup Milestones" (GAO-19-207), the Office of Environmental Management has frequently failed to provide the required annual future-years defense environmental cleanup plan since the creation of the requirement in the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111-383). In light of the Department of Energy's regular failure to meet

this reporting requirement, the committee believes that a basic amount of information should be available to the public to track overall progress in reducing the U.S. Government's environmental liabilities.

Inclusion of missed milestones in future-years defense environmental cleanup plan (sec. 3142)

The committee recommends a provision that would require the Assistant Secretary of Energy for Environmental Management (EM) to include missed, postponed, or renegotiated milestones in the annual future-years defense environmental cleanup plan.

The February 2019 Government Accountability Office report titled "Nuclear Waste: DOE Should Take Actions to Improve Oversight of Cleanup Milestones" (GAO-19-207) noted that EM "does not accurately track met, missed, or postponed cleanup-related milestones," and that, as a result, "EM's milestone reporting to Congress is incomplete." The committee believes that the ability to track progress against consistent goals is essential to effective oversight.

Classification of defense environmental cleanup as capital asset projects or operations activities (sec. 3143)

The committee recommends a provision that would require the Assistant Secretary of Energy for Environmental Management (EM) to establish a requirement for the classification of defense EM projects as capital asset projects or operations activities. The provision would require the Assistant Secretary to submit a report to the congressional defense committees no later than March 1, 2021, on the established requirement along with an assessment of whether any ongoing projects should be reclassified.

The February 2019 Government Accountability Office report titled "Nuclear Waste Cleanup: DOE Could Improve Program and Project Management by Better Classifying Work and Following Leading Practices" (GAO-19-223) noted that 77 percent of EM's budget request for fiscal year 2019 was for activities classified as operations. Programs classified as capital asset projects, on the other hand, are subject to DOE Order 413.3B, which requires adherence to much more stringent program and project management standards. While not all EM efforts should fall under Order 413.3B, the committee believes that EM should apply a consistent standard across sites and projects in order to better manage cost and schedule risk across the EM complex.

Continued analysis of approaches for supplemental treatment of low-activity waste at Hanford Nuclear Reservation (sec. 3144)

The committee recommends a provision that would require the Secretary of Energy to enter into a contract with a federally funded research and development center to conduct a follow-on study of the analysis required by section 3134 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328) on approaches to treating low-activity waste at the Hanford Nuclear Reservation in eastern Washington. The provision would require the Secretary to submit this study, along with a review conducted by

the National Academy of Sciences, to the congressional defense committees not later than 2 years after the date of the enactment of this Act.

Subtitle F—Other Matters

Modifications to enhanced procurement authority to manage supply chain risk (sec. 3151)

The committee recommends a provision that would modify the enhanced procurement authority available to the Secretary of Energy to exclude a supplier that may present a significant supply chain risk from procurements of covered systems. The provision would allow the Secretary to delegate his or her authority to the Administrator of the National Nuclear Security Administration (NNSA), for procurements within that agency, or to the senior procurement executive of the Department of Energy for procurements outside the NNSA. The provision would also allow a determination to be made for multiple contracts at one time.

The committee notes that this authority was originally provided by the National Defense Authorization Act for Fiscal Year 2014 (Public Law 113–66) but that, as the Government Accountability Office (GAO) noted, most recently in its report dated August 8, 2019, “Nuclear Supply Chain: NNSA Should Notify Congress of Its Recommendations to Improve the Enhanced Procurement Authority” (GAO–19–606R), the Secretary has never exercised the authority. This provision is in line with the recommendations made by the GAO in that report, and the committee believes that it would improve the process for the use of the enhanced procurement authority in situations for which it is appropriate.

Laboratory- or production facility-directed research and development programs (sec. 3152)

The committee recommends a provision that would align requirements and restrictions on production facility-directed research and development with those applied to laboratory-directed research and development by section 4811 of the Atomic Energy Defense Act (50 U.S.C. 2791).

The committee notes that many of these programs are already administered similarly by the National Nuclear Security Administration (NNSA). The committee believes that innovation in manufacturing, as well as recruitment and retention of the highest quality staff at the NNSA’s production facilities, are crucial to the success of future nuclear programs.

Prohibition on use of laboratory- or production facility-directed research and development funds for general and administrative overhead costs (sec. 3153)

The committee recommends a provision that would prohibit the use of laboratory- or production facility-directed research and development (LDRD or PDRD) funds for general and administrative overhead costs at the National Nuclear Security Administration’s laboratories, sites, and plants.

The committee notes that this change was a top recommendation of the final report of the Commission to Review the Effectiveness

of the National Energy Laboratories in 2015. The Commission noted at the time that reductions in LDRD through direct cuts or burdening with overhead costs resulted in “substantial cuts to the size of recruitment and retention programs” as well as reductions in specific types of projects at the laboratories.

The committee further notes that section 3119 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114–328) temporarily implemented this prohibition as part of a 3-year pilot program, which was extended an additional year by section 3118 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92). Section 3119, as amended by section 3118, required the Administrator for Nuclear Security to submit to the congressional defense committees a report on this pilot program, assessing the costs, benefits, risks, and other effects of the program. This report was due February 15, 2020, but the committee does not expect to receive the report until July 2020 at the earliest and believes that this pilot program should be converted to a permanent program regardless.

Monitoring of industrial base for nuclear weapons components, subsystems, and materials (sec. 3154)

The committee recommends a provision that would require the Administrator for Nuclear Security to designate a senior official within the National Nuclear Security Administration (NNSA) responsible for monitoring the industrial base supporting NNSA’s nuclear weapons programs. The provision would require the Administrator to provide that official with sufficient resources to carry out this responsibility and to consult with other relevant officials at the Department of Defense and Department of Energy. Finally, the provision would require the Administrator to provide annual briefings to the Committees on Armed Services of the Senate and the House of Representatives on the implementation of this requirement no later than April 1 each year through 2024.

The committee notes that the NNSA industrial base shares many of the same challenges faced by that of the Department of Defense (DOD): parts and materials are procured in small quantities, at irregular intervals, and with exacting performance specifications. Unlike the DOD, however, the NNSA does not comprehensively monitor the health of its industrial base and instead has left this responsibility to individual programs or contractors. As a result, efforts are fragmented and duplicative, as identified by the Department of Energy Inspector General in a July 2018 report titled “Supplier Quality Management at National Nuclear Security Administration Sites” (DOE–IG–18–41). The committee believes that this provision would help the NNSA reduce cost, schedule, and performance risk in future programs.

Prohibition on use of funds for advanced naval nuclear fuel system based on low-enriched uranium (sec. 3155)

The committee recommends a provision that would prohibit the obligation or expenditure of any fiscal year 2021 funds at the National Nuclear Security Administration (NNSA) to conduct research and development of an advanced naval nuclear fuel system based on low-enriched uranium unless the Secretary of Defense, the Sec-

retary of Energy, and the Secretary of the Navy submit certain certifications to the congressional defense committees. The provision would also require the Administrator of the NNSA to submit to the congressional defense committees not later than 60 days after the date of the enactment of this Act a report outlining activities undertaken using fiscal year 2020 funds for this purpose, including progress made toward either technological or nonproliferation goals.

The committee notes that the Secretaries of Energy and the Navy stated in a letter to the congressional defense committees dated March 25, 2018, that such a research and development effort would cost about \$1.0 billion over a 10-to-15-year period, “with success not assured.” It would also result in a reactor design that would be “less capable, more expensive, and unlikely to support current life-of-ship submarine reactors,” which would reduce operational availability and increase force structure requirements.

Authorization of appropriations for W93 nuclear warhead program (sec. 3156)

The committee recommends a provision that would authorize the W93 warhead modernization program, in accordance with section 4209(a)(1)(B) of the Atomic Energy Defense Act (50 U.S.C. 2529(a)(1)(B)). The committee notes that this program is also authorized in the funding tables in section 4701 of this Act.

Review of future of computing beyond exascale at the National Nuclear Security Administration (sec. 3157)

The committee recommends a provision that would require the Administrator of the National Nuclear Security Administration (NNSA) to enter into an agreement with the National Academy of Sciences to review the future of advanced computing at the NNSA. The review would consider a number of factors related to NNSA requirements and technical capabilities. The Administrator would be required to submit a report on the review’s findings not later than 2 years after the date of the enactment of this Act.

Application of requirement for independent cost estimates and reviews to new nuclear weapons systems (sec. 3158)

The committee recommends a provision that would extend existing requirements for selected acquisition reports and independent cost estimates of warhead life extension programs to new nuclear weapon systems.

Extension and expansion of limitations on importation of uranium from Russian Federation (sec. 3159)

The committee recommends a provision that would extend through 2035 the limitations on importation of low-enriched uranium to the United States from the Russian Federation originally imposed under the terms of the Russian Suspension Agreement and make certain changes to those limitations. The provision would allow for the harmonization of the limitations with those imposed through an agreement between the Department of Commerce and the Russian Federation if such agreement is reached before December 31, 2020. Finally, the provision would require the Secretary of

Energy to submit a report to the Congress not later than 1 year after the date of the enactment of this Act, and at least once every 3 years after, related to these limitations.

Integration of stockpile stewardship and nonproliferation missions (sec. 3160)

The committee recommends a provision that would express the sense of the Senate that the stockpile stewardship capabilities of the National Nuclear Security Administration should continue to be applied to efforts to assess and counter current and emerging nuclear threats.

Technology development and integration program (sec. 3161)

The committee recommends a provision that would require the Administrator for Nuclear Security to establish a program to improve the safety and security of the nuclear weapons stockpile.

Advanced manufacturing development program (sec. 3162)

The committee recommends a provision that would require the Administrator for Nuclear Security to establish an advanced manufacturing development program.

Materials science program (sec. 3163)

The committee recommends a provision that would require the Administrator for Nuclear Security to establish a materials science program to develop new materials to replace those that are no longer available for weapons sustainment.

Modifications to Inertial Confinement Fusion Ignition and High Yield program (sec. 3164)

The committee recommends a provision that would require the Administrator for Nuclear Security to establish a working group to identify and implement recommendations issued by the National Academies of Sciences, Engineering, and Medicine as required by section 3137 of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92). The provision would also require the Administrator to submit a report to the congressional defense committees no later than March 31, 2021, on the timelines for completing implementation of these recommendations.

Earned value management program for life extension programs (sec. 3165)

The committee recommends a provision that would require the Administrator for Nuclear Security to establish a program to set earned value management (EVM) standards for technology readiness for life extension programs and ensure that appropriate risk mitigation measures are taken to meet the cost and schedule requirements of these programs. The provision would also require the Administrator to enter into an arrangement with an independent entity to review EVM standards of contractors of the National Nuclear Security Administration.

Use of high performance computing capabilities for COVID-19 research (sec. 3166)

The committee recommends a provision that would direct the Secretary of Energy to make available the unclassified high performance computing capabilities of the Department of Energy for research relating to COVID-19, so long as doing so does not negatively affect the stockpile stewardship mission of the National Nuclear Security Administration.

Availability of stockpile responsiveness funds for projects to reduce time necessary to execute a nuclear test (sec. 3167)

The committee recommends a provision that would require not less than \$10.0 million of the funds authorized to be appropriated by this Act for the Stockpile Responsiveness Program to be made available for projects related to reducing the time required to execute a nuclear test if necessary.

Budget Items

Cleanup activities at Los Alamos National Laboratory

The budget request included \$5.1 billion for defense environmental management (EM) programs, of which \$120.0 million was for activities at Los Alamos National Laboratory (LANL).

The committee supports EM's surface and groundwater management efforts at LANL as well as those focused on remediation of contaminated sites.

Accordingly, the committee recommends an increase of \$100.0 million for defense EM activities at LANL.

Formerly Utilized Sites Remedial Action Program

The budget request included \$317.0 million for the Department of Energy's Office of Legacy Management, of which \$150.0 million was requested to support cleanup activities that would continue to be performed by the U.S. Army Corps of Engineers (USACE) at Formerly Utilized Sites Remedial Action Program (FUSRAP) sites.

The committee does not see reason to introduce risk into cleanup activities at FUSRAP sites by transitioning administration of the program to a different organization when USACE has successfully administered the program in the past.

Accordingly, the committee recommends a decrease of \$150.0 million, for a total of \$167.0 million, for the Office of Legacy Management.

Items of Special Interest

Comptroller General review of uncosted balances for Atomic Energy Defense Activities

The National Nuclear Security Administration (NNSA) provides regular base financial reports to the congressional defense committees containing a number of metrics. While useful, some of these metrics have led to confusion regarding the status of these balances. This committee has not previously received similar data on a regular basis from the Department of Energy's Office of Environ-

mental Management (EM) or other defense activities within the Atomic Energy Defense Activities account.

Therefore, the committee directs the Comptroller General of the United States to undertake a review of NNSA and EM carryover balances, including: (1) The extent and type of carryover balances; (2) How the application of the thresholds used by EM and NNSA to assess carryover balances has changed over time; (3) The extent to which carryover balances are associated with either completed efforts or old budget structures; (4) An analysis of the statutory and policy constraints on the movement of previously appropriated NNSA and EM carryover balances within or between appropriations accounts and within or between congressional controls; (5) Any ongoing efforts within NNSA or EM to improve management of carryover balances; and (6) To the extent practicable, how these practices compare to other Federal Government agencies outside the Department of Energy. The committee requests that the Comptroller General provide an interim briefing to the congressional defense committees no later than February 26, 2021, with the timing of a final report to be determined at the time of the briefing.

Continued Comptroller General review of the Hanford Waste Treatment Plant

The committee notes that the Department of Energy's Office of Environmental Management (EM) continues to appear in the Government Accountability Office's High Risk List report, which cites programs vulnerable to waste, fraud, abuse, and mismanagement. EM's largest project, in Hanford, Washington, has faced numerous technical challenges, cost overruns, and schedule delays.

Therefore, the committee directs the Comptroller General of the United States to continue its ongoing evaluation of environmental cleanup efforts at the Hanford Site, including the Waste Treatment Plant. Reviews should include assessment of cost and schedule performance, technology readiness levels, contractor assurance, and project management, as well as the start of Direct-Feed Low-Activity Waste treatment and Hanford's long-term schedule and budget needs. The committee directs the Comptroller General to continue these reviews through December 2023—the current amended consent decree milestone for Low-Activity Waste commissioning—with briefings to the congressional defense committees on a periodic basis agreeable to both parties.

Domestic uranium enrichment technologies

The committee recognizes that reconstituting a domestic uranium enrichment capability is important for present and future U.S. national security interests, including to support naval nuclear propulsion, warhead programs, high-assay low-enriched uranium for research reactor conversion, and nuclear thermal propulsion. To advance and maintain this capability, the committee commends the ongoing efforts of the National Nuclear Security Administration (NNSA) to establish and implement long-term plans for continued research, development, and demonstration of enrichment technologies. The committee supports the NNSA's analysis of alternatives process, which is considering both commercial and government approaches to meeting national security mission require-

ments and taking into account the benefits of industry and Federal expertise. The committee directs the Administrator of the NNSA to provide a briefing to the congressional defense committees, not later than November 1, 2020, on the assessed benefits or drawbacks of both commercial and Federal approaches to this mission.

Responsibility for Los Alamos Plutonium Facility 4 and Technical Area 55

Plutonium Facility 4 (PF-4) at Los Alamos National Laboratory's Technical Area 55 is the primary plutonium handling facility within the National Nuclear Security Administration (NNSA). PF-4 is currently undergoing major modifications to produce war reserve plutonium pits, with a production goal of 30 pits per year by 2026. Given the limited space and high cost of operations in PF-4, coordination of programmatic efforts within the facility are paramount.

At the same time, PF-4 is used for a number of other missions involving the handling and processing of plutonium. The second-largest requirement for space in the facility is the Advanced Recovery and Integrated Extraction System (ARIES) program, which converts excess plutonium, shipped from the Pantex Plant in Texas, to oxide powder. The powder is then shipped to the Savannah River Site (SRS), in South Carolina, to be packaged and then shipped back to the Waste Isolation Pilot Plant (WIPP) in New Mexico. The committee notes that the Government Accountability Office's October 2019 report titled "Surplus Plutonium Disposition: NNSA's Long Term Plutonium Oxide Production Plans Are Uncertain" (GAO-20-166) found that the NNSA was planning to increase oxide production in PF-4 through the 2020s, requiring additional space and even a new entrance to the facility. Both of these changes would almost certainly increase risk to plutonium pit production goals in the same time period.

Given competing demands on space in PF-4 and the cost of and risk inherent in shipping plutonium, the committee believes that the NNSA should consider alternative locations for the oxide production mission, including at the SRS.

Therefore, the committee directs the Administrator of the NNSA to provide a report to the congressional defense committees no later than March 1, 2021, on options for continued plutonium oxide operations, including continuing the mission in PF-4 and moving it to the SRS. In the analysis of continuing operations in PF-4, the Administrator shall list estimated annual costs as well as the expected impact to the priority PF-4 mission of plutonium pit production of 30 pits per year and at a surge level of 50 pits per year. In the analysis of moving the ARIES mission to the SRS, the Administrator shall include the estimated timeline and costs for doing so and estimated annual cost of operations. Either option should also include consideration of the need to meet the requirements to remove a certain amount of plutonium from the state of South Carolina by the end of next year.

Finally, the report shall also include the designation of one official at the NNSA to coordinate and approve all programmatic operations in PF-4, including weapons programs and nonproliferation programs, in order to deconflict valuable space. That individual shall be below the Deputy Administrator level and shall also con-

sider other facilities in Technical Area 55 related to plutonium science, including the Radiological Laboratory Utility Office Building.

Review of plutonium infrastructure at the National Nuclear Security Administration

The National Nuclear Security Administration (NNSA) is rebuilding its plutonium infrastructure to meet DOD and statutory requirements to annually produce 80 plutonium pits by 2030. This effort includes two new line item construction projects and an annual expenditure of operational funds to refurbish and expand existing plutonium capabilities.

Given the importance of the plutonium mission, the committee directs the Comptroller General of the United States to periodically review the NNSA's plutonium modernization plans. This review should include the requirements, cost, schedule, and technology readiness levels, as appropriate, of the projects and related plutonium operations, including:

- (1) The Los Alamos Plutonium Pit Production Project (21-D-512) and associated plutonium modernization operations at Los Alamos National Laboratory;
- (2) The Savannah River Plutonium Processing Facility (21-D-511) and associated modernization operations at the Savannah River Site; and
- (3) The integration of these two projects with the NNSA's overall plutonium operations and capability sustainment program.

The committee requests a preliminary briefing on the status of these efforts no later than March 1, 2021, with subsequent reviews to be conducted in consultation with this committee and in consideration of the critical decision process for the projects and the NNSA program management requirements. The briefing and reviews may be coordinated with the Comptroller General's activities in monitoring the NNSA's progress on pit production activities pursuant to the request in the House Committee Report accompanying H.R. 2960 (H. Rept. 116-83) of the Energy and Water Development and Related Agencies Appropriations Bill, 2020.

TITLE XXXII—DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Authorization (sec. 3201)

The committee recommends a provision that would authorize funding for the Defense Nuclear Facilities Safety Board at \$28.8 million, consistent with the budget request.

Nonpublic collaborative discussions by Defense Nuclear Facilities Safety Board (sec. 3202)

The committee recommends a provision that would allow members of the Defense Nuclear Facilities Safety Board to hold nonpublic meetings to discuss official business. The members would not be able to take any formal or informal votes, or other official actions, at such meetings and would be subject to other restrictions. The Board would be required to disclose certain information about these meetings to the public after the fact.

The committee appreciates the value of government transparency both to the public and to the Congress. The committee notes, however, that a 2018 National Academy of Public Administration report, “Defense Nuclear Facilities Safety Board Organizational Assessment,” identified the inability to hold regular and candid conversations among board members as one factor, among many, leading to pervasive dysfunction at the Board. This provision would help the Board reach a better balance between transparency and communication. The committee also notes that this provision is modeled on currently enacted law allowing similar conversations of the National Transportation Safety Board, Federal Maritime Commission, and Surface Transportation Board.

Improvements to operations of Defense Nuclear Facilities Safety Board (sec. 3203)

The committee recommends a provision that would more accurately define personnel covered under the adequate protection standard of the Defense Nuclear Facilities Safety Board under section 312 of the Atomic Energy Act of 1954 (42 U.S.C. 2286a). The provision would also clarify the “unfettered access” to Department of Energy nuclear facilities that the Secretary of Energy is required to provide the Board pursuant to section 314 (42 U.S.C. 2286c).

The committee appreciates the efforts of the Department of Energy to revise or clarify the intent of DOE Order 140.1, which governs the interface between the Board and the Department. The committee believes that the most effective way to clarify implementation of Order 140.1 would be for the Board and the Department to jointly draft and sign a memorandum of agreement (MOA) or similar document.

Accordingly, the committee directs the Secretary of Energy and the Chairman of the Board to provide a joint briefing to the Committees on Armed Services of the Senate and the House of Representatives not later than November 1, 2020, on how they intend to come to a common understanding of Order 140.1 and its implementation across the defense nuclear enterprise. The committee encourages both parties to work toward an MOA or similar document prior to this briefing.

TITLE XXXV—MARITIME ADMINISTRATION

Maritime Administration (sec. 3501)

The committee recommends a provision that would reauthorize certain aspects of the Maritime Administration.

DIVISION D—FUNDING TABLES

Authorization of amounts in funding tables (sec. 4001)

The committee recommends a provision that would provide for the allocation of funds among programs, projects, and activities in accordance with the tables in division D of this Act, subject to re-programming in accordance with established procedures.

Consistent with the previously expressed views of the committee, the provision would also require that decisions by an agency head to commit, obligate, or expend funds to a specific entity on the basis of such funding tables be based on authorized, transparent, statutory criteria, or merit-based selection procedures in accordance with the requirements of sections 2304(k) and 2374 of title 10, United States Code, and other applicable provisions of law.

**SUMMARY OF NATIONAL DEFENSE
AUTHORIZATIONS FOR FISCAL YEAR 2021**

SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2021

(In Thousands of Dollars)

	FY 2021 Request	Senate Change	Senate Authorized
DISCRETIONARY AUTHORIZATIONS WITHIN THE JURISDICTION OF THE ARMED SERVICES COMMITTEE			
NATIONAL DEFENSE BASE BUDGET			
DEPARTMENT OF DEFENSE-MILITARY (BUDGET SUB-FUNCTION 051)			
DIVISION A: DEPARTMENT OF DEFENSE AUTHORIZATIONS			
TITLE I--PROCUREMENT			
AIRCRAFT PROCUREMENT, ARMY	3,074,594	185,000	3,259,594
MISSILE PROCUREMENT, ARMY	3,491,507	136,085	3,627,592
PROCUREMENT OF W&TCV, ARMY	3,696,740	-55,500	3,641,240
PROCUREMENT OF AMMUNITION, ARMY	2,777,716		2,777,716
OTHER PROCUREMENT, ARMY	8,625,206	60,033	8,685,239
AIRCRAFT PROCUREMENT, NAVY	17,127,378	280,500	17,407,878
WEAPONS PROCUREMENT, NAVY	4,884,995	48,800	4,933,795
PROCUREMENT OF AMMO, NAVY & MC	883,602		883,602
SHIPBUILDING AND CONVERSION, NAVY	19,902,757	1,351,339	21,254,096
OTHER PROCUREMENT, NAVY	10,948,518	-372,300	10,576,218
PROCUREMENT, MARINE CORPS	2,903,976	59,600	2,963,576
AIRCRAFT PROCUREMENT, AIR FORCE	17,908,145	1,160,321	19,068,466
MISSILE PROCUREMENT, AIR FORCE	2,396,417		2,396,417
SPACE PROCUREMENT, AIR FORCE	2,446,064	12,500	2,458,564
PROCUREMENT OF AMMUNITION, AIR FORCE	596,338		596,338
OTHER PROCUREMENT, AIR FORCE	23,695,720	20,200	23,715,920
PROCUREMENT, DEFENSE-WIDE	5,324,487	444,100	5,768,587
SUBTOTAL, TITLE I--PROCUREMENT	130,684,160	3,330,678	134,014,838
TITLE II--RESEARCH, DEVELOPMENT, TEST AND EVALUATION			
RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY	12,587,343	123,000	12,710,343
RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY	21,427,048	-390,242	21,036,806
RESEARCH, DEVELOPMENT, TEST & EVAL, AF	37,391,826	437,480	37,829,306
RESEARCH, DEVELOPMENT, TEST & EVAL, SF	10,327,595	-26,500	10,301,095
RESEARCH, DEVELOPMENT, TEST & EVAL, DW ...	24,280,891	265,114	24,546,005
OPERATIONAL TEST & EVAL, DEFENSE	210,090	27,000	237,090
SUBTOTAL, TITLE II--RESEARCH, DEVELOPMENT, TEST AND EVALUATION	106,224,793	435,852	106,660,645
TITLE III--OPERATION AND MAINTENANCE			
OPERATION & MAINTENANCE, ARMY	40,312,968	-6,641	40,306,327
OPERATION & MAINTENANCE, ARMY RES	2,934,717	-11,439	2,923,278
OPERATION & MAINTENANCE, ARNG	7,420,014	-59,952	7,360,062
OPERATION & MAINTENANCE, NAVY	49,692,742	-582,187	49,110,555
OPERATION & MAINTENANCE, MARINE CORPS	7,328,607	-28,257	7,300,350
OPERATION & MAINTENANCE, NAVY RES	1,127,046	-30,938	1,096,108
OPERATION & MAINTENANCE, MC RESERVE	284,656	-1,246	283,410
OPERATION & MAINTENANCE, AIR FORCE	34,750,597	-522,301	34,228,296
OPERATION & MAINTENANCE, SPACE FORCE	2,531,294	-400	2,530,894

SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2021—Continued

(In Thousands of Dollars)

	FY 2021 Request	Senate Change	Senate Authorized
OPERATION & MAINTENANCE, AF RESERVE	3,350,284	-18,763	3,331,521
OPERATION & MAINTENANCE, ANG	6,753,642	-125,152	6,628,490
OPERATION AND MAINTENANCE, DEFENSE-WIDE	38,649,079	181,661	38,830,740
MISCELLANEOUS APPROPRIATIONS	1,494,850	148,499	1,643,349
SUBTOTAL, TITLE III--OPERATION AND MAINTENANCE	196,630,496	-1,057,116	195,573,380
TITLE IV--MILITARY PERSONNEL			
MILITARY PERSONNEL	150,524,104	-2,548,090	147,976,014
MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTIONS	8,372,741		8,372,741
SUBTOTAL, TITLE IV--MILITARY PERSONNEL	158,896,845	-2,548,090	156,348,755
TITLE XIV--OTHER AUTHORIZATIONS			
WORKING CAPITAL FUND	1,348,910	-140,000	1,208,910
CHEM AGENTS & MUNITIONS DESTRUCTION	889,500		889,500
DRUG INTERDICTION & CTR-DRUG ACTIVITIES, DEF	769,629	15,800	785,429
OFFICE OF THE INSPECTOR GENERAL	371,439		371,439
DEFENSE HEALTH PROGRAM	32,690,372	5,000	32,695,372
SUBTOTAL, TITLE XIV--OTHER AUTHORIZATIONS	36,069,850	-119,200	35,950,650
TOTAL, DIVISION A: DEPARTMENT OF DEFENSE AUTHORIZATIONS	628,506,144	42,124	628,548,268
DIVISION B: MILITARY CONSTRUCTION AUTHORIZATIONS			
MILITARY CONSTRUCTION			
ARMY	650,336	219,200	869,536
NAVY	1,975,606	-118,670	1,856,936
AIR FORCE	767,132	-71,578	695,554
DEFENSE-WIDE	2,027,520	-198,587	1,828,933
ARMY NATIONAL GUARD	321,437	49,835	371,272
AIR NATIONAL GUARD	64,214	29,500	93,714
ARMY RESERVE	88,337	2,500	90,837
NAVY RESERVE	70,995	12,800	83,795
AIR FORCE RESERVE	23,117	25,000	48,117
NATO SECURITY INVESTMENT PROGRAM	173,030		173,030
SUBTOTAL, MILITARY CONSTRUCTION	6,161,724	-50,000	6,111,724
FAMILY HOUSING			
CONSTRUCTION, ARMY	119,400		119,400
O&M, ARMY	367,142		367,142
CONSTRUCTION, NAVY AND MARINE CORPS	42,897		42,897
O&M, NAVY AND MARINE CORPS	346,493	25,000	371,493
CONSTRUCTION, AIR FORCE	97,214		97,214
O&M, AIR FORCE	317,021	25,000	342,021
O&M, DEFENSE-WIDE	54,728		54,728
IMPROVEMENT FUND	5,897		5,897

SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2021—Continued

(In Thousands of Dollars)

	FY 2021 Request	Senate Change	Senate Authorized
UNACCOMP HSG IMPRV FUND	600		600
SUBTOTAL, FAMILY HOUSING	1,351,392	50,000	1,401,392
BASE REALIGNMENT AND CLOSURE			
ARMY BRAC	66,060		66,060
NAVY BRAC	125,165		125,165
AIR FORCE BRAC	109,222		109,222
SUBTOTAL, BASE REALIGNMENT AND CLOSURE	300,447		300,447
TOTAL, DIVISION B: MILITARY CONSTRUCTION AUTHORIZATIONS	7,813,563		7,813,563
TOTAL, DEPARTMENT OF DEFENSE-MILITARY (BUDGET SUB-FUNCTION 051)	636,319,707	42,124	636,361,831
ATOMIC ENERGY DEFENSE ACTIVITIES (BUDGET SUB-FUNCTION 053)			
DIVISION C: DEPARTMENT OF ENERGY NATIONAL SECURITY AND INDEPENDENT FEDERAL AGENCY AUTHORIZATIONS			
DEPARTMENT OF ENERGY AUTHORIZATIONS			
ENERGY PROGRAMS			
NUCLEAR ENERGY	137,800		137,800
SUBTOTAL, ENERGY PROGRAMS	137,800	0	137,800
NATIONAL NUCLEAR SECURITY ADMINISTRATION			
FEDERAL SALARIES AND EXPENSES	454,000		454,000
WEAPONS ACTIVITIES	15,602,000		15,602,000
DEFENSE NUCLEAR NONPROLIFERATION	2,031,000		2,031,000
NAVAL REACTORS	1,684,000		1,684,000
SUBTOTAL, NATIONAL NUCLEAR SECURITY AD- MINISTRATION	19,771,000	0	19,771,000
ENVIRONMENTAL AND OTHER DEFENSE ACTIVITIES			
DEFENSE ENVIRONMENTAL CLEANUP	4,983,608	100,000	5,083,608
OTHER DEFENSE ACTIVITIES	1,054,727	-150,000	904,727
SUBTOTAL, ENVIRONMENTAL & OTHER DEFENSE ACTIVITIES	6,038,335	-50,000	5,988,335
SUBTOTAL, DEPARTMENT OF ENERGY AUTHOR- IZATIONS	25,947,135	-50,000	25,897,135
INDEPENDENT FEDERAL AGENCY AUTHORIZATION			
DEFENSE NUCLEAR FACILITIES SAFETY BOARD ..	28,836		28,836
SUBTOTAL, INDEPENDENT FEDERAL AGENCY AU- THORIZATION	28,836	0	28,836

SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2021—Continued

(In Thousands of Dollars)

	FY 2021 Request	Senate Change	Senate Authorized
TOTAL, DIVISION C: DEPARTMENT OF ENERGY NATIONAL SECURITY AND INDEPENDENT FEDERAL AGENCY AUTHORIZATIONS	25,975,971	-50,000	25,925,971
ATOMIC ENERGY DEFENSE ACTIVITIES (BUDGET SUB-FUNCTION 053)	25,975,971	-50,000	25,925,971
TOTAL, NATIONAL DEFENSE FUNDING, BASE BUDGET REQUEST	662,295,678	-7,876	662,287,802
NATIONAL DEFENSE OCO BUDGET REQUEST			
DEPARTMENT OF DEFENSE-MILITARY (BUDGET SUB-FUNCTION 051)			
PROCUREMENT			
AIRCRAFT PROCUREMENT, ARMY	461,080		461,080
MISSILE PROCUREMENT, ARMY	881,592	-176,585	705,007
PROCUREMENT OF W&TCV, ARMY	15,225		15,225
PROCUREMENT OF AMMUNITION, ARMY	110,668		110,668
OTHER PROCUREMENT, ARMY	924,077	79,400	1,003,477
AIRCRAFT PROCUREMENT, NAVY	33,241		33,241
WEAPONS PROCUREMENT, NAVY	5,572		5,572
PROCUREMENT OF AMMO, NAVY & MC	95,942		95,942
OTHER PROCUREMENT, NAVY	343,526		343,526
PROCUREMENT, MARINE CORPS	47,963		47,963
AIRCRAFT PROCUREMENT, AIR FORCE	569,155		569,155
MISSILE PROCUREMENT, AIR FORCE	223,772		223,772
PROCUREMENT OF AMMUNITION, AIR FORCE	802,455		802,455
OTHER PROCUREMENT, AIR FORCE	355,339		355,339
PROCUREMENT, DEFENSE-WIDE	258,491		258,491
SUBTOTAL, PROCUREMENT	5,128,098	-97,185	5,030,913
RESEARCH, DEVELOPMENT, TEST AND EVALUATION			
RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY	182,824		182,824
RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY	59,562		59,562
RESEARCH, DEVELOPMENT, TEST & EVAL, AF	5,304	6,500	11,804
RESEARCH, DEVELOPMENT, TEST & EVAL, DW	82,818		82,818
SUBTOTAL, RESEARCH, DEVELOPMENT, TEST AND EVALUATION	330,508	6,500	337,008
OPERATION AND MAINTENANCE			
OPERATION & MAINTENANCE, ARMY	17,137,754	30,740	17,168,494
OPERATION & MAINTENANCE, ARMY RES	33,399		33,399
OPERATION & MAINTENANCE, ARNG	79,792		79,792
AFGHANISTAN SECURITY FORCES FUND	4,015,612		4,015,612
OPERATION & MAINTENANCE, NAVY	10,700,305		10,700,305
OPERATION & MAINTENANCE, MARINE CORPS	1,102,600	17,500	1,120,100
OPERATION & MAINTENANCE, NAVY RES	21,492		21,492

SUMMARY OF NATIONAL DEFENSE AUTHORIZATIONS FOR FISCAL YEAR 2021—Continued

(In Thousands of Dollars)

	FY 2021 Request	Senate Change	Senate Authorized
OPERATION & MAINTENANCE, MC RESERVE	8,707		8,707
OPERATION & MAINTENANCE, SPACE FORCE	77,115		77,115
OPERATION & MAINTENANCE, AIR FORCE	17,930,020	15,445	17,945,465
OPERATION & MAINTENANCE, AF RESERVE	30,090		30,090
OPERATION & MAINTENANCE, ANG	175,642		175,642
OPERATION AND MAINTENANCE, DEFENSE-WIDE	6,022,254	349,500	6,371,754
SUBTOTAL, OPERATION AND MAINTENANCE	57,334,782	413,185	57,747,967
MILITARY PERSONNEL			
MILITARY PERSONNEL	4,602,593		4,602,593
SUBTOTAL, MILITARY PERSONNEL	4,602,593	0	4,602,593
OTHER AUTHORIZATIONS			
WORKING CAPITAL FUND	20,090		20,090
OFFICE OF THE INSPECTOR GENERAL	24,069		24,069
DEFENSE HEALTH PROGRAM	365,098		365,098
COUNTER ISIS TRAIN AND EQUIP FUND (CTEF) ..	845,000	-322,500	522,500
SUBTOTAL, OTHER AUTHORIZATIONS	1,254,257	-322,500	931,757
MILITARY CONSTRUCTION			
ARMY	15,873		15,873
NAVY	70,020		70,020
AIR FORCE	263,869		263,869
SUBTOTAL, MILITARY CONSTRUCTION	349,762		349,762
TOTAL, NATIONAL DEFENSE (BUDGET FUNCTION 050) OCO BUDGET REQUEST	69,000,000	0	69,000,000
TOTAL, NATIONAL DEFENSE (BUDGET FUNCTION 050)	731,295,678	-7,876	731,287,802
MEMORANDUM: NON-DEFENSE AUTHORIZATIONS			
TITLE XIV—ARMED FORCES RETIREMENT HOME (FUNCTION 600)	64,300		64,300
MEMORANDUM: TRANSFER AUTHORITIES (NON-ADDS)			
TITLE X—GENERAL TRANSFER AUTHORITY	[5,000,000]		[4,000,000]
TITLE XV—SPECIAL TRANSFER AUTHORITY	[4,500,000]		[2,000,000]

**NATIONAL DEFENSE BUDGET AUTHORITY
IMPLICATION**

NATIONAL DEFENSE BUDGET AUTHORITY IMPLICATION

(In Thousands of Dollars)

	FY 2021 Request	Senate Change	Senate Authorized
SUMMARY DISCRETIONARY AUTHORIZATIONS WITHIN THE JURISDICTION OF THE ARMED SERVICES COMMITTEE			
NATIONAL DEFENSE (050)			
DEPARTMENT OF DEFENSE-MILITARY, BASE BUDGET			
(051)	636,319,707	42,124	636,361,831
ATOMIC ENERGY DEFENSE ACTIVITIES (053)	25,975,971	-50,000	25,925,971
OVERSEAS CONTINGENCY OPERATIONS	69,000,000		69,000,000
TOTAL, NATIONAL DEFENSE (050)	731,295,678	(7,876)	731,287,802
TRANSFER OF AUTHORIZED AMOUNTS TO NON-DEFENSE FUNCTIONS			
TRANSFER FROM DEPARTMENT OF DEFENSE-MILITARY (051)			
CAPTAIN JAMES A. LOVELL FEDERAL HEALTH CARE CENTER	-130,400		-130,400
DOD-VA HEALTH CARE SHARING INCENTIVE FUND	-15,000		-15,000
SUBTOTAL, TRANSFER FROM DEPARTMENT OF DEFENSE-MILITARY (051)	-145,400		-145,400
OTHER DEFENSE DISCRETIONARY AUTHORIZATIONS PROGRAMS OUTSIDE THE JURISDICTION OF THE ARMED SERVICES COMMITTEE OR ALREADY AUTHORIZED			
DEPARTMENT OF DEFENSE-MILITARY (051)	0		0
DEFENSE PRODUCTION ACT PURCHASES	182,000		182,000
INDEFINITE ACCOUNT: DISPOSAL OF DOD REAL PROPERTY	9,000		9,000
INDEFINITE ACCOUNT: LEASE OF DOD REAL PROPERTY ...	36,000		36,000
SUBTOTAL, DEPARTMENT OF DEFENSE-MILITARY (051) ...	227,000	0	227,000
DEFENSE-RELATED ACTIVITIES (054)			
OTHER DISCRETIONARY PROGRAMS	9,131,000		9,131,000
SUBTOTAL, DEFENSE-RELATED ACTIVITIES (054)	9,131,000	0	9,131,000
TOTAL, OTHER DEFENSE DISCRETIONARY AUTHORIZATIONS (050)	9,212,600	0	9,212,600
DISCRETIONARY BUDGET AUTHORITY IMPLICATION (050)			
NATIONAL DEFENSE DISCRETIONARY AUTHORIZATIONS (050)			
DEPARTMENT OF DEFENSE--MILITARY (051)	705,319,707	42,124	705,361,831
ATOMIC ENERGY DEFENSE ACTIVITIES (053)	25,975,971	-50,000	25,925,971
DEFENSE-RELATED ACTIVITIES (054)	9,212,600		9,212,600
TOTAL, DISCRETIONARY BUDGET AUTHORITY IMPLICATION, 050	740,508,278	-7,876	740,500,402
NATIONAL DEFENSE MANDATORY PROGRAMS, CURRENT LAW (CBO BASELINE)			
DEPARTMENT OF DEFENSE-MILITARY (051)			
CONCURRENT RECEIPT ACCRUAL PAYMENTS TO THE MILITARY RETIREMENT FUND	9,799,000		9,799,000

NATIONAL DEFENSE BUDGET AUTHORITY IMPLICATION—Continued

(In Thousands of Dollars)

	FY 2021 Request	Senate Change	Senate Authorized
REVOLVING, TRUST AND OTHER DOD MANDATORY	1,833,000		1,833,000
OFFSETTING RECEIPTS	-1,989,000		-1,989,000
SUBTOTAL, DEPARTMENT OF DEFENSE-MILITARY (051) ...	9,643,000	0	9,643,000
ATOMIC ENERGY DEFENSE ACTIVITIES (053)			
ENERGY EMPLOYEES OCCUPATIONAL ILLNESS COM- PENSATION PROGRAMS AND OTHER	1,682,000		1,682,000
SUBTOTAL, ATOMIC ENERGY DEFENSE ACTIVITIES (053)	1,682,000	0	1,682,000
DEFENSE-RELATED ACTIVITIES (054)			
RADIATION EXPOSURE COMPENSATION TRUST FUND	61,000		61,000
PAYMENT TO CIA RETIREMENT FUND AND OTHER	514,000		514,000
SUBTOTAL, DEFENSE-RELATED ACTIVITIES (054)	575,000	0	575,000
TOTAL, NATIONAL DEFENSE MANDATORY PROGRAMS (050)	11,900,000	0	11,900,000
DISCRETIONARY AND MANDATORY BUDGET AUTHORITY IMPLICATION (050)			
DISCRETIONARY AND MANDATORY BUDGET AUTHORITY IMPLICATION (050)			
DEPARTMENT OF DEFENSE--MILITARY (051)	714,962,707	42,124	715,004,831
ATOMIC ENERGY DEFENSE ACTIVITIES (053)	27,657,971	-50,000	27,607,971
DEFENSE-RELATED ACTIVITIES (054)	9,787,600		9,787,600
TOTAL, BUDGET AUTHORITY IMPLICATION (050)	752,408,278	-7,876	752,400,402

**PACIFIC DETERRENCE INITIATIVE
AUTHORIZATION FOR FISCAL YEAR 2021**

PACIFIC DETERRENCE INITIATIVE AUTHORIZATION FOR FISCAL YEAR 2021

(In Thousands of Dollars)

Line	Program Name	FY 2021 Request	Senate Change	Senate Authorized
ENHANCE FORCE DESIGN AND POSTURE				
Other Procurement, Army				
150	PDI: Bulk fuel distribution	4,271	0	4,271
164	PDI: Theater watercraft (incl. OPA lines 166, 183)	43,025	0	43,025
165	PDI: Theater MSV-L ships	76,576	0	76,576
Operations and Maintenance, Navy				
1CCH	PDI: Movement Coordination Center	1,000	0	1,000
Military Construction, Navy				
N/A	PDI: Joint Communication Upgrade	166,000	0	166,000
Military Construction, Air Force				
N/A	PDI: Guam Stand Off Weapons Complex, MSA 2	56,000	0	56,000
N/A	PDI: Timian Airfield Development Phase 1 (Inc 2)	20,000	0	20,000
N/A	PDI: Timian Fuel Tanks with Pipeline & Hydrant Sys (Inc 2)	7,000	0	7,000
N/A	PDI: Parking Apron (Inc 2)	15,000	0	15,000
Military Construction, Defense-Wide				
N/A	PDI: Planning and Design, INDOPACOM	0	15,000	15,000
Subtotal, ENHANCE FORCE DESIGN AND POSTURE		388,872	15,000	403,872
EXERCISES, EXPERIMENTATION, AND INNOVATION				
Operations and Maintenance, Army				
111	PDI: Defender 2021 home station training	150,000	0	150,000

111	PDI: Defender 2021 expanded Pacific deployment exercise	214,000	0	214,000
121	PDI: Defender 2021 support transportation/personnel	12,793	0	12,793
	Operations and Maintenance, Navy			
4GTD	PDI: Pacific Partnership	5,830	0	5,830
1CCH	PDI: Range study/program review	1,000	0	1,000
	Operations and Maintenance, Defense-Wide			
8PL1	PDI: Joint Exercise Program 1253 requirement	125,260	0	125,260
	Research, Development, Test, and Evaluation, Army			
0604759A	PDI: Reagan Test Site T&E investments	6,280	0	6,280
	Subtotal, EXERCISES, EXPERIMENTATION, AND INNOVATION	515,163	0	515,163
	INCREASE JOINT FORCE LETHALITY			
	Research and Development, Defense-Wide			
0604880C	PDI: Guam Defense System—systems engineering	0	76,800	76,800
0605125J	PDI: Guam Defense System JB AOA	1,000	0	1,000
	Subtotal, INCREASE JOINT FORCE LETHALITY	1,000	76,800	77,800
	STRENGTHEN COOPERATION WITH ALLIES AND PARTNERS			
	Other Procurement, Air Force			
14	PDI: Mission Partner Environment BICES-X	0	1,500	1,500
49	PDI: Mission Partner Environment PACNET	0	14,000	14,000
	Operations and Maintenance, Air Force			
12A	PDI: Mission Partner Environment implementation	0	30,800	30,800
	Research and Development, Air Force			

PACIFIC DETERRENCE INITIATIVE AUTHORIZATION FOR FISCAL YEAR 2021—Continued
(In Thousands of Dollars)

Line	Program Name	FY 2021 Request	Senate Change	Senate Authorized
0305600F	PDI: Mission Partner Environment BICES-X Project 675898	0	3,680	3,680
	Operations and Maintenance, Navy			
1CCM	PDI: Joint Task Force Indo-Pacific (SOPAC)	0	6,300	6,300
1CCM	PDI: Singapore CTIF fusion center	0	2,000	2,000
1CCH	PDI: Asia-Pacific Regional Initiative	10,000	5,000	15,000
1CCS	PDI: countering Chinese malign influence in Indo-Pacific	0	17,700	17,700
	Operations and Maintenance, Defense-Wide			
4GTE	PDI: Joint Interagency Task Force—West Project 3309	0	13,000	13,000
4GTE	PDI: Joint Interagency Task Force—West Project 9202	0	2,800	2,800
4GTD	PDI: Defense Security Cooperation Agency Sec. 333	254,662	-163,000	91,662
4GTD	PDI: Capacity building (Maritime Security Initiative)	37,000	163,000	200,000
	Subtotal, STRENGTHEN COOPERATION WITH ALLIES AND PARTNERS	301,662	96,780	398,442
	Total, PACIFIC DETERRENCE INITIATIVE	1,206,697	188,560	1,395,277

TITLE XLI—PROCUREMENT

TITLE XLI—PROCUREMENT

SEC. 4101. PROCUREMENT.

SEC. 4101. PROCUREMENT (In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
AIRCRAFT PROCUREMENT, ARMY							
FIXED WING							
2	MQ-1 UAV	0	0	0	165,000	0	165,000
	Reverse planned temporary procurement pause			[0]	[165,000]		
3	FUTURE UAS FAMILY	0	1,100			0	1,100
4	RQ-11 (RAVEN)	0	20,851			0	20,851
ROTARY							
7	AH-64 APACHE BLOCK IIIA REMAN	50	792,027			50	792,027
8	AH-64 APACHE BLOCK IIIA REMAN AP	0	169,460			0	169,460
11	UH-60 BLACKHAWK M MODEL (MYP)	36	742,998			36	742,998
12	UH-60 BLACKHAWK M MODEL (MYP) AP	0	87,427			0	87,427
13	UH-60 BLACKHAWK L AND V MODELS	24	172,797			24	172,797
14	CH-47 HELICOPTER	6	160,750			6	160,750
15	CH-47 HELICOPTER AP	0	18,372			0	18,372
MODIFICATION OF AIRCRAFT							
18	UNIVERSAL GROUND CONTROL EQUIPMENT (UAS)	0	7,509			0	7,509
19	GRAY EAGLE MODS2	0	16,280			0	16,280
20	MULTI SENSOR ABN RECON (MIP)	0	35,864			0	35,864
21	AH-64 MODS	0	118,316			0	118,316
22	CH-47 CARGO HELICOPTER MODS (MYP)	0	15,548	0	20,000	0	35,548

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
	Army-identified funding early to need			[0]	[-40,500]		
	AIR-TO-SURFACE MISSILE SYSTEM						
6	HELLFIRE SYS SUMMARY	428	91,225			428	91,225
7	JOINT AIR-TO-GROUND MISLS (JAGM)	657	213,397			657	213,397
8	LONG RANGE PRECISION MUNITION	0	45,307			0	45,307
	ANTI-TANK/ASSAULT MISSILE SYS						
9	JAVELIN (AAWS-M) SYSTEM SUMMARY	773	190,325			773	190,325
10	TOW 2 SYSTEM SUMMARY	1,405	121,074			1,405	121,074
11	GUIDED MLRS ROCKET (GMLRS)	5,384	850,157			5,384	850,157
12	MLRS REDUCED RANGE PRACTICE ROCKETIS (RRPR)	3,270	30,836			3,270	30,836
13	HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)	5	41,226			5	41,226
	MODIFICATIONS						
16	PATRIOT MODS	0	278,050			0	278,050
17	ATACMS MODS	0	141,690			0	141,690
20	AVENGER MODS	0	13,942			0	13,942
21	ITAS/TOW MODS	0	5,666			0	5,666
22	MLRS MODS	0	310,419			0	310,419
23	HIMARS MODIFICATIONS	0	6,081			0	6,081
	SPARES AND REPAIR PARTS						
24	SPARES AND REPAIR PARTS	0	5,090			0	5,090
	SUPPORT EQUIPMENT & FACILITIES						
25	AIR DEFENSE TARGETS	0	8,978			0	8,978
	TOTAL MISSILE PROCUREMENT, ARMY	12,124	3,491,507	46	136,085	12,170	3,627,592

PROCUREMENT OF W&TCV, ARMY
TRACKED COMBAT VEHICLES

2	ARMORED MULTI PURPOSE VEHICLE (AMPV)	32	192,971	0	-20,000	32	172,971
	Program decrease			[0]	[-20,000]		
	MODIFICATION OF TRACKED COMBAT VEHICLES						
4	STRYKER UPGRADE	154	847,212	0	-20,000	154	847,212
5	BRADLEY PROGRAM (MOD)	0	493,109	[0]	[-20,000]	0	473,109
	UBIS slip						
6	M109 FOV MODIFICATIONS	0	26,893			0	26,893
7	PALADIN INTEGRATED MANAGEMENT (PIM)	30	435,825			30	435,825
9	ASSAULT BRIDGE (MOD)	0	5,074			0	5,074
10	ASSAULT BREACHER VEHICLE	4	19,500			4	19,500
11	M88 FOV MODS	0	18,382	0	-5,000	0	13,382
	Unjustified growth			[0]	[-5,000]		
12	JOINT ASSAULT BRIDGE	14	72,178	0	-10,500	14	61,678
	IOTE and testing delay			[0]	[-10,500]		
13	M1 ABRAMS TANK (MOD)	0	392,013			0	392,013
14	ABRAMS UPGRADE PROGRAM	89	1,033,253			89	1,033,253
	WEAPONS & OTHER COMBAT VEHICLES						
16	MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON S	0	17,864			0	17,864
18	MORTAR SYSTEMS	0	10,288			0	10,288
19	XM320 GRENADE LAUNCHER MODULE (GLM)	0	5,969			0	5,969
20	PRECISION SNIPER RIFLE	0	10,137			0	10,137
21	COMPACT SEMI-AUTOMATIC SNIPER SYSTEM	0	999			0	999
22	CARBINE	0	7,411			0	7,411
23	NEXT GENERATION SQUAD WEAPON	0	35,822			0	35,822
24	COMMON REMOTELY OPERATED WEAPONS STATION	0	24,534			0	24,534
25	HANDGUN	0	4,662			0	4,662
	MOD OF WEAPONS AND OTHER COMBAT VEH						
26	MK-19 GRENADE MACHINE GUN MODS	0	6,444			0	6,444
27	M777 MODS	0	10,983			0	10,983
28	M4 CARBINE MODS	0	4,824			0	4,824
31	M240 MEDIUM MACHINE GUN MODS	0	6,385			0	6,385
32	SNIPER RIFLES MODIFICATIONS	0	1,898			0	1,898

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
33	M119 MODIFICATIONS	0	2,009			0	2,009
34	MORTAR MODIFICATION	0	1,689			0	1,689
35	MODIFICATIONS LESS THAN \$5.0M (WOCV-WTCV)	0	2,604			0	2,604
	SUPPORT EQUIPMENT & FACILITIES						
36	ITEMS LESS THAN \$5.0M (WOCV-WTCV)	0	2,763			0	2,763
37	PRODUCTION BASE SUPPORT (WOCV-WTCV)	0	3,045			0	3,045
	TOTAL PROCUREMENT OF W&TCV, ARMY	323	3,696,740	0	-55,500	323	3,641,240
	PROCUREMENT OF AMMUNITION, ARMY						
	SMALL/MEDIUM CAL AMMUNITION						
1	CTG, 5.56MM, ALL TYPES	0	68,472			0	68,472
2	CTG, 7.62MM, ALL TYPES	0	109,933			0	109,933
3	NEXT GENERATION SQUAD WEAPON AMMUNITION	0	11,988			0	11,988
4	CTG, HANDGUN, ALL TYPES	0	853			0	853
5	CTG, 50 CAL, ALL TYPES	0	58,280			0	58,280
6	CTG, 20MM, ALL TYPES	0	31,708			0	31,708
7	CTG, 25MM, ALL TYPES	0	9,111			0	9,111
8	CTG, 30MM, ALL TYPES	0	58,172			0	58,172
9	CTG, 40MM, ALL TYPES	0	114,638			0	114,638
	MORTAR AMMUNITION						
10	60MM MORTAR, ALL TYPES	0	31,222			0	31,222
11	81MM MORTAR, ALL TYPES	0	42,857			0	42,857
12	120MM MORTAR, ALL TYPES	0	107,762			0	107,762
	TANK AMMUNITION						
13	CARTRIDGES, TANK, 105MM AND 120MM, ALL TYPES	0	233,444			0	233,444
	ARTILLERY AMMUNITION						

14	ARTILLERY CARTRIDGES, 75MM & 105MM, ALL TYPES	0	35,963	0	35,963
15	ARTILLERY PROJECTILE, 155MM, ALL TYPES	0	293,692	0	293,692
16	PROJ 155MM EXTENDED RANGE M982	597	69,159	597	69,159
17	ARTILLERY PROPELLANTS, FUZES AND PRIMERS, ALL	0	232,913	0	232,913
	MINES				
18	MINES & CLEARING CHARGES, ALL TYPES	0	65,278	0	65,278
19	CLOSE TERRAIN SHAPING OBSTACLE	0	4,995	0	4,995
	ROCKETS				
20	SHOULDER LAUNCHED MUNITIONS, ALL TYPES	0	69,112	0	69,112
21	ROCKET, HYDRA 70, ALL TYPES	0	125,915	0	125,915
	OTHER AMMUNITION				
22	CAD/PAD, ALL TYPES	0	8,891	0	8,891
23	DEMOLITION MUNITIONS, ALL TYPES	0	54,043	0	54,043
24	GRENADES, ALL TYPES	0	28,931	0	28,931
25	SIGNALS, ALL TYPES	0	27,036	0	27,036
26	SIMULATORS, ALL TYPES	0	10,253	0	10,253
	MISCELLANEOUS				
27	AMMO COMPONENTS, ALL TYPES	0	3,476	0	3,476
29	ITEMS LESS THAN \$5 MILLION (AMMO)	0	10,569	0	10,569
30	AMMUNITION PECULIAR EQUIPMENT	0	12,338	0	12,338
31	FIRST DESTINATION TRANSPORTATION (AMMO)	0	15,908	0	15,908
32	CLOSEOUT LIABILITIES	0	99	0	99
	PRODUCTION BASE SUPPORT				
33	INDUSTRIAL FACILITIES	0	592,224	0	592,224
34	CONVENTIONAL MUNITIONS DEMILITARIZATION	0	235,112	0	235,112
35	ARMS INITIATIVE	0	3,369	0	3,369
	TOTAL PROCUREMENT OF AMMUNITION, ARMY	597	2,777,716	0	2,777,716
	OTHER PROCUREMENT, ARMY				
	TACTICAL VEHICLES				
1	TACTICAL TRAILERS/DOLLY SETS	0	12,986	0	12,986
2	SEMITRAILERS, FLATBED:	0	31,443	0	31,443

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
3	SEMITRAILERS, TANKERS	0	17,082			0	17,082
4	HI MOB MULTI-PURP WHLD VEH (HMMWV)	0	44,795			0	44,795
5	GROUND MOBILITY VEHICLES (GMV)	0	37,932			0	37,932
8	JOINT LIGHT TACTICAL VEHICLE FAMILY OF VEHICL	0	894,414			0	894,414
9	TRUCK, DUMP, 20T (CCE)	0	29,368			0	29,368
10	FAMILY OF MEDIUM TACTICAL VEH (FMTV)	0	95,092			0	95,092
11	FAMILY OF COLD WEATHER ALL-TERRAIN VEHICLE (C	0	999			0	999
12	FIRETRUCKS & ASSOCIATED FIREFIGHTING EQUIP	0	27,687			0	27,687
14	PLS ESP	0	21,969			0	21,969
15	HVY EXPANDED MOBILE TACTICAL TRUCK EXT SERV	0	65,635			0	65,635
16	HMMWV RECAPITALIZATION PROGRAM	0	5,927			0	5,927
17	TACTICAL WHEELED VEHICLE PROTECTION KITS	0	36,497			0	36,497
18	MODIFICATION OF IN SVC EQUIP	0	114,977			0	114,977
	NON-TACTICAL VEHICLES						
20	PASSENGER CARRYING VEHICLES	0	1,246			0	1,246
21	NONTACTICAL VEHICLES, OTHER	0	19,870			0	19,870
	COMM—JOINT COMMUNICATIONS						
22	SIGNAL MODERNIZATION PROGRAM	0	160,469			0	160,469
23	TACTICAL NETWORK TECHNOLOGY MOD IN SVC	0	360,379			0	365,379
	MDTF scalable node equipment			0	5,000	0	
24	SITUATION INFORMATION TRANSPORT	0	63,396	[0]	[5,000]	0	63,396
26	JCSE EQUIPMENT (USRDECOM)	0	5,170			0	5,170
	COMM—SATELLITE COMMUNICATIONS						
29	DEFENSE ENTERPRISE WIDEBAND SATCOM SYSTEMS	0	101,498			0	101,498
30	TRANSPORTABLE TACTICAL COMMAND COMMUNICATIONS	0	72,450			0	74,850
	AFRICOM force protection upgrades			0	2,400	0	
				[0]	[1,000]		

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
59	EMERGENCY MANAGEMENT MODERNIZATION PROGRAM	0	4,900			0	4,900
60	HOME STATION MISSION COMMAND CENTERS (HSMCC)	0	15,227			0	15,227
61	JOINT INFORMATION ENVIRONMENT (JIE)	0	3,177			0	3,177
62	INSTALLATION INFO INFRASTRUCTURE MOD PROGRAM	0	300,035			0	300,035
	ELECT EQUIP—TACT INT REL ACT (TIARA)						
65	JT/CBS-M (MIP)	0	5,304			0	5,304
66	TERRESTRIAL LAYER SYSTEMS (TLS) (MIP)	0	8,081			0	8,081
68	DCGS-A (MIP)	0	151,886			0	151,886
70	TROJAN (MIP)	0	17,593			0	17,593
71	MOD OF IN-SVC EQUIP (INTEL SPT) (MIP)	0	28,558			0	28,558
73	BIOMETRIC TACTICAL COLLECTION DEVICES (MIP)	0	999			0	999
	ELECT EQUIP—ELECTRONIC WARFARE (EW)						
75	LIGHTWEIGHT COUNTER MORTAR RADAR	0	5,332			0	5,332
76	EW PLANNING & MANAGEMENT TOOLS (EWPMT)	0	7,849			0	7,849
77	AIR VIGILANCE (AV) (MIP)	0	8,160			0	8,160
79	MULTI-FUNCTION ELECTRONIC WARFARE (MFEW) SYST	0	8,669			0	8,669
81	COUNTERINTELLIGENCE/SECURITY COUNTERMEASURES	0	0	0	13,400	0	13,400
	MDTF advanced intel systems remote collection			[0]	[13,400]		
82	CI MODERNIZATION (MIP)	0	300			0	300
	ELECT EQUIP—TACTICAL SURV. (TAC SURV)						
83	SENTINEL MODS	0	58,884			0	58,884
84	NIGHT VISION DEVICES	0	1,127,375			0	1,127,375
86	SMALL TACTICAL OPTICAL RIFLE MOUNTED MLRF	0	13,954			0	13,954
88	INDIRECT FIRE PROTECTION FAMILY OF SYSTEMS	0	10,069	0	4,000	0	14,069
	AFRICOM UFR force protection upgrades			[0]	[4,000]		
89	FAMILY OF WEAPON SIGHTS (FWS)	0	133,590			0	133,590

91	JOINT BATTLE COMMAND—PLATFORM (JBC-P)	0	243,850	0	243,850	0	243,850
92	JOINT EFFECTS TARGETING SYSTEM (JETS)	0	69,641	0	69,641	0	69,641
94	COMPUTER BALLISTICS: LHMC XM32	0	7,509	0	7,509	0	7,509
95	MORTAR FIRE CONTROL SYSTEM	0	3,800	0	3,800	0	3,800
96	MORTAR FIRE CONTROL SYSTEMS MODIFICATIONS	0	7,292	0	7,292	0	7,292
97	COUNTERFIRE RADARS	0	72,421	0	72,421	0	72,421
	ELECT EQUIP—TACTICAL C2 SYSTEMS						
98	ARMY COMMAND POST INTEGRATED INFRASTRUCTURE (.....	0	49,947	0	49,947	0	49,947
99	FIRE SUPPORT C2 FAMILY	0	9,390	0	9,390	0	9,390
100	AIR & MSL DEFENSE PLANNING & CONTROL SYS	0	47,374	0	47,374	0	47,374
101	IAMD BATTLE COMMAND SYSTEM	0	201,587	0	201,587	0	201,587
102	LIFE CYCLE SOFTWARE SUPPORT (LCSS)	0	4,495	0	4,495	0	4,495
103	NETWORK MANAGEMENT INITIALIZATION AND SERVICE	0	18,651	0	18,651	0	18,651
105	GLOBAL COMBAT SUPPORT SYSTEM-ARMY (GCCS-A)	0	2,792	0	2,792	0	2,792
106	INTEGRATED PERSONNEL AND PAY SYSTEM-ARMY (IPP)	0	9,071	0	9,071	0	9,071
107	RECONNAISSANCE AND SURVEYING INSTRUMENT SET	0	12,117	0	12,117	0	12,117
108	MOD OF IN-SVC EQUIPMENT (ENFIRE)	0	3,004	0	3,004	0	3,004
	ELECT EQUIP—AUTOMATION						
109	ARMY TRAINING MODERNIZATION	0	14,574	0	14,574	0	14,574
110	AUTOMATED DATA PROCESSING EQUIP	0	140,619	0	140,619	0	140,619
111	GENERAL FUND ENTERPRISE BUSINESS SYSTEMS FAM	0	4,448	0	4,448	0	4,448
112	HIGH PERF COMPUTING MOD PGM (HPCMP)	0	68,405	0	68,405	0	68,405
113	CONTRACT WRITING SYSTEM	0	8,459	0	8,459	0	8,459
114	CSS COMMUNICATIONS	0	57,651	0	57,651	0	57,651
115	RESERVE COMPONENT AUTOMATION SYS (RCAS)	0	14,848	0	14,848	0	14,848
	ELECT EQUIP—AUDIO VISUAL SYS (AV)						
117	ITEMS LESS THAN \$5M (SURVEYING EQUIPMENT)	0	4,995	0	4,995	0	4,995
	ELECT EQUIP—SUPPORT						
119	BCT EMERGING TECHNOLOGIES	0	16,983	0	16,983	0	16,983
	MDTF advanced intel systems remote collection					3,900	3,900
						[0]	[3,900]
	CLASSIFIED PROGRAMS						
9999	CLASSIFIED PROGRAMS	0	1,582	0	1,582	0	1,582

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
CHEMICAL DEFENSIVE EQUIPMENT							
123	CBRN DEFENSE	0	28,456	0	14,000	0	42,456
	WMD CST equipment			[0]	[14,000]		
124	SMOKE & OBSCURANT FAMILY: SOF (NON-AAO ITEM)	0	13,995			0	13,995
BRIDGING EQUIPMENT							
125	TACTICAL BRIDGING	0	10,545			0	10,545
126	TACTICAL BRIDGE, FLOAT-RIBBON	0	72,074			0	72,074
127	BRIDGE SUPPLEMENTAL SET	0	32,493			0	32,493
128	COMMON BRIDGE TRANSPORTER (CBT) RECAP	0	62,978			0	62,978
ENGINEER (NON-CONSTRUCTION) EQUIPMENT							
129	HANDHELD STANDOFF MINEFIELD DETECTION SYS-HST	0	5,570			0	5,570
130	GRND STANDOFF MINE DETECTN SYSM (GSTAMDS)	0	2,497			0	2,497
132	HUSKY MOUNTED DETECTION SYSTEM (HMDS)	0	109,069			0	109,069
134	EOD ROBOTICS SYSTEMS RECAPITALIZATION	0	36,584			0	36,584
135	ROBOTICS AND APPLIQUE SYSTEMS	0	179,544			0	179,544
137	RENDER SAFE SETS KITS OUTFITS	0	64,583			0	64,583
139	FAMILY OF BOATS AND MOTORS	0	5,289			0	5,289
COMBAT SERVICE SUPPORT EQUIPMENT							
140	HEATERS AND ECU'S	0	8,200			0	8,200
142	PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)	0	4,625			0	4,625
143	GROUND SOLDIER SYSTEM	0	154,937			0	154,937
144	MOBILE SOLDIER POWER	0	34,297			0	34,297
147	CARGO AERIAL DEL & PERSONNEL PARACHUTE SYSTEM	0	53,021			0	53,021
148	FAMILY OF ENGR COMBAT AND CONSTRUCTION SETS	0	23,324			0	23,324
149	ITEMS LESS THAN \$5M (ENG SPT)	0	8,014			0	8,014
PETROLEUM EQUIPMENT							

150	DISTRIBUTION SYSTEMS, PETROLEUM & WATER	0	78,448	0	78,448
	MEDICAL EQUIPMENT				
151	COMBAT SUPPORT MEDICAL	0	59,485	0	59,485
	MAINTENANCE EQUIPMENT				
152	MOBILE MAINTENANCE EQUIPMENT SYSTEMS	0	40,337	0	40,337
153	ITEMS LESS THAN \$5.0M (MAINT EQ)	0	5,386	0	5,386
	CONSTRUCTION EQUIPMENT				
154	GRADER, ROAD MITZD, HVI, 6X4 (CCE)	0	5,406	0	5,406
155	SCRAPERS, EARTHMOVING	0	4,188	0	4,188
156	LOADERS	0	4,521	0	4,521
157	HYDRAULIC EXCAVATOR	0	5,186	0	5,186
158	TRACTOR, FULL TRACKED	0	4,715	0	4,715
159	ALL TERRAIN CRANES	0	70,560	0	70,560
162	CONST EQUIP ESP	0	8,925	0	8,925
	RAIL FLOAT CONTAINERIZATION EQUIPMENT				
164	ARMY WATERCRAFT ESP	0	40,910	0	40,910
165	MANEUVER SUPPORT VESSEL (MSV)	0	76,576	0	76,576
166	ITEMS LESS THAN \$5.0M (FLOAT/RAIL)	0	1,844	0	1,844
	GENERATORS				
167	GENERATORS AND ASSOCIATED EQUIP	0	53,433	0	53,433
168	TACTICAL ELECTRIC POWER RECAPITALIZATION	0	22,216	0	22,216
	MATERIAL HANDLING EQUIPMENT				
169	FAMILY OF FORKLIFTS	0	16,145	0	16,145
	TRAINING EQUIPMENT				
170	COMBAT TRAINING CENTERS SUPPORT	0	90,580	0	90,580
171	TRAINING DEVICES, NONSYSTEM	0	161,814	0	161,814
172	SYNTHETIC TRAINING ENVIRONMENT (STE)	0	13,063	0	13,063
175	GAMING TECHNOLOGY IN SUPPORT OF ARMY TRAINING	0	1,950	0	1,950
	TEST MEASURE AND DIG EQUIPMENT (TMD)				
176	CALIBRATION SETS EQUIPMENT	0	2,511	0	2,511
177	INTEGRATED FAMILY OF TEST EQUIPMENT (IFTE)	0	78,578	0	78,578
178	TEST EQUIPMENT MODERNIZATION (TEMOD)	0	14,941	0	14,941

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
OTHER SUPPORT EQUIPMENT							
180	RAPID EQUIPPING SOLDIER SUPPORT EQUIPMENT	0	8,629			0	8,629
181	PHYSICAL SECURITY SYSTEMS (OPA3)	0	75,499	0	12,000	0	87,499
	AFRICOM UFR force protection upgrades			[0]	[12,000]		
182	BASE LEVEL COMMON EQUIPMENT	0	27,444			0	27,444
183	MODIFICATION OF IN-SVC EQUIPMENT (OPA-3)	0	32,485	0	15,900	0	48,385
	Expeditionary Solid Waste Disposal System			[0]	[15,900]		
187	SPECIAL EQUIPMENT FOR TEST AND EVALUATION	0	39,436			0	39,436
	OPA2						
189	INITIAL SPARES—C&E	0	9,950			0	9,950
	TOTAL OTHER PROCUREMENT, ARMY	0	8,625,206	0	60,033	0	8,685,239
AIRCRAFT PROCUREMENT, NAVY							
COMBAT AIRCRAFT							
1	F/A-18E/F (FIGHTER) HORNET	24	1,761,146			24	1,761,146
3	JOINT STRIKE FIGHTER CV	21	2,181,780	2	200,000	23	2,381,780
	Additional aircraft			[2]	[200,000]		
4	JOINT STRIKE FIGHTER CV AP	0	330,386			0	330,386
5	JSF STOVL	10	1,109,393	2	125,500	12	1,234,893
	Additional 2 F-35B aircraft			[2]	[125,500]		
6	JSF STOVL AP	0	303,035			0	303,035
7	CH-53K (HEAVY LIFT)	7	813,324	0	-20,000	7	793,324
	Force Design 2030 realignment NRE excess			[0]	[-20,000]		
8	CH-53K (HEAVY LIFT) AP	0	201,188	0	-10,000	0	191,188
	Force Design 2030 realignment			[0]	[-10,000]		
9	V-22 (MEDIUM LIFT)	9	934,793			9	934,793

10	V-22 (MEDIUM LIFT) AP	0	39,547	0	39,547
11	H-1 UPGRADES (UH-1Y/AH-1Z)	0	7,267	0	7,267
13	P-8A POSEIDON	0	80,134	0	80,134
15	E-2D ADV HAWKEYE	4	626,109	4	626,109
16	E-2D ADV HAWKEYE AP	0	123,166	0	123,166
	TRAINER AIRCRAFT				
17	ADVANCED HELICOPTER TRAINING SYSTEM	36	269,867	36	269,867
	OTHER AIRCRAFT				
18	KC-130J	5	380,984	5	380,984
19	KC-130J AP	0	67,022	0	67,022
21	MQ-4 TRITON	0	150,570	0	150,570
	Excess funding given procurement pause until FY23	0		0	-50,000
				[0]	[-50,000]
23	MQ-8 UAV	0	40,375	0	40,375
24	STUASLO UAV	0	30,930	0	30,930
26	VH-92A EXECUTIVE HELO	5	610,231	5	610,231
	MODIFICATION OF AIRCRAFT				
28	F-18 A-D UNIQUE	0	208,261	0	208,261
29	F-18E/F AND EA-18G MODERNIZATION AND SUSTAINM	0	468,954	0	468,954
30	AEA SYSTEMS	0	21,061	0	21,061
31	AV-8 SERIES	0	34,082	0	34,082
32	INFRARED SEARCH AND TRACK (IRST)	0	158,055	0	158,055
33	ADVERSARY	0	42,946	0	42,946
34	F-18 SERIES	0	379,351	0	379,351
35	H-53 SERIES	0	74,771	0	74,771
36	MH-60 SERIES	0	131,584	0	131,584
37	H-1 SERIES	0	185,140	0	185,140
38	EP-3 SERIES	0	26,602	0	26,602
40	E-2 SERIES	0	175,540	0	175,540
41	TRAINER W/C SERIES	0	7,085	0	7,085
42	C-2A	0	9,525	0	9,525
43	C-130 SERIES	0	141,705	0	141,705
44	FEWSG	0	684	0	684

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
45	CARGO/TRANSPORT A/C SERIES	0	8,911			0	8,911
46	E-6 SERIES	0	197,206			0	197,206
47	EXECUTIVE HELICOPTERS SERIES	0	29,086			0	29,086
49	T-45 SERIES	0	155,745			0	155,745
50	POWER PLANT CHANGES	0	24,633			0	24,633
51	JPATS SERIES	0	22,682			0	22,682
52	AVIATION LIFE SUPPORT MODS	0	40,401	0	5,000	0	45,401
	Aviation body armor vest			[0]	[5,000]		
53	COMMON ECM EQUIPMENT	0	138,480			0	138,480
54	COMMON AVIONICS CHANGES	0	143,322			0	143,322
55	COMMON DEFENSIVE WEAPON SYSTEM	0	2,142			0	2,142
56	ID SYSTEMS	0	35,999			0	35,999
57	P-8 SERIES	0	180,530			0	180,530
58	MAGTF EW FOR AVIATION	0	27,794			0	27,794
59	MQ-8 SERIES	0	28,774			0	28,774
60	V-22 (TILT/ROTOR ACFT) OSPREY	0	334,405			0	334,405
61	NEXT GENERATION JAMMER (NGJ)	0	176,638			0	176,638
62	F-35 STOVL SERIES	0	153,588			0	153,588
63	F-35 CV SERIES	0	105,452			0	105,452
64	QRC	0	126,618			0	126,618
65	MQ-4 SERIES	0	12,998			0	12,998
66	RQ-21 SERIES	0	18,550			0	18,550
	AIRCRAFT SPARES AND REPAIR PARTS						
70	SPARES AND REPAIR PARTS	0	2,198,460	0	30,000	0	2,228,460
	Additional F-35B/C spares			[0]	[30,000]		
	AIRCRAFT SUPPORT EQUIP & FACILITIES						

71	COMMON GROUND EQUIPMENT	0	543,559		0	543,559
72	AIRCRAFT INDUSTRIAL FACILITIES	0	75,685		0	75,685
73	WAR CONSUMABLES	0	40,633		0	40,633
74	OTHER PRODUCTION CHARGES	0	21,194		0	21,194
75	SPECIAL SUPPORT EQUIPMENT	0	155,179		0	155,179
76	FIRST DESTINATION TRANSPORTATION	0	2,121		0	2,121
	TOTAL AIRCRAFT PROCUREMENT, NAVY	121	17,127,378	4	280,500	17,407,878
WEAPONS PROCUREMENT, NAVY						
MODIFICATION OF MISSILES						
1	TRIDENT II MODS	0	1,173,837		0	1,173,837
SUPPORT EQUIPMENT & FACILITIES						
2	MISSILE INDUSTRIAL FACILITIES	0	7,275		0	7,275
STRATEGIC MISSILES						
3	TOMAHAWK	155	277,694	10	26,000	303,694
	Program increase for USMC Tomahawk			[10]	[26,000]	
TACTICAL MISSILES						
4	AIMRAAM	325	326,952		325	326,952
5	SIDEWINDER	270	126,485		270	126,485
7	STANDARD MISSILE	125	456,206		125	456,206
8	STANDARD MISSILE AP	0	66,716		0	66,716
9	SMALL DIAMETER BOMB II	357	78,867		357	78,867
10	RAM	100	90,533		100	90,533
11	JOINT AIR GROUND MISSILE (JAGM)	203	49,386		203	49,386
14	AERIAL TARGETS	0	174,336		0	174,336
15	DRONES AND DECOYS	68	41,256		68	41,256
16	OTHER MISSILE SUPPORT	0	3,501		0	3,501
17	LRASM	48	168,845	10	35,000	203,845
	Additional Navy LRASM missiles			[10]	[35,000]	
18	LCS OTH MISSILE	15	32,910		15	32,910
MODIFICATION OF MISSILES						
19	TOMAHAWK MODS	0	164,915		0	164,915

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
20	ESSM	120	215,375			120	215,375
22	HARM MODS	24	147,572			24	147,572
23	STANDARD MISSILES MODS	0	83,654			0	83,654
	SUPPORT EQUIPMENT & FACILITIES						
24	WEAPONS INDUSTRIAL FACILITIES	0	1,996			0	1,996
25	FLEET SATELLITE COMM FOLLOW-ON	0	53,401			0	53,401
	ORDNANCE SUPPORT EQUIPMENT						
27	ORDNANCE SUPPORT EQUIPMENT	0	215,659			0	215,659
	TORPEDOES AND RELATED EQUIP						
28	SSTD	0	5,811	0	-2,200	0	3,611
	Insufficient justification for ADC non-recurring costs			[0]	[-2,200]		
29	MK-48 TORPEDO	110	284,901			110	284,901
30	ASW TARGETS	0	13,833			0	13,833
	MOD OF TORPEDOES AND RELATED EQUIP						
31	MK-54 TORPEDO MODS	0	110,286	0	-10,000	0	100,286
	Mk 54 Mod 0 production delays			[0]	[-10,000]		
32	MK-48 TORPEDO ADCAP MODS	0	57,214			0	57,214
33	MARITIME MINES	0	5,832			0	5,832
	SUPPORT EQUIPMENT						
34	TORPEDO SUPPORT EQUIPMENT	0	97,581			0	97,581
35	ASW RANGE SUPPORT	0	4,159			0	4,159
	DESTINATION TRANSPORTATION						
36	FIRST DESTINATION TRANSPORTATION	0	4,106			0	4,106
	GUNS AND GUN MOUNTS						
37	SMALL ARMS AND WEAPONS	0	16,030			0	16,030
	MODIFICATION OF GUNS AND GUN MOUNTS						

38	CIWS MODS	0	37,147	0	37,147
39	COAST GUARD WEAPONS	0	45,804	0	45,804
40	GUN MOUNT MODS	0	74,427	0	74,427
41	LCS MODULE WEAPONS	32	4,253	32	4,253
42	AIRBORNE MINE NEUTRALIZATION SYSTEMS	0	6,662	0	6,662
	SPARES AND REPAIR PARTS	0	159,578	0	159,578
45	TOTAL WEAPONS PROCUREMENT, NAVY	1,952	4,884,995	1,972	4,933,795
				48,800	
		20			
	PROCUREMENT OF AMMO, NAVY & MC				
	NAVY AMMUNITION				
1	GENERAL PURPOSE BOMBS	0	41,496	0	41,496
2	JDAM	2,865	64,631	2,865	64,631
3	AIRBORNE ROCKETS, ALL TYPES	0	60,719	0	60,719
4	MACHINE GUN AMMUNITION	0	11,158	0	11,158
5	PRACTICE BOMBS	0	51,409	0	51,409
6	CARTRIDGES & CART ACTUATED DEVICES	0	64,694	0	64,694
7	AIR EXPENDABLE COUNTERMEASURES	0	51,523	0	51,523
8	JATOS	0	6,761	0	6,761
9	5 INCH/54 GUN AMMUNITION	0	31,517	0	31,517
10	INTERMEDIATE CALIBER GUN AMMUNITION	0	38,005	0	38,005
11	OTHER SHIP GUN AMMUNITION	0	40,626	0	40,626
12	SMALL ARMS & LANDING PARTY AMMO	0	48,202	0	48,202
13	PYROTECHNIC AND DEMOLITION	0	9,766	0	9,766
15	AMMUNITION LESS THAN \$5 MILLION	0	2,115	0	2,115
	MARINE CORPS AMMUNITION				
16	MORTARS	0	46,781	0	46,781
17	DIRECT SUPPORT MUNITIONS	0	119,504	0	119,504
18	INFANTRY WEAPONS AMMUNITION	0	83,220	0	83,220
19	COMBAT SUPPORT MUNITIONS	0	32,650	0	32,650
20	AMMO MODERNIZATION	0	15,144	0	15,144
21	ARTILLERY MUNITIONS	0	59,539	0	59,539

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
22	ITEMS LESS THAN \$5 MILLION	0	4,142			0	4,142
	TOTAL PROCUREMENT OF AMMO, NAVY & MC	2,865	883,602	0	0	2,865	883,602
	SHIPBUILDING AND CONVERSION, NAVY						
	FLEET BALLISTIC MISSILE SHIPS						
1	OHIO REPLACEMENT SUBMARINE	1	2,891,475			1	2,891,475
2	OHIO REPLACEMENT SUBMARINE AP	0	1,123,175	0	175,000	0	1,298,175
	Submarine supplier stability			[0]	[175,000]		
	OTHER WARSHIPS						
3	CARRIER REPLACEMENT PROGRAM	0	997,544			0	997,544
4	CVN-81	0	1,645,606			0	1,645,606
5	VIRGINIA CLASS SUBMARINE	1	2,334,693	0	-74,400	1	2,260,293
	Unjustified cost growth			[0]	[-74,400]		
6	VIRGINIA CLASS SUBMARINE AP	0	1,901,187	0	472,000	0	2,373,187
	Long lead material for option ship			[0]	[472,000]		
7	CVN REFUELING OVERHAULS	0	1,878,453			0	1,878,453
8	CVN REFUELING OVERHAULS AP	0	17,384			0	17,384
9	DDG 1000	0	78,205			0	78,205
10	DDG-51	2	3,040,270	0	-30,000	2	3,010,270
	Available prior-year funds			[0]	[-30,000]		
11	DDG-51 AP	0	29,297	0	435,000	0	464,297
	LLTM for FY22 DDG-51s			[0]	[260,000]		
	Surface ship supplier stability			[0]	[175,000]		
13	FFG-FRIGATE	1	1,053,123			1	1,053,123
	AMPHIBIOUS SHIPS						
14	LPD FLIGHT II	1	1,155,801	-1	-250,000	0	905,801

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
	Installation excess unit cost growth			[0]	[-50,000]		
6	FIREFIGHTING EQUIPMENT	0	18,394			0	18,394
7	COMMAND AND CONTROL SWITCHBOARD	0	2,374			0	2,374
8	LHA/LHD MIDLIFE	0	78,265			0	78,265
9	POLLUTION CONTROL EQUIPMENT	0	23,035			0	23,035
10	SUBMARINE SUPPORT EQUIPMENT	0	64,632			0	64,632
11	VIRGINIA CLASS SUPPORT EQUIPMENT	0	22,868			0	22,868
12	LCS CLASS SUPPORT EQUIPMENT	0	3,976			0	3,976
13	SUBMARINE BATTERIES	0	31,322			0	31,322
14	LPD CLASS SUPPORT EQUIPMENT	0	50,475			0	50,475
15	DDG 1000 CLASS SUPPORT EQUIPMENT	0	42,279			0	42,279
16	STRATEGIC PLATFORM SUPPORT EQUIP	0	15,429			0	15,429
17	DSSP EQUIPMENT	0	2,918			0	2,918
18	CG MODERNIZATION	0	87,978			0	87,978
19	LCAC	0	9,366			0	9,366
20	UNDERWATER EOD EQUIPMENT	0	16,842			0	16,842
21	ITEMS LESS THAN \$5 MILLION	0	105,715			0	105,715
22	CHEMICAL WARFARE DETECTORS	0	3,044			0	3,044
23	SUBMARINE LIFE SUPPORT SYSTEM	0	5,885			0	5,885
	REACTOR PLANT EQUIPMENT						
24	SHIP MAINTENANCE, REPAIR AND MODERNIZATION	0	1,260,721			0	1,260,721
25	REACTOR POWER UNITS	0	5,305			0	5,305
26	REACTOR COMPONENTS	0	415,404			0	415,404
	OCEAN ENGINEERING						
27	DIVING AND SALVAGE EQUIPMENT	0	11,143			0	11,143
	SMALL BOATS						

28	STANDARD BOATS	0	52,371	0	52,371	0	
	PRODUCTION FACILITIES EQUIPMENT						
29	OPERATING FORCES IPE	0	233,667	0	233,667	0	
	OTHER SHIP SUPPORT						
30	LCS COMMON MISSION MODULES EQUIPMENT	0	39,714	0	39,714	0	-22,300
	MCM containers and MPCE sonar processing insufficient justification			[0]		[0]	[-22,300]
31	LCS MCM MISSION MODULES	0	218,822	0	218,822	0	-123,500
	Excess procurement ahead of satisfactory testing			[0]		[0]	[-123,500]
32	LCS ASW MISSION MODULES	0	61,759	0	61,759	0	-57,000
	Excess procurement ahead of satisfactory testing			[0]		[0]	[-57,000]
33	LCS SUW MISSION MODULES	0	24,412	0	24,412	0	
34	LCS IN-SERVICE MODERNIZATION	0	121,848	0	121,848	0	
35	SMALL & MEDIUM UUV	0	67,709	0	67,709	0	-30,100
	SMCM UUV excess procurement ahead of satisfactory testing			[0]		[0]	[-30,100]
	SHIP SONARS						
37	SPQ-9B RADAR	0	27,517	0	27,517	0	
38	AN/SQQ-89 SURF ASW COMBAT SYSTEM	0	128,664	0	128,664	0	
39	SSN ACOUSTIC EQUIPMENT	0	374,737	0	374,737	0	
40	UNDERSEA WARFARE SUPPORT EQUIPMENT	0	9,286	0	9,286	0	
	ASW ELECTRONIC EQUIPMENT						
41	SUBMARINE ACOUSTIC WARFARE SYSTEM	0	26,066	0	26,066	0	
42	SSTD	0	13,241	0	13,241	0	
43	FIXED SURVEILLANCE SYSTEM	0	193,446	0	193,446	0	
44	SURTASS	0	63,838	0	63,838	0	
	ELECTRONIC WARFARE EQUIPMENT						
45	AN/SIQ-32	0	387,195	0	387,195	0	-56,400
	Early to need			[0]		[0]	[-56,400]
	RECONNAISSANCE EQUIPMENT						
46	SHIPBOARD IW EXPLOIT	0	235,744	0	235,744	0	
47	AUTOMATED IDENTIFICATION SYSTEM (AIS)	0	3,862	0	3,862	0	
	OTHER SHIP ELECTRONIC EQUIPMENT						
48	COOPERATIVE ENGAGEMENT CAPABILITY	0	26,006	0	26,006	0	-7,300

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
	Common Array Block antenna program delays			[0]	[-7,300]		
49	NAVAL TACTICAL COMMAND SUPPORT SYSTEM (NTCSS)	0	15,385			0	15,385
50	ATDLS	0	103,835			0	103,835
51	NAVY COMMAND AND CONTROL SYSTEM (NCCS)	0	3,594			0	3,594
52	MINESWEEPING SYSTEM REPLACEMENT	0	15,744			0	15,744
53	SHALLOW WATER MCM	0	5,493			0	5,493
54	NAVSTAR GPS RECEIVERS (SPACE)	0	38,043			0	38,043
55	AMERICAN FORCES RADIO AND TV SERVICE	0	2,592			0	2,592
56	STRATEGIC PLATFORM SUPPORT EQUIP	0	7,985			0	7,985
	AVIATION ELECTRONIC EQUIPMENT						
57	ASHORE ATC EQUIPMENT	0	83,475			0	83,475
58	AFLOAT ATC EQUIPMENT	0	65,113			0	65,113
59	ID SYSTEMS	0	23,815			0	23,815
60	JOINT PRECISION APPROACH AND LANDING SYSTEM (.....	0	100,751			0	100,751
61	NAVAL MISSION PLANNING SYSTEMS	0	13,947			0	13,947
	OTHER SHORE ELECTRONIC EQUIPMENT						
62	MARITIME INTEGRATED BROADCAST SYSTEM	0	1,375			0	1,375
63	TACTICAL/MOBILE C4I SYSTEMS	0	22,771			0	22,771
64	DCGS-N	0	18,872			0	18,872
65	CANES	0	389,585			0	389,585
66	RADIAC	0	10,335			0	10,335
67	CANES-INTELL	0	48,654			0	48,654
68	GPETE	0	8,133			0	8,133
69	MAF	0	4,150			0	4,150
70	INTEG COMBAT SYSTEM TEST FACILITY	0	5,934			0	5,934
71	EMI CONTROL INSTRUMENTATION	0	4,334			0	4,334

72	ITEMS LESS THAN \$5 MILLION	0	159,815	0	-54,800	0	105,015
	NGSSR available prior year funds			[0]	[-54,800]		
	SHIPBOARD COMMUNICATIONS						
73	SHIPBOARD TACTICAL COMMUNICATIONS	0	56,106			0	56,106
74	SHIP COMMUNICATIONS AUTOMATION	0	124,288			0	124,288
75	COMMUNICATIONS ITEMS UNDER \$5M	0	45,120			0	45,120
	SUBMARINE COMMUNICATIONS						
76	SUBMARINE BROADCAST SUPPORT	0	31,133			0	31,133
77	SUBMARINE COMMUNICATION EQUIPMENT	0	62,214			0	62,214
	SATELLITE COMMUNICATIONS						
78	SATELLITE COMMUNICATIONS SYSTEMS	0	47,421			0	47,421
79	NAVY MULTIBAND TERMINAL (NMT)	0	64,552			0	64,552
	SHORE COMMUNICATIONS						
80	JOINT COMMUNICATIONS SUPPORT ELEMENT (JCSE)	0	4,398			0	4,398
	CRYPTOGRAPHIC EQUIPMENT						
81	INFO SYSTEMS SECURITY PROGRAM (ISSP)	0	157,551			0	157,551
82	MIO INTEL EXPLOITATION TEAM	0	985			0	985
	CRYPTOLOGIC EQUIPMENT						
83	CRYPTOLOGIC COMMUNICATIONS EQUIP	0	15,906			0	15,906
	OTHER ELECTRONIC SUPPORT						
90	COAST GUARD EQUIPMENT	0	70,689			0	70,689
	SONOBUOYS						
92	SONOBUOYS—ALL TYPES	0	237,639	0	49,100	0	286,739
	Program increase for sonobuoys			[0]	[49,100]		
	AIRCRAFT SUPPORT EQUIPMENT						
93	MINOTAUR	0	5,077			0	5,077
94	WEAPONS RANGE SUPPORT EQUIPMENT	0	83,969			0	83,969
95	AIRCRAFT SUPPORT EQUIPMENT	0	187,758			0	187,758
96	ADVANCED ARRESTING GEAR (AAG)	0	16,059			0	16,059
97	METEOROLOGICAL EQUIPMENT	0	15,192			0	15,192
99	LEGACY AIRBORNE MCM	0	6,674			0	6,674
100	LAMPS EQUIPMENT	0	1,189			0	1,189

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
101	AVIATION SUPPORT EQUIPMENT	0	58,873			0	58,873
102	UMCS-UNMAN CARRIER AVIATION(UCA)MISSION CNTRL	0	60,937			0	60,937
	SHIP GUN SYSTEM EQUIPMENT						
103	SHIP GUN SYSTEMS EQUIPMENT	0	5,540			0	5,540
	SHIP MISSILE SYSTEMS EQUIPMENT						
104	HARPOON SUPPORT EQUIPMENT	0	208			0	208
105	SHIP MISSILE SUPPORT EQUIPMENT	0	262,077			0	262,077
106	TOMAHAWK SUPPORT EQUIPMENT	0	84,087			0	84,087
	FBM SUPPORT EQUIPMENT						
107	STRATEGIC MISSILE SYSTEMS EQUIP	0	258,910			0	258,910
	ASW SUPPORT EQUIPMENT						
108	SSN COMBAT CONTROL SYSTEMS	0	173,770			0	173,770
109	ASW SUPPORT EQUIPMENT	0	26,584			0	26,584
	OTHER ORDNANCE SUPPORT EQUIPMENT						
110	EXPLOSIVE ORDNANCE DISPOSAL EQUIP	0	7,470			0	7,470
111	ITEMS LESS THAN \$5 MILLION	0	6,356			0	6,356
	OTHER EXPENDABLE ORDNANCE						
112	ANTI-SHIP MISSILE DECOY SYSTEM	0	86,356			0	86,356
113	SUBMARINE TRAINING DEVICE MODS	0	69,240			0	69,240
114	SURFACE TRAINING EQUIPMENT	0	192,245			0	192,245
	CIVIL ENGINEERING SUPPORT EQUIPMENT						
115	PASSENGER CARRYING VEHICLES	0	6,123			0	6,123
116	GENERAL PURPOSE TRUCKS	0	2,693			0	2,693
117	CONSTRUCTION & MAINTENANCE EQUIP	0	47,301			0	47,301
118	FIRE FIGHTING EQUIPMENT	0	10,352			0	10,352
119	TACTICAL VEHICLES	0	31,475			0	31,475

121	POLLUTION CONTROL EQUIPMENT	0	2,630	0	2,630
122	ITEMS LESS THAN \$5 MILLION	0	47,972	0	47,972
123	PHYSICAL SECURITY VEHICLES	0	1,171	0	1,171
	SUPPLY SUPPORT EQUIPMENT				
124	SUPPLY EQUIPMENT	0	19,693	0	19,693
125	FIRST DESTINATION TRANSPORTATION	0	4,956	0	4,956
126	SPECIAL PURPOSE SUPPLY SYSTEMS	0	668,639	0	668,639
	TRAINING DEVICES				
127	TRAINING SUPPORT EQUIPMENT	0	4,026	0	4,026
128	TRAINING AND EDUCATION EQUIPMENT	0	73,454	0	73,454
	COMMAND SUPPORT EQUIPMENT				
129	COMMAND SUPPORT EQUIPMENT	0	32,390	0	32,390
130	MEDICAL SUPPORT EQUIPMENT	0	974	0	974
132	NAVAL MIP SUPPORT EQUIPMENT	0	5,606	0	5,606
133	OPERATING FORCES SUPPORT EQUIPMENT	0	16,024	0	16,024
134	C4ISR EQUIPMENT	0	6,697	0	6,697
135	ENVIRONMENTAL SUPPORT EQUIPMENT	0	27,503	0	27,503
136	PHYSICAL SECURITY EQUIPMENT	0	138,281	0	138,281
137	ENTERPRISE INFORMATION TECHNOLOGY	0	42,680	0	42,680
	OTHER				
140	NEXT GENERATION ENTERPRISE SERVICE	0	184,443	0	184,443
141	CYBERSPACE ACTIVITIES	0	16,523	0	16,523
9999	CLASSIFIED PROGRAMS				
	CLASSIFIED PROGRAMS				
	SPARES AND REPAIR PARTS				
142	SPARES AND REPAIR PARTS	0	374,195	0	374,195
	TOTAL OTHER PROCUREMENT, NAVY	0	10,948,518	0	10,948,518
	PROCUREMENT, MARINE CORPS				
	TRACKED COMBAT VEHICLES				
1	AAV7A1 PIP	0	87,476	0	87,476
2	AMPHIBIOUS COMBAT VEHICLE FAMILY OF VEHICLES	72	478,874	72	478,874
	TOTAL OTHER PROCUREMENT, NAVY	0	-372,300	0	-372,300
	TOTAL OTHER PROCUREMENT, NAVY				
	TOTAL OTHER PROCUREMENT, NAVY				

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
3	LAV PIP	0	41,988			0	41,988
	ARTILLERY AND OTHER WEAPONS						
4	155MM LIGHTWEIGHT TOWED HOWITZER	0	59			0	59
5	ARTILLERY WEAPONS SYSTEM	0	174,687	36	59,600	36	234,287
	Ground-Based Anti-Ship Missile NSM			[36]	[59,600]		
6	WEAPONS AND COMBAT VEHICLES UNDER \$5 MILLION	0	24,867			0	24,867
	OTHER SUPPORT						
7	MODIFICATION KITS	0	3,067			0	3,067
	GUIDED MISSILES						
8	GROUND BASED AIR DEFENSE	0	18,920			0	18,920
9	ANTI-ARMOR MISSILE-JAVELIN	98	19,888			98	19,888
10	FAMILY ANTI-ARMOR WEAPON SYSTEMS (FOAAMS)	0	21,891			0	21,891
11	ANTI-ARMOR MISSILE-TOW	0	34,985			0	34,985
12	GUIDED MLRS ROCKET (GMLRS)	952	133,689			952	133,689
	COMMAND AND CONTROL SYSTEMS						
13	COMMON AVIATION COMMAND AND CONTROL SYSTEM (C)	0	35,057			0	35,057
	REPAIR AND TEST EQUIPMENT						
14	REPAIR AND TEST EQUIPMENT	0	24,405			0	24,405
	OTHER SUPPORT (TEL)						
15	MODIFICATION KITS	0	1,006			0	1,006
	COMMAND AND CONTROL SYSTEM (NON-TEL)						
16	ITEMS UNDER \$5 MILLION (COMM & ELEC)	0	69,725			0	69,725
17	AIR OPERATIONS C2 SYSTEMS	0	15,611			0	15,611
	RADAR + EQUIPMENT (NON-TEL)						
19	GROUND/AIR TASK ORIENTED RADAR (G/ATOR)	8	284,283			8	284,283
	INTELL/COMM EQUIPMENT (NON-TEL)						

20	GCSS-MC	0	1,587	0	1,587
21	FIRE SUPPORT SYSTEM	0	24,934	0	24,934
22	INTELLIGENCE SUPPORT EQUIPMENT	0	50,728	0	50,728
24	UNMANNED AIR SYSTEMS (INTEL)	0	24,853	0	24,853
25	DCGS-MC	0	38,260	0	38,260
26	UAS PAYLOADS	0	5,489	0	5,489
	OTHER SUPPORT (NON-TEL)				
29	NEXT GENERATION ENTERPRISE NETWORK (NGEN)	0	78,922	0	78,922
30	COMMON COMPUTER RESOURCES	0	35,349	0	35,349
31	COMMAND POST SYSTEMS	0	33,713	0	33,713
32	RADIO SYSTEMS	0	343,250	0	343,250
33	COMM SWITCHING & CONTROL SYSTEMS	0	40,627	0	40,627
34	COMM & ELEC INFRASTRUCTURE SUPPORT	0	43,782	0	43,782
35	CYBERSPACE ACTIVITIES	0	53,896	0	53,896
	CLASSIFIED PROGRAMS				
9999	CLASSIFIED PROGRAMS	0	3,797	0	3,797
	ADMINISTRATIVE VEHICLES				
37	COMMERCIAL CARGO VEHICLES	0	22,460	0	22,460
	TACTICAL VEHICLES				
38	MOTOR TRANSPORT MODIFICATIONS	0	10,739	0	10,739
39	JOINT LIGHT TACTICAL VEHICLE	752	381,675	752	381,675
40	FAMILY OF TACTICAL TRAILERS	0	2,963	0	2,963
	ENGINEER AND OTHER EQUIPMENT				
42	ENVIRONMENTAL CONTROL EQUIP ASSORT	0	385	0	385
43	TACTICAL FUEL SYSTEMS	0	501	0	501
44	POWER EQUIPMENT ASSORTED	0	23,430	0	23,430
45	AMPHIBIOUS SUPPORT EQUIPMENT	0	5,752	0	5,752
46	EOD SYSTEMS	0	20,939	0	20,939
	MATERIALS HANDLING EQUIPMENT				
47	PHYSICAL SECURITY EQUIPMENT	0	23,063	0	23,063
	GENERAL PROPERTY				
48	FIELD MEDICAL EQUIPMENT	0	4,187	0	4,187

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
49	TRAINING DEVICES	0	101,765			0	101,765
50	FAMILY OF CONSTRUCTION EQUIPMENT	0	19,305			0	19,305
51	ULTRA-LIGHT TACTICAL VEHICLE (ULTV)	0	678			0	678
	OTHER SUPPORT						
52	ITEMS LESS THAN \$5 MILLION	0	9,174			0	9,174
	SPARES AND REPAIR PARTS						
53	SPARES AND REPAIR PARTS	0	27,295			0	27,295
	TOTAL PROCUREMENT, MARINE CORPS	1,882	2,903,976	36	59,600	1,918	2,963,576
	AIRCRAFT PROCUREMENT, AIR FORCE						
	TACTICAL FORCES						
1	F-35	48	4,567,018	12	976,667	60	5,543,685
	Additional 12 F-35As			[12]	[976,667]		
2	F-35	0	610,800			0	610,800
4	F-15EX	12	1,269,847			12	1,269,847
5	F-15EX	0	133,500			0	133,500
	TACTICAL AIRLIFT						
7	KC-46A MDAP	15	2,850,151			15	2,850,151
	OTHER AIRLIFT						
8	C-130J	0	37,131			0	37,131
10	MC-130J	4	362,807			4	362,807
11	MC-130J	0	39,987			0	39,987
	HELICOPTERS						
12	UH-1H REPLACEMENT	8	194,016			8	194,016
13	COMBAT RESCUE HELICOPTER	16	973,473			16	973,473
	MISSION SUPPORT AIRCRAFT						

15	CIVIL AIR PATROL A/C	0	2,811	0	2,811
	OTHER AIRCRAFT				
16	TARGET DRONES	38	133,273	38	133,273
18	COMPASS CALL	0	161,117	0	161,117
20	MQ-9	0	29,409	0	79,409
	Program increase	[0]		50,000	
				[50,000]	
	STRATEGIC AIRCRAFT				
22	B-1	0	3,853	0	0
	USAF-requested transfer to RDAF Line 174	[0]		-3,853	
				[-3,853]	
23	B-2A	0	31,476	0	31,476
24	B-1B	0	21,808	0	21,315
	USAF-requested transfer to RDAF Line 174	[0]		-493	
				[-493]	
25	B-52	0	53,949	0	53,949
26	LARGE AIRCRAFT INFRARED COUNTERMEASURES	0	9,999	0	9,999
	TACTICAL AIRCRAFT				
27	A-10	0	135,793	0	135,793
28	E-11 BACN/HAG	0	33,645	0	33,645
29	F-15	0	349,304	0	349,304
30	F-16	0	615,760	0	640,760
	Additional radars	[0]		25,000	
				[25,000]	
32	F-22A	0	387,905	0	387,905
33	F-35 MODIFICATIONS	0	322,185	0	322,185
34	F-15 EPAW	6	31,995	6	31,995
35	INCREMENT 3.2B	0	5,889	0	5,889
36	KC-46A MDAP	0	24,085	0	24,085
	AIRLIFT AIRCRAFT				
37	C-5	0	62,108	0	62,108
38	C-17A	0	66,798	0	66,798
40	C-32A	0	2,947	0	2,947
41	C-37A	0	12,985	0	12,985
	TRAINER AIRCRAFT				
42	GLIDER MODS	0	977	0	977

SEC. 4101. PROCUREMENT (In Thousands of Dollars)									
Line	Item	FY 2021 Request		Senate Change		Senate Authorized		Qty	Cost
		Qty	Cost	Qty	Cost	Qty	Cost		
43	T-6	0	26,829			0	26,829		
44	T-1	0	4,465			0	4,465		
45	T-38	0	36,806	0	7,700	0	44,506		
	T-38 ejection seats			[0]	[7,700]				
	OTHER AIRCRAFT								
46	U-2 MODS	0	110,618			0	110,618		
47	KC-10A (ATCA)	0	117			0	117		
49	VC-25A MOD	0	1,983			0	1,983		
50	C-40	0	9,252			0	9,252		
51	C-130	0	5,871			0	5,871		
52	C-130J MODS	0	140,032			0	140,032		
53	C-135	0	88,250			0	88,250		
55	COMPASS CALL	0	193,389			0	193,389		
57	RC-135	0	191,332			0	191,332		
58	E-3	0	172,141			0	172,141		
59	E-4	0	58,803			0	58,803		
	Funds rephased to future fiscal years								
60	E-8	0	11,037			0	11,037		
	Secure information transmission capability								
61	AIRBORNE WARNING AND CNTRL SYS (AWACS) 40/45	0	53,343			0	53,343		
62	FAMILY OF BEYOND LINE-OF-SIGHT TERMINALS	0	1,573			0	1,573		
63	H-1	0	4,410			0	4,410		
64	H-60	0	44,538			0	44,538		
65	RQ-4 MODS	0	40,468			0	40,468		
66	HC/MC-130 MODIFICATIONS	0	20,780			0	20,780		
67	OTHER AIRCRAFT	0	100,774			0	100,774		

68	MQ-9 MODS	0	188,387	0	188,387	0	188,387
70	CV-22 MODS	0	122,306	0	122,306	0	127,306
	CV-22 ABSS			0	5,000		
				[0]	[5,000]		
	AIRCRAFT SPARES AND REPAIR PARTS						
71	INITIAL SPARES/REPAIR PARTS	0	926,683	0	30,000	0	956,683
	F-35A initial spares increase			[0]	[30,000]		
	COMMON SUPPORT EQUIPMENT						
73	AIRCRAFT REPLACEMENT SUPPORT EQUIP	0	132,719	0		0	132,719
	POST PRODUCTION SUPPORT						
74	B-2A	0	1,683	0		0	1,683
75	B-2B	0	46,734	0		0	46,734
76	B-52	0	1,034	0		0	1,034
79	E-11 BACN/HAG	0	63,419	0		0	63,419
80	F-15	0	2,632	0		0	2,632
81	F-16	0	14,163	0		0	14,163
83	OTHER AIRCRAFT	0	4,595	0		0	4,595
84	RQ-4 POST PRODUCTION CHARGES	0	32,585	0		0	32,585
	INDUSTRIAL PREPAREDNESS						
85	INDUSTRIAL RESPONSIVENESS	0	18,215	0		0	18,215
	WAR CONSUMABLES						
86	WAR CONSUMABLES	0	36,046	0		0	36,046
	OTHER PRODUCTION CHARGES						
87	OTHER PRODUCTION CHARGES	0	1,439,640	0	75,000	0	1,514,640
	Classified increase			[0]	[75,000]		
	CLASSIFIED PROGRAMS						
9999	CLASSIFIED PROGRAMS	0	21,692	0		0	21,692
	TOTAL AIRCRAFT PROCUREMENT, AIR FORCE	147	17,908,145	12	1,160,321	159	19,068,466
	MISSILE PROCUREMENT, AIR FORCE						
	MISSILE REPLACEMENT EQUIPMENT—BALLISTIC						
1	MISSILE REPLACEMENT EQ-BALLISTIC	0	75,012	0		0	75,012
	TACTICAL						

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
2	REPLAC EQUIP & WAR CONSUMABLES	0	4,495			0	4,495
4	JOINT AIR-SURFACE STANDOFF MISSILE	376	475,949	-60	-75,000	316	400,949
	Realignment to support NDS requirements in Pacific			[-60]	[-75,000]		
5	LRASMO	5	19,800	20	75,000	25	94,800
	Additional Air Force LRASM missiles			[20]	[75,000]		
6	SIDEWINDER (AIM-9X)	331	164,769			331	164,769
7	AMRAAM	414	453,223			414	453,223
8	PREDATOR HELLFIRE MISSILE	548	40,129			548	40,129
9	SMALL DIAMETER BOMB	1,179	45,475			1,179	45,475
10	SMALL DIAMETER BOMB II	1,133	273,272			1,133	273,272
	INDUSTRIAL FACILITIES						
11	INDUSTRI'L PREPAREDNS/POL PREVENTION	0	814			0	814
	CLASS IV						
13	ICBM FUZE MOD	20	3,458			20	3,458
14	ICBM FUZE MOD AP	0	43,450			0	43,450
15	MM III MODIFICATIONS	0	85,310			0	85,310
16	AGM-65D MAVERICK	0	298			0	298
17	AIR LAUNCH CRUISE MISSILE (ALCM)	0	52,924			0	52,924
	MISSILE SPARES AND REPAIR PARTS						
18	MSL SPRS/REPAIR PARTS (INITIAL)	0	9,402			0	9,402
19	MSL SPRS/REPAIR PARTS (REPLEN)	0	84,671			0	84,671
	SPECIAL PROGRAMS						
25	SPECIAL UPDATE PROGRAMS	0	23,501			0	23,501
	CLASSIFIED PROGRAMS						
9999	CLASSIFIED PROGRAMS	0	540,465			0	540,465
	TOTAL MISSILE PROCUREMENT, AIR FORCE	4,006	2,396,417	-40	0	3,966	2,396,417

PROCUREMENT, SPACE FORCE					
SPACE PROCUREMENT, SF					
1	ADVANCED EHF	0	14,823	0	14,823
2	AF SATELLITE COMM SYSTEM	0	48,326	0	48,326
3	COUNTERSPACE SYSTEMS	0	65,540	0	65,540
4	FAMILY OF BEYOND LINE-OF-SIGHT TERMINALS	0	66,190	0	66,190
5	GENERAL INFORMATION TECH—SPACE	0	3,299	0	3,299
6	GPSIII FOLLOW ON	2	627,796	2	627,796
7	GPS III SPACE SEGMENT	0	20,122	0	20,122
8	GLOBAL POSITIONING (SPACE)	0	2,256	0	2,256
9	SPACEBORNE EQUIP (COMSEC)	0	35,495	0	35,495
10	MILSATCOM	0	15,795	0	15,795
11	SBR HIGH (SPACE)	0	160,891	0	160,891
12	SPECIAL SPACE ACTIVITIES	0	78,387	0	78,387
13	NATIONAL SECURITY SPACE LAUNCH	3	1,043,171	3	1,043,171
14	NUDET DETECTION SYSTEM	0	6,638	0	6,638
15	ROCKET SYSTEMS LAUNCH PROGRAM	0	47,741	0	47,741
16	SPACE FENCE	0	11,279	0	11,279
17	SPACE MODS	0	96,551	0	109,051
	Cobra Dane service life extension				12,500
18	SPACELIFT RANGE SYSTEM SPACE	0	100,492	0	[12,500] 100,492
SPARES					
19	SPARES AND REPAIR PARTS	0	1,272	0	1,272
TOTAL PROCUREMENT, SPACE FORCE		5	2,446,064	5	2,458,564
PROCUREMENT OF AMMUNITION, AIR FORCE					
ROCKETS					
1	ROCKETS	0	14,962	0	14,962
CARTRIDGES					
2	CARTRIDGES	0	123,365	0	123,365
BOMBS					

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
3	PRACTICE BOMBS	0	59,725			0	59,725
6	JOINT DIRECT ATTACK MUNITION	10,000	206,989			10,000	206,989
7	B61	0	35,634			0	35,634
	OTHER ITEMS						
9	CAD/PAD	0	47,830			0	47,830
10	EXPLOSIVE ORDNANCE DISPOSAL (EOD)	0	6,232			0	6,232
11	SPARES AND REPAIR PARTS	0	542			0	542
12	MODIFICATIONS	0	1,310			0	1,310
13	ITEMS LESS THAN \$5,000,000	0	4,753			0	4,753
	FLARES						
15	FLARES	0	40,088			0	40,088
	FUZES						
16	FUZES	0	40,983			0	40,983
	SMALL ARMS						
17	SMALL ARMS	0	13,925			0	13,925
	TOTAL PROCUREMENT OF AMMUNITION, AIR FORCE	10,000	596,338	0	0	10,000	596,338
	OTHER PROCUREMENT, AIR FORCE						
	PASSENGER CARRYING VEHICLES						
1	PASSENGER CARRYING VEHICLES	0	9,016			0	9,016
	CARGO AND UTILITY VEHICLES						
2	MEDIUM TACTICAL VEHICLE	0	15,058			0	15,058
3	CAP VEHICLES	0	1,059			0	1,059
4	CARGO AND UTILITY VEHICLES	0	38,920			0	38,920
	SPECIAL PURPOSE VEHICLES						
5	JOINT LIGHT TACTICAL VEHICLE	0	30,544			0	30,544

6	SECURITY AND TACTICAL VEHICLES	0	319	0	319	0	319
7	SPECIAL PURPOSE VEHICLES	0	43,157	0	43,157	0	43,157
	FIRE FIGHTING EQUIPMENT						
8	FIRE FIGHTING/CRASH RESCUE VEHICLES	0	8,621	0	8,621	0	8,621
9	MATERIALS HANDLING EQUIPMENT						
	MATERIALS HANDLING VEHICLES	0	12,897	0	12,897	0	12,897
	BASE MAINTENANCE SUPPORT						
10	RUNWAY SNOW REMOV AND CLEANING EQU	0	3,577	0	3,577	0	3,577
11	BASE MAINTENANCE SUPPORT VEHICLES	0	43,095	0	43,095	0	43,095
	COMM SECURITY EQUIPMENT(COMSEC)						
13	COMSEC EQUIPMENT	0	54,864	0	54,864	0	54,864
	INTELLIGENCE PROGRAMS						
14	INTERNATIONAL INTEL TECH & ARCHITECTURES	0	9,283	0	9,283	0	9,283
	PDI: Mission Partner Environment BICES-X local upgrades			0	1,500	0	1,500
				[0]	[1,500]		
15	INTELLIGENCE TRAINING EQUIPMENT	0	6,849	0	6,849	0	6,849
16	INTELLIGENCE COMM EQUIPMENT	0	33,471	0	33,471	0	33,471
	ELECTRONICS PROGRAMS						
17	AIR TRAFFIC CONTROL & LANDING SYS	0	29,409	0	29,409	0	29,409
18	BATTLE CONTROL SYSTEM—FIXED	0	7,909	0	7,909	0	7,909
19	THEATER AIR CONTROL SYS IMPROVEMEN	0	32,632	0	32,632	0	32,632
20	WEATHER OBSERVATION FORECAST	0	33,021	0	33,021	0	33,021
21	STRATEGIC COMMAND AND CONTROL	0	31,353	0	31,353	0	31,353
22	CHEYENNE MOUNTAIN COMPLEX	0	10,314	0	10,314	0	10,314
23	MISSION PLANNING SYSTEMS	0	15,132	0	15,132	0	15,132
25	INTEGRATED STRAT PLAN & ANALY NETWORK (SPAN)	0	9,806	0	9,806	0	9,806
	SPIL COMM-ELECTRONICS PROJECTS						
26	GENERAL INFORMATION TECHNOLOGY	0	39,887	0	39,887	0	39,887
27	AF GLOBAL COMMAND & CONTROL SYS	0	2,602	0	2,602	0	2,602
29	MOBILITY COMMAND AND CONTROL	0	10,541	0	10,541	0	10,541
30	AIR FORCE PHYSICAL SECURITY SYSTEM	0	96,277	0	96,277	0	96,277
31	COMBAT TRAINING RANGES	0	195,185	0	195,185	0	195,185
32	MINIMUM ESSENTIAL EMERGENCY COMM N	0	29,664	0	29,664	0	29,664

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
33	WIDE AREA SURVEILLANCE (WAS)	0	59,633			0	59,633
34	C3 COUNTERMEASURES	0	105,584			0	105,584
36	DEFENSE ENTERPRISE ACCOUNTING & MGT SYS	0	899			0	899
38	THEATER BATTLE MGT C2 SYSTEM	0	3,392			0	3,392
39	AIR & SPACE OPERATIONS CENTER (AOC)	0	24,983			0	24,983
	AIR FORCE COMMUNICATIONS						
41	BASE INFORMATION TRANSPT INFRAST (BITI) WIRED	0	19,147			0	19,147
42	AFNET	0	84,515			0	84,515
43	JOINT COMMUNICATIONS SUPPORT ELEMENT (JCSE)	0	6,185			0	6,185
44	USCENTCOM	0	19,649			0	19,649
45	USSTRATCOM	0	4,337			0	4,337
	ORGANIZATION AND BASE						
46	TACTICAL C-E EQUIPMENT	0	137,033			0	137,033
47	RADIO EQUIPMENT	0	15,264			0	15,264
49	BASE COMM INFRASTRUCTURE	0	132,281	0	14,000	0	146,281
	PDI: Mission Partner Environment PACNET			[0]	[14,000]		
	MODIFICATIONS						
50	COMM ELECT MODS	0	21,471			0	21,471
	PERSONAL SAFETY & RESCUE EQUIP						
51	PERSONAL SAFETY AND RESCUE EQUIPMENT	0	49,578			0	49,578
	DEPOT PLANT+MTRLS HANDLING EQ						
52	POWER CONDITIONING EQUIPMENT	0	11,454			0	11,454
53	MECHANIZED MATERIAL HANDLING EQUIP	0	12,110			0	12,110
	BASE SUPPORT EQUIPMENT						
54	BASE PROCURED EQUIPMENT	0	21,142			0	21,142
55	ENGINEERING AND EOD EQUIPMENT	0	7,700			0	7,700

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
20	JOINT SERVICE PROVIDER	0	157,538			0	157,538
21	FOURTH ESTATE NETWORK OPTIMIZATION (4ENO)	0	42,084			0	42,084
	MAJOR EQUIPMENT, DLA						
23	MAJOR EQUIPMENT	0	417,459			0	417,459
	MAJOR EQUIPMENT, DDMACT						
24	MAJOR EQUIPMENT	0	7,993			0	7,993
	MAJOR EQUIPMENT, DODEA						
25	AUTOMATION/EDUCATIONAL SUPPORT & LOGISTICS	0	1,319			0	1,319
	MAJOR EQUIPMENT, DPAA						
26	MAJOR EQUIPMENT, DPAA	10	500			10	500
	MAJOR EQUIPMENT, DEFENSE SECURITY COOPERATION AGENCY						
27	REGIONAL CENTER PROCUREMENT	0	1,598			0	1,598
	MAJOR EQUIPMENT, DEFENSE THREAT REDUCTION AGENCY						
28	VEHICLES	0	215			0	215
29	OTHER MAJOR EQUIPMENT	0	9,994			0	9,994
	MAJOR EQUIPMENT, MISSILE DEFENSE AGENCY						
31	THAAD	41	495,396	0	106,400	41	601,796
	8th THAAD battery components			[0]	[76,300]		
	HEMTT life-of-type buy			[0]	[30,100]		
34	AEGIS BMD	34	356,195			34	356,195
35	AEGIS BMD AP	0	44,901			0	44,901
36	BMDs AM/TPY-2 RADARS	0	0	0	243,300	0	243,300
	8th THAAD battery radar equipment			[0]	[243,300]		
37	SM-3 IAS	6	218,322	5	128,000	11	346,322
	Additional SM-3 Block IIA interceptors			[5]	[128,000]		
38	ARROW 3 UPPER TIER SYSTEMS	1	77,000			1	77,000

39	SHORT RANGE BALLISTIC MISSILE DEFENSE (SRBMD)	1	50,000	1	50,000	
40	AEGIS ASHORE PHASE III	0	39,114	0	39,114	
41	IRON DOME	1	73,000	1	73,000	
42	AEGIS BMD HARDWARE AND SOFTWARE	49	104,241	49	104,241	
	MAJOR EQUIPMENT, NSA					
48	INFORMATION SYSTEMS SECURITY PROGRAM (ISSP)	0	101	0	101	
	MAJOR EQUIPMENT, OSD					
49	MAJOR EQUIPMENT, OSD	0	3,099	0	3,099	
	MAJOR EQUIPMENT, TJS					
50	MAJOR EQUIPMENT, TJS	0	8,329	0	8,329	
51	MAJOR EQUIPMENT—TJS CYBER	0	1,247	0	1,247	
	MAJOR EQUIPMENT, WHS					
53	MAJOR EQUIPMENT, WHS	0	515	0	515	
	CLASSIFIED PROGRAMS					
9999	CLASSIFIED PROGRAMS	0	554,264	0	554,264	
	AVIATION PROGRAMS					
55	ARMED OVERWATCH/TARGETING	5	101,000	5	0	-101,000
	Lack of validated requirement and analysis					[-101,000]
56	MANNED ISR	0	0	0	40,100	40,100
	SOCOM DHC-8 combat loss replacement					[40,100]
59	ROTARY WING UPGRADES AND SUSTAINMENT	0	211,041	0	211,041	
60	UNMANNED ISR	0	25,488	0	25,488	
61	NON-STANDARD AVIATION	0	61,874	0	61,874	
62	U-28	0	3,825	0	24,700	24,700
	SOCOM aircraft maintenance support combat loss replacement					[24,700]
63	MH-47 CHINOOK	0	135,482	0	135,482	
64	CV-22 MODIFICATION	0	14,829	0	14,829	
65	MQ-9 UNMANNED AERIAL VEHICLE	0	6,746	0	6,746	
66	PRECISION STRIKE PACKAGE	0	243,111	0	243,111	
67	AC/MC-130J	0	163,914	0	163,914	
68	C-130 MODIFICATIONS	0	20,414	0	20,414	
	SHIPBUILDING					

SEC. 4101. PROCUREMENT
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
69	UNDERWATER SYSTEMS	0	20,556			0	20,556
	AMMUNITION PROGRAMS						
70	ORDNANCE ITEMS <\$5M	0	186,197			0	186,197
	OTHER PROCUREMENT PROGRAMS						
71	INTELLIGENCE SYSTEMS	0	94,982	0	13,400	0	108,382
	Transfer from MMP-Light to man-pack			[0]	[13,400]		
72	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	0	11,645			0	11,645
73	OTHER ITEMS <\$5M	0	96,333			0	96,333
74	COMBATANT CRAFT SYSTEMS	0	17,278			0	17,278
75	SPECIAL PROGRAMS	0	78,865			0	78,865
76	TACTICAL VEHICLES	0	30,158			0	30,158
77	WARRIOR SYSTEMS <\$5M	0	260,733	0	-12,200	0	248,533
	MMP-Light unexecutable, transfer to man-pack			[0]	[-12,200]		
78	COMBAT MISSION REQUIREMENTS	0	19,848			0	19,848
79	GLOBAL VIDEO SURVEILLANCE ACTIVITIES	0	2,401			0	2,401
80	OPERATIONAL ENHANCEMENTS INTELLIGENCE	0	13,861			0	13,861
81	OPERATIONAL ENHANCEMENTS	0	247,038	0	12,500	0	259,538
	SOCOM Syria exfiltration reconstitution			[0]	[12,500]		
	CBDP						
82	CHEMICAL BIOLOGICAL SITUATIONAL AWARENESS	0	147,150			0	147,150
83	CB PROTECTION & HAZARD MITIGATION	0	149,944			0	149,944
	TOTAL PROCUREMENT, DEFENSE-WIDE	148	5,324,487	5	444,100	153	5,768,587
	TOTAL PROCUREMENT	34,422	130,684,160	78	3,330,678	34,500	134,014,838

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS.

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
AIRCRAFT PROCUREMENT, ARMY							
ROTARY							
9	AH-64 APACHE BLOCK 11B NEW BUILD	2	69,154	0		2	69,154
14	CH-47 HELICOPTER	1	50,472	0		1	50,472
MODIFICATION OF AIRCRAFT							
17	MQ-1 PAYLOAD (MIP)	0	5,968	0		0	5,968
20	MULTI SENSOR ABN RECON (MIP)	0	122,520	0		0	122,520
25	EMARSS SEMA MODS (MIP)	0	26,460	0		0	26,460
30	DEGRADED VISUAL ENVIRONMENT	0	1,916	0		0	1,916
GROUND SUPPORT AVIONICS							
37	CMWS	0	149,162	0		0	149,162
38	COMMON INFRARED COUNTERMEASURES (CIRCUM)	0	32,400	0		0	32,400
OTHER SUPPORT							
41	AIRCREW INTEGRATED SYSTEMS	0	3,028	0		0	3,028
	TOTAL AIRCRAFT PROCUREMENT, ARMY	3	461,080	0	0	3	461,080
MISSILE PROCUREMENT, ARMY							
SURFACE-TO-AIR MISSILE SYSTEM							
2	M-SHORAD—PROCUREMENT	22	158,300	0		22	158,300
3	MSE MISSILE	46	176,585	-46	-176,585	0	0
	Inappropriate for EDI, transfer to base			[-46]	[-176,585]		
AIR-TO-SURFACE MISSILE SYSTEM							
6	HELLFIRE SYS SUMMARY	3,090	236,265	0		3,090	236,265
ANTI-TANK/ASSAULT MISSILE SYS							

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
11	GUIDED MLRS ROCKET (GMLRS)	904	127,015	0		904	127,015
15	LETHAL MINIATURE AERIAL MISSILE SYSTEM (LMAMS)	1,130	84,993	0		1,130	84,993
	MODIFICATIONS						
17	ATACMS MODS	0	78,434	0		0	78,434
22	MLRS MODS	0	20,000	0		0	20,000
	TOTAL MISSILE PROCUREMENT, ARMY	5,192	881,592	-46	-176,585	5,146	705,007
	PROCUREMENT OF W&TCV, ARMY						
	WEAPONS & OTHER COMBAT VEHICLES						
16	MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON S	0	4,765	0		0	4,765
18	MORTAR SYSTEMS	0	10,460	0		0	10,460
	TOTAL PROCUREMENT OF W&TCV, ARMY	0	15,225	0	0	0	15,225
	PROCUREMENT OF AMMUNITION, ARMY						
	SMALL/MEDIUM CAL AMMUNITION						
1	CTG, 5.56MM, ALL TYPES	0	567	0		0	567
2	CTG, 7.62MM, ALL TYPES	0	40	0		0	40
4	CTG, HANDGUN, ALL TYPES	0	17	0		0	17
5	CTG, .50 CAL, ALL TYPES	0	189	0		0	189
8	CTG, 30MM, ALL TYPES	0	24,900	0		0	24,900
	ARTILLERY AMMUNITION						
16	PROJ 155MM EXTENDED RANGE M982	275	29,213	0		275	29,213
17	ARTILLERY PROPELLANTS, FUZES AND PRIMERS, ALL	0	21,675	0		0	21,675
	ROCKETS						
20	SHOULDER LAUNCHED MUNITIONS, ALL TYPES	0	176	0		0	176
21	ROCKET, HYDRA 70, ALL TYPES	0	33,880	0		0	33,880

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
	ELECT EQUIP—TACTICAL SURV. (TAC SURV)						
83	SENTINEL MODS	0	33,496	0	0	0	33,496
84	NIGHT VISION DEVICES	0	643	0	0	0	643
87	RADIATION MONITORING SYSTEMS	0	11	0	0	0	11
88	INDIRECT FIRE PROTECTION FAMILY OF SYSTEMS	0	37,000	0	0	0	37,000
94	COMPUTER BALLISTICS: LHMCB XM32	0	280	0	0	0	280
95	MORTAR FIRE CONTROL SYSTEM	0	13,672	0	0	0	13,672
	ELECT EQUIP—TACTICAL C2 SYSTEMS						
100	AIR & MSL DEFENSE PLANNING & CONTROL SYS	0	15,143	0	0	0	15,143
	ELECT EQUIP—AUTOMATION						
109	ARMY TRAINING MODERNIZATION	0	4,688	0	0	0	4,688
110	AUTOMATED DATA PROCESSING EQUIP	0	16,552	0	0	0	16,552
	CHEMICAL DEFENSIVE EQUIPMENT						
121	FAMILY OF NON-LETHAL EQUIPMENT (FNLE)	0	25,480	0	0	0	25,480
122	BASE DEFENSE SYSTEMS (BDS)	0	98,960	0	0	0	98,960
123	CBRN DEFENSE	0	18,887	0	0	0	18,887
	BRIDGING EQUIPMENT						
125	TACTICAL BRIDGING	0	50,400	0	0	0	50,400
	ENGINEER (NON-CONSTRUCTION) EQUIPMENT						
137	RENDER SAFE SETS KITS OUTFITS	0	84,000	0	0	0	84,000
	COMBAT SERVICE SUPPORT EQUIPMENT						
140	HEATERS AND ECU'S	0	370	0	0	0	370
142	PERSONNEL RECOVERY SUPPORT SYSTEM (PRSS)	0	3,721	0	0	0	3,721
145	FORCE PROVIDER	0	56,400	0	0	0	56,400
	ED: Improvements to living quarters for rotational forces in Europe			[0]	73,400	0	73,400
146	FIELD FEEDING EQUIPMENT	0	2,279	0	[73,400]	0	2,279

147	CARGO AERIAL DEL & PERSONNEL PARACHUTE SYSTEM	0	2,040	0	0	2,040	0	0	0	2,040
	PETROLEUM EQUIPMENT									
150	DISTRIBUTION SYSTEMS, PETROLEUM & WATER	0	4,374	0	0	4,374	0	0	0	4,374
	MEDICAL EQUIPMENT									
151	COMBAT SUPPORT MEDICAL	0	6,390	0	0	6,390	0	0	0	6,390
	MAINTENANCE EQUIPMENT									
152	MOBILE MAINTENANCE EQUIPMENT SYSTEMS	0	7,769	0	0	7,769	0	0	0	7,769
153	ITEMS LESS THAN \$5.0M (MAINT EQ)	0	184	0	0	184	0	0	0	184
	CONSTRUCTION EQUIPMENT									
156	LOADERS	0	3,190	0	0	3,190	0	0	0	3,190
157	HYDRAULIC EXCAVATOR	0	7,600	0	0	7,600	0	0	0	7,600
158	TRACTOR, FULL TRACKED	0	7,450	0	0	7,450	0	0	0	7,450
160	HIGH MOBILITY ENGINEER EXCAVATOR (HMEE)	0	3,703	0	0	3,703	0	0	0	3,703
162	CONST EQUIP ESP	0	657	0	0	657	0	0	0	657
	GENERATORS									
167	GENERATORS AND ASSOCIATED EQUIP	0	106	0	0	106	0	0	0	106
	MATERIAL HANDLING EQUIPMENT									
169	FAMILY OF FORKLIFTS	0	1,885	0	0	1,885	0	0	0	1,885
	OTHER SUPPORT EQUIPMENT									
180	RAPID EQUIPPING SOLDIER SUPPORT EQUIPMENT	0	8,500	0	0	8,500	0	0	0	8,500
181	PHYSICAL SECURITY SYSTEMS (OPA3)	0	3,248	0	0	3,248	0	0	0	3,248
185	BUILDING, PRE-FAB, RELOCATABLE	0	31,845	0	0	31,845	0	0	0	31,845
	TOTAL OTHER PROCUREMENT, ARMY	0	924,077	0	0	924,077	0	79,400	0	1,003,477
	AIRCRAFT PROCUREMENT, NAVY									
	OTHER AIRCRAFT									
24	STUASLO UAV	0	7,921	0	0	7,921	0	0	0	7,921
	MODIFICATION OF AIRCRAFT									
53	COMMON ECM EQUIPMENT	0	3,474	0	0	3,474	0	0	0	3,474
55	COMMON DEFENSIVE WEAPON SYSTEM	0	3,339	0	0	3,339	0	0	0	3,339
64	QRC	0	18,507	0	0	18,507	0	0	0	18,507
	TOTAL AIRCRAFT PROCUREMENT, NAVY	0	33,241	0	0	33,241	0	0	0	33,241

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
WEAPONS PROCUREMENT, NAVY							
TACTICAL MISSILES							
12	HELLFIRE	115	5,572	0	0	115	5,572
	TOTAL WEAPONS PROCUREMENT, NAVY	115	5,572	0	0	115	5,572
PROCUREMENT OF AMMO, NAVY & MC							
NAVY AMMUNITION							
1	GENERAL PURPOSE BOMBS	0	8,068	0	0	0	8,068
2	JDAM	673	15,529	0	0	673	15,529
3	AIRBORNE ROCKETS, ALL TYPES	0	23,000	0	0	0	23,000
4	MACHINE GUN AMMUNITION	0	22,600	0	0	0	22,600
6	CARTRIDGES & CART ACTUATED DEVICES	0	3,927	0	0	0	3,927
7	AIR EXPENDABLE COUNTERMEASURES	0	15,978	0	0	0	15,978
8	JATOS	0	2,100	0	0	0	2,100
11	OTHER SHIP GUN AMMUNITION	0	2,611	0	0	0	2,611
12	SMALL ARMS & LANDING PARTY AMMO	0	1,624	0	0	0	1,624
13	PYROTECHNIC AND DEMOLITION	0	505	0	0	0	505
	TOTAL PROCUREMENT OF AMMO, NAVY & MC	673	95,942	0	0	673	95,942
OTHER PROCUREMENT, NAVY							
SMALL BOATS							
28	STANDARD BOATS	0	19,104	0	0	0	19,104
OTHER SHIP SUPPORT							
35	SMALL & MEDIUM UUV	0	2,946	0	0	0	2,946
ASW ELECTRONIC EQUIPMENT							

43	FIXED SURVEILLANCE SYSTEM	0	213,000	0	0	213,000
	SONOBUOYS					
92	SONOBUOYS—ALL TYPES	0	26,196	0	0	26,196
	AIRCRAFT SUPPORT EQUIPMENT					
95	AIRCRAFT SUPPORT EQUIPMENT	0	60,217	0	0	60,217
	OTHER ORDNANCE SUPPORT EQUIPMENT					
110	EXPLOSIVE ORDNANCE DISPOSAL EQUIP	0	2,124	0	0	2,124
	CIVIL ENGINEERING SUPPORT EQUIPMENT					
115	PASSENGER CARRYING VEHICLES	0	177	0	0	177
116	GENERAL PURPOSE TRUCKS	0	416	0	0	416
118	FIRE FIGHTING EQUIPMENT	0	801	0	0	801
	SUPPLY SUPPORT EQUIPMENT					
125	FIRST DESTINATION TRANSPORTATION	0	520	0	0	520
	TRAINING DEVICES					
128	TRAINING AND EDUCATION EQUIPMENT	0	11,500	0	0	11,500
	COMMAND SUPPORT EQUIPMENT					
130	MEDICAL SUPPORT EQUIPMENT	0	3,525	0	0	3,525
136	PHYSICAL SECURITY EQUIPMENT	0	3,000	0	0	3,000
	TOTAL OTHER PROCUREMENT, NAVY	0	343,526	0	0	343,526
	PROCUREMENT, MARINE CORPS					
	GUIDED MISSILES					
12	GUIDED MLRS ROCKET (GMLRS)	120	17,456	0	120	17,456
	OTHER SUPPORT (TEL)					
15	MODIFICATION KITS	0	4,200	0	0	4,200
	INTELL/COMM EQUIPMENT (NON-TEL)					
22	INTELLIGENCE SUPPORT EQUIPMENT	0	10,124	0	0	10,124
	TACTICAL VEHICLES					
38	MOTOR TRANSPORT MODIFICATIONS	0	16,183	0	0	16,183
	TOTAL PROCUREMENT, MARINE CORPS	120	47,963	0	120	47,963
	AIRCRAFT PROCUREMENT, AIR FORCE					

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
	HELICOPTERS						
13	COMBAT RESCUE HELICOPTER	3	174,000	0		3	174,000
	OTHER AIRCRAFT						
20	MQ-9	0	142,490	0		0	142,490
21	RQ-20B PUMA	0	13,770	0		0	13,770
	STRATEGIC AIRCRAFT						
26	LARGE AIRCRAFT INFRARED COUNTERMEASURES	0	57,521	0		0	57,521
	OTHER AIRCRAFT						
46	U-2 MODS	0	9,600	0		0	9,600
55	COMPASS CALL	0	12,800	0		0	12,800
66	HC/MC-130 MODIFICATIONS	0	58,020	0		0	58,020
69	MQ-9 UAS PAYLOADS	0	46,100	0		0	46,100
70	CV-22 MODS	0	6,290	0		0	6,290
	AIRCRAFT SPARES AND REPAIR PARTS						
71	INITIAL SPARES/REPAIR PARTS	0	10,700	0		0	10,700
72	MQ-9	0	12,250	0		0	12,250
	COMMON SUPPORT EQUIPMENT						
73	AIRCRAFT REPLACEMENT SUPPORT EQUIP	0	25,614	0		0	25,614
	TOTAL AIRCRAFT PROCUREMENT, AIR FORCE	3	569,155	0	0	3	569,155
	MISSILE PROCUREMENT, AIR FORCE						
	TACTICAL						
4	JOINT AIR-SURFACE STANDOFF MISSILE	24	30,000	0		24	30,000
8	PREDATOR HELLFIRE MISSILE	3,969	143,420	0		3,969	143,420
9	SMALL DIAMETER BOMB	1,283	50,352	0		1,283	50,352
	TOTAL MISSILE PROCUREMENT, AIR FORCE	5,276	223,772	0	0	5,276	223,772

PROCUREMENT OF AMMUNITION, AIR FORCE					
	ROCKETS				
1	ROCKETS	0	19,489	0	19,489
	CARTRIDGES				
2	CARTRIDGES	0	40,434	0	40,434
	BOMBS				
4	GENERAL PURPOSE BOMBS	0	369,566	0	369,566
6	JOINT DIRECT ATTACK MUNITION	6,800	237,723	0	237,723
	FLARES				
15	FLARES	0	21,171	0	21,171
	FUZES				
16	FUZES	0	107,855	0	107,855
	SMALL ARMS				
17	SMALL ARMS	0	6,217	0	6,217
	TOTAL PROCUREMENT OF AMMUNITION, AIR FORCE	6,800	802,455	0	802,455
OTHER PROCUREMENT, AIR FORCE					
	PASSENGER CARRYING VEHICLES				
1	PASSENGER CARRYING VEHICLES	0	1,302	0	1,302
	CARGO AND UTILITY VEHICLES				
2	MEDIUM TACTICAL VEHICLE	0	3,400	0	3,400
4	CARGO AND UTILITY VEHICLES	0	12,475	0	12,475
	SPECIAL PURPOSE VEHICLES				
5	JOINT LIGHT TACTICAL VEHICLE	0	26,150	0	26,150
7	SPECIAL PURPOSE VEHICLES	0	51,254	0	51,254
	FIRE FIGHTING EQUIPMENT				
8	FIRE FIGHTING/CRASH RESCUE VEHICLES	0	24,903	0	24,903
	MATERIALS HANDLING EQUIPMENT				
9	MATERIALS HANDLING VEHICLES	0	14,167	0	14,167
	BASE MAINTENANCE SUPPORT				
10	RUNWAY SNOW REMOV AND CLEANING EQU	0	5,759	0	5,759

SEC. 4102. PROCUREMENT FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request		Senate Change		Senate Authorized	
		Qty	Cost	Qty	Cost	Qty	Cost
11	BASE MAINTENANCE SUPPORT VEHICLES	0	20,653	0	0	0	20,653
	SPCL COMM-ELECTRONICS PROJECTS						
26	GENERAL INFORMATION TECHNOLOGY	0	5,100	0	0	0	5,100
30	AIR FORCE PHYSICAL SECURITY SYSTEM	0	56,496	0	0	0	56,496
	ORGANIZATION AND BASE						
49	BASE COMM INFRASTRUCTURE	0	30,717	0	0	0	30,717
	BASE SUPPORT EQUIPMENT						
55	ENGINEERING AND EOD EQUIPMENT	0	13,172	0	0	0	13,172
56	MOBILITY EQUIPMENT	0	33,694	0	0	0	33,694
57	FUELS SUPPORT EQUIPMENT (FSE)	0	1,777	0	0	0	1,777
58	BASE MAINTENANCE AND SUPPORT EQUIPMENT	0	31,620	0	0	0	31,620
	SPECIAL SUPPORT PROJECTS						
61	DCGS-AF	0	18,700	0	0	0	18,700
	SPARES AND REPAIR PARTS						
65	SPARES AND REPAIR PARTS	0	4,000	0	0	0	4,000
	TOTAL OTHER PROCUREMENT, AIR FORCE	0	355,339	0	0	0	355,339
	PROCUREMENT, DEFENSE-WIDE						
	MAJOR EQUIPMENT, DISA						
16	DEFENSE INFORMATION SYSTEM NETWORK	0	6,120	0	0	0	6,120
	MAJOR EQUIPMENT, DEFENSE THREAT REDUCTION AGENCY						
30	COUNTER IMPROVISED THREAT TECHNOLOGIES	0	2,540	0	0	0	2,540
	CLASSIFIED PROGRAMS						
	CLASSIFIED PROGRAMS						
	AVIATION PROGRAMS						
56	MANNED ISR	0	5,000	0	0	0	5,000

57	MC-12	0	5,000	0	0	0	5,000
60	UNMANNED ISR	0	8,207	0	0	0	8,207
	AMMUNITION PROGRAMS						
70	ORDNANCE ITEMS <\$5M	0	105,355	0	0	0	105,355
	OTHER PROCUREMENT PROGRAMS						
71	INTELLIGENCE SYSTEMS	0	16,234	0	0	0	16,234
73	OTHER ITEMS <\$5M	0	984	0	0	0	984
76	TACTICAL VEHICLES	0	2,990	0	0	0	2,990
77	WARRIOR SYSTEMS <\$5M	0	32,573	0	0	0	32,573
78	COMBAT MISSION REQUIREMENTS	0	10,000	0	0	0	10,000
80	OPERATIONAL ENHANCEMENTS INTELLIGENCE	0	6,724	0	0	0	6,724
81	OPERATIONAL ENHANCEMENTS	0	53,264	0	0	0	53,264
	TOTAL PROCUREMENT, DEFENSE-WIDE	0	258,491	0	0	0	258,491
	TOTAL PROCUREMENT	18,457	5,128,098	-46	-97,185	18,411	5,030,913

**TITLE XLII—RESEARCH, DEVELOPMENT, TEST,
AND EVALUATION**

TITLE XLII—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION.

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION (In Thousands of Dollars)

Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY					
BASIC RESEARCH					
2	0601102A	DEFENSE RESEARCH SCIENCES	303,257	12,000	315,257
		AI human performance optimization		[2,000]	
		Increase in basic research		[10,000]	
3	0601103A	UNIVERSITY RESEARCH INITIATIVES	67,148		67,148
4	0601104A	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	87,877		87,877
5	0601121A	CYBER COLLABORATIVE RESEARCH ALLIANCE	5,077		5,077
		SUBTOTAL BASIC RESEARCH	463,359	12,000	475,359
APPLIED RESEARCH					
7	0602115A	BIOMEDICAL TECHNOLOGY	11,835	4,000	15,835
		Pandemic vaccine response		[4,000]	
11	0602134A	COUNTER IMPROVISED-THREAT ADVANCED STUDIES	2,000		2,000
12	0602141A	LETHALITY TECHNOLOGY	42,425	3,000	45,425
		Hybrid additive manufacturing		[3,000]	
13	0602142A	ARMY APPLIED RESEARCH	30,757	3,000	33,757
		Pathfinder Air Assault		[3,000]	
14	0602143A	SOLDIER LETHALITY TECHNOLOGY	125,435	10,500	135,935
			494		

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION
(In Thousands of Dollars)

Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
55	0603119A	3D advanced manufacturing		[2,000]	
		GROUND ADVANCED TECHNOLOGY	14,795	6,000	20,795
		Cybersecurity for industrial control systems and building automation		[3,000]	
		Graphene applications for military engineering		[3,000]	
59	0603134A	COUNTER IMPROVISED-THREAT SIMULATION	25,000		25,000
63	0603457A	C3I CYBER ADVANCED DEVELOPMENT	23,357		23,357
64	0603461A	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM	188,024	5,000	193,024
		High performance computing modernization		[5,000]	
65	0603462A	NEXT GENERATION COMBAT VEHICLE ADVANCED TECHNOLOGY	199,358	27,500	226,858
		Carbon fiber and graphitic composites		[10,000]	
		Cyber and connected vehicle innovation research		[5,000]	
		Small unit ground robotic capabilities		[7,500]	
		Virtual experimentations enhancement		[5,000]	
66	0603463A	NETWORK C3I ADVANCED TECHNOLOGY	158,608		158,608
67	0603464A	LONG RANGE PRECISION FIRES ADVANCED TECHNOLOGY	121,060	3,000	124,060
		Hyper velocity projectile—extended range technologies		[3,000]	
68	0603465A	FUTURE VERTICAL LIFT ADVANCED TECHNOLOGY	156,194		156,194
69	0603466A	AIR AND MISSILE DEFENSE ADVANCED TECHNOLOGY	58,130	15,500	73,630
		Electromagnetic effects research to support fires and AMD CFTs		[5,000]	
		High-energy laser system characterization lab		[10,500]	
77	0603920A	HUMANITARIAN DEMINING	8,515		8,515
		SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT	1,203,590	59,000	1,262,590
ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
78	0603305A	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	11,062	3,000	14,062
		Hypersonic hot air tunnel test environment		[3,000]	
79	0603308A	ARMY SPACE SYSTEMS INTEGRATION	26,230		26,230

80	0603327A	AIR AND MISSILE DEFENSE SYSTEMS ENGINEERING	26,482	26,482
81	0603619A	LANDMINE WARFARE AND BARRIER—ADV DEV	64,092	64,092
83	0603639A	TANK AND MEDIUM CALIBER AMMUNITION	92,753	92,753
84	0603645A	ARMORED SYSTEM MODERNIZATION—ADV DEV	151,478	151,478
85	0603747A	SOLDIER SUPPORT AND SURVIVABILITY	5,841	5,841
86	0603766A	TACTICAL ELECTRONIC SURVEILLANCE SYSTEM—ADV DEV	194,775	194,775
87	0603774A	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	24,316	24,316
88	0603779A	ENVIRONMENTAL QUALITY TECHNOLOGY—DE/MVAL	13,387	13,387
89	0603790A	NATO RESEARCH AND DEVELOPMENT	4,762	4,762
90	0603801A	AVIATION—ADV DEV	652,937	652,937
		Future Long Range Assault Aircraft (FLRAA)	5,000	5,000
		LOGISTICS AND ENGINEER EQUIPMENT—ADV DEV	[5,000]	[5,000]
91	0603804A	MEDICAL SYSTEMS—ADV DEV	4,761	4,761
92	0603807A	SOLDIER SYSTEMS—ADVANCED DEVELOPMENT	28,520	28,520
93	0603827A	ROBOTICS DEVELOPMENT	26,138	26,138
94	0604017A	ELECTRONIC WARFARE TECHNOLOGY MATURATION (MIP)	121,207	121,207
96	0604021A	LOW EARTH ORBIT (LEO) SATELLITE CAPABILITY	22,840	22,840
97	0604035A	ANALYSIS OF ALTERNATIVES	22,678	22,678
98	0604100A	SMALL UNMANNED AERIAL VEHICLE (SUAV) (6.4)	10,082	10,082
99	0604101A	FUTURE TACTICAL UNMANNED AIRCRAFT SYSTEM (FTUAS)	1,378	1,378
100	0604113A	LOWER TIER AIR MISSILE DEFENSE (LTAMD) SENSOR	40,083	40,083
101	0604114A	TECHNOLOGY MATURATION INITIATIVES	376,373	376,373
102	0604115A	OpFires lack of transition pathway	156,834	156,834
		MANEUVER—SHORT RANGE AIR DEFENSE (M-SHORAD)	–10,000	–10,000
		ARMY ADVANCED COMPONENT DEVELOPMENT & PROTOTYPING	[–10,000]	[–10,000]
103	0604117A	ASSURED POSITIONING, NAVIGATION AND TIMING (PNT)	4,995	4,995
105	0604119A	SYNTHETIC TRAINING ENVIRONMENT REFINEMENT & PROTOTYPING	170,490	170,490
106	0604120A	COUNTER IMPROVISED-THREAT DEMONSTRATION, PROTOTYPE DEVELOPMENT, AND TESTING	128,125	128,125
107	0604121A	HYPERSONICS	129,547	129,547
108	0604134A	Lack of hypersonic prototyping coordination	13,831	13,831
109	0604182A	FUTURE INTERCEPTOR	801,417	801,417
		UNIFIED NETWORK TRANSPORT	–5,000	–5,000
		FUTURE INTERCEPTOR	[–5,000]	[–5,000]
111	0604403A		7,992	7,992
112	0604541A		40,677	40,677

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION
(In Thousands of Dollars)

Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
115	0305251A	CYBERSPACE OPERATIONS FORCES AND FORCE SUPPORT	50,525		50,525
		SUBTOTAL ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	3,421,608	-7,000	3,414,608
		SYSTEM DEVELOPMENT & DEMONSTRATION			
118	0604201A	AIRCRAFT AVIONICS	2,764		2,764
119	0604270A	ELECTRONIC WARFARE DEVELOPMENT	62,426		62,426
121	0604601A	INFANTRY SUPPORT WEAPONS	91,574		91,574
122	0604604A	MEDIUM TACTICAL VEHICLES	8,523		8,523
123	0604611A	JAVELIN	7,493		7,493
124	0604622A	FAMILY OF HEAVY TACTICAL VEHICLES	24,792		24,792
125	0604633A	AIR TRAFFIC CONTROL	3,511		3,511
126	0604642A	LIGHT TACTICAL WHEELED VEHICLES	1,976		1,976
127	0604645A	ARMORED SYSTEMS MODERNIZATION (ASM)—ENG DEV	135,488		135,488
128	0604710A	NIGHT VISION SYSTEMS—ENG DEV	61,445		61,445
129	0604713A	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	2,814		2,814
130	0604715A	NON-SYSTEM TRAINING DEVICES—ENG DEV	28,036		28,036
131	0604741A	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE—ENG DEV	43,651		83,651
		Joint Counter-UAS Office acceleration		40,000	
		Joint Counter-UAS Office SOCOM advanced capabilities		[17,500]	
		Joint Counter-UAS Office SOCOM demonstrations		[7,500]	
		Joint Counter-UAS Office SOCOM demonstrations		[15,000]	
132	0604742A	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	10,150		10,150
133	0604746A	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	5,578		5,578
134	0604760A	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS)—ENG DEV	7,892		7,892
135	0604768A	BRILLIANT ANTI-ARMOR SUBMUNITION (BAT)	24,975		24,975
136	0604780A	COMBINED ARMS TACTICAL TRAINER (CATT) CORE	3,568		3,568
137	0604798A	BRIGADE ANALYSIS, INTEGRATION AND EVALUATION	19,268		19,268
138	0604802A	WEAPONS AND MUNITIONS—ENG DEV	265,811	800	266,611

139	0604804A	Increase NGSW soldier touchpoints				
140	0604805A	LOGISTICS AND ENGINEER EQUIPMENT—ENG DEV	49,694	[800]	49,694	
141	0604807A	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS—ENG DEV	11,079		11,079	
142	0604808A	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT—ENG DEV	49,870		49,870	
143	0604818A	LANDMINE WARFARE/BARRIER—ENG DEV	9,589		9,589	
144	0604820A	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	162,513		162,513	
145	0604822A	RADAR DEVELOPMENT	109,259		109,259	
146	0604823A	GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBs)	21,201		21,201	
147	0604827A	FIREFINDER	20,008		20,008	
148	0604852A	SOLDIER SYSTEMS—WARRIOR DEMVAL	6,534		6,534	
149	0604854A	SUITE OF SURVIVABILITY ENHANCEMENT SYSTEMS—EMD	82,459		82,459	
150	0605013A	Bradley and Stryker APS			47,000	
151	0605018A	ARTILLERY SYSTEMS—EMD	11,611		11,611	
152	0605028A	INFORMATION TECHNOLOGY DEVELOPMENT	142,678		147,678	
153	0605030A	Integrated data software pilot program			5,000	
154	0605030A	INTEGRATED PERSONNEL AND PAY SYSTEM—ARMY (PPS-A)	115,286		115,286	
155	0605031A	ARMORED MULTI-PURPOSE VEHICLE (AMPV)	96,594		96,594	
156	0605033A	JOINT TACTICAL NETWORK CENTER (JTNC)	16,264		16,264	
157	0605035A	JOINT TACTICAL NETWORK (JTN)	31,696		31,696	
158	0605038A	GROUND-BASED OPERATIONAL SURVEILLANCE SYSTEM—EXPEDITIONARY (GBOSS-E)	5,976		5,976	
159	0605042A	COMMON INFRARED COUNTERMEASURES (CIRCW)	23,321		23,321	
160	0605047A	NUCLEAR BIOLOGICAL CHEMICAL RECONNAISSANCE VEHICLE (NBCRV) SENSOR SUITE	4,846		4,846	
161	0605051A	DEFENSIVE CYBER TOOL DEVELOPMENT	28,544		16,544	
162	0605052A	Army Cyber SU program			-12,000	
163	0605042A	TACTICAL NETWORK RADIO SYSTEMS (LOW-TIER)	28,178		28,178	
164	0605047A	CONTRACT WRITING SYSTEM	22,860		22,860	
165	0605051A	AIRCRAFT SURVIVABILITY DEVELOPMENT	35,893		35,893	
166	0605052A	INDIRECT FIRE PROTECTION CAPABILITY INC 2—BLOCK 1	235,770		187,970	
167	0605053A	Army-identified funding early to need			-47,800	
168	0605053A	GROUND ROBOTICS	13,710		13,710	
169	0605054A	EMERGING TECHNOLOGY INITIATIVES	294,739		294,739	
170	0605145A	MEDICAL PRODUCTS AND SUPPORT SYSTEMS DEVELOPMENT	954		954	

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION
(In Thousands of Dollars)

Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
171	0605203A	ARMY SYSTEM DEVELOPMENT & DEMONSTRATION	150,201		150,201
172	0605205A	SMALL UNMANNED AERIAL VEHICLE (SUAV) (6.5)	5,999		5,999
174	0605450A	JOINT AIR-TO-GROUND MISSILE (JAGM)	8,891		8,891
175	0605457A	ARMY INTEGRATED AIR AND MISSILE DEFENSE (AIAMD)	193,929		193,929
176	0605625A	MANNED GROUND VEHICLE	327,732	-80,000	247,732
		OMFV program reset		[-80,000]	
177	0605766A	NATIONAL CAPABILITIES INTEGRATION (MIP)	7,670		7,670
178	0605812A	JOINT LIGHT TACTICAL VEHICLE (JLTV) ENGINEERING AND MANUFACTURING DEVELOPMENT PH ..	1,742		1,742
179	0605830A	AVIATION GROUND SUPPORT EQUIPMENT	1,467		1,467
180	0303032A	TROJAN—RH12	3,451		3,451
183	0304270A	ELECTRONIC WARFARE DEVELOPMENT	55,855		55,855
		SUBTOTAL SYSTEM DEVELOPMENT & DEMONSTRATION	3,199,798	-47,000	3,152,798
		MANAGEMENT SUPPORT			
185	0604256A	THREAT SIMULATOR DEVELOPMENT	14,515		14,515
186	0604258A	TARGET SYSTEMS DEVELOPMENT	10,668		10,668
187	0604759A	MAJOR T&E INVESTMENT	106,270		106,270
188	0605103A	RAND ARROYO CENTER	13,481		13,481
189	0605301A	ARMY KWAJALEIN ATOLL	231,824		231,824
190	0605326A	CONCEPTS EXPERIMENTATION PROGRAM	54,898		54,898
192	0605601A	ARMY TEST RANGES AND FACILITIES	350,359	15,000	365,359
		Program increase—Army directed energy T&E		[15,000]	
193	0605602A	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	48,475		48,475
194	0605604A	SURVIVABILITY/LETHALITY ANALYSIS	36,001		36,001
195	0605606A	AIRCRAFT CERTIFICATION	2,736		2,736
196	0605702A	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	6,488		6,488
197	0605706A	MATERIEL SYSTEMS ANALYSIS	21,859		21,859

198	0605709A	EXPLOITATION OF FOREIGN ITEMS	7,936	7,936
199	0605712A	SUPPORT OF OPERATIONAL TESTING	54,470	54,470
200	0605716A	ARMY EVALUATION CENTER	63,141	63,141
201	0605718A	ARMY MODELING & SIM X-CMD COLLABORATION & INTEG	2,572	2,572
202	0605801A	PROGRAM-WIDE ACTIVITIES	87,472	87,472
203	0605803A	TECHNICAL INFORMATION ACTIVITIES	26,244	26,244
204	0605805A	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY	40,133	40,133
205	0605857A	ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT	1,780	1,780
206	0605898A	ARMY DIRECT REPORT HEADQUARTERS—R&D - MHA	55,045	55,045
208	0606002A	RONALD REAGAN BALLISTIC MISSILE DEFENSE TEST SITE	71,306	71,306
209	0606003A	COUNTERINTEL AND HUMAN INTEL MODERNIZATION	1,063	1,063
210	0606105A	MEDICAL PROGRAM-WIDE ACTIVITIES	19,891	19,891
211	0606942A	ASSESSMENTS AND EVALUATIONS CYBER VULNERABILITIES	4,496	4,496
		SUBTOTAL MANAGEMENT SUPPORT	1,333,123	1,348,123

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214	0603778A	OPERATIONAL SYSTEMS DEVELOPMENT	10,157	10,157
216	0605024A	MLRS PRODUCT IMPROVEMENT PROGRAM	8,682	8,682
217	0607131A	ANTI-TAMPER TECHNOLOGY SUPPORT	20,409	20,409
219	0607134A	WEAPONS AND MUNITIONS PRODUCT IMPROVEMENT PROGRAMS	122,733	115,233
		Excess funds due to second vendor dropped		-7,500
		[(-7,500)]		
221	0607136A	BLACKHAWK PRODUCT IMPROVEMENT PROGRAM	11,236	11,236
222	0607137A	CHINOOK PRODUCT IMPROVEMENT PROGRAM	46,091	46,091
224	0607139A	IMPROVED TURBINE ENGINE PROGRAM	249,257	249,257
225	0607142A	AVIATION ROCKET SYSTEM PRODUCT IMPROVEMENT AND DEVELOPMENT	17,155	17,155
226	0607143A	UNMANNED AIRCRAFT SYSTEM UNIVERSAL PRODUCTS	7,743	7,743
227	0607145A	APACHE FUTURE DEVELOPMENT	77,177	77,177
228	0607150A	INTEL CYBER DEVELOPMENT	14,652	14,652
229	0607312A	ARMY OPERATIONAL SYSTEMS DEVELOPMENT	35,851	35,851
230	0607665A	FAMILY OF BIOMETRICS	1,324	1,324
231	0607865A	PATRIOT PRODUCT IMPROVEMENT	187,840	187,840
232	0203728A	JOINT AUTOMATED DEEP OPERATION COORDINATION SYSTEM (JADOC)	44,691	44,691

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Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
233	0203735A	COMBAT VEHICLE IMPROVEMENT PROGRAMS	268,919		268,919
234	0203743A	155MM SELF-PROPELLED HOWITZER IMPROVEMENTS	427,254		427,254
235	0203744A	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS	11,688		11,688
236	0203752A	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	80		80
237	0203758A	DIGITIZATION	4,516		4,516
238	0203801A	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	1,288		1,288
239	0203802A	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS	79,424		79,424
243	0205412A	ENVIRONMENTAL QUALITY TECHNOLOGY—OPERATIONAL SYSTEM DEV	259		259
244	0205456A	LOWER TIER AIR AND MISSILE DEFENSE (AMD) SYSTEM	166		166
245	0205778A	GUIDED MULTIPLE-LAUNCH ROCKET SYSTEM (GMLRS)	75,575	17,500	93,075
		Qualification of second SRM source		[17,500]	
246	0208053A	JOINT TACTICAL GROUND SYSTEM	9,510		9,510
249	0303140A	INFORMATION SYSTEMS SECURITY PROGRAM	29,270		29,270
250	0303141A	GLOBAL COMBAT SUPPORT SYSTEM	86,908		86,908
251	0303142A	SATCOM GROUND ENVIRONMENT (SPACE)	18,684		18,684
256	0305179A	INTEGRATED BROADCAST SERVICE (IBS)	467		467
257	0305204A	TACTICAL UNMANNED AERIAL VEHICLES	4,051		4,051
258	0305206A	AIRBORNE RECONNAISSANCE SYSTEMS	13,283		13,283
259	0305208A	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	47,204		47,204
264	0708045A	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	61,012	17,500	78,512
		Functional fabrics manufacturing		[7,500]	
		Nanoscale materials manufacturing		[5,000]	
		Tungsten manufacturing for armaments		[5,000]	
999	9999999999	CLASSIFIED PROGRAMS	3,983		3,983
		SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT	1,998,539	27,500	2,026,039

SOFTWARE AND DIGITAL TECHNOLOGY PILOT PROGRAMS

267	0608041A	DEFENSIVE CYBER—SOFTWARE PROTOTYPE DEVELOPMENT	46,445	46,445	46,445
		SUBTOTAL SOFTWARE AND DIGITAL TECHNOLOGY PILOT PROGRAMS	46,445	0	46,445
		TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY	12,567,343	123,000	12,710,343
		RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY			
		BASIC RESEARCH			
1	0601103N	UNIVERSITY RESEARCH INITIATIVES	116,816	2,000	118,816
		Defense University Research and Instrumentation Program		[2,000]	
2	0601152N	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	19,113		19,113
3	0601153N	DEFENSE RESEARCH SCIENCES	467,158	13,000	480,158
		Increase in basic research		[10,000]	
		Predictive modeling for undersea vehicles		[3,000]	
		SUBTOTAL BASIC RESEARCH	603,087	15,000	618,087
		APPLIED RESEARCH			
4	0602114N	POWER PROJECTION APPLIED RESEARCH	17,792	18,000	17,792
5	0602123N	FORCE PROTECTION APPLIED RESEARCH	122,281	[8,000]	140,281
		Direct air capture and blue carbon removal technology program		[2,000]	
		Electric propulsion for military craft and advanced planning hulls		[5,000]	
		Expeditionary unmanned systems launch and recovery		[3,000]	
		Testbed for autonomous ship systems		3,000	
6	0602131M	MARINE CORPS LANDING FORCE TECHNOLOGY	50,623	[3,000]	53,623
		Interdisciplinary cybersecurity research			
7	0602235N	COMMON PICTURE APPLIED RESEARCH	48,001	7,000	48,001
8	0602236N	WARFIGHTER SUSTAINMENT APPLIED RESEARCH	67,765	[4,000]	74,765
		Humanoid robotics research			
		Social networks and computational social science		[3,000]	
9	0602271N	ELECTROMAGNETIC SYSTEMS APPLIED RESEARCH	84,994		84,994
10	0602435N	OCEAN WARFIGHTING ENVIRONMENT APPLIED RESEARCH	63,392		63,392
11	0602651M	JOINT NON-LETHAL WEAPONS APPLIED RESEARCH	6,343		6,343
12	0602747N	UNDERSEA WAREFARE APPLIED RESEARCH	56,397	7,500	63,897

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13	0602750N	Navy and academia submarine partnerships		[7,500]	
14	0602782N	FUTURE NAVAL CAPABILITIES APPLIED RESEARCH	167,590		167,590
15	0602792N	MINE AND EXPEDITIONARY WARFARE APPLIED RESEARCH	30,715		30,715
		INNOVATIVE NAVAL PROTOTYPES (INP) APPLIED RESEARCH	160,537	7,300	167,837
		Thermoplastic materials		[7,300]	
16	0602861N	SCIENCE AND TECHNOLOGY MANAGEMENT—ONR FIELD ACTIVITIES	76,745		76,745
		SUBTOTAL APPLIED RESEARCH	953,175	42,800	995,975
		ADVANCED TECHNOLOGY DEVELOPMENT			
17	0603123N	FORCE PROTECTION ADVANCED TECHNOLOGY	24,410		24,410
18	0603271N	ELECTROMAGNETIC SYSTEMS ADVANCED TECHNOLOGY	8,008		8,008
19	0603640M	USMC ADVANCED TECHNOLOGY DEMONSTRATION (ATD)	219,045	3,000	222,045
		Mission planning advanced technology demonstration		[3,000]	
20	0603651M	JOINT NON-LETHAL WEAPONS TECHNOLOGY DEVELOPMENT	13,301		13,301
21	0603673N	FUTURE NAVAL CAPABILITIES ADVANCED TECHNOLOGY DEVELOPMENT	246,054		246,054
22	0603680N	MANUFACTURING TECHNOLOGY PROGRAM	60,122		60,122
23	0603729N	WARFIGHTER PROTECTION ADVANCED TECHNOLOGY	4,851		4,851
24	0603758N	NAVY WARFIGHTING EXPERIMENTS AND DEMONSTRATIONS	40,709		40,709
25	0603782N	MINE AND EXPEDITIONARY WARFARE ADVANCED TECHNOLOGY	1,948		1,948
26	0603801N	INNOVATIVE NAVAL PROTOTYPES (INP) ADVANCED TECHNOLOGY DEVELOPMENT	141,948		141,948
		SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT	760,396	3,000	763,396
		ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES			
27	0603178N	MEDIUM AND LARGE UNMANNED SURFACE VEHICLES (USVS)	464,042	-464,042	
		Excess procurement ahead of satisfactory testing		[-464,042]	
28	0603207N	AIR/OCEAN TACTICAL APPLICATIONS	35,386		35,386
29	0603216N	AVIATION SURVIVABILITY	13,428		13,428

30	0603239N	ISO NAVAL CONSTRUCTION FORCES	2,350	2,350
31	0603251N	AIRCRAFT SYSTEMS	418	418
32	0603254N	ASW SYSTEMS DEVELOPMENT	15,719	15,719
33	0603261N	TACTICAL AIRBORNE RECONNAISSANCE	3,411	3,411
34	0603382N	ADVANCED COMBAT SYSTEMS TECHNOLOGY	56,118	56,118
		Project 3416: HIJENKS insufficient schedule justification	-14,100	
		Project 3422: SHARC excess platforms ahead of satisfactory testing	[-7,000]	
35	0603502N	SURFACE AND SHALLOW WATER MINE COUNTERMEASURES	24,158	24,158
		Project 2989: Barracuda program delay	[-7,100]	
36	0603506N	SURFACE SHIP TORPEDO DEFENSE	12,816	12,816
37	0603512N	CARRIER SYSTEMS DEVELOPMENT	7,559	7,559
38	0603525N	PILOT FISH	358,757	358,757
39	0603527N	RETRACT LARCH	12,562	12,562
40	0603536N	RETRACT JUNIPER	148,000	148,000
41	0603542N	RADIOLOGICAL CONTROL	778	778
42	0603553N	SURFACE ASW	1,161	1,161
43	0603561N	ADVANCED SUBMARINE SYSTEM DEVELOPMENT	185,356	185,356
		Out-of-autoclave submarine technology development	10,000	
		Project 9710: EDMs early to need	[20,000]	
44	0603562N	SUBMARINE TACTICAL WARFARE SYSTEMS	10,528	10,528
45	0603563N	SHIP CONCEPT ADVANCED DESIGN	126,396	63,296
		Project 2196: Future surface combatant early to need	-63,100	
		Project 3161: Program increase for CBM+ initiative	[-19,100]	
		Project 4044: Medium amphibious ship early to need	[16,000]	
		Project 4045: Medium logistics ship early to need	[-30,000]	
46	0603564N	SHIP PRELIMINARY DESIGN & FEASIBILITY STUDIES	70,270	28,970
		Project 0411: LSC preliminary design and CDD early to need	[-41,300]	
47	0603570N	ADVANCED NUCLEAR POWER SYSTEMS	149,188	149,188
48	0603573N	ADVANCED SURFACE MACHINERY SYSTEMS	38,449	238,449
		Accelerate IFF to achieve full test capability in FY23	200,000	
		Accelerate qualification of silicon carbide power modules	[75,000]	
		USV autonomy development	[10,000]	
			[45,000]	

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49	0603576N	USV engine and generator qualification testing		[70,000]	
		CHALK EAGLE	71,181		71,181
50	0603581N	LITTORAL COMBAT SHIP (LCS)	32,178	-5,000	27,178
		Project 3096: Available prior year funds		[-5,000]	
51	0603582N	COMBAT SYSTEM INTEGRATION	17,843		17,843
52	0603595N	OHIO REPLACEMENT	317,196		317,196
53	0603596N	LCS MISSION MODULES	67,875	-35,000	32,875
		Project 2550: LCS MCM MP outdated IMS and TEMP		[-20,000]	
		Project 2551: LCS ASW MP available prior year funds due to testing delays		[-15,000]	
54	0603597N	AUTOMATED TEST AND ANALYSIS	4,797		4,797
55	0603599N	FRIGATE DEVELOPMENT	82,309		82,309
56	0603609N	CONVENTIONAL MUNITIONS	9,922	-7,800	2,122
		Project 0363: Insufficient justification		[-7,800]	
57	0603635M	MARINE CORPS GROUND COMBAT/SUPPORT SYSTEM	189,603		189,603
58	0603654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	43,084		43,084
59	0603713N	OCEAN ENGINEERING TECHNOLOGY DEVELOPMENT	6,346		6,346
60	0603721N	ENVIRONMENTAL PROTECTION	20,601		20,601
61	0603724N	NAVY ENERGY PROGRAM	23,422		23,422
62	0603725N	FACILITIES IMPROVEMENT	4,664		4,664
63	0603734N	CHALK CORAL	545,763		545,763
64	0603739N	NAVY LOGISTIC PRODUCTIVITY	3,884		3,884
65	0603746N	RETRACT MAPLE	353,226		353,226
66	0603748N	LINK PLUMERIA	544,388		544,388
67	0603751N	RETRACT ELM	86,730		86,730
68	0603764M	LINK EVERGREEN	236,234		236,234
70	0603790N	NATO RESEARCH AND DEVELOPMENT	6,880		6,880
71	0603795N	LAND ATTACK TECHNOLOGY	10,578		10,578

72	0603851M	JOINT NON-LETHAL WEAPONS TESTING	28,435	28,435
73	0603860N	JOINT PRECISION APPROACH AND LANDING SYSTEMS—DEMVAL	33,612	33,612
74	0603925N	DIRECTED ENERGY AND ELECTRIC WEAPON SYSTEMS	128,845	113,845
		Project 3402: Excess engineering and sustainment support		-15,000
		F/A -18 INFRARED SEARCH AND TRACK (IRST)	84,190	84,190
75	0604014N	DIGITAL WARFARE OFFICE	54,699	54,699
76	0604027N	SMALL AND MEDIUM UNMANNED UNDERSEA VEHICLES	53,942	53,942
77	0604028N	UNMANNED UNDERSEA VEHICLE CORE TECHNOLOGIES	40,060	40,060
78	0604029N	RAPID PROTOTYPING, EXPERIMENTATION AND DEMONSTRATION	12,100	12,100
79	0604030N	LARGE UNMANNED UNDERSEA VEHICLES	78,122	42,122
80	0604031N	Project 2094: Excess procurement ahead of phase 1 testing		-36,000
		GERALD R. FORD CLASS NUCLEAR AIRCRAFT CARRIER (CVN 78—80)	107,895	107,895
81	0604112N	LITTORAL AIRBORNE MCM	17,366	17,366
82	0604126N	SURFACE MINE COUNTERMEASURES	18,754	18,754
83	0604127N	TACTICAL AIR DIRECTIONAL INFRARED COUNTERMEASURES (TADIRCM)	59,776	59,776
84	0604272N	FUTURE VERTICAL LIFT (MARTIME STRIKE)	5,097	5,097
86	0604292N	RAPID TECHNOLOGY CAPABILITY PROTOTYPE	3,664	3,664
87	0604320M	LX (R)	10,203	10,203
88	0604454N	ADVANCED UNDERSEA PROTOTYPING	115,858	95,858
89	0604536N	Orca UUV testing delay and uncertified test strategy		-20,000
		Snakehead UUV uncertified test strategy		[-10,000]
90	0604636N	COUNTER UNMANNED AIRCRAFT SYSTEMS (C-UAS)	14,259	14,259
91	0604659N	PRECISION STRIKE WEAPONS DEVELOPMENT PROGRAM	1,102,387	1,045,387
		Lack of hypersonic prototyping coordination		-57,000
		Project 3334: Excess Virginia-class CPS modification and installation costs		[-5,000]
92	0604707N	SPACE AND ELECTRONIC WARFARE (SEW) ARCHITECTURE/ENGINEERING SUPPORT	7,657	7,657
93	0604786N	OFFENSIVE ANTI-SURFACE WARFARE WEAPON DEVELOPMENT	35,750	35,750
94	0303354N	ASW SYSTEMS DEVELOPMENT—MIP	9,151	9,151
95	0304240M	ADVANCED TACTICAL UNMANNED AIRCRAFT SYSTEM	22,589	22,589
97	0304270N	ELECTRONIC WARFARE DEVELOPMENT—MIP	809	809
		SUBTOTAL ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	6,503,074	-576,542

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SYSTEM DEVELOPMENT & DEMONSTRATION					
98	0603208N	TRAINING SYSTEM AIRCRAFT	4,332		4,332
99	0604212N	OTHER HELO DEVELOPMENT	18,133	5,000	23,133
		Program increase for Attack and Utility Replacement Aircraft		[5,000]	
100	0604214M	AV-8B AIRCRAFT—ENG DEV	20,054		20,054
101	0604215N	STANDARDS DEVELOPMENT	4,237		4,237
102	0604216N	MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT	27,340		27,340
104	0604221N	P-3 MODERNIZATION PROGRAM	606		606
105	0604230N	WARFARE SUPPORT SYSTEM	9,065		9,065
106	0604231N	TACTICAL COMMAND SYSTEM	97,968		97,968
107	0604234N	ADVANCED HAWKEYE	309,373		309,373
108	0604245M	H-1 UPGRADES	62,310		62,310
109	0604261N	ACOUSTIC SEARCH SENSORS	47,182		47,182
110	0604262N	V-22A	132,624		132,624
111	0604264N	AIR CREW SYSTEMS DEVELOPMENT	21,445		21,445
112	0604269N	EA-18	106,134		106,134
113	0604270N	ELECTRONIC WARFARE DEVELOPMENT	134,194		134,194
114	0604273M	EXECUTIVE HELO DEVELOPMENT	99,321		99,321
115	0604274N	NEXT GENERATION JAMMER (NGJ)	477,680		477,680
116	0604280N	JOINT TACTICAL RADIO SYSTEM—NAVY (JTRS-NAVY)	232,818		232,818
117	0604282N	NEXT GENERATION JAMMER (NGJ) INCREMENT II	170,039		170,039
118	0604307N	SURFACE COMBATANT COMBAT SYSTEM ENGINEERING	403,712		403,712
119	0604311N	LPD-17 CLASS SYSTEMS INTEGRATION	945		945
120	0604329N	SMALL DIAMETER BOMB (SDB)	62,488		62,488
121	0604366N	STANDARD MISSILE IMPROVEMENTS	386,225		386,225
122	0604373N	AIRBORNE MCM	10,909		10,909
123	0604378N	NAVAL INTEGRATED FIRE CONTROL—COUNTER AIR SYSTEMS ENGINEERING	44,548		44,548

124	0604419N	ADVANCED SENSORS APPLICATION PROGRAM (ASAP)	13,673		13,673
125	0604501N	ADVANCED ABOVE WATER SENSORS	87,809		87,809
126	0604503N	SSN-688 AND TRIDENT MODERNIZATION	93,097		93,097
127	0604504N	AIR CONTROL	38,863		38,863
128	0604512N	SHIPBOARD AVIATION SYSTEMS	9,593		9,593
129	0604518N	COMBAT INFORMATION CENTER CONVERSION	12,718		12,718
130	0604522N	AIR AND MISSILE DEFENSE RADAR (AMDR) SYSTEM	78,319		78,319
131	0604530N	ADVANCED ARRESTING GEAR (AAG)	65,834		65,834
132	0604558N	NEW DESIGN SSN	259,443		259,443
133	0604562N	SUBMARINE TACTICAL WARFARE SYSTEM	63,878	-5,000	58,878
		AN/BYG-1 APB17 and APB19 testing delays		[-5,000]	
134	0604567N	SHIP CONTRACT DESIGN/ LIVE FIRE T&E	51,853	14,900	66,753
		Advanced degaussing DDG-51 retrofit and demonstration		[14,900]	
135	0604574N	NAVY TACTICAL COMPUTER RESOURCES	3,853		3,853
136	0604601N	MINE DEVELOPMENT	92,607		92,607
137	0604610N	LIGHTWEIGHT TORPEDO DEVELOPMENT	146,012	-30,000	116,012
		Project 1412: HAAWC operational testing delays		[-10,000]	
		Project 3418: Mk 54 Mod 2 contract delays		[-20,000]	
138	0604654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	8,383		8,383
139	0604657M	USMC GROUND COMBAT/SUPPORTING ARMS SYSTEMS—ENG DEV	33,784		33,784
140	0604703N	PERSONNEL, TRAINING, SIMULATION, AND HUMAN FACTORS	8,599		8,599
141	0604727N	JOINT STANDOFF WEAPON SYSTEMS	73,744		73,744
142	0604755N	SHIP SELF DEFENSE (DETECT & CONTROL)	157,490		157,490
143	0604756N	SHIP SELF DEFENSE (ENGAGE: HARD KILL)	121,761		121,761
144	0604757N	SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	89,373		89,373
145	0604761N	INTELLIGENCE ENGINEERING	15,716		15,716
146	0604771N	MEDICAL DEVELOPMENT	2,120		2,120
147	0604777N	NAVIGATION/ID SYSTEM	50,180		50,180
148	0604800M	JOINT STRIKE FIGHTER (JSF)—EMD	561		561
149	0604800N	JOINT STRIKE FIGHTER (JSF)—EMD	250		250
150	0604850N	SSN(X)	1,000		1,000
151	0605013M	INFORMATION TECHNOLOGY DEVELOPMENT	974		974

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152	0605013N	INFORMATION TECHNOLOGY DEVELOPMENT	356,173		356,173
153	0605024N	ANTI-TAMPER TECHNOLOGY SUPPORT	7,810		7,810
154	0605212M	CH-53K RDTE	406,406		406,406
155	0605215N	MISSION PLANNING	86,134		86,134
156	0605217N	COMMON AVIONICS	54,540		54,540
157	0605220N	SHIP TO SHORE CONNECTOR (SSC)	5,155		5,155
158	0605327N	T-AO 205 CLASS	5,148		5,148
159	0605414N	UNMANNED CARRIER AVIATION (UCA)	266,970		266,970
160	0605450M	JOINT AIR-TO-GROUND MISSILE (JAGM)	12,713		12,713
161	0605500N	MULTI-MISSION MARITIME AIRCRAFT (MMA)	24,424		24,424
162	0605504N	MULTI-MISSION MARITIME (MMA) INCREMENT III	182,870		182,870
163	0605611M	MARINE CORPS ASSAULT VEHICLES SYSTEM DEVELOPMENT & DEMONSTRATION	41,775		41,775
164	0605813M	JOINT LIGHT TACTICAL VEHICLE (JLV) SYSTEM DEVELOPMENT & DEMONSTRATION	2,541		2,541
165	0204202N	DDG-1000	208,448		208,448
169	0304785N	TACTICAL CRYPTOLOGIC SYSTEMS	111,434		111,434
170	0306250M	CYBER OPERATIONS TECHNOLOGY DEVELOPMENT	26,173		26,173
		SUBTOTAL SYSTEM DEVELOPMENT & DEMONSTRATION	6,263,883	-15,100	6,248,783
MANAGEMENT SUPPORT					
171	0604256N	THREAT SIMULATOR DEVELOPMENT	22,075		22,075
172	0604258N	TARGET SYSTEMS DEVELOPMENT	10,224		10,224
173	0604759N	MAJOR T&E INVESTMENT	85,195		85,195
175	0605152N	STUDIES AND ANALYSIS SUPPORT—NAVY	3,089		3,089
176	0605154N	CENTER FOR NAVAL ANALYSES	43,517		43,517
179	0605804N	TECHNICAL INFORMATION SERVICES	932		932
180	0605853N	MANAGEMENT, TECHNICAL & INTERNATIONAL SUPPORT	94,297		94,297
181	0605856N	STRATEGIC TECHNICAL SUPPORT	3,813		3,813

183	0605863N	RD&E SHIP AND AIRCRAFT SUPPORT	104,822		104,822
184	0605864N	TEST AND EVALUATION SUPPORT	446,960		446,960
185	0605865N	OPERATIONAL TEST AND EVALUATION CAPABILITY	27,241		27,241
186	0605866N	NAVY SPACE AND ELECTRONIC WARFARE (SEW) SUPPORT	15,787		15,787
187	0605867N	SEW SURVEILLANCE/RECONNAISSANCE SUPPORT	8,559		8,559
188	0605873M	MARINE CORPS PROGRAM WIDE SUPPORT	42,749		42,749
189	0605898N	MANAGEMENT HQ—R&D	41,094		41,094
190	0606355N	WARFARE INNOVATION MANAGEMENT	37,022		37,022
193	0305327N	INSIDER THREAT	2,310		2,310
194	0902498N	MANAGEMENT HEADQUARTERS (DEPARTMENTAL SUPPORT ACTIVITIES)	1,536		1,536
		SUBTOTAL MANAGEMENT SUPPORT	991,222	0	991,222
OPERATIONAL SYSTEMS DEVELOPMENT					
199	0604227N	HARPOON MODIFICATIONS	697		697
200	0604840M	F-35 C2D2	379,549		379,549
201	0604840N	F-35 C2D2	413,875		413,875
202	0607658N	COOPERATIVE ENGAGEMENT CAPABILITY (CEC)	143,667		143,667
204	0101221N	STRATEGIC SUB & WEAPONS SYSTEM SUPPORT	173,056		173,056
205	0101224N	SSBN SECURITY TECHNOLOGY PROGRAM	45,970		45,970
206	0101226N	SUBMARINE ACOUSTIC WARFARE DEVELOPMENT	69,190		69,190
		CRAW EDM (T1-2) early to need		-8,000	
				[-8,000]	
207	0101402N	NAVY STRATEGIC COMMUNICATIONS	42,277		42,277
208	0204136N	F/A-18 SQUADRONS	171,030		171,030
210	0204228N	SURFACE SUPPORT	33,482		33,482
211	0204229N	TOMAHAWK AND TOMAHAWK MISSION PLANNING CENTER (TMPC)	200,308		200,308
212	0204311N	INTEGRATED SURVEILLANCE SYSTEM	102,975		152,975
		Accelerate sensor and signal processing development		50,000	
		Program increase for spiral 1 TRAPS units		[25,000]	
				[25,000]	
213	0204313N	SHIP-TOWED ARRAY SURVEILLANCE SYSTEMS	10,873		10,873
214	0204413N	AMPHIBIOUS TACTICAL SUPPORT UNITS (DISPLACEMENT CRAFT)	1,713		6,713
		Program increase for LCAC composite component manufacturing		5,000	
				[5,000]	
215	0204460M	GROUND/AIR TASK ORIENTED RADAR (GATOR)	22,205		105,805

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		Program increase for G/ATOR and SM-6 stand-alone engagement analysis		[10,000]	
		Program increase for USMC G/ATOR and SM-6 demonstration		[73,600]	
216	0204571N	CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	83,956		83,956
218	0204575N	ELECTRONIC WARFARE (EW) READINESS SUPPORT	56,791		56,791
219	0205601N	HARM IMPROVEMENT	146,166		146,166
221	0205620N	SURFACE ASW COMBAT SYSTEM INTEGRATION	29,348		29,348
222	0205632N	MK-48 ADCAP	110,349		110,349
223	0205633N	AVIATION IMPROVEMENTS	133,953		133,953
224	0205675N	OPERATIONAL NUCLEAR POWER SYSTEMS	110,313		110,313
225	0206313M	MARINE CORPS COMMUNICATIONS SYSTEMS	207,662		207,662
226	0206335M	COMMON AVIATION COMMAND AND CONTROL SYSTEM (CAC2S)	4,406		4,406
227	0206623M	MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYSTEMS	61,381		61,381
228	0206624M	MARINE CORPS COMBAT SERVICES SUPPORT	10,421		10,421
229	0206625M	USMC INTELLIGENCE/ELECTRONIC WARFARE SYSTEMS (MIP)	29,977		29,977
230	0206629M	AMPHIBIOUS ASSAULT VEHICLE	6,469		6,469
231	0207161N	TACTICAL AIM MISSILES	5,859		5,859
232	0207163N	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM)	44,323		44,323
236	0303109N	SATELLITE COMMUNICATIONS (SPACE)	41,978		41,978
237	0303138N	CONSOLIDATED AFLOAT NETWORK ENTERPRISE SERVICES (CANES)	29,684		29,684
238	0303140N	INFORMATION SYSTEMS SECURITY PROGRAM	39,094		39,094
239	0305192N	MILITARY INTELLIGENCE PROGRAM (MIP) ACTIVITIES	6,154		6,154
240	0305204N	TACTICAL UNMANNED AERIAL VEHICLES	7,108		7,108
241	0305205N	UAS INTEGRATION AND INTEROPERABILITY	62,098		62,098
242	0305208M	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	21,500		21,500
244	030520N	MQ-4C TRITON	11,120		11,120
245	0305231N	MQ-8 UAV	28,968		28,968
246	0305232M	RQ-11 UAV	537		537

247	0305234N	SMALL (LEVEL 0) TACTICAL UAS (STUASLO)	8,773		8,773
248	0305239M	RQ-21A	10,853		10,853
249	0305241N	MULTI-INTELLIGENCE SENSOR DEVELOPMENT	60,413		60,413
250	0305242M	UNMANNED AERIAL SYSTEMS (UAS) PAYLOADS (MIP)	5,000		5,000
251	0305251N	CYBERSPACE OPERATIONS FORCES AND FORCE SUPPORT	34,967	10,000	44,967
		Cyber tool development		[10,000]	
252	0305421N	RQ-4 MODERNIZATION	178,799		178,799
253	0307577N	INTELLIGENCE MISSION DATA (IMD)	2,120		2,120
254	0308601N	MODELING AND SIMULATION SUPPORT	8,683		8,683
255	0702207N	DEPOT MAINTENANCE (NON-IF)	45,168		45,168
256	0708730N	MARITIME TECHNOLOGY (MARITECH)	6,697		6,697
257	1203109N	SATELLITE COMMUNICATIONS (SPACE)	70,056		70,056
999	9999999999	CLASSIFIED PROGRAMS	1,795,032		1,795,032
		SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT	5,327,043	140,600	5,467,643
SOFTWARE AND DIGITAL TECHNOLOGY PILOT PROGRAMS					
258	0608013N	RISK MANAGEMENT INFORMATION—SOFTWARE PILOT PROGRAM	14,300		14,300
259	0608231N	MARITIME TACTICAL COMMAND AND CONTROL (MTC2)—SOFTWARE PILOT PROGRAM	10,868		10,868
		SUBTOTAL SOFTWARE AND DIGITAL TECHNOLOGY PILOT PROGRAMS	25,168	0	25,168
		TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY	21,427,048	-390,242	21,036,806
RESEARCH, DEVELOPMENT, TEST & EVAL, AF					
BASIC RESEARCH					
1	0601102F	DEFENSE RESEARCH SCIENCES	315,348	10,000	325,348
		Increase in basic research		[10,000]	
2	0601103F	UNIVERSITY RESEARCH INITIATIVES	161,861		161,861
3	0601108F	HIGH ENERGY LASER RESEARCH INITIATIVES	15,085		15,085
		SUBTOTAL BASIC RESEARCH	492,294	10,000	502,294
APPLIED RESEARCH					
4	0602020F	FUTURE AF CAPABILITIES APPLIED RESEARCH	100,000		100,000

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5	0602102F	MATERIALS	140,781	19,500	160,281
		High-energy synchrotron x-ray program		[5,000]	
		Materials maturation for high mach systems		[5,000]	
		Metals Affordability Initiative		[5,000]	
		Qualification of additive manufacturing processes		[2,000]	
		Techniques to repair fasteners		[2,500]	
6	0602201F	AEROSPACE VEHICLE TECHNOLOGIES	349,225	10,000	359,225
		Hypersonic materials		[10,000]	
7	0602202F	HUMAN EFFECTIVENESS APPLIED RESEARCH	115,222		115,222
9	0602204F	AEROSPACE SENSORS	211,301		211,301
11	0602298F	SCIENCE AND TECHNOLOGY MANAGEMENT— MAJOR HEADQUARTERS ACTIVITIES	8,926		8,926
12	0602602F	CONVENTIONAL MUNITIONS	132,425		132,425
13	0602605F	DIRECTED ENERGY TECHNOLOGY	128,113		128,113
14	0602788F	DOMINANT INFORMATION SCIENCES AND METHODS	178,668		178,668
15	0602890F	HIGH ENERGY LASER RESEARCH	45,088		45,088
		SUBTOTAL APPLIED RESEARCH	1,409,749	29,500	1,439,249
		ADVANCED TECHNOLOGY DEVELOPMENT			
17	0603030F	AF FOUNDATIONAL DEVELOPMENT/DEMOS	103,280		103,280
18	0603032F	FUTURE AF INTEGRATED TECHNOLOGY DEMOS	157,619	-50,000	107,619
		Golden Horde too mature for science and technology prototype		[-50,000]	
19	0603033F	NEXT GEN PLATFORM DEV/DEMO	199,556	9,000	208,556
		B-52 pylon fairings		[3,000]	
		C-130 finlets		[3,000]	
		KC-135 aft body drag		[3,000]	
20	0603034F	PERSISTENT KNOWLEDGE, AWARENESS, & C2 TECH	102,276		102,276
21	0603035F	NEXT GEN EFFECTS DEV/DEMOS	215,817		215,817

			778,548	-41,000	737,548
		SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT			
		ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES			
38	0603260F	INTELLIGENCE ADVANCED DEVELOPMENT	4,320		4,320
39	0603742F	COMBAT IDENTIFICATION TECHNOLOGY	26,396		26,396
40	0603790F	NATO RESEARCH AND DEVELOPMENT	3,647		3,647
41	0603851F	INTERCONTINENTAL BALLISTIC MISSILE—DEW/VAL	32,959		32,959
43	0604002F	AIR FORCE WEATHER SERVICES RESEARCH	869		869
44	0604003F	ADVANCED BATTLE MANAGEMENT SYSTEM (ABMS)	302,323		302,323
45	0604004F	ADVANCED ENGINE DEVELOPMENT	636,495	50,000	686,495
		AETP program acceleration		[50,000]	
46	0604015F	LONG RANGE STRIKE—BOMBER	2,848,410		2,848,410
47	0604032F	DIRECTED ENERGY PROTOTYPING	20,964	5,000	25,964
		Directed energy counter-Unmanned Aerial Systems (CUAS)		[5,000]	
48	0604033F	HYPERSONICS PROTOTYPING	381,862	65,000	446,862
		HAWC program increase		[65,000]	
50	0604257F	ADVANCED TECHNOLOGY AND SENSORS	24,747		24,747
51	0604288F	NATIONAL AIRBORNE OPS CENTER (NAOC) RECAP	76,417		76,417
52	0604317F	TECHNOLOGY TRANSFER	3,011		3,011
53	0604327F	HARD AND DEEPLY BURIED TARGET DEFEAT SYSTEM (HDBTDS) PROGRAM	52,921		52,921
54	0604414F	CYBER RESILIENCY OF WEAPON SYSTEMS-ACS	69,783		69,783
55	0604776F	DEPLOYMENT & DISTRIBUTION ENTERPRISE R&D	25,835		25,835
56	0604858F	TECH TRANSITION PROGRAM	219,252	236,000	455,252
		Agile software development and operations		[4,500]	
		Initial polar MILSATCOM capability		[46,000]	
		KC-135 vertical wipers		[2,000]	
		KC-135 winglets		[10,000]	
		LCAAT program acceleration		[128,000]	
		Long-endurance UAS		[33,500]	
		Rapid repair of high performance materials		[6,000]	
		Small satellite acceleration		[6,000]	
57	0605230F	GROUND BASED STRATEGIC DETERRENT	1,524,759		1,524,759

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59	0207110F	NEXT GENERATION AIR DOMINANCE	1,044,089		1,044,089
60	0207455F	THREE DIMENSIONAL LONG-RANGE RADAR (3DELRR)	19,356		19,356
61	0207522F	AIRBASE AIR DEFENSE SYSTEMS (ABADS)	8,737		8,737
62	0208099F	UNIFIED PLATFORM (UP)	5,990		5,990
63	0305236F	COMMON DATA LINK EXECUTIVE AGENT (CDL EA)	39,293		39,293
65	0305601F	MISSION PARTNER ENVIRONMENTS	11,430		11,430
66	0306250F	CYBER OPERATIONS TECHNOLOGY DEVELOPMENT	259,823		259,823
67	0306415F	ENABLED CYBER ACTIVITIES	10,560		10,560
68	0401310F	C-32 EXECUTIVE TRANSPORT RECAPITALIZATION	9,908		9,908
69	0901410F	CONTRACTING INFORMATION TECHNOLOGY SYSTEM	8,662		8,662
74	1206427F	SPACE SYSTEMS PROTOTYPE TRANSITIONS (SSPT)	8,787		8,787
77	1206730F	SPACE SECURITY AND DEFENSE PROGRAM	56,311		56,311
		SUBTOTAL ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	7,737,916	356,000	8,093,916
SYSTEM DEVELOPMENT & DEMONSTRATION					
82	0604200F	FUTURE ADVANCED WEAPON ANALYSIS & PROGRAMS	25,161		25,161
83	0604201F	PNT RESILIENCY, MODS, AND IMPROVEMENTS	38,564		38,564
84	0604222F	NUCLEAR WEAPONS SUPPORT	35,033		35,033
85	0604270F	ELECTRONIC WARFARE DEVELOPMENT	2,098		2,098
86	0604281F	TACTICAL DATA NETWORKS ENTERPRISE	131,909		131,909
87	0604287F	PHYSICAL SECURITY EQUIPMENT	6,752		6,752
88	0604329F	SMALL DIAMETER BOMB (SDB)—EMD	17,280		17,280
89	0604429F	AIRBORNE ELECTRONIC ATTACK	0	30,000	30,000
		STITCHES integration		[30,000]	
90	0604602F	ARMAMENT/ORDNANCE DEVELOPMENT	23,076		23,076
91	0604604F	SUBMUNITIONS	3,091		3,091
92	0604617F	AGILE COMBAT SUPPORT	20,609		20,609

93	0604618F	JOINT DIRECT ATTACK MUNITION	7,926		7,926
94	0604706F	LIFE SUPPORT SYSTEMS	23,660		23,660
95	0604735F	COMBAT TRAINING RANGES	8,898		8,898
96	0604800F	F-35—EMD	5,423		5,423
97	0604932F	LONG RANGE STANDOFF WEAPON	474,430		474,430
98	0604933F	ICBM FUZE MODERNIZATION	167,099		167,099
100	0605056F	OPEN ARCHITECTURE MANAGEMENT	30,547		30,547
102	0605223F	ADVANCED PILOT TRAINING	248,669	6,000	254,669
		SLATE/VR training		[6,000]	
103	0605229F	COMBAT RESCUE HELICOPTER	63,169		63,169
105	0101125F	NUCLEAR WEAPONS MODERNIZATION	9,683		9,683
106	0207171F	F-15 EPAWSS	170,679		170,679
107	0207328F	STAND IN ATTACK WEAPON	160,438		160,438
108	0207701F	FULL COMBAT MISSION TRAINING	9,422		9,422
110	0305176F	COMBAT SURVIVOR EVADER LOCATOR	973		973
111	0401221F	KC-46A TANKER SQUADRONS	106,262		106,262
113	0401319F	VC-25B	800,889		800,889
114	0701212F	AUTOMATED TEST SYSTEMS	10,673		10,673
115	0804772F	TRAINING DEVELOPMENTS	4,479		4,479
116	0901299F	AF A1 SYSTEMS	8,467		8,467
		SUBTOTAL SYSTEM DEVELOPMENT & DEMONSTRATION	2,615,359	36,000	2,651,359
MANAGEMENT SUPPORT					
131	0604256F	THREAT SIMULATOR DEVELOPMENT	57,725		57,725
132	0604759F	MAJOR T&E INVESTMENT	208,680	15,000	223,680
		Gulf Range telemetric modernization		[15,000]	
133	0605101F	RAND PROJECT AIR FORCE	35,803		35,803
135	0605712F	INITIAL OPERATIONAL TEST & EVALUATION	13,557		13,557
136	0605807F	TEST AND EVALUATION SUPPORT	764,606		764,606
142	0605831F	ACQ WORKFORCE- CAPABILITY INTEGRATION	1,362,038		1,362,038
143	0605832F	ACQ WORKFORCE- ADVANCED PRGM TECHNOLOGY	40,768		40,768
144	0605833F	ACQ WORKFORCE- NUCLEAR SYSTEMS	179,646		179,646

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145	0605898F	MANAGEMENT HQ—R&D	5,734		5,734
146	0605976F	FACILITIES RESTORATION AND MODERNIZATION—TEST AND EVALUATION SUPPORT	70,985		70,985
147	0605978F	FACILITIES SUSTAINMENT—TEST AND EVALUATION SUPPORT	29,880		29,880
148	0606017F	REQUIREMENTS ANALYSIS AND MATURATION	63,381		63,381
149	0606398F	MANAGEMENT HQ—T&E	5,785		5,785
150	0303255F	COMMAND, CONTROL, COMMUNICATION, AND COMPUTERS (C4)—STRATCOM	24,564		24,564
151	0308602F	ENTERPRISE INFORMATION SERVICES (EIS) Acq strat incompatible with AF digital mod strategy	9,883	-7,500 [-7,500]	2,383
152	0702806F	ACQUISITION AND MANAGEMENT SUPPORT	13,384		13,384
153	0804731F	GENERAL SKILL TRAINING	1,262		1,262
155	1001004F	INTERNATIONAL ACTIVITIES	3,599		3,599
		SUBTOTAL MANAGEMENT SUPPORT	2,891,280	7,500	2,898,780
OPERATIONAL SYSTEMS DEVELOPMENT					
163	0604233F	SPECIALIZED UNDERGRADUATE FLIGHT TRAINING	8,777		8,777
164	0604776F	DEPLOYMENT & DISTRIBUTION ENTERPRISE R&D	499		499
165	0604840F	F-35 C2D2	785,336		785,336
166	0605018F	AF INTEGRATED PERSONNEL AND PAY SYSTEM (AF-IPPS) Poor agile development strategy	27,035	-20,000 [-20,000]	7,035
167	0605024F	ANTI-TAMPER TECHNOLOGY EXECUTIVE AGENCY	50,508		50,508
168	0605117F	FOREIGN MATERIEL ACQUISITION AND EXPLOITATION	71,229		71,229
169	0605278F	HC/MC-130 RECAP RDT&E	24,705		24,705
170	0606018F	NC3 INTEGRATION	26,356		26,356
172	0101113F	B-52 SQUADRONS	520,023		520,023
173	0101122F	AIR-LAUNCHED CRUISE MISSILE (ALCM)	1,433		1,433
174	0101126F	B-1B SQUADRONS USAF-requested transfer from APAF Lines 22, 24	15,766	10,800 [10,800]	26,566

175	0101127F	B-2 SQUADRONS	187,399
176	0101213F	MINUTEMAN SQUADRONS	116,569
177	0101316F	WORLDWIDE JOINT STRATEGIC COMMUNICATIONS	27,235
178	0101324F	INTEGRATED STRATEGIC PLANNING & ANALYSIS NETWORK	24,227
179	0101328F	ICBM REENTRY VEHICLES	112,753
181	0102110F	UH-1N REPLACEMENT PROGRAM	44,464
182	0102326F	REGION/SECTOR OPERATION CONTROL CENTER MODERNIZATION PROGRAM	5,929
183	0102412F	NORTH WARNING SYSTEM (NWS)	100
184	0205219F	MQ-9 UAV	162,080
186	0207131F	A-10 SQUADRONS	24,535
187	0207133F	F-16 SQUADRONS	223,437
188	0207134F	F-15E SQUADRONS	298,908
189	0207136F	MANNED DESTRUCTIVE SUPPRESSION	14,960
190	0207138F	F-22A SQUADRONS	665,038
191	0207142F	F-35 SQUADRONS	132,229
192	0207146F	F-15EX	159,761
193	0207161F	TACTICAL AIM MISSILES	19,417
194	0207163F	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM)	51,799
195	0207227F	COMBAT RESCUE—PARARESCUE	669
196	0207247F	AF TENCAP	21,644
197	0207249F	PRECISION ATTACK SYSTEMS PROCUREMENT	9,261
198	0207253F	COMPASS CALL	15,854
199	0207268F	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	95,896
200	0207325F	JOINT AIR-TO-SURFACE STANDOFF MISSILE (JASSM)	70,792
201	0207410F	AIR & SPACE OPERATIONS CENTER (AOC)	51,187
202	0207412F	CONTROL AND REPORTING CENTER (CRC)	16,041
203	0207417F	AIRBORNE WARNING AND CONTROL SYSTEM (AWACS)	138,303
204	0207418F	AFSPECWAR—TACP	4,223
206	0207431F	COMBAT AIR INTELLIGENCE SYSTEM ACTIVITIES	16,564
207	0207438F	THEATER BATTLE MANAGEMENT (TBM) C4I	7,858
208	0207444F	TACTICAL AIR CONTROL PARTY-MOD	12,906
210	0207452F	DCAPES	14,816

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211	0207521F	AIR FORCE CALIBRATION PROGRAMS	1,970		1,970
212	0207573F	NATIONAL TECHNICAL NUCLEAR FORENSICS	396		396
213	0207590F	SEEK EAGLE	29,680		29,680
214	0207601F	USAF MODELING AND SIMULATION	17,666		17,666
215	0207605F	WARGAMING AND SIMULATION CENTERS	6,353		6,353
216	0207610F	BATTLEFIELD ABN COMM NODE (BACN)	6,827		6,827
217	0207697F	DISTRIBUTED TRAINING AND EXERCISES	3,390		3,390
218	0208006F	MISSION PLANNING SYSTEMS	91,768		91,768
219	0208007F	TACTICAL DECEPTION	2,370		2,370
220	0208064F	OPERATIONAL HQ—CYBER	5,527		5,527
221	0208087F	DISTRIBUTED CYBER WARFARE OPERATIONS	68,279		68,279
222	0208088F	AF DEFENSIVE CYBERSPACE OPERATIONS	15,165		15,165
223	0208097F	JOINT CYBER COMMAND AND CONTROL (JCC2)	38,480		38,480
224	0208099F	UNIFIED PLATFORM (UP)	84,645		84,645
230	0301025F	GEOWARE	2,767		2,767
231	0301112F	NUCLEAR PLANNING AND EXECUTION SYSTEM (NPES)	32,759		32,759
238	0301401F	AIR FORCE SPACE AND CYBER NON-TRADITIONAL ISR FOR BATTLESPACE AWARENESS	2,904		2,904
239	0302015F	E-4B NATIONAL AIRBORNE OPERATIONS CENTER (NAOC)	3,468		3,468
240	0303131F	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK (MEECN)	61,887		61,887
242	0303140F	INFORMATION SYSTEMS SECURITY PROGRAM	10,351		10,351
243	0303142F	GLOBAL FORCE MANAGEMENT—DATA INITIATIVE	1,346		1,346
246	0304260F	AIRBORNE SIGINT ENTERPRISE	128,110		128,110
247	0304310F	COMMERCIAL ECONOMIC ANALYSIS	4,042		4,042
251	0305020F	CCMD INTELLIGENCE INFORMATION TECHNOLOGY	1,649		1,649
252	0305022F	ISR MODERNIZATION & AUTOMATION DVMAT (IMAD)	19,265		19,265
253	0305099F	GLOBAL AIR TRAFFIC MANAGEMENT (GATM)	4,645		4,645
254	0305103F	CYBER SECURITY INITIATIVE	384		384

255	0305111F	WEATHER SERVICE	23,640	23,640
256	0305114F	AIR TRAFFIC CONTROL, APPROACH, AND LANDING SYSTEM (ATCAL)	6,553	6,553
257	0305116F	AERIAL TARGETS	449	449
260	0305128F	SECURITY AND INVESTIGATIVE ACTIVITIES	432	432
262	0305146F	DEFENSE JOINT COUNTERINTELLIGENCE ACTIVITIES	4,890	4,890
264	0305179F	INTEGRATED BROADCAST SERVICE (IBS)	8,864	8,864
265	0305202F	DRAGON U-2	18,660	18,660
267	0305206F	AIRBORNE RECONNAISSANCE SYSTEMS	121,512	121,512
268	0305207F	MANNED RECONNAISSANCE SYSTEMS	14,711	14,711
269	0305208F	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	14,152	14,152
270	0305220F	RQ-4 UAV	134,589	134,589
271	0305221F	NETWORK-CENTRIC COLLABORATIVE TARGETING	15,049	15,049
272	0305238F	NATO AGS	36,731	36,731
273	0305240F	SUPPORT TO DCGS ENTERPRISE	33,547	33,547
274	0305600F	INTERNATIONAL INTELLIGENCE TECHNOLOGY AND ARCHITECTURES	13,635	17,315
		PDI: Mission Partner Environment BICES-X Project 675898	3,680	3,680
			[3,680]	[3,680]
275	0305881F	RAPID CYBER ACQUISITION	4,262	4,262
276	0305984F	PERSONNEL RECOVERY COMMAND & CTRL (PRC2)	2,207	2,207
277	0307577F	INTELLIGENCE MISSION DATA (IMD)	6,277	6,277
278	0401115F	C-130 AIRLIFT SQUADRON	41,973	41,973
279	0401119F	C-5 AIRLIFT SQUADRONS (IF)	32,560	32,560
280	0401130F	C-17 AIRCRAFT (IF)	9,991	12,991
		C-17 microvanes	3,000	3,000
			[3,000]	[3,000]
281	0401132F	C-130J PROGRAM	10,674	10,674
282	0401134F	LARGE AIRCRAFT IR COUNTERMEASURES (LAIRCM)	5,507	5,507
283	0401218F	KC-135S	4,591	4,591
286	0401318F	CV-22	18,419	18,419
288	0408011F	SPECIAL TACTICS / COMBAT CONTROL	7,673	7,673
290	0708055F	MAINTENANCE, REPAIR & OVERHAUL SYSTEM	24,513	24,513
291	0708610F	LOGISTICS INFORMATION TECHNOLOGY (LOGIT)	35,225	15,225
		Poor agile development strategy	-20,000	-20,000
			[-20,000]	[-20,000]
292	0708611F	SUPPORT SYSTEMS DEVELOPMENT	11,838	11,838

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Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
293	0804743F	OTHER FLIGHT TRAINING	1,332		1,332
295	0901202F	JOINT PERSONNEL RECOVERY AGENCY	2,092		2,092
296	0901218F	CIVILIAN COMPENSATION PROGRAM	3,869		3,869
297	0901220F	PERSONNEL ADMINISTRATION	1,584		1,584
298	0901226F	AIR FORCE STUDIES AND ANALYSIS AGENCY	1,197		1,197
299	0901538F	FINANCIAL MANAGEMENT INFORMATION SYSTEMS DEVELOPMENT	7,006		7,006
300	0901554F	DEFENSE ENTERPRISE ACNTNG AND MGT SYS (DEAMS)	45,638		45,638
301	1201017F	GLOBAL SENSOR INTEGRATED ON NETWORK (GSIN)	1,889		1,889
302	1201921F	SERVICE SUPPORT TO STRATCOM—SPACE ACTIVITIES	993		993
303	1202140F	SERVICE SUPPORT TO SPACECOM ACTIVITIES	8,999		8,999
314	1203400F	SPACE SUPERIORITY INTELLIGENCE	16,810		16,810
316	1203620F	NATIONAL SPACE DEFENSE CENTER	2,687		2,687
318	1203906F	NCMC—TW/AA SYSTEM	6,990		6,990
999	9999999999	CLASSIFIED PROGRAMS	15,777,856	62,000	15,839,856
		Air-to-air weapons development increase		[62,000]	
		SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT	21,466,680	39,480	21,506,160
		TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, AF	37,391,826	437,480	37,829,306
		RDTE, SPACE FORCE			
		APPLIED RESEARCH			
1	1206601SF	SPACE TECHNOLOGY	130,874	3,000	133,874
		Small satellite mission operations facility		[3,000]	
		SUBTOTAL APPLIED RESEARCH	130,874	3,000	133,874
2	1203164SF	ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES			
		NAVSTAR GLOBAL POSITIONING SYSTEM (USER EQUIPMENT) (SPACE)	390,704	-20,000	370,704

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OPERATIONAL SYSTEM DEVELOPMENT					
26	1201017SF	GLOBAL SENSOR INTEGRATED ON NETWORK (GSIN)	3,708		3,708
27	1203001SF	FAMILY OF ADVANCED BLOS TERMINALS (FAB-T)	247,229		247,229
28	1203110SF	SATELLITE CONTROL NETWORK (SPACE)	75,480		75,480
29	1203165SF	NAVSTAR GLOBAL POSITIONING SYSTEM (SPACE AND CONTROL SEGMENTS)	1,984		1,984
30	1203173SF	SPACE AND MISSILE TEST AND EVALUATION CENTER	4,397		4,397
31	1203174SF	SPACE INNOVATION, INTEGRATION AND RAPID TECHNOLOGY DEVELOPMENT	44,746		44,746
32	1203182SF	SPACELIFT RANGE SYSTEM (SPACE)	11,020		11,020
33	1203265SF	GPS III SPACE SEGMENT	10,777		10,777
34	1203873SF	BALLISTIC MISSILE DEFENSE RADARS	28,179	18,500	46,679
		Cobra Dane service life extension		[18,500]	
35	1203913SF	NUDET DETECTION SYSTEM (SPACE)	29,157		29,157
36	1203940SFZ	SPACE SITUATION AWARENESS OPERATIONS	44,809	7,000	51,809
		Commercial SSA		[7,000]	
37	1206423SF	GLOBAL POSITIONING SYSTEM III—OPERATIONAL CONTROL SEGMENT	481,999	-65,000	416,999
		Funds available prioritized to other space missions		[-65,000]	
41	1206770SF	ENTERPRISE GROUND SERVICES	116,791		116,791
999	99999999999	CLASSIFIED PROGRAMS	3,632,866		3,632,866
		SUBTOTAL OPERATIONAL SYSTEM DEVELOPMENT	4,733,142	-39,500	4,693,642
SOFTWARE AND DIGITAL TECHNOLOGY PILOT PROGRAMS					
42	1203614SF	JSPOC MISSION SYSTEM	149,742		149,742
		SUBTOTAL SOFTWARE AND DIGITAL TECHNOLOGY PILOT PROGRAMS	149,742	0	149,742
		TOTAL RDTE, SPACE FORCE	10,327,595	-26,500	10,301,095

RESEARCH, DEVELOPMENT, TEST & EVAL, DW				
BASIC RESEARCH				
1	0601000BR	DTRA BASIC RESEARCH	14,617	14,617
2	0601101E	DEFENSE RESEARCH SCIENCES	479,958	479,958
3	0601110D8Z	BASIC RESEARCH INITIATIVES	35,565	72,565
		DEPSCoR		37,000
		Minerva Research Initiative restore DWR cut		[20,000]
4	0601117E	BASIC OPERATIONAL MEDICAL RESEARCH SCIENCE	53,730	58,730
		Traumatic brain injury medical research		[17,000]
5	0601120D8Z	NATIONAL DEFENSE EDUCATION PROGRAM	100,241	100,241
6	0601228D8Z	HISTORICALLY BLACK COLLEGES AND UNIVERSITIES/MINORITY INSTITUTIONS	30,975	37,975
		Aerospace education, research, and innovation activities		7,000
		HBCU/Minority Institutions		[2,000]
7	0601384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	45,300	45,300
		SUBTOTAL BASIC RESEARCH	760,386	809,386
				49,000
APPLIED RESEARCH				
8	0602000D8Z	JOINT MUNITIONS TECHNOLOGY	19,409	19,409
9	0602115E	BIOMEDICAL TECHNOLOGY	107,568	107,568
11	0602230D8Z	DEFENSE TECHNOLOGY INNOVATION	35,000	35,000
12	0602234D8Z	LINCOLN LABORATORY RESEARCH PROGRAM	41,080	41,080
13	0602251D8Z	APPLIED RESEARCH FOR THE ADVANCEMENT OF S&T PRIORITIES	60,722	60,722
14	0602303E	INFORMATION & COMMUNICATIONS TECHNOLOGY	435,920	435,920
15	0602383E	BIOLOGICAL WARFARE DEFENSE	26,950	26,950
16	0602384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	201,807	201,807
17	0602668D8Z	CYBER SECURITY RESEARCH	15,255	15,255
18	0602702E	TACTICAL TECHNOLOGY	233,271	233,271
19	0602715E	MATERIALS AND BIOLOGICAL TECHNOLOGY	250,107	290,107
		Increase in emerging biotech research		40,000
20	0602716E	ELECTRONICS TECHNOLOGY	322,693	322,693
21	0602718BR	COUNTER WEAPONS OF MASS DESTRUCTION APPLIED RESEARCH	174,571	174,571
22	0602751D8Z	SOFTWARE ENGINEERING INSTITUTE (SEI) APPLIED RESEARCH	9,573	9,573

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23	1160401BB	SOF TECHNOLOGY DEVELOPMENT	42,464		42,464
		SUBTOTAL APPLIED RESEARCH	1,976,390	40,000	2,016,390
		ADVANCED TECHNOLOGY DEVELOPMENT			
24	0603000D8Z	JOINT MUNITIONS ADVANCED TECHNOLOGY	22,920		22,920
25	0603121D8Z	SO/LIC ADVANCED DEVELOPMENT	4,914		4,914
26	0603122D8Z	COMBATING TERRORISM TECHNOLOGY SUPPORT	51,089		51,089
27	0603133D8Z	FOREIGN COMPARATIVE TESTING	25,183		25,183
29	0603160BR	COUNTER WEAPONS OF MASS DESTRUCTION ADVANCED TECHNOLOGY DEVELOPMENT	366,659		366,659
30	0603176C	ADVANCED CONCEPTS AND PERFORMANCE ASSESSMENT	14,910		14,910
32	0603180C	ADVANCED RESEARCH	18,687		18,687
33	060325D8Z	JOINT DOD-DOE MUNITIONS TECHNOLOGY DEVELOPMENT	18,873		18,873
34	0603286E	ADVANCED AEROSPACE SYSTEMS	230,978	-20,000	210,978
		OpFires lack of transition pathway		[-20,000]	
35	0603287E	SPACE PROGRAMS AND TECHNOLOGY	158,439		158,439
36	0603288D8Z	ANALYTIC ASSESSMENTS	23,775		23,775
37	0603289D8Z	ADVANCED INNOVATIVE ANALYSIS AND CONCEPTS	36,524		36,524
38	0603291D8Z	ADVANCED INNOVATIVE ANALYSIS AND CONCEPTS—MHA	14,703		14,703
39	0603294C	COMMON KILL VEHICLE TECHNOLOGY	11,058		11,058
40	0603338D8Z	DEFENSE MODERNIZATION AND PROTOTYPING	133,375	-7,000	126,375
		Lack of hypersonic prototype coordination efforts		[-20,000]	
		Stratospheric balloon research		[13,000]	
42	0603342D8Z	DEFENSE INNOVATION UNIT (DIU)	26,141		26,141
43	0603375D8Z	TECHNOLOGY INNOVATION	27,709		27,709
44	0603384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM—ADVANCED DEVELOPMENT	188,001		188,001
45	0603527D8Z	RETRACT LARCH	130,283		130,283
46	0603618D8Z	JOINT ELECTRONIC ADVANCED TECHNOLOGY	15,164		15,164

47	0603648D8Z	JOINT CAPABILITY TECHNOLOGY DEMONSTRATIONS	85,452		85,452
48	0603662D8Z	NETWORKED COMMUNICATIONS CAPABILITIES	5,882		5,882
49	0603680D8Z	DEFENSE-WIDE MANUFACTURING SCIENCE AND TECHNOLOGY PROGRAM	93,817	5,000	98,817
		Rapid prototyping using digital manufacturing		[5,000]	
50	0603680S	MANUFACTURING TECHNOLOGY PROGRAM	40,025	[5,000]	55,025
		Defense supply chain technologies		[5,000]	
		Steel performance initiative		[10,000]	
52	0603712S	GENERIC LOGISTICS R&D TECHNOLOGY DEMONSTRATIONS	10,235		10,235
53	0603716D8Z	STRATEGIC ENVIRONMENTAL RESEARCH PROGRAM	53,862		53,862
54	0603720S	MICROELECTRONICS TECHNOLOGY DEVELOPMENT AND SUPPORT	124,049		124,049
55	0603727D8Z	JOINT WARFIGHTING PROGRAM	3,871		3,871
56	0603739E	ADVANCED ELECTRONICS TECHNOLOGIES	95,864		95,864
57	0603760E	COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS	221,724		221,724
58	0603766E	NETWORK-CENTRIC WARFARE TECHNOLOGY	661,158	-10,000	651,158
		Lack of coordination		[-10,000]	
59	0603767E	SENSOR TECHNOLOGY	200,220		200,220
60	0603769D8Z	DISTRIBUTED LEARNING ADVANCED TECHNOLOGY DEVELOPMENT	6,765		6,765
61	0603781D8Z	SOFTWARE ENGINEERING INSTITUTE	12,598		12,598
64	0603924D8Z	HIGH ENERGY LASER ADVANCED TECHNOLOGY PROGRAM	105,410		105,410
65	0603941D8Z	TEST & EVALUATION SCIENCE & TECHNOLOGY	187,065		187,065
67	0604055D8Z	OPERATIONAL ENERGY CAPABILITY IMPROVEMENT	0	65,000	65,000
		Restoration of funds		[65,000]	
70	1160402BB	SOF ADVANCED TECHNOLOGY DEVELOPMENT	89,072		89,072
71	1206310SDA	SPACE SCIENCE AND TECHNOLOGY RESEARCH AND DEVELOPMENT	72,422		72,422
		SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT	3,568,876	48,000	3,636,876
ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
72	0603161D8Z	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT RDT&E ADC&P	32,636		32,636
73	0603600D8Z	WALKOFF	106,529		106,529
75	0603851D8Z	ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PROGRAM	61,345	15,000	76,345
		Joint Storage Program		[15,000]	
76	0603881C	BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT	412,627		412,627

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77	0603882C	BALLISTIC MISSILE DEFENSE MIDCOURSE DEFENSE SEGMENT	1,004,305		1,004,305
78	0603884BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM—DEMVAL	76,167		76,167
79	0603884C	BALLISTIC MISSILE DEFENSE SENSORS	281,957		281,957
80	0603890C	BMD ENABLING PROGRAMS	599,380		599,380
81	0603891C	SPECIAL PROGRAMS—MDA	420,216		420,216
82	0603892C	AEGIS BMD	814,936		814,936
83	0603896C	BALLISTIC MISSILE DEFENSE COMMAND AND CONTROL, BATTLE MANAGEMENT AND COMMUNICATI.....	593,353		593,353
84	0603898C	BALLISTIC MISSILE DEFENSE JOINT WARFIGHTER SUPPORT	49,560		49,560
85	0603904C	MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	55,356		55,356
86	0603906C	REGARDING TRENCH	11,863		11,863
87	0603907C	SEA BASED X-BAND RADAR (SBX)	118,318		118,318
88	0603913C	ISRAELI COOPERATIVE PROGRAMS	300,000		300,000
89	0603914C	BALLISTIC MISSILE DEFENSE TEST	378,302		378,302
90	0603915C	BALLISTIC MISSILE DEFENSE TARGETS	536,133		536,133
92	0603923D8Z	COALITION WARFARE	10,129		10,129
93	0604011D8Z	NEXT GENERATION INFORMATION COMMUNICATIONS TECHNOLOGY (5G)	449,000		449,000
94	0604016D8Z	DEPARTMENT OF DEFENSE CORROSION PROGRAM	3,325		3,325
95	0604115C	TECHNOLOGY MATURATION INITIATIVES	67,389		67,389
98	0604181C	HYPERSONIC DEFENSE	206,832		206,832
99	0604250D8Z	ADVANCED INNOVATIVE TECHNOLOGIES	730,508	-100,000 [-100,000]	630,508
		Program decrease			
100	0604294D8Z	TRUSTED & ASSURED MICROELECTRONICS	489,076		489,076
101	0604331D8Z	RAPID PROTOTYPING PROGRAM	102,023	-20,000 [-20,000]	82,023
		Lack of hypersonic prototype coordination efforts			
102	0604341D8Z	DEFENSE INNOVATION UNIT (DIU) PROTOTYPING	13,255		13,255
103	0604400D8Z	DEPARTMENT OF DEFENSE (DOD) UNMANNED SYSTEM COMMON DEVELOPMENT	2,787		2,787

105	0604672C	HOMELAND DEFENSE RADAR—HAWAII (HDR-H)	0	162,000	162,000
		Continue radar development		[162,000]	
107	0604682D8Z	WARGAMING AND SUPPORT FOR STRATEGIC ANALYSIS (SSA)	3,469	3,469	
109	0604826J	JOINT C5 CAPABILITY DEVELOPMENT, INTEGRATION AND INTEROPERABILITY ASSESSMENTS	19,190	19,190	
110	0604873C	LONG RANGE DISCRIMINATION RADAR (LRDR)	137,256	137,256	
111	0604874C	IMPROVED HOMELAND DEFENSE INTERCEPTORS	664,138	354,138	
		Contract award delay		[-310,000]	
112	0604876C	BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT TEST	7,768	7,768	
113	0604878C	AEGIS BMD TEST	170,880	170,880	
114	0604879C	BALLISTIC MISSILE DEFENSE SENSOR TEST	76,456	76,456	
115	0604880C	LAND-BASED SM-3 (LBSM3)	56,628	133,428	
		PDI: Guam Defense System—systems engineering		[76,800]	
116	0604887C	BALLISTIC MISSILE DEFENSE MIDCOURSE SEGMENT TEST	67,071	67,071	
118	0300206R	ENTERPRISE INFORMATION TECHNOLOGY SYSTEMS	2,198	2,198	
119	0303191D8Z	JOINT ELECTROMAGNETIC TECHNOLOGY (JET) PROGRAM	997	997	
120	0305103C	CYBER SECURITY INITIATIVE	1,148	1,148	
121	1206410SDA	SPACE TECHNOLOGY DEVELOPMENT AND PROTOTYPING	215,994	325,994	
		Execution of HBTSS by MDA		[110,000]	
		Space-based target custody layer		[-20,000]	
122	1206883C	SPACE TRACKING & SURVEILLANCE SYSTEM	34,144	34,144	
123	1206895C	BALLISTIC MISSILE DEFENSE SYSTEM SPACE PROGRAMS	32,068	152,068	
		Hypersonic and Ballistic Tracking Space Sensor (HBTSS)		[120,000]	
		SUBTOTAL ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	9,416,712	53,800	9,470,512
SYSTEM DEVELOPMENT & DEMONSTRATION					
124	0604161D8Z	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT RDT&E SDD	7,173	7,173	
126	0604384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM—EMD	319,976	322,976	
		Stryker NBCRV sensor suite upgrade		[3,000]	
127	0604771D8Z	JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)	54,985	54,985	
128	0605000BR	COUNTER WEAPONS OF MASS DESTRUCTION SYSTEMS DEVELOPMENT	15,650	15,650	
129	0605013BL	INFORMATION TECHNOLOGY DEVELOPMENT	1,441	1,441	
130	0605021SE	HOMELAND PERSONNEL SECURITY INITIATIVE	7,287	7,287	

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131	0605022D8Z	DEFENSE EXPORTABILITY PROGRAM	12,928		12,928
132	0605027D8Z	OUS(D) IT DEVELOPMENT INITIATIVES	10,259		10,259
133	0605070S	DOD ENTERPRISE SYSTEMS DEVELOPMENT AND DEMONSTRATION	1,377		1,377
134	0605075D8Z	CMO POLICY AND INTEGRATION	1,648		1,648
135	0605080S	DEFENSE AGENCY INITIATIVES (DAI)—FINANCIAL SYSTEM	20,537		20,537
136	0605090S	DEFENSE RETIRED AND ANNUITANT PAY SYSTEM (DRAS)	1,638		1,638
137	0605141BR	MISSION ASSURANCE RISK MANAGEMENT SYSTEM (MARMS)	5,500		5,500
138	0605210D8Z	DEFENSE-WIDE ELECTRONIC PROCUREMENT CAPABILITIES	8,279		8,279
139	0605294D8Z	TRUSTED & ASSURED MICROELECTRONICS	107,585		107,585
140	0605772D8Z	NUCLEAR COMMAND, CONTROL, & COMMUNICATIONS	3,685		3,685
143	0305304D8Z	DOD ENTERPRISE ENERGY INFORMATION MANAGEMENT (EEIM)	3,275		3,275
144	0305310D8Z	CWMD SYSTEMS: SYSTEM DEVELOPMENT AND DEMONSTRATION	20,585		20,585
		SUBTOTAL SYSTEM DEVELOPMENT & DEMONSTRATION	603,808	3,000	606,808
		MANAGEMENT SUPPORT			
145	0603829J	JOINT CAPABILITY EXPERIMENTATION	11,239		11,239
146	0604774D8Z	DEFENSE READINESS REPORTING SYSTEM (DRRS)	9,793		9,793
147	0604875D8Z	JOINT SYSTEMS ARCHITECTURE DEVELOPMENT	8,497		8,497
148	0604940D8Z	CENTRAL TEST AND EVALUATION INVESTMENT DEVELOPMENT (CTEIP)	422,451	30,000	452,451
		Joint Counter-UAS Office assessment infrastructure		[15,000]	
		Telemetry range extension wave glider relay		[15,000]	
149	0604942D8Z	ASSESSMENTS AND EVALUATIONS	18,379		18,379
150	0605001E	MISSION SUPPORT	74,334		74,334
151	0605100D8Z	JOINT MISSION ENVIRONMENT TEST CAPABILITY (JMETS)	79,046		79,046
153	0605126J	JOINT INTEGRATED AIR AND MISSILE DEFENSE ORGANIZATION (JIAMDO)	50,255		50,255
155	0605142D8Z	SYSTEMS ENGINEERING	49,376		49,376
156	0605151D8Z	STUDIES AND ANALYSIS SUPPORT—OSD	5,777	2,000	7,777

157	0605161D8Z	National Academies of Science study on comparison of talent programs			
158	0605170D8Z	NUCLEAR MATTERS-PHYSICAL SECURITY	16,552	[2,000]	16,552
159	0605200D8Z	SUPPORT TO NETWORKS AND INFORMATION INTEGRATION	9,582		9,582
160	0605384BP	GENERAL SUPPORT TO USD (INTELLIGENCE)	1,940		1,940
161	0605790D8Z	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	122,951		122,951
168	0605797D8Z	SMALL BUSINESS INNOVATION RESEARCH (SBIR)/ SMALL BUSINESS TECHNOLOGY TRANSFER	3,582		3,582
169	0605798D8Z	MAINTAINING TECHNOLOGY ADVANTAGE	29,566		29,566
170	0605801KA	DEFENSE TECHNOLOGY ANALYSIS	29,059		29,059
		DEFENSE TECHNICAL INFORMATION CENTER (DTIC)	59,369		59,369
		Insufficient progress on data sharing and open repositories	-50,000		
		R&D IN SUPPORT OF DOD ENLISTMENT, TESTING AND EVALUATION	[-50,000]		
171	0605803SE	DEVELOPMENT TEST AND EVALUATION	29,420		29,420
172	0605804D8Z	MANAGEMENT HQ—R&D	27,198		27,198
173	0605898E	MANAGEMENT HQ—DEFENSE TECHNICAL INFORMATION CENTER (DTIC)	13,434		13,434
174	0605998KA	BUDGET AND PROGRAM ASSESSMENTS	2,837		2,837
175	0606100D8Z	ODNA TECHNOLOGY AND RESOURCE ANALYSIS	13,173		13,173
176	0606225D8Z	DEFENSE DIGITAL SERVICE (DDS) DEVELOPMENT SUPPORT	3,200		3,200
177	0606589D8W	DEFENSE OPERATIONS SECURITY INITIATIVE (DOSI)	999		999
180	0203345D8Z	JOINT STAFF ANALYTICAL SUPPORT	3,099		3,099
181	0204571J	C4I INTEROPERABILITY	3,058		3,058
182	0208045K	INFORMATION SYSTEMS SECURITY PROGRAM	59,813		59,813
185	0303140SE	SUPPORT TO INFORMATION OPERATIONS (IO) CAPABILITIES	1,112		1,112
186	0303166J	DEFENSE MILITARY DECEPTION PROGRAM OFFICE (DMIDPO)	545		545
187	0303260D8Z	COMBINED ADVANCED APPLICATIONS	1,036		1,036
188	0305172K	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	30,824		30,824
190	0305208K	COCOM EXERCISE ENGAGEMENT AND TRAINING TRANSFORMATION (CE2T2)—NON-MHA	3,048		3,048
194	0804768J	DEFENSE EQUAL OPPORTUNITY MANAGEMENT INSTITUTE (DEOMI)	31,125		31,125
195	0808709SE	MANAGEMENT HQ—MDA	100		100
196	0901598C	JOINT SERVICE PROVIDER (JSP)	26,902		26,902
197	0903235K	CLASSIFIED PROGRAMS	3,138		3,138
999	99999999999	SUBTOTAL MANAGEMENT SUPPORT	41,583	-18,000	1,279,392

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION
(In Thousands of Dollars)

Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
OPERATIONAL SYSTEMS DEVELOPMENT					
199	0604130V	ENTERPRISE SECURITY SYSTEM (ESS)	14,378		14,378
200	0604532K	JOINT ARTIFICIAL INTELLIGENCE	132,058		132,058
201	0605127T	REGIONAL INTERNATIONAL OUTREACH (RIO) AND PARTNERSHIP FOR PEACE INFORMATION MANA	1,986		1,986
202	0605147T	OVERSEAS HUMANITARIAN ASSISTANCE SHARED INFORMATION SYSTEM (OHASIS)	316		316
203	0607210D8Z	INDUSTRIAL BASE ANALYSIS AND SUSTAINMENT SUPPORT	9,151	61,000	70,151
		Advanced machine tool research		[20,000]	
		Cold spray manufacturing technologies		[5,000]	
		Domestic organic LED manufacturing		[5,000]	
		Implementation of radar supplier resiliency plan		[5,000]	
		Manufacturing for reuse of NdFeB magnets		[6,000]	
		Submarine industrial base workforce training pipeline		[20,000]	
204	0607310D8Z	CWMD SYSTEMS: OPERATIONAL SYSTEMS DEVELOPMENT	19,082		19,082
205	0607327T	GLOBAL THEATER SECURITY COOPERATION MANAGEMENT INFORMATION SYSTEMS (G-TSCMIS)	3,992		3,992
206	0607384BP	CHEMICAL AND BIOLOGICAL DEFENSE (OPERATIONAL SYSTEMS DEVELOPMENT)	39,530		39,530
207	0208043J	PLANNING AND DECISION AID SYSTEM (PDAS)	3,039		3,039
212	0302019K	DEFENSE INFO INFRASTRUCTURE ENGINEERING AND INTEGRATION	16,324		16,324
213	0303126K	LONG-HAUL COMMUNICATIONS—DCS	11,884		11,884
214	0303131K	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK (MEECN)	5,560		5,560
215	0303136G	KEY MANAGEMENT INFRASTRUCTURE (KMI)	73,356		73,356
216	0303140D8Z	INFORMATION SYSTEMS SECURITY PROGRAM	46,577	20,000	66,577
		Workforce transformation cyber initiative pilot program		[20,000]	
217	0303140G	INFORMATION SYSTEMS SECURITY PROGRAM	356,713		356,713
218	0303140K	INFORMATION SYSTEMS SECURITY PROGRAM	8,922	10,000	18,922
		Execution of orchestration pilot		[10,000]	
219	0303150K	GLOBAL COMMAND AND CONTROL SYSTEM	3,695		3,695
220	0303153K	DEFENSE SPECTRUM ORGANIZATION	20,113		20,113

223	0303228K	JOINT REGIONAL SECURITY STACKS (JRSS)	9,728	-486	9,242
		JRSS SIPR funding		[-486]	
231	0305128V	SECURITY AND INVESTIGATIVE ACTIVITIES	5,700		5,700
235	0305186D8Z	POLICY R&D PROGRAMS	7,144		7,144
236	0305199D8Z	NET CENTRICITY	21,793		21,793
238	03052088B	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	6,066		6,066
245	0305387D8Z	HOMELAND DEFENSE TECHNOLOGY TRANSFER PROGRAM	2,190		2,190
252	0708012K	LOGISTICS SUPPORT ACTIVITIES	1,654		1,654
253	0708012S	PACIFIC DISASTER CENTERS	1,785		1,785
254	0708047S	DEFENSE PROPERTY ACCOUNTABILITY SYSTEM	7,301		7,301
256	11052198B	MQ-9 UAV	21,265		21,265
258	11604038B	AVIATION SYSTEMS	230,812		230,812
259	11604058B	INTELLIGENCE SYSTEMS DEVELOPMENT	19,558		19,558
260	11604088B	OPERATIONAL ENHANCEMENTS	136,041		136,041
261	11604318B	WARRIOR SYSTEMS	59,511	-1,200	58,311
		MIMP-Light unexecutable, transfer to man-pack		[-1,200]	
262	11604328B	SPECIAL PROGRAMS	10,500		10,500
263	11604348B	UNMANNED ISR	19,154		19,154
264	11604808B	SOF TACTICAL VEHICLES	9,263		9,263
265	11604838B	MARITIME SYSTEMS	59,882		59,882
266	11604898B	GLOBAL VIDEO SURVEILLANCE ACTIVITIES	4,606		4,606
267	11604908B	OPERATIONAL ENHANCEMENTS INTELLIGENCE	11,612		11,612
268	1203610K	TELEPORT PROGRAM	3,239		3,239
999	9999999999	CLASSIFIED PROGRAMS	4,746,466		4,746,466
		SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT	6,161,946	89,314	6,251,260
SOFTWARE AND DIGITAL TECHNOLOGY PILOT PROGRAMS					
269	0608197V	NATIONAL BACKGROUND INVESTIGATION SERVICES—SOFTWARE PILOT PROGRAM	121,676		121,676
270	0608648D8Z	ACQUISITION VISIBILITY—SOFTWARE PILOT PROGRAM	16,848		16,848
271	0303150K	GLOBAL COMMAND AND CONTROL SYSTEM	86,750		86,750
272	0308588D8Z	ALGORITHMIC WARFARE CROSS FUNCTIONAL TEAMS—SOFTWARE PILOT PROGRAM	250,107		250,107
		SUBTOTAL SOFTWARE AND DIGITAL TECHNOLOGY PILOT PROGRAMS	475,381	0	475,381

SEC. 4201. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION
(In Thousands of Dollars)

Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
		TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, DW	24,280,891	265,114	24,546,005
		OPERATIONAL TEST & EVAL, DEFENSE			
		MANAGEMENT SUPPORT			
1	06051180TE	OPERATIONAL TEST AND EVALUATION	100,021		100,021
2	06051310TE	LIVE FIRE TEST AND EVALUATION	70,933		70,933
3	06058140TE	OPERATIONAL TEST ACTIVITIES AND ANALYSES	39,136	27,000	66,136
		Advanced satellite navigation receiver		[5,000]	
		Joint Test and Evaluation DWR funding restoration		[22,000]	
		SUBTOTAL MANAGEMENT SUPPORT	210,090	27,000	237,090
		TOTAL OPERATIONAL TEST & EVAL, DEFENSE	210,090	27,000	237,090
		TOTAL RDT&E	106,224,793	435,852	106,660,645

SEC. 4202. RESEARCH, DEVELOPMENT, TEST, AND EVALUATION FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
248	0303028A	SECURITY AND INTELLIGENCE ACTIVITIES	23,367		23,367
257	0305204A	TACTICAL UNMANNED AERIAL VEHICLES	34,100		34,100
258	0305206A	AIRBORNE RECONNAISSANCE SYSTEMS	15,575		15,575
		SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT	75,342	0	75,342
		TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY	182,824	0	182,824
		RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY			
		ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES			
39	0603527N	RETRACT LARCH	36,500		36,500
58	0603654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	14,461		14,461
63	0603734N	CHALK CORAL	3,000		3,000
71	0603795N	LAND ATTACK TECHNOLOGY	1,457		1,457
		SUBTOTAL ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	55,418	0	55,418
		SYSTEM DEVELOPMENT & DEMONSTRATION			
142	0604755N	SHIP SELF DEFENSE (DETECT & CONTROL)	1,144		1,144
		SUBTOTAL SYSTEM DEVELOPMENT & DEMONSTRATION	1,144	0	1,144
		OPERATIONAL SYSTEMS DEVELOPMENT			
229	0206625M	USMC INTELLIGENCE/ELECTRONIC WARFARE SYSTEMS (MIP)	3,000		3,000
		SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT	3,000	0	3,000
		TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY	59,562	0	59,562
		RESEARCH, DEVELOPMENT, TEST & EVAL, AF			
		ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES			

65	0305601F	MISSION PARTNER ENVIRONMENTS	6,500	6,500
		EDI: Mission Partner Environment (MPE)	[6,500]	
		SUBTOTAL ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	6,500	6,500
OPERATIONAL SYSTEMS DEVELOPMENT				
185	0205671F	JOINT COUNTER RCIED ELECTRONIC WARFARE	4,080	4,080
228	0208288F	INTEL DATA APPLICATIONS	1,224	1,224
		SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT	0	5,304
		TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, AF	6,500	11,804
RESEARCH, DEVELOPMENT, TEST & EVAL, DW				
APPLIED RESEARCH				
10	0602134BR	COUNTER IMPROVISED-THREAT ADVANCED STUDIES	3,699	3,699
		SUBTOTAL APPLIED RESEARCH	0	3,699
ADVANCED TECHNOLOGY DEVELOPMENT				
26	0603122D&Z	COMBATING TERRORISM TECHNOLOGY SUPPORT	19,288	19,288
28	0603134BR	COUNTER IMPROVISED-THREAT SIMULATION	3,861	3,861
		SUBTOTAL ADVANCED TECHNOLOGY DEVELOPMENT	0	23,149
ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES				
97	0604134BR	COUNTER IMPROVISED-THREAT DEMONSTRATION, PROTOTYPE DEVELOPMENT, AND TESTING	19,931	19,931
		SUBTOTAL ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	0	19,931
CLASSIFIED PROGRAMS				
	9999999999	OPERATIONAL SYSTEMS DEVELOPMENT	24,057	24,057
260	1160408BB	OPERATIONAL ENHANCEMENTS	1,186	1,186
261	1160431BB	WARRIOR SYSTEMS	5,796	5,796
263	1160434BB	UNMANNED ISR	5,000	5,000
		SUBTOTAL OPERATIONAL SYSTEMS DEVELOPMENT	0	36,039

SEC. 4202. RESEARCH, DEVELOPMENT, TEST AND EVALUATION FOR OVERSEAS CONTINGENCY OPERATIONS (In Thousands of Dollars)					
Line	Program Element	Item	FY 2021 Request	Senate Change	Senate Authorized
		TOTAL RESEARCH, DEVELOPMENT, TEST & EVAL, DW	82,818	0	82,818
		TOTAL RDT&E	330,508	6,500	337,008

TITLE XLIII—OPERATION AND MAINTENANCE

TITLE XLIII—OPERATION AND MAINTENANCE

SEC. 4301. OPERATION AND MAINTENANCE.

SEC. 4301. OPERATION AND MAINTENANCE (In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	OPERATION & MAINTENANCE, ARMY			
	OPERATING FORCES			
020	MODULAR SUPPORT BRIGADES	159,834		159,834
030	ECHELONS ABOVE BRIGADE	663,751		663,751
040	THEATER LEVEL ASSETS	956,477		956,477
050	LAND FORCES OPERATIONS SUPPORT	1,157,635	10,300	1,167,935
	Joint Counter-UAS IOC acceleration		[10,300]	
060	AVIATION ASSETS	1,453,024		1,453,024
070	FORCE READINESS OPERATIONS SUPPORT	4,713,660		4,713,660
080	LAND FORCES SYSTEMS READINESS	404,161		404,161
090	LAND FORCES DEPOT MAINTENANCE	1,413,359		1,413,359
100	BASE OPERATIONS SUPPORT	8,220,093	126,000	8,346,093
	Child Development Center playground equipment and furniture increases		[79,000]	
	Child Youth Service improvements		[47,000]	
110	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION	3,581,071	234,460	3,815,531
	FSRM increase		[62,360]	
	MDTF EUCOM and INDOPACOM FSRM		[126,800]	
	Revitalization of Army deployment infrastructure		[45,300]	
120	MANAGEMENT AND OPERATIONAL HEADQUARTERS	411,844		411,844
160	US AFRICA COMMAND	239,387	102,500	341,887
	AFRICOM force protection upgrades		[2,500]	

170	AFRICOM ISR improvements			[64,000]	
	AFRICOM UFR CASEVAC improvements			[36,000]	
180	US EUROPEAN COMMAND	160,761			160,761
190	US SOUTHERN COMMAND	197,826			197,826
200	US FORCES KOREA	65,152			65,152
	CYBERSPACE ACTIVITIES—CYBERSPACE OPERATIONS	430,109		5,000	435,109
	Additional access and operations support	464,117		[5,000]	464,117
210	CYBERSPACE ACTIVITIES—CYBERSECURITY				
	SUBTOTAL OPERATING FORCES	24,692,261		478,260	25,170,521
MOBILIZATION					
220	STRATEGIC MOBILITY	402,236			402,236
230	ARMY PREPOSITIONED STOCKS	324,306			324,306
240	INDUSTRIAL PREPAREDNESS	3,653			3,653
	SUBTOTAL MOBILIZATION	730,195		0	730,195
TRAINING AND RECRUITING					
250	OFFICER ACQUISITION	165,142			165,142
260	RECRUIT TRAINING	76,509			76,509
270	ONE STATION UNIT TRAINING	88,523			88,523
280	SENIOR RESERVE OFFICERS TRAINING CORPS	535,578			535,578
290	SPECIALIZED SKILL TRAINING	981,436			981,436
300	FLIGHT TRAINING	1,204,768			1,204,768
310	PROFESSIONAL DEVELOPMENT EDUCATION	215,195			215,195
320	TRAINING SUPPORT	575,232			575,232
330	RECRUITING AND ADVERTISING	722,612			722,612
340	EXAMINING	185,522			185,522
350	OFF-DUTY AND VOLUNTARY EDUCATION	221,503			221,503
360	CIVILIAN EDUCATION AND TRAINING	154,651			154,651
370	JUNIOR RESERVE OFFICER TRAINING CORPS	173,286			173,286

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	SUBTOTAL TRAINING AND RECRUITING	5,299,957	0	5,299,957
	ADMIN & SRWIDE ACTIVITIES			
390	SERVICEWIDE TRANSPORTATION	491,926	-25,000	466,926
	Historical underexecution		[-25,000]	
400	CENTRAL SUPPLY ACTIVITIES	812,613		812,613
410	LOGISTIC SUPPORT ACTIVITIES	676,178		676,178
420	AMMUNITION MANAGEMENT	437,774		437,774
430	ADMINISTRATION	438,048		438,048
440	SERVICEWIDE COMMUNICATIONS	1,638,872		1,638,872
450	MANPOWER MANAGEMENT	300,046		300,046
460	OTHER PERSONNEL SUPPORT	701,103	-1,000	700,103
	Historical underexecution		[-4,000]	
	Servicewomen's commemorative partnerships		[3,000]	
470	OTHER SERVICE SUPPORT	1,887,133		1,887,133
480	ARMY CLAIMS ACTIVITIES	195,291		195,291
490	REAL ESTATE MANAGEMENT	229,537		229,537
500	FINANCIAL MANAGEMENT AND AUDIT READINESS	306,370		306,370
510	INTERNATIONAL MILITARY HEADQUARTERS	373,030		373,030
520	MISC. SUPPORT OF OTHER NATIONS	32,719		32,719
9999	CLASSIFIED PROGRAMS	1,069,915		1,069,915
	SUBTOTAL ADMIN & SRWIDE ACTIVITIES	9,590,555	-26,000	9,564,555
	UNDISTRIBUTED			
999	UNDISTRIBUTED	0	-458,901	-458,901

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
180	RECRUITING AND ADVERTISING	55,240		55,240
	SUBTOTAL ADMIN & SRWD ACTIVITIES	109,351	0	109,351
	UNDISTRIBUTED			
999	UNDISTRIBUTED	0	-16,699	-16,699
	COVID-related ops/training slowdown		[-11,999]	
	Excessive standard price for fuel		[-4,700]	
	SUBTOTAL UNDISTRIBUTED	0	-16,699	-16,699
	TOTAL OPERATION & MAINTENANCE, ARMY RES	2,934,717	-11,439	2,923,278
	OPERATION & MAINTENANCE, ARNG			
	OPERATING FORCES			
010	MANEUVER UNITS	769,449		769,449
020	MODULAR SUPPORT BRIGADES	204,604		204,604
030	ECHELONS ABOVE BRIGADE	812,072		812,072
040	THEATER LEVEL ASSETS	103,650		103,650
050	LAND FORCES OPERATIONS SUPPORT	32,485		32,485
060	AVIATION ASSETS	1,011,142		1,011,142
070	FORCE READINESS OPERATIONS SUPPORT	712,881		712,881
080	LAND FORCES SYSTEMS READINESS	47,732		47,732
090	LAND FORCES DEPOT MAINTENANCE	265,408		265,408
100	BASE OPERATIONS SUPPORT	1,106,704		1,106,704
110	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION	876,032	11,220	887,252
	FSRM increase		[-11,220]	

120	MANAGEMENT AND OPERATIONAL HEADQUARTERS	1,050,257		1,050,257
130	CYBERSPACE ACTIVITIES—CYBERSPACE OPERATIONS	7,998	3,000	10,998
	Pilot program for National Guard cybersecurity		[3,000]	
140	CYBERSPACE ACTIVITIES—CYBERSECURITY	7,756		7,756
	SUBTOTAL OPERATING FORCES	7,008,170	14,220	7,022,390
	ADMIN & SRWD ACTIVITIES			
150	SERVICEWIDE TRANSPORTATION	8,018		8,018
160	ADMINISTRATION	74,309		74,309
170	SERVICEWIDE COMMUNICATIONS	66,140		66,140
180	MANPOWER MANAGEMENT	9,087		9,087
190	OTHER PERSONNEL SUPPORT	251,714		251,714
200	REAL ESTATE MANAGEMENT	2,576		2,576
	SUBTOTAL ADMIN & SRWD ACTIVITIES	411,844	0	411,844
999	UNDISTRIBUTED			
	UNDISTRIBUTED	0	-74,172	-74,172
	COVID-related ops/training slowdown		[-36,372]	
	Excessive standard price for fuel		[-37,800]	
	SUBTOTAL UNDISTRIBUTED	0	-74,172	-74,172
	TOTAL OPERATION & MAINTENANCE, ARNG	7,420,014	-59,952	7,360,062
	OPERATION & MAINTENANCE, NAVY			
	OPERATING FORCES			
010	MISSION AND OTHER FLIGHT OPERATIONS	5,738,746		5,738,746
020	FLEET AIR TRAINING	2,213,673		2,213,673
030	AVIATION TECHNICAL DATA & ENGINEERING SERVICES	57,144		57,144
040	AIR OPERATIONS AND SAFETY SUPPORT	171,949		171,949

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
050	AIR SYSTEMS SUPPORT	838,767		838,767
060	AIRCRAFT DEPOT MAINTENANCE	1,459,447		1,459,447
070	AIRCRAFT DEPOT OPERATIONS SUPPORT	57,789		57,789
080	AVIATION LOGISTICS	1,264,665		1,264,665
100	SHIP OPERATIONS SUPPORT & TRAINING	1,117,067		1,117,067
110	SHIP DEPOT MAINTENANCE	7,859,104		7,859,104
120	SHIP DEPOT OPERATIONS SUPPORT	2,262,196		2,262,196
130	COMBAT COMMUNICATIONS AND ELECTRONIC WARFARE	1,521,360		1,521,360
140	SPACE SYSTEMS AND SURVEILLANCE	274,087		274,087
150	WARFARE TACTICS	741,609		741,609
160	OPERATIONAL METEOROLOGY AND OCEANOGRAPHY	401,382		401,382
170	COMBAT SUPPORT FORCES	1,546,273		1,546,273
180	EQUIPMENT MAINTENANCE AND DEPOT OPERATIONS SUPPORT	177,951		177,951
190	COMBATANT COMMANDERS CORE OPERATIONS	61,484	5,000	66,484
	PDI: Asia-Pacific Regional Initiative		[5,000]	
200	COMBATANT COMMANDERS DIRECT MISSION SUPPORT	102,330	8,300	110,630
	PDI: Joint Task Force Indo-Pacific (SOCPAC)		[6,300]	
	PDI: Singapore CTIF fusion center		[2,000]	
210	MILITARY INFORMATION SUPPORT OPERATIONS	8,810	17,700	26,510
	PDI: Countering Chinese malign influence in Indo-Pacific		[17,700]	
220	CYBERSPACE ACTIVITIES	567,496		567,496
230	FLEET BALLISTIC MISSILE	1,428,102		1,428,102
240	WEAPONS MAINTENANCE	995,762		995,762
250	OTHER WEAPON SYSTEMS SUPPORT	524,008		524,008
260	ENTERPRISE INFORMATION	1,229,056		1,229,056
270	SUSTAINMENT, RESTORATION AND MODERNIZATION	3,453,099		3,453,099
280	BASE OPERATING SUPPORT	4,627,966		4,627,966

		40,732,322	31,000	40,701,322
	SUBTOTAL OPERATING FORCES			
	MOBILIZATION			
290	SHIP REPOSITIONING AND SURGE	849,993		
300	READY RESERVE FORCE	436,029		
310	SHIP ACTIVATIONS/INACTIVATIONS	286,416		
320	EXPEDITIONARY HEALTH SERVICES SYSTEMS	99,402	11,600	
	USNS Mercy SLEP		[11,600]	
330	COAST GUARD SUPPORT	25,235		
	SUBTOTAL MOBILIZATION	1,687,075	11,600	1,708,675
	TRAINING AND RECRUITING			
340	OFFICER ACQUISITION	186,117		
350	RECRUIT TRAINING	13,206		
360	RESERVE OFFICERS TRAINING CORPS	163,683		
370	SPECIALIZED SKILL TRAINING	947,841		
380	PROFESSIONAL DEVELOPMENT EDUCATION	367,647		
390	TRAINING SUPPORT	254,928		
400	RECRUITING AND ADVERTISING	206,305		
410	OFF-DUTY AND VOLUNTARY EDUCATION	103,799		
420	CIVILIAN EDUCATION AND TRAINING	66,060		
430	JUNIOR ROTC	56,276		
	SUBTOTAL TRAINING AND RECRUITING	2,365,862	0	2,365,862
	ADMIN & SRWVD ACTIVITIES			
440	ADMINISTRATION	1,249,410		
450	CIVILIAN MANPOWER AND PERSONNEL MANAGEMENT	189,625		
460	MILITARY MANPOWER AND PERSONNEL MANAGEMENT	499,904		
470	MEDICAL ACTIVITIES	196,747		

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
480	SERVICEWIDE TRANSPORTATION	165,708		165,708
500	PLANNING, ENGINEERING, AND PROGRAM SUPPORT	519,716	5,000	524,716
	Energy Security Programs Office		[5,000]	
510	ACQUISITION, LOGISTICS, AND OVERSIGHT	751,184		751,184
520	INVESTIGATIVE AND SECURITY SERVICES	747,519		747,519
9999	CLASSIFIED PROGRAMS	608,670		608,670
	SUBTOTAL ADMIN & SRVWD ACTIVITIES	4,928,483	5,000	4,933,483
UNDISTRIBUTED				
999	UNDISTRIBUTED	0	-629,787	-629,787
	COVID-related ops/training slowdown		[-54,987]	
	Excessive standard price for fuel		[-526,100]	
	Foreign currency adjustments		[-48,700]	
	SUBTOTAL UNDISTRIBUTED	0	-629,787	-629,787
	TOTAL OPERATION & MAINTENANCE, NAVY	49,692,742	-582,187	49,110,555
OPERATION & MAINTENANCE, MARINE CORPS				
OPERATING FORCES				
010	OPERATIONAL FORCES	941,143		941,143
020	FIELD LOGISTICS	1,277,798		1,277,798
030	DEPOT MAINTENANCE	206,907		206,907
040	MARITIME PREPOSITIONING	103,614		103,614
050	CYBERSPACE ACTIVITIES	215,974		215,974
060	SUSTAINMENT, RESTORATION & MODERNIZATION	938,063		938,063

070	BASE OPERATING SUPPORT	2,264,680		2,264,680
	SUBTOTAL OPERATING FORCES	5,948,179	0	5,948,179
	TRAINING AND RECRUITING			
080	RECRUIT TRAINING	20,751		20,751
090	OFFICER ACQUISITION	1,193		1,193
100	SPECIALIZED SKILL TRAINING	110,149		110,149
110	PROFESSIONAL DEVELOPMENT EDUCATION	69,509		69,509
120	TRAINING SUPPORT	412,613		412,613
130	RECRUITING AND ADVERTISING	215,464		215,464
140	OFF-DUTY AND VOLUNTARY EDUCATION	33,719		33,719
150	JUNIOR ROTC	25,784		25,784
	SUBTOTAL TRAINING AND RECRUITING	889,182	0	889,182
	ADMIN & SRWD ACTIVITIES			
160	SERVICEWIDE TRANSPORTATION	32,005		32,005
170	ADMINISTRATION	399,363		399,363
9999	CLASSIFIED PROGRAMS	59,878		59,878
	SUBTOTAL ADMIN & SRWD ACTIVITIES	491,246	0	491,246
	UNDISTRIBUTED			
999	UNDISTRIBUTED	0	-28,257	-28,257
	COVID-related ops/training slowdown		[-7,457]	
	Excessive standard price for fuel		[-7,300]	
	Foreign currency adjustments		[-13,500]	
	SUBTOTAL UNDISTRIBUTED	0	-28,257	-28,257
	TOTAL OPERATION & MAINTENANCE, MARINE CORPS	7,328,607	-28,257	7,300,350

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
OPERATION & MAINTENANCE, NAVY RES				
OPERATING FORCES				
010	MISSION AND OTHER FLIGHT OPERATIONS	635,070		635,070
020	INTERMEDIATE MAINTENANCE	8,713		8,713
030	AIRCRAFT DEPOT MAINTENANCE	105,088		105,088
040	AIRCRAFT DEPOT OPERATIONS SUPPORT	398		398
050	AVIATION LOGISTICS	27,284		27,284
070	COMBAT COMMUNICATIONS	17,894		17,894
080	COMBAT SUPPORT FORCES	132,862		132,862
090	CYBERSPACE ACTIVITIES	453		453
100	ENTERPRISE INFORMATION	26,073		26,073
110	SUSTAINMENT, RESTORATION AND MODERNIZATION	48,762		48,762
120	BASE OPERATING SUPPORT	103,580		103,580
	SUBTOTAL OPERATING FORCES	1,106,177	0	1,106,177
ADMIN & SRWD ACTIVITIES				
130	ADMINISTRATION	1,927		1,927
140	MILITARY MANPOWER AND PERSONNEL MANAGEMENT	15,895		15,895
150	ACQUISITION AND PROGRAM MANAGEMENT	3,047		3,047
	SUBTOTAL ADMIN & SRWD ACTIVITIES	20,869	0	20,869
UNDISTRIBUTED				
999	UNDISTRIBUTED	0	-30,938	-30,938
	COVID-related ops/training slowdown		[-6,438]	

	Excessive standard price for fuel	0	[-24,500]	
	SUBTOTAL UNDISTRIBUTED		-30,938	-30,938
	TOTAL OPERATION & MAINTENANCE, NAVY RES	1,127,046	-30,938	1,096,108
	OPERATION & MAINTENANCE, MC RESERVE			
	OPERATING FORCES			
010	OPERATING FORCES	104,616		104,616
020	DEPOT MAINTENANCE	17,053		17,053
030	SUSTAINMENT, RESTORATION AND MODERNIZATION	41,412		41,412
040	BASE OPERATING SUPPORT	107,773		107,773
	SUBTOTAL OPERATING FORCES	270,854	0	270,854
	ADMIN & SRVWD ACTIVITIES			
050	ADMINISTRATION	13,802		13,802
	SUBTOTAL ADMIN & SRVWD ACTIVITIES	13,802	0	13,802
	UNDISTRIBUTED			
999	UNDISTRIBUTED	0	-1,246	-1,246
	COVID-related ops/training slowdown		[-1,046]	
	Excessive standard price for fuel		[-200]	
	SUBTOTAL UNDISTRIBUTED	0	-1,246	-1,246
	TOTAL OPERATION & MAINTENANCE, MC RESERVE	284,656	-1,246	283,410
	OPERATION & MAINTENANCE, AIR FORCE			
	OPERATING FORCES			
010	PRIMARY COMBAT FORCES	731,511	1,700	733,211

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	Premature reduction of A-10 squadrons		[1,700]	
020	COMBAT ENHANCEMENT FORCES	1,275,485		1,275,485
030	AIR OPERATIONS TRAINING (OJT, MAINTAIN SKILLS)	1,437,095	12,400	1,449,495
	Premature reduction of A-10 squadrons		[12,400]	
050	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION	3,241,216	101,800	3,343,016
	FSRM increase		[101,800]	
060	CYBERSPACE SUSTAINMENT	235,816		235,816
070	CONTRACTOR LOGISTICS SUPPORT AND SYSTEM SUPPORT	1,508,342	-30,445	1,477,897
	Transfer to OCO		[-30,445]	
080	FLYING HOUR PROGRAM	4,458,457	105,700	4,564,157
	KC-10 tanker divestment reversal		[16,200]	
	KC-135 tanker divestment reversal		[36,600]	
	Premature reduction of A-10 squadrons		[52,900]	
090	BASE SUPPORT	7,497,288		7,497,288
100	GLOBAL C3I AND EARLY WARNING	849,842	30,800	880,642
	PDI: Mission Partner Environment implementation		[30,800]	
110	OTHER COMBAT OPS SPT PROGRAMS	1,067,055		1,067,055
120	CYBERSPACE ACTIVITIES	698,579		698,579
150	SPACE CONTROL SYSTEMS	34,194		34,194
160	US NORTHCOM/NORAD	204,268		204,268
170	US STRATCOM	526,809		526,809
180	US CYBERCOM	314,524	41,700	356,224
	Additional access and operations support		[25,000]	
	Hunt Forward missions		[13,800]	
	Secure the DODIN		[2,900]	
190	US CENTCOM	186,116		186,116
200	US SOCOM	9,881		9,881

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
400	ADMINISTRATION	851,251		851,251
410	SERVICEWIDE COMMUNICATIONS	28,554		28,554
420	OTHER SERVICEWIDE ACTIVITIES	1,188,414		1,188,414
430	CIVIL AIR PATROL	28,772		28,772
450	INTERNATIONAL SUPPORT	158,803		158,803
9999	CLASSIFIED PROGRAMS	1,338,009		1,338,009
	SUBTOTAL ADMIN & SRVWD ACTIVITIES	4,411,359	0	4,411,359
	UNDISTRIBUTED			
999	UNDISTRIBUTED	0	-765,956	-765,956
	COVID-related ops/training slowdown		[-89,856]	
	COVID-related throughput carryover adjustment		[-75,800]	
	Excessive standard price for fuel		[-560,200]	
	Foreign currency adjustments		[-40,100]	
	SUBTOTAL UNDISTRIBUTED	0	-765,956	-765,956
	TOTAL OPERATION & MAINTENANCE, AIR FORCE	34,750,597	-522,301	34,228,296
	OPERATION & MAINTENANCE, SPACE FORCE			
	OPERATING FORCES			
020	GLOBAL C3I & EARLY WARNING	276,109		276,109
030	SPACE LAUNCH OPERATIONS	177,056		177,056
040	SPACE OPERATIONS	475,338		475,338
050	EDUCATION & TRAINING	18,660		18,660
060	SPECIAL PROGRAMS	137,315		137,315

070	DEPOT MAINTENANCE	250,324	250,324
080	CONTRACTOR LOGISTICS & SYSTEM SUPPORT	1,063,969	1,063,969
	SUBTOTAL OPERATING FORCES	0	2,398,771
090	ADMINISTRATION AND SERVICE WIDE ACTIVITIES		
	ADMINISTRATION	132,523	132,523
	SUBTOTAL ADMINISTRATION AND SERVICE WIDE ACTIVITIES	0	132,523
999	UNDISTRIBUTED		
	UNDISTRIBUTED	0	-400
	Excessive standard price for fuel		[-400]
	SUBTOTAL UNDISTRIBUTED	0	-400
	TOTAL OPERATION & MAINTENANCE, SPACE FORCE	2,531,294	2,530,894
	OPERATION & MAINTENANCE, AF RESERVE		
	OPERATING FORCES		
010	PRIMARY COMBAT FORCES	1,782,016	1,782,016
020	MISSION SUPPORT OPERATIONS	215,209	215,209
030	DEPOT PURCHASE EQUIPMENT MAINTENANCE	453,896	509,096
	KC-10 tanker divestment reversal		55,200
	KC-135 tanker divestment reversal		[48,400]
	Premature reduction of A-10 squadrons		[3,400]
	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION	103,414	107,614
	FSRM increase		[4,200]
050	CONTRACTOR LOGISTICS SUPPORT AND SYSTEM SUPPORT	224,977	224,977
060	BASE SUPPORT	452,468	452,468
070	CYBERSPACE ACTIVITIES	2,259	2,259
	SUBTOTAL OPERATING FORCES	3,234,239	3,293,639

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SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	ADMINISTRATION AND SERVICEWIDE ACTIVITIES			
080	ADMINISTRATION	74,258		74,258
090	RECRUITING AND ADVERTISING	23,121	-5,000	18,121
	Ahead of need		[-5,000]	
100	MILITARY MANPOWER AND PERS MGMT (ARPC)	12,006		12,006
110	OTHER PERS SUPPORT (DISABILITY COMP)	6,165		6,165
120	AUDIOVISUAL	495		495
	SUBTOTAL ADMINISTRATION AND SERVICEWIDE ACTIVITIES	116,045	-5,000	111,045
	UNDISTRIBUTED			
999	UNDISTRIBUTED	0	-73,163	-73,163
	COVID-related ops/training slowdown		[-10,863]	
	Excessive standard price for fuel		[-62,300]	
	SUBTOTAL UNDISTRIBUTED	0	-73,163	-73,163
	TOTAL OPERATION & MAINTENANCE, AF RESERVE	3,350,284	-18,763	3,331,521
	OPERATION & MAINTENANCE, ANG			
	OPERATING FORCES			
010	AIRCRAFT OPERATIONS	2,476,205		2,476,205
020	MISSION SUPPORT OPERATIONS	611,325		611,325
030	DEPOT PURCHASE EQUIPMENT MAINTENANCE	1,138,919		1,138,919
040	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION	323,605	8,900	332,505

050	FSRM increase		[8,900]	
	CONTRACTOR LOGISTICS SUPPORT AND SYSTEM SUPPORT	1,100,828		1,100,828
060	BASE SUPPORT	962,438		962,438
070	CYBERSPACE SUSTAINMENT	27,028		27,028
080	CYBERSPACE ACTIVITIES	16,380	3,000	19,380
	Pilot program for National Guard cybersecurity		[3,000]	
	SUBTOTAL OPERATING FORCES	6,656,728	11,900	6,668,628
	ADMINISTRATION AND SERVICE-WIDE ACTIVITIES			
090	ADMINISTRATION	48,218		48,218
100	RECRUITING AND ADVERTISING	48,696	-15,000	33,696
	Ahead of need		[-15,000]	
	SUBTOTAL ADMINISTRATION AND SERVICE-WIDE ACTIVITIES	96,914	-15,000	81,914
999	UNDISTRIBUTED			
	UNDISTRIBUTED	0	-122,052	-122,052
	COVID-related ops/training slowdown		[-15,852]	
	Excessive standard price for fuel		[-106,200]	
	SUBTOTAL UNDISTRIBUTED	0	-122,052	-122,052
	TOTAL OPERATION & MAINTENANCE, ANG	6,753,642	-125,152	6,628,490
	OPERATION AND MAINTENANCE, DEFENSE-WIDE			
	OPERATING FORCES			
010	JOINT CHIEFS OF STAFF	439,111		439,111
020	JOINT CHIEFS OF STAFF—CE2T2	535,728		535,728
030	JOINT CHIEFS OF STAFF—CYBER	24,728		24,728
040	SPECIAL OPERATIONS COMMAND COMBAT DEVELOPMENT ACTIVITIES	1,069,971	3,000	1,072,971
	SOCOM Syria exfiltration reconstitution		[3,000]	

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
050	SPECIAL OPERATIONS COMMAND CYBERSPACE ACTIVITIES	9,800		9,800
060	SPECIAL OPERATIONS COMMAND INTELLIGENCE	561,907		561,907
070	SPECIAL OPERATIONS COMMAND MAINTENANCE	685,097	22,000	707,097
	Airborne ISR restoration		[22,000]	
080	SPECIAL OPERATIONS COMMAND MANAGEMENT/OPERATIONAL HEADQUARTERS	158,971		158,971
090	SPECIAL OPERATIONS COMMAND OPERATIONAL SUPPORT	1,062,748		1,062,748
100	SPECIAL OPERATIONS COMMAND THEATER FORCES	2,598,385	1,300	2,599,685
	Airborne ISR restoration		[1,300]	
	SUBTOTAL OPERATING FORCES	7,146,446	26,300	7,172,746
TRAINING AND RECRUITING				
120	DEFENSE ACQUISITION UNIVERSITY	162,963		162,963
130	JOINT CHIEFS OF STAFF	95,684		95,684
140	PROFESSIONAL DEVELOPMENT EDUCATION	33,301		33,301
	SUBTOTAL TRAINING AND RECRUITING	291,948	0	291,948
ADMIN & SRWIDE ACTIVITIES				
160	CIVIL MILITARY PROGRAMS	147,993	31,900	179,893
	Innovative Readiness Training		[16,900]	
	STARBASE		[15,000]	
180	DEFENSE CONTRACT AUDIT AGENCY	604,835		604,835
190	DEFENSE CONTRACT AUDIT AGENCY—CYBER	3,282		3,282
210	DEFENSE CONTRACT MANAGEMENT AGENCY	1,370,681	56,400	1,427,081
	DWR restore activities		[56,400]	
220	DEFENSE CONTRACT MANAGEMENT AGENCY—CYBER	22,532		22,532

230	DEFENSE COUNTERINTELLIGENCE AND SECURITY AGENCY	949,008	3,000	952,008
	DWR restore: Congressional oversight		[3,000]	
250	DEFENSE COUNTERINTELLIGENCE AND SECURITY AGENCY—CYBER	9,577		9,577
260	DEFENSE HUMAN RESOURCES ACTIVITY	799,952		799,952
270	DEFENSE HUMAN RESOURCES ACTIVITY—CYBER	20,806		20,806
280	DEFENSE INFORMATION SYSTEMS AGENCY	1,883,190	40,000	1,923,190
	Secure the DODIN		[40,000]	
290	DEFENSE INFORMATION SYSTEMS AGENCY—CYBER	582,639	-4,700	577,939
	IRSS SIPR funding		[-4,700]	
330	DEFENSE LEGAL SERVICES AGENCY	37,637		37,637
340	DEFENSE LOGISTICS AGENCY	382,084	3,600	385,684
	DWR restore: blankets for homeless		[3,600]	
350	DEFENSE MEDIA ACTIVITY	196,997		196,997
360	DEFENSE PERSONNEL ACCOUNTING AGENCY	129,225		129,225
370	DEFENSE SECURITY COOPERATION AGENCY	598,559		598,559
	Defense Institute for International Legal Studies		[2,000]	
	Institute for Security Governance		[-2,000]	
	PDI: Maritime Security Initiative INDOPACOM UFR		[163,000]	
	PDI: Transfer from Sec. 333 to Maritime Security Initiative		[-163,000]	
400	DEFENSE TECHNOLOGY SECURITY ADMINISTRATION	38,432		38,432
410	DEFENSE THREAT REDUCTION AGENCY	591,780		591,780
430	DEFENSE THREAT REDUCTION AGENCY—CYBER	24,635		24,635
440	DEPARTMENT OF DEFENSE EDUCATION ACTIVITY	2,941,429	71,500	3,012,929
	DWR restore: maintain student-teacher ratios in DODEA schools		[1,500]	
	Impact Aid for children with severe disabilities		[20,000]	
	Impact Aid for schools with military dependent students		[50,000]	
450	MISSILE DEFENSE AGENCY	505,858		505,858
480	OFFICE OF ECONOMIC ADJUSTMENT	40,272	50,000	90,272
	Defense Community Infrastructure Program infusion		[50,000]	
490	OFFICE OF THE SECRETARY OF DEFENSE	1,540,446	73,500	1,613,946
	AI National Security Commission		[2,500]	
	Bien Hoa dioxin cleanup		[15,000]	

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	Black Start ERREs		[2,000]	
	CDC PFAS health assessment		[10,000]	
	Commission on Confederate symbols and displays		[2,000]	
	Cooperative program for Vietnam personnel MIA		[2,000]	
	DWR restore: Congressional background investigations		[-3,000]	
	Energy performance contracts		[10,000]	
	ESOH personnel in ASD(S)		[2,000]	
	FY20 NDAA Sec. 575 interstate spousal licensing		[4,000]	
	National Cyber Director independent study		[2,000]	
	REPI		[25,000]	
500	OFFICE OF THE SECRETARY OF DEFENSE—CYBER	51,630		51,630
510	SPACE DEVELOPMENT AGENCY	48,166		48,166
530	WASHINGTON HEADQUARTERS SERVICES	340,291	3,000	343,291
	DWR restore: support to commissions		[3,000]	
9999	CLASSIFIED PROGRAMS	17,348,749		17,348,749
	SUBTOTAL ADMIN & SRWIDE ACTIVITIES	31,210,685	328,200	31,538,885
	UNDISTRIBUTED			
999	UNDISTRIBUTED	0	-172,839	-172,839
	COVID-related ops/training slowdown		[-129,339]	
	Excessive standard price for fuel		[-14,800]	
	Foreign currency adjustments		[-28,700]	
	SUBTOTAL UNDISTRIBUTED	0	-172,839	-172,839
	TOTAL OPERATION AND MAINTENANCE, DEFENSE-WIDE	38,649,079	181,661	38,830,740

	MISCELLANEOUS APPROPRIATIONS			
	US COURT OF APPEALS FOR THE ARMED FORCES, DEFENSE			
	US COURT OF APPEALS FOR THE ARMED FORCES, DEFENSE	15,211		15,211
	SUBTOTAL US COURT OF APPEALS FOR THE ARMED FORCES, DEFENSE	15,211	0	15,211
	TOTAL MISCELLANEOUS APPROPRIATIONS	15,211	0	15,211
	MISCELLANEOUS APPROPRIATIONS			
	OVERSEAS HUMANITARIAN, DISASTER AND CIVIC AID			
	OVERSEAS HUMANITARIAN, DISASTER AND CIVIC AID	109,900		109,900
	SUBTOTAL OVERSEAS HUMANITARIAN, DISASTER AND CIVIC AID	109,900	0	109,900
	TOTAL MISCELLANEOUS APPROPRIATIONS	109,900	0	109,900
	MISCELLANEOUS APPROPRIATIONS			
	COOPERATIVE THREAT REDUCTION			
	COOPERATIVE THREAT REDUCTION	238,490	50,000	288,490
	DWR restore: Biological Threat Reduction Program		[50,000]	
	SUBTOTAL COOPERATIVE THREAT REDUCTION	238,490	50,000	288,490
	TOTAL MISCELLANEOUS APPROPRIATIONS	238,490	50,000	288,490
	MISCELLANEOUS APPROPRIATIONS			
	ACQUISITION WORKFORCE DEVELOPMENT			
	ACQ WORKFORCE DEV FD	58,181	98,499	156,680
	DWR restore OSD-level acquisition workforce activities		[98,499]	
	SUBTOTAL ACQUISITION WORKFORCE DEVELOPMENT	58,181	98,499	156,680

SEC. 4301. OPERATION AND MAINTENANCE
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	TOTAL MISCELLANEOUS APPROPRIATIONS	58,181	98,499	156,680
	MISCELLANEOUS APPROPRIATIONS			
	ENVIRONMENTAL RESTORATION, ARMY	207,518		207,518
050	ENVIRONMENTAL RESTORATION, ARMY	207,518	0	207,518
	TOTAL MISCELLANEOUS APPROPRIATIONS	207,518	0	207,518
	MISCELLANEOUS APPROPRIATIONS			
	ENVIRONMENTAL RESTORATION, NAVY	335,932		335,932
060	ENVIRONMENTAL RESTORATION, NAVY	335,932	0	335,932
	TOTAL MISCELLANEOUS APPROPRIATIONS	335,932	0	335,932
	MISCELLANEOUS APPROPRIATIONS			
	ENVIRONMENTAL RESTORATION, AIR FORCE	303,926		303,926
070	ENVIRONMENTAL RESTORATION, AIR FORCE	303,926	0	303,926
	TOTAL MISCELLANEOUS APPROPRIATIONS	303,926	0	303,926

	MISCELLANEOUS APPROPRIATIONS			
	ENVIRONMENTAL RESTORATION, DEFENSE			
	ENVIRONMENTAL RESTORATION, DEFENSE	9,105		9,105
	SUBTOTAL ENVIRONMENTAL RESTORATION, DEFENSE	9,105	0	9,105
	TOTAL MISCELLANEOUS APPROPRIATIONS	9,105	0	9,105
	MISCELLANEOUS APPROPRIATIONS			
	ENVIRONMENTAL RESTORATION FORMERLY USED SITES			
	ENVIRONMENTAL RESTORATION FORMERLY USED SITES	216,587		216,587
	SUBTOTAL ENVIRONMENTAL RESTORATION FORMERLY USED SITES	216,587	0	216,587
	TOTAL MISCELLANEOUS APPROPRIATIONS	216,587	0	216,587
	TOTAL OPERATION & MAINTENANCE	196,630,496	-1,057,116	195,573,380

SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS.

SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	OPERATION & MAINTENANCE, ARMY			
	OPERATING FORCES			
010	MANEUVER UNITS	4,114,001		4,114,001
030	ECHELONS ABOVE BRIGADE	32,811		32,811
040	THEATER LEVEL ASSETS	2,542,760	2,650	2,545,410
	EdI: Support to deterrent activities		[2,650]	
050	LAND FORCES OPERATIONS SUPPORT	162,557		162,557
060	AVIATION ASSETS	204,396		204,396
070	FORCE READINESS OPERATIONS SUPPORT	5,716,734	4,490	5,721,224
	EdI: Support to deterrent activities PE 0202218A		[1,490]	
	EdI: Support to deterrent activities PE 1001010A		[3,000]	
080	LAND FORCES SYSTEMS READINESS	180,048		180,048
090	LAND FORCES DEPOT MAINTENANCE	81,125		81,125
100	BASE OPERATIONS SUPPORT	219,029		219,029
110	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION	301,017		301,017
130	ADDITIONAL ACTIVITIES	966,649		966,649
140	COMMANDER'S EMERGENCY RESPONSE PROGRAM	2,500	-500	2,000
	Hero payments funded by ASFF		[-500]	
150	RESET	403,796		403,796
160	US AFRICA COMMAND	100,422		100,422
170	US EUROPEAN COMMAND	120,043	24,100	144,143
	EdI: Continuity of operations support		[2,100]	
	EdI: Modernizing Mission Partner Environment (MPE)		[22,000]	
200	CYBERSPACE ACTIVITIES—CYBERSPACE OPERATIONS	98,461		98,461

210	CYBERSPACE ACTIVITIES—CYBERSECURITY	21,256	21,256	
	SUBTOTAL OPERATING FORCES	15,267,605	30,740	15,298,345
	MOBILIZATION			
230	ARMY PREPOSITIONED STOCKS	103,052		103,052
	SUBTOTAL MOBILIZATION	103,052	0	103,052
	TRAINING AND RECRUITING			
290	SPECIALIZED SKILL TRAINING	89,943		89,943
320	TRAINING SUPPORT	2,550		2,550
	SUBTOTAL TRAINING AND RECRUITING	92,493	0	92,493
	ADMIN & SRVWIDE ACTIVITIES			
390	SERVICEWIDE TRANSPORTATION	521,090		521,090
400	CENTRAL SUPPLY ACTIVITIES	43,897		43,897
410	LOGISTIC SUPPORT ACTIVITIES	68,423		68,423
420	AMMUNITION MANAGEMENT	29,162		29,162
440	SERVICEWIDE COMMUNICATIONS	11,447		11,447
470	OTHER SERVICE SUPPORT	5,839		5,839
490	REAL ESTATE MANAGEMENT	48,782		48,782
510	INTERNATIONAL MILITARY HEADQUARTERS	50,000		50,000
9999	CLASSIFIED PROGRAMS	895,964		895,964
	SUBTOTAL ADMIN & SRVWIDE ACTIVITIES	1,674,604	0	1,674,604
	TOTAL OPERATION & MAINTENANCE, ARMY	17,137,754	30,740	17,168,494
	OPERATION & MAINTENANCE, ARMY RES			
	OPERATING FORCES			

SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
020	ECHELONS ABOVE BRIGADE	17,193		17,193
060	FORCE READINESS OPERATIONS SUPPORT	440		440
090	BASE OPERATIONS SUPPORT	15,766		15,766
	SUBTOTAL OPERATING FORCES	33,399	0	33,399
	TOTAL OPERATION & MAINTENANCE, ARMY RES	33,399	0	33,399
OPERATION & MAINTENANCE, ARNG				
OPERATING FORCES				
010	MANEUVER UNITS	25,746		25,746
020	MODULAR SUPPORT BRIGADES	40		40
030	ECHELONS ABOVE BRIGADE	983		983
040	THEATER LEVEL ASSETS	22		22
060	AVIATION ASSETS	20,624		20,624
070	FORCE READINESS OPERATIONS SUPPORT	7,914		7,914
100	BASE OPERATIONS SUPPORT	24,417		24,417
	SUBTOTAL OPERATING FORCES	79,746	0	79,746
ADMIN & SRWD ACTIVITIES				
170	SERVICEWIDE COMMUNICATIONS	46		46
	SUBTOTAL ADMIN & SRWD ACTIVITIES	46	0	46
	TOTAL OPERATION & MAINTENANCE, ARNG	79,792	0	79,792

	AFGHANISTAN SECURITY FORCES FUND		
	AFGHAN NATIONAL ARMY		
010	SUSTAINMENT	1,065,932	1,065,932
020	INFRASTRUCTURE	64,501	64,501
030	EQUIPMENT AND TRANSPORTATION	47,854	47,854
040	TRAINING AND OPERATIONS	56,780	56,780
	SUBTOTAL AFGHAN NATIONAL ARMY	1,235,067	1,235,067
		0	0
	AFGHAN NATIONAL POLICE		
050	SUSTAINMENT	434,500	434,500
060	INFRASTRUCTURE	448	448
070	EQUIPMENT AND TRANSPORTATION	108,231	108,231
080	TRAINING AND OPERATIONS	58,993	58,993
	SUBTOTAL AFGHAN NATIONAL POLICE	602,172	602,172
		0	0
	AFGHAN AIR FORCE		
090	SUSTAINMENT	534,102	534,102
100	INFRASTRUCTURE	9,532	9,532
110	EQUIPMENT AND TRANSPORTATION	58,487	58,487
120	TRAINING AND OPERATIONS	233,803	233,803
	SUBTOTAL AFGHAN AIR FORCE	835,924	835,924
		0	0
	AFGHAN SPECIAL SECURITY FORCES		
130	SUSTAINMENT	680,024	680,024
140	INFRASTRUCTURE	2,532	2,532
150	EQUIPMENT AND TRANSPORTATION	486,808	486,808
160	TRAINING AND OPERATIONS	173,085	173,085
	SUBTOTAL AFGHAN SPECIAL SECURITY FORCES	1,342,449	1,342,449
		0	0

SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	TOTAL AFGHANISTAN SECURITY FORCES FUND	4,015,612	0	4,015,612
	OPERATION & MAINTENANCE, NAVY			
	OPERATING FORCES			
010	MISSION AND OTHER FLIGHT OPERATIONS	382,062		382,062
030	AVIATION TECHNICAL DATA & ENGINEERING SERVICES	832		832
040	AIR OPERATIONS AND SAFETY SUPPORT	17,840		17,840
050	AIR SYSTEMS SUPPORT	210,692		210,692
060	AIRCRAFT DEPOT MAINTENANCE	170,580		170,580
070	AIRCRAFT DEPOT OPERATIONS SUPPORT	5,854		5,854
080	AVIATION LOGISTICS	33,707		33,707
090	MISSION AND OTHER SHIP OPERATIONS	5,817,696		5,817,696
100	SHIP OPERATIONS SUPPORT & TRAINING	20,741		20,741
110	SHIP DEPOT MAINTENANCE	2,072,470		2,072,470
130	COMBAT COMMUNICATIONS AND ELECTRONIC WARFARE	59,254		59,254
140	SPACE SYSTEMS AND SURVEILLANCE	18,000		18,000
150	WARFARE TACTICS	17,324		17,324
160	OPERATIONAL METEOROLOGY AND OCEANOGRAPHY	22,581		22,581
170	COMBAT SUPPORT FORCES	772,441		772,441
180	EQUIPMENT MAINTENANCE AND DEPOT OPERATIONS SUPPORT	5,788		5,788
200	COMBATANT COMMANDERS DIRECT MISSION SUPPORT	24,800		24,800
220	CYBERSPACE ACTIVITIES	369		369
240	WEAPONS MAINTENANCE	567,247		567,247
250	OTHER WEAPON SYSTEMS SUPPORT	12,571		12,571
270	SUSTAINMENT, RESTORATION AND MODERNIZATION	70,041		70,041
280	BASE OPERATING SUPPORT	218,792		218,792

SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
070	BASE OPERATING SUPPORT	24,569		24,569
	SUBTOTAL OPERATING FORCES	1,012,742	17,500	1,030,242
	TRAINING AND RECRUITING			
120	TRAINING SUPPORT	28,458		28,458
	SUBTOTAL TRAINING AND RECRUITING	28,458	0	28,458
	ADMIN & SRVWD ACTIVITIES			
160	SERVICEWIDE TRANSPORTATION	61,400		61,400
	SUBTOTAL ADMIN & SRVWD ACTIVITIES	61,400	0	61,400
	TOTAL OPERATION & MAINTENANCE, MARINE CORPS	1,102,600	17,500	1,120,100
	OPERATION & MAINTENANCE, NAVY RES			
020	OPERATING FORCES			
	INTERMEDIATE MAINTENANCE	522		522
030	AIRCRAFT DEPOT MAINTENANCE	11,861		11,861
080	COMBAT SUPPORT FORCES	9,109		9,109
	SUBTOTAL OPERATING FORCES	21,492	0	21,492
	TOTAL OPERATION & MAINTENANCE, NAVY RES	21,492	0	21,492
	OPERATION & MAINTENANCE, MC RESERVE			
				570

	OPERATING FORCES		
010	OPERATING FORCES	7,627	7,627
040	BASE OPERATING SUPPORT	1,080	1,080
	SUBTOTAL OPERATING FORCES	8,707	8,707
	TOTAL OPERATION & MAINTENANCE, MC RESERVE	8,707	8,707
	OPERATION & MAINTENANCE, AIR FORCE		
	OPERATING FORCES		
010	PRIMARY COMBAT FORCES	125,551	125,551
020	COMBAT ENHANCEMENT FORCES	916,538	916,538
030	AIR OPERATIONS TRAINING (OJT, MAINTAIN SKILLS)	93,970	93,970
040	DEPOT PURCHASE EQUIPMENT MAINTENANCE	3,528,059	3,528,059
050	FACILITIES SUSTAINMENT, RESTORATION & MODERNIZATION	147,264	147,264
060	CYBERSPACE SUSTAINMENT	10,842	10,842
070	CONTRACTOR LOGISTICS SUPPORT AND SYSTEM SUPPORT	7,187,100	7,217,545
	Transfer from base		30,445
			[30,445]
080	FLYING HOUR PROGRAM	2,031,548	2,031,548
090	BASE SUPPORT	1,540,444	1,540,444
100	GLOBAL C3I AND EARLY WARNING	13,709	13,709
110	OTHER COMBAT OPS SPT PROGRAMS	345,800	345,800
120	CYBERSPACE ACTIVITIES	17,936	17,936
130	TACTICAL INTEL AND OTHER SPECIAL ACTIVITIES	36,820	36,820
140	LAUNCH FACILITIES	70	70
150	SPACE CONTROL SYSTEMS	1,450	1,450
160	US NORTHCOM/NORAD	725	725
170	US STRATCOM	856	856
180	US CYBERCOM	35,189	35,189
190	US CENTCOM	126,934	126,934
	SUBTOTAL OPERATING FORCES	16,160,805	16,191,250
		30,445	30,445

SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
MOBILIZATION				
240	AIRLIFT OPERATIONS	1,271,439		1,271,439
250	MOBILIZATION PREPAREDNESS	120,866		120,866
	SUBTOTAL MOBILIZATION	1,392,305	0	1,392,305
TRAINING AND RECRUITING				
260	OFFICER ACQUISITION	200		200
270	RECRUIT TRAINING	352		352
290	SPECIALIZED SKILL TRAINING	27,010		27,010
300	FLIGHT TRAINING	844		844
310	PROFESSIONAL DEVELOPMENT EDUCATION	1,199		1,199
320	TRAINING SUPPORT	1,320		1,320
	SUBTOTAL TRAINING AND RECRUITING	30,925	0	30,925
ADMIN & SRWWD ACTIVITIES				
380	LOGISTICS OPERATIONS	164,701		164,701
390	TECHNICAL SUPPORT ACTIVITIES	11,782		11,782
400	ADMINISTRATION	3,886		3,886
410	SERVICEWIDE COMMUNICATIONS	355		355
420	OTHER SERVICEWIDE ACTIVITIES	100,831		85,831
	OSC-I transition to normalized security cooperation		-15,000	
450	INTERNATIONAL SUPPORT	29,928	[-15,000]	29,928
9999	CLASSIFIED PROGRAMS	34,502		34,502
	SUBTOTAL ADMIN & SRWWD ACTIVITIES	345,985	-15,000	330,985

	TOTAL OPERATION & MAINTENANCE, AIR FORCE	17,930,020	15,445	17,945,465
	OPERATION & MAINTENANCE, SPACE FORCE			
	OPERATING FORCES			
020	GLOBAL C3I & EARLY WARNING	227		227
030	SPACE LAUNCH OPERATIONS	321		321
040	SPACE OPERATIONS	15,135		15,135
070	DEPOT MAINTENANCE	18,268		18,268
080	CONTRACTOR LOGISTICS & SYSTEM SUPPORT	43,164		43,164
	SUBTOTAL OPERATING FORCES	77,115	0	77,115
	TOTAL OPERATION & MAINTENANCE, SPACE FORCE	77,115	0	77,115
	OPERATION & MAINTENANCE, AF RESERVE			
	OPERATING FORCES			
030	DEPOT PURCHASE EQUIPMENT MAINTENANCE	24,408		24,408
060	BASE SUPPORT	5,682		5,682
	SUBTOTAL OPERATING FORCES	30,090	0	30,090
	TOTAL OPERATION & MAINTENANCE, AF RESERVE	30,090	0	30,090
	OPERATION & MAINTENANCE, ANG			
	OPERATING FORCES			
020	MISSION SUPPORT OPERATIONS	3,739		3,739
030	DEPOT PURCHASE EQUIPMENT MAINTENANCE	61,862		61,862
050	CONTRACTOR LOGISTICS SUPPORT AND SYSTEM SUPPORT	97,108		97,108
060	BASE SUPPORT	12,933		12,933
	SUBTOTAL OPERATING FORCES	175,642	0	175,642

SEC. 4302. OPERATION AND MAINTENANCE FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	TOTAL OPERATION & MAINTENANCE, ANG	175,642	0	175,642
	OPERATION AND MAINTENANCE, DEFENSE-WIDE			
	OPERATING FORCES			
010	JOINT CHIEFS OF STAFF	3,799		3,799
020	JOINT CHIEFS OF STAFF—CE2TZ	6,634		6,634
040	SPECIAL OPERATIONS COMMAND COMBAT DEVELOPMENT ACTIVITIES	898,024		898,024
060	SPECIAL OPERATIONS COMMAND INTELLIGENCE	1,244,553		1,244,553
070	SPECIAL OPERATIONS COMMAND MAINTENANCE	354,951	27,000	381,951
	Airborne ISR restoration		[27,000]	
090	SPECIAL OPERATIONS COMMAND OPERATIONAL SUPPORT	104,535		104,535
100	SPECIAL OPERATIONS COMMAND THEATER FORCES	757,744		757,744
	SUBTOTAL OPERATING FORCES	3,370,240	27,000	3,397,240
	ADMIN & SRWIDE ACTIVITIES			
180	DEFENSE CONTRACT AUDIT AGENCY	1,247		1,247
210	DEFENSE CONTRACT MANAGEMENT AGENCY	21,723		21,723
280	DEFENSE INFORMATION SYSTEMS AGENCY	56,256		56,256
290	DEFENSE INFORMATION SYSTEMS AGENCY—CYBER	3,524		3,524
330	DEFENSE LEGAL SERVICES AGENCY	156,373		156,373
350	DEFENSE MEDIA ACTIVITY	3,555		3,555
370	DEFENSE SECURITY COOPERATION AGENCY	1,557,763	322,500	1,880,263
	Transfer from CTEF for Iraq train and equip requirements		[322,500]	
410	DEFENSE THREAT REDUCTION AGENCY	297,486		297,486

490	OFFICE OF THE SECRETARY OF DEFENSE	16,984	16,984
530	WASHINGTON HEADQUARTERS SERVICES	1,997	1,997
9999	CLASSIFIED PROGRAMS	535,106	535,106
	SUBTOTAL ADMIN & SRWIDE ACTIVITIES	2,652,014	322,500
	TOTAL OPERATION AND MAINTENANCE, DEFENSE-WIDE	6,022,254	349,500
	TOTAL OPERATION & MAINTENANCE	57,334,782	413,185

TITLE XLIV—MILITARY PERSONNEL

TITLE XLIV—MILITARY PERSONNEL

SEC. 4401. MILITARY PERSONNEL.

SEC. 4401. MILITARY PERSONNEL (In Thousands of Dollars)

Item	FY 2021 Request	Senate Change	Senate Authorized
MILITARY PERSONNEL			
MILITARY PERSONNEL APPROPRIATIONS			
MILITARY PERSONNEL APPROPRIATIONS	150,524,104		147,976,014
COVID related endstrength decreases		-2,548,090	
Foreign currency adjustments, Air Force		[-755,000]	
Foreign currency adjustments, Army		[-81,800]	
Foreign currency adjustments, Marine Corps		[-44,400]	
Foreign currency adjustments, Navy		[-13,900]	
Military personnel historical underexecution		[-41,300]	
SUBTOTAL MILITARY PERSONNEL APPROPRIATIONS	150,524,104	-2,548,090	147,976,014
MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTIONS			
MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTIONS	8,372,741		8,372,741
SUBTOTAL MEDICARE-ELIGIBLE RETIREE HEALTH FUND CONTRIBUTIONS	8,372,741	0	8,372,741
TOTAL MILITARY PERSONNEL	158,896,845	-2,548,090	156,348,755

SEC. 4402. MILITARY PERSONNEL FOR OVERSEAS CONTINGENCY OPERATIONS.

SEC. 4402. MILITARY PERSONNEL FOR OVERSEAS CONTINGENCY OPERATIONS (In Thousands of Dollars)				
Item	FY 2021 Request	Senate Change	Senate Authorized	
.....	0	0	0	0
MILITARY PERSONNEL				
MILITARY PERSONNEL APPROPRIATIONS				
MILITARY PERSONNEL APPROPRIATIONS	4,602,593		4,602,593	
SUBTOTAL MILITARY PERSONNEL APPROPRIATIONS	4,602,593	0	4,602,593	
TOTAL MILITARY PERSONNEL	4,602,593	0	4,602,593	

TITLE XLV—OTHER AUTHORIZATIONS

TITLE XLV—OTHER AUTHORIZATIONS

SEC. 4501. OTHER AUTHORIZATIONS.

SEC. 4501. OTHER AUTHORIZATIONS (In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	WORKING CAPITAL FUND			
	WORKING CAPITAL FUND, ARMY			
010	INDUSTRIAL OPERATIONS	32,551	-27,000	5,551
	One-time COVID-related carryover decrease		[-27,000]	
020	SUPPLY MANAGEMENT—ARMY	24,166	-23,000	1,166
	One-time COVID-related carryover decrease		[-23,000]	
	SUBTOTAL WORKING CAPITAL FUND, ARMY	56,717	-50,000	6,717
	WORKING CAPITAL FUND, AIR FORCE			
020	SUPPLIES AND MATERIALS	95,712	-90,000	5,712
	Air Force cash corpus for energy optimization		[10,000]	
	One-time COVID-related carryover decrease		[-100,000]	
	SUBTOTAL WORKING CAPITAL FUND, AIR FORCE	191,424	-90,000	101,424
	WORKING CAPITAL FUND, DEFENSE-WIDE			
020	SUPPLY CHAIN MANAGEMENT—DEF	49,821		49,821
	SUBTOTAL WORKING CAPITAL FUND, DEFENSE-WIDE	49,821	0	49,821
010	WORKING CAPITAL FUND, DECA			
	WORKING CAPITAL FUND, DECA	1,146,660		1,146,660
	SUBTOTAL WORKING CAPITAL FUND, DECA	1,146,660	0	1,146,660

	TOTAL WORKING CAPITAL FUND	1,444,622	-140,000	1,304,622
	CHEM AGENTS & MUNITIONS DESTRUCTION			
	OPERATION & MAINTENANCE			
1	CHEM DEMILITARIZATION—O&M	106,691		106,691
	SUBTOTAL OPERATION & MAINTENANCE	106,691	0	106,691
	RESEARCH, DEVELOPMENT, TEST, AND EVALUATION			
2	CHEM DEMILITARIZATION—RDT&E	782,193		782,193
	SUBTOTAL RESEARCH, DEVELOPMENT, TEST, AND EVALUATION	782,193	0	782,193
	PROCUREMENT			
3	CHEM DEMILITARIZATION—PROC	616		616
	SUBTOTAL PROCUREMENT	616	0	616
	TOTAL CHEM AGENTS & MUNITIONS DESTRUCTION	889,500	0	889,500
	DRUG INTERDICTION & CTR-DRUG ACTIVITIES, DEF			
	DRUG INTROCTN			
010	COUNTER-NARCOTICS SUPPORT	546,203	15,800	562,003
	PDI: Joint Interagency Task Force—West Project 3309		[13,000]	
	PDI: Joint Interagency Task Force—West Project 9202		[2,800]	
	SUBTOTAL DRUG INTROCTN	546,203	15,800	562,003
	DRUG DEMAND REDUCTION PROGRAM			
020	DRUG DEMAND REDUCTION PROGRAM	123,704		123,704
	SUBTOTAL DRUG DEMAND REDUCTION PROGRAM	123,704	0	123,704
	NATIONAL GUARD COUNTER-DRUG PROGRAM			
030	NATIONAL GUARD COUNTER-DRUG PROGRAM	94,211		94,211
	SUBTOTAL NATIONAL GUARD COUNTER-DRUG PROGRAM	94,211	0	94,211

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SEC. 4501. OTHER AUTHORIZATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	NATIONAL GUARD COUNTER-DRUG SCHOOLS			
040	NATIONAL GUARD COUNTER-DRUG SCHOOLS	5,511		5,511
	SUBTOTAL NATIONAL GUARD COUNTER-DRUG SCHOOLS	5,511	0	5,511
	TOTAL DRUG INTERDICTION & CTR-DRUG ACTIVITIES, DEF	769,629	15,800	785,429
	OFFICE OF THE INSPECTOR GENERAL			
	OFFICE OF THE INSPECTOR GENERAL			
010	OFFICE OF THE INSPECTOR GENERAL	368,279		368,279
030	OFFICE OF THE INSPECTOR GENERAL—CYBER	1,204		1,204
040	OFFICE OF THE INSPECTOR GENERAL	1,098		1,098
050	OFFICE OF THE INSPECTOR GENERAL	858		858
	SUBTOTAL OFFICE OF THE INSPECTOR GENERAL	371,439	0	371,439
	TOTAL OFFICE OF THE INSPECTOR GENERAL	371,439	0	371,439
	DEFENSE HEALTH PROGRAM			
	OPERATION & MAINTENANCE			
010	IN-HOUSE CARE	9,560,564		9,560,564
020	PRIVATE SECTOR CARE	15,841,887		15,841,887
030	CONSOLIDATED HEALTH SUPPORT	1,338,269		1,338,269
040	INFORMATION MANAGEMENT	2,039,910		2,039,910
050	MANAGEMENT ACTIVITIES	330,627		330,627
060	EDUCATION AND TRAINING	315,691		315,691
070	BASE OPERATIONS/COMMUNICATIONS	1,922,605	5,000	1,927,605
	National Disaster Medical System pilot program		[5,000]	

	SUBTOTAL OPERATION & MAINTENANCE	31,349,553	5,000	31,354,553
	RD&E			
080	R&D RESEARCH	8,913		8,913
090	R&D EXPLORATORY DEVELOPMENT	73,984		73,984
100	R&D ADVANCED DEVELOPMENT	225,602		225,602
110	R&D DEMONSTRATION/VALIDATION	132,331		132,331
120	R&D ENGINEERING DEVELOPMENT	55,748		55,748
130	R&D MANAGEMENT AND SUPPORT	48,672		48,672
140	R&D CAPABILITIES ENHANCEMENT	17,215		17,215
	SUBTOTAL RD&E	562,465	0	562,465
	PROCUREMENT			
150	PROC INITIAL OUTFITTING	22,932		22,932
160	PROC REPLACEMENT & MODERNIZATION	215,618		215,618
170	PROC MILITARY HEALTH SYSTEM—DESKTOP TO DATACENTER	70,872		70,872
180	PROC DOD HEALTHCARE MANAGEMENT SYSTEM MODERNIZATION	308,504		308,504
	SUBTOTAL PROCUREMENT	617,926	0	617,926
	SOFTWARE & DIGITAL TECHNOLOGY PILOT PROGRAMS			
190	SOFTWARE & DIGITAL TECHNOLOGY PILOT PROGRAMS	160,428		160,428
	SUBTOTAL SOFTWARE & DIGITAL TECHNOLOGY PILOT PROGRAMS	160,428	0	160,428
	TOTAL DEFENSE HEALTH PROGRAM	32,690,372	5,000	32,695,372
	TOTAL OTHER AUTHORIZATIONS	36,711,765	-119,200	36,592,565

SEC. 4502. OTHER AUTHORIZATIONS FOR OVERSEAS CONTINGENCY OPERATIONS.

SEC. 4502. OTHER AUTHORIZATIONS FOR OVERSEAS CONTINGENCY OPERATIONS
(In Thousands of Dollars)

Line	Item	FY 2021 Request	Senate Change	Senate Authorized
	WORKING CAPITAL FUND			
	WORKING CAPITAL FUND, ARMY			
020	SUPPLY MANAGEMENT—ARMY	20,090		20,090
	SUBTOTAL WORKING CAPITAL FUND, ARMY	20,090	0	20,090
	TOTAL WORKING CAPITAL FUND	20,090	0	20,090
	OFFICE OF THE INSPECTOR GENERAL			
	OFFICE OF THE INSPECTOR GENERAL			
010	OFFICE OF THE INSPECTOR GENERAL	24,069		24,069
	SUBTOTAL OFFICE OF THE INSPECTOR GENERAL	24,069	0	24,069
	TOTAL OFFICE OF THE INSPECTOR GENERAL	24,069	0	24,069
	DEFENSE HEALTH PROGRAM			
	OPERATION & MAINTENANCE			
010	IN-HOUSE CARE	65,072		65,072
020	PRIVATE SECTOR CARE	296,828		296,828
030	CONSOLIDATED HEALTH SUPPORT	3,198		3,198
	SUBTOTAL OPERATION & MAINTENANCE	365,098	0	365,098
	TOTAL DEFENSE HEALTH PROGRAM	365,098	0	365,098
	COUNTER ISIS TRAIN AND EQUIP FUND (CTEF)			

	COUNTER ISIS TRAIN AND EQUIP FUND (CTEF)			
010	IRAQ	645,000	-322,500	322,500
	Transfer traditional BPC activities to DSCA		[-322,500]	
020	SYRIA	200,000		200,000
	SUBTOTAL COUNTER ISIS TRAIN AND EQUIP FUND (CTEF)	845,000	-322,500	522,500
	TOTAL COUNTER ISIS TRAIN AND EQUIP FUND (CTEF)	845,000	-322,500	522,500
	TOTAL OTHER AUTHORIZATIONS	1,254,257	-322,500	931,757

TITLE XLVI—MILITARY CONSTRUCTION

TITLE XLVI—MILITARY CONSTRUCTION

SEC. 4601. MILITARY CONSTRUCTION.

SEC. 4601. MILITARY CONSTRUCTION (In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2021 Request	Senate Change	Senate Authorized
MILITARY CONSTRUCTION						
ARMY						
Army	Alaska	Fort Wainwright	Child Development Center	0	55,000	55,000
Army	Alaska	Fort Wainwright	Unaccompanied Enlisted Personnel Housing	0	59,000	59,000
Army	Arizona	Yuma Proving Ground	Ready Building	14,000		14,000
Army	California	Military Ocean Terminal Concord	Ammunition Holding Facility	0	46,000	46,000
Army	Colorado	Fort Carson	Physical Fitness Facility	28,000		28,000
Army	Florida	JIATF-S Operations Center	Planning & Design	0	8,000	8,000
Army	Georgia	Fort Gillem	Forensic Laboratory	71,000		71,000
Army	Georgia	Fort Gordon	Adv Individual Training Barracks Cpl, Ph3	80,000		80,000
Army	Hawaii	Aliamanu Military Res- ervation	Child Development Center—School Age	0	71,000	71,000
Army	Hawaii	Schofield Barracks	Child Development Center	0	39,000	39,000
Army	Hawaii	Wheeler Army Air Field	Aircraft Maintenance Hangar	89,000		89,000
Army	Italy	Casmera Renato Dal Din	Access Control Point	0	10,200	10,200
Army	Louisiana	Fort Polk	Information Systems Facility	25,000		25,000
Army	Oklahoma	McAlester AAP	Ammunition Demolition Shop	35,000		35,000
Army	Pennsylvania	Carlisle Barracks	General Instruction Building (Inc 2)	38,000	-30,000	8,000
Army	South Carolina	Fort Jackson	Trainee Barracks Complex 3, Ph2	0	7,000	7,000
Army	Virginia	Humphreys Engineer Cen- ter	Training Support Facility	51,000		51,000

Army	Worldwide Unspecified	Unspecified Worldwide Locations	Planning and Design	129,436	-70,000	59,436
Army	Worldwide Unspecified	Unspecified Worldwide Locations	Host Naton Support	39,000		39,000
Army	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	50,900	24,000	74,900
			SUBTOTAL ARMY	650,336	219,200	869,536
NAVY						
Navy	Bahrain Island	SW Asia	Ship to Shore Utility Services	68,340		68,340
Navy	California	Camp Pendleton	Combat Water Survival Training Facility	0	25,200	25,200
Navy	California	Camp Pendleton	Warehouse Consolidation and Modernization	0	21,800	21,800
Navy	California	Camp Pendleton	I MEF Consolidated Information Center (INC)	37,000		37,000
Navy	California	Camp Pendleton	1ST MARDIV Operations Complex	68,530		68,530
Navy	California	Lemoore	F-35C Simulator Facility & Electrical Upgrade	59,150		59,150
Navy	California	Lemoore	F-35C Hangar 6 Phase 2 (Mod 3/4)	128,070	-75,070	53,000
Navy	California	Point Mugu	Directed Energy Test Facility	0	26,700	26,700
Navy	California	Port Hueneme	Combat Vehicle Maintenance Facilities	0	43,500	43,500
Navy	California	San Diego	Pier 6 Replacement	128,500	-65,000	63,500
Navy	California	Seal Beach	Magazines	0	46,800	46,800
Navy	California	Twentynine Palms	Wastewater Treatment Plant	76,500		76,500
Navy	Greece	Souda Bay	Communication Center	50,180		50,180
Navy	Guam	Andersen Air Force Base	Ordnance Operations Admin	21,280		21,280
Navy	Guam	Joint Region Marianas	DAR Road Strengthening	70,760		70,760
Navy	Guam	Joint Region Marianas	DAR Bridge Improvements	40,180		40,180
Navy	Guam	Joint Region Marianas	Central Fuel Station	35,950	-18,000	17,950
Navy	Guam	Joint Region Marianas	Distribution Warehouse	77,930		77,930
Navy	Guam	Joint Region Marianas	Combined EOD Facility	37,600		37,600
Navy	Guam	Joint Region Marianas	Bachelor Enlisted Quarters (Inc)	80,000	-70,000	10,000
Navy	Guam	Joint Region Marianas	Joint Communication Upgrade	166,000	-140,000	26,000
Navy	Guam	Joint Region Marianas	Base Warehouse	55,410		55,410
Navy	Guam	Joint Region Marianas	Individual Combat Skills Training	17,430		17,430

SEC. 4601. MILITARY CONSTRUCTION
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2021 Request	Senate Change	Senate Authorized
Navy	Guam	Joint Region Marianas	Central Issue Facility	45,290		45,290
Navy	Hawaii	Joint Base Pearl Harbor- Hickam	Waterfront Improvements Wharves S8-S10	65,910		65,910
Navy	Hawaii	Joint Base Pearl Harbor- Hickam	Waterfront Improve, Wharves S1,S11-13,S20-21	48,990		48,990
Navy	Honduras	Comalapa	Long Range Maritime Patrol Aircraft Hangar and Ramp.	0	28,000	28,000
Navy	Japan	Yokosuka	Pier 5 (Berths 2 and 3) (Inc)	74,692	-30,000	44,692
Navy	Maine	Kittery	Multi-Mission Drydock #1 Exten., Ph 1 (Inc)	160,000		160,000
Navy	Maine	NCTAMS LANT Detachment Cutler	Perimeter Security	0	26,100	26,100
Navy	Nevada	Fallon	Range Training Complex, Phase 1	29,040		29,040
Navy	North Carolina	Camp Lejeune	II MEF Operations Center Replacement (Inc)	20,000		20,000
Navy	North Carolina	Cherry Point	Fitness Center Replacement and Training Pool	0	51,900	51,900
Navy	Spain	Rota	MH-60R Squadron Support Facilities	60,110		60,110
Navy	Virginia	Norfolk	Sub Logistics Support	0	9,400	9,400
Navy	Virginia	Norfolk	MH60 & OMV-22B Corrosion Control & Paint Facility.	17,671		17,671
Navy	Virginia	Norfolk	E-2D Training Facility	30,400		30,400
Navy	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	38,983		38,983
Navy	Worldwide Unspecified	Unspecified Worldwide Locations	Planning & Design	165,710		165,710
SUBTOTAL NAVY				1,975,606	-118,670	1,856,936

AIR FORCE

Air Force	Colorado	Schriever Air Force Base	Consolidated Space Operations Facility, (Inc 2)	88,000		88,000
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Air Force	Colorado	United States Air Force Academy	Cadet Preparatory School Dormitory	0	49,000	49,000
Air Force	Guam	Joint Region Marianas	Stand Off Weapons Complex, MSA 2	56,000		56,000
Air Force	Mariana Islands	Tinian	Fuel Tanks with Pipeline & Hydrant Sys, (Inc 2)	7,000		7,000
Air Force	Mariana Islands	Tinian	Airfield Development Phase 1, (Inc 2)	20,000		20,000
Air Force	Mariana Islands	Tinian	Parking Apron, (Inc 2)	15,000		15,000
Air Force	Montana	Malmstrom Air Force Base	Weapons Storage & Maintenance Facility, (Inc 2)	25,000		25,000
Air Force	New Jersey	Joint Base McGuire-Dix-Lakehurst	Munitions Storage Area	22,000		22,000
Air Force	Qatar	Al Udeid	Cargo Marshalling Yard	26,000		26,000
Air Force	South Dakota	Ellsworth Air Force Base	B-21 2-Bay LO Restoration Facility	0	10,000	10,000
Air Force	Texas	Joint Base San Antonio	BMT Recruit Dormitory 8, (Inc 2)	36,000		36,000
Air Force	Texas	Joint Base San Antonio	T-X ADAL Ground Based Trng Sys Sim	19,500		19,500
Air Force	Utah	Hill Air Force Base	GBSD Organic Software Sustainment Center	0	20,000	20,000
Air Force	Utah	Hill Air Force Base	GBSD Mission Integration Facility, (Inc 2)	68,000		68,000
Air Force	Virginia	Joint Base Langley-Eustis	Access Control Point Main Gate With Land Acq	19,500		19,500
Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Cost to Complete	0	29,422	29,422
Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Planning & Design	296,532	-180,000	116,532
Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	68,600		68,600
SUBTOTAL AIR FORCE				767,132	-71,578	695,554
DEFENSE-WIDE						
Defense-Wide	Alabama	Anniston Army Depot	Demilitarization Facility	18,000		18,000
Defense-Wide	Alaska	Fort Greely	Communications Center	48,000		48,000
Defense-Wide	Alabama	Fort Rucker	Construct 10MW Generation & Microgrid	0	24,000	24,000
Defense-Wide	Arizona	Fort Huachuca	Laboratory Building	33,728		33,728
Defense-Wide	Arizona	Yuma	SOF Hangar	49,500		49,500
Defense-Wide	Arkansas	Fort Smith Air National Guard Base	PV Arrays and Battery Storage	0	2,600	2,600

SEC. 4601. MILITARY CONSTRUCTION
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2021 Request	Senate Change	Senate Authorized
Defense-Wide	California	Beale Air Force Base	Bulk Fuel Tank	22,800		22,800
Defense-Wide	Colorado	Fort Carson	SOF Tactical Equipment Maintenance Facility	15,600		15,600
Defense-Wide	Comus Unspecified	CONUS Unspecified	Training Target Structure	14,400		14,400
Defense-Wide	Florida	Hurlburt Field	SOF Special Tactics Ops Facility (23 STS)	44,810		44,810
Defense-Wide	Florida	Hurlburt Field	SOF Combat Aircraft Parking Apron-North	38,310		38,310
Defense-Wide	Georgia	Fort Benning	Construct 4.8MW Generation & Microgrid	0	17,000	17,000
Defense-Wide	Germany	Rhine Ordnance Barracks	Medical Center Replacement (Inc 9)	200,000	-200,000	0
Defense-Wide	Japan	Def Fuel Support Point	Fuel Wharf	49,500		49,500
		Tsurumi				
Defense-Wide	Japan	Yokosuka	Kinnick High School (Inc)	30,000	-30,000	0
Defense-Wide	Kentucky	Fort Knox	Van Voorhis Elementary School	69,310		69,310
Defense-Wide	Maryland	Bethesda Naval Hospital	MEDCEN Addition/Alteration (Inc 4)	180,000	-130,000	50,000
Defense-Wide	Maryland	Fort Meade	NSAW Recapitalize Building #3 (Inc)	250,000		250,000
Defense-Wide	Mississippi	MTA Camp Shelby	Construct 10MW Generation Plant and Microgrid System.	0	30,000	30,000
Defense-Wide	Missouri	Fort Leonard Wood	Hospital Replacement (Inc 3)	40,000		40,000
Defense-Wide	Missouri	St Louis	Next NGA West (N2W) Complex Phase 2 (Inc)	119,000	-59,000	60,000
Defense-Wide	New Mexico	Kirtland Air Force Base	Administrative Building	46,600		46,600
Defense-Wide	North Carolina	Fort Bragg	SOTF Chilled Water Upgrade	0	6,100	6,100
Defense-Wide	North Carolina	Fort Bragg	SOF Military Working Dog Facility	17,700		17,700
Defense-Wide	North Carolina	Fort Bragg	SOF Group Headquarters	53,100		53,100
Defense-Wide	North Carolina	Fort Bragg	SOF Operations Facility	43,000		43,000
Defense-Wide	Ohio	Wright-Patterson Air Force Base	Intelligence Facility Central Utility Plant	0	35,000	35,000
Defense-Wide	Ohio	Wright-Patterson Air Force Base	Hydrant Fuel System	23,500		23,500

Defense-Wide	Tennessee	Memphis International Airport	PV Arrays and Battery Storage	0	4,780	4,780
Defense-Wide	Texas	Fort Hood	Fuel Facilities	32,700		32,700
Defense-Wide	Virginia	Joint Expeditionary Base Little Creek—Story	SOF DCS Operations Fac. and Command Center	54,500		54,500
Defense-Wide	Virginia	Joint Expeditionary Base Little Creek—Story	SOF NSWG-2 NSWTG CSS Facilities	58,000		58,000
Defense-Wide	Washington	Joint Base Lewis-McChord	Fuel Facilities (Lewis North)	10,900		10,900
Defense-Wide	Washington	Joint Base Lewis-McChord	Fuel Facilities (Lewis Main)	10,900		10,900
Defense-Wide	Washington	Manchester	Bulk Fuel Storage Tanks Phase 1	82,000		82,000
Defense-Wide	Washington DC	Joint Base Anacostia-Bolling	DIA HQ Cooling Towers and Cond Pumps	0	1,963	1,963
Defense-Wide	Washington DC	Joint Base Anacostia-Bolling	Industrial Controls System Modernization	0	8,749	8,749
Defense-Wide	Washington DC	Joint Base Anacostia-Bolling	PV Carports	0	25,221	25,221
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	8,000		8,000
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Planning and Design	27,746		27,746
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	4,922		4,922
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	17,698		17,698
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	20,000		20,000
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Energy Resilience and Conserv. Invest. Prog.	142,500		142,500
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	3,000		3,000
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Planning and Design	10,647		10,647

SEC. 4601. MILITARY CONSTRUCTION
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2021 Request	Senate Change	Senate Authorized
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	ERCIP Design	14,250		14,250
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Planning and Design	10,303		10,303
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Exercise Related Minor Construction	5,840		5,840
Defense-Wide	Worldwide Unspecified	Various Worldwide Locations	Planning and Design	32,624		32,624
Defense-Wide	Worldwide Unspecified	Various Worldwide Locations	Unspecified Minor Construction	9,726		9,726
Defense-Wide	Worldwide Unspecified	Various Worldwide Locations	Planning and Design	64,406		64,406
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Planning & Design—Military Installation Resiliency	0	50,000	50,000
Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Planning & Design—Pacific Deterrence Initiative	0	15,000	15,000
SUBTOTAL DEFENSE-WIDE				2,027,520	-196,587	1,828,933
ARMY NATIONAL GUARD						
Army National Guard	Arizona	Tucson	National Guard Readiness Center	18,100		18,100
Army National Guard	Arkansas	Fort Chaffee	National Guard Readiness Center	0	15,000	15,000
Army National Guard	California	Bakersfield	National Guard Vehicle Maintenance Shop	0	9,300	9,300
Army National Guard	Colorado	Peterson Air Force Base	National Guard Readiness Center	15,000		15,000
Army National Guard	Indiana	Shelbyville	National Guard/Reserve Center Building Add/Al	12,000		12,000
Army National Guard	Kentucky	Frankfort	National Guard/Reserve Center Building	15,000		15,000
Army National Guard	Mississippi	Brandon	National Guard Vehicle Maintenance Shop	10,400		10,400
Army National Guard	Nebraska	North Platte	National Guard Vehicle Maintenance Shop	9,300		9,300

Army National Guard	New Jersey	Joint Base McGuire-Dix-Lakehurst	National Guard Readiness Center	15,000		15,000
Army National Guard	Ohio	Columbus	National Guard Readiness Center	15,000		15,000
Army National Guard	Oklahoma	Ardmore	National Guard Vehicle Maintenance Shop	0	9,800	9,800
Army National Guard	Oregon	Hermiston	Enlisted Barracks, Transient Training	0	15,735	15,735
Army National Guard	Oregon	Hermiston	Enlisted Barracks, Transient Training	9,300		9,300
Army National Guard	Puerto Rico	Fort Allen	National Guard Readiness Center	37,000		37,000
Army National Guard	South Carolina	Joint Base Charleston	National Guard Readiness Center	15,000		15,000
Army National Guard	Tennessee	McMinnville	National Guard Readiness Center	11,200		11,200
Army National Guard	Texas	Fort Worth	National Guard Vehicle Maintenance Shop	7,800		7,800
Army National Guard	Texas	Fort Worth	Aircraft Maintenance Hangar Addition/Alt	6,000		6,000
Army National Guard	Texas	Nephi	National Guard Readiness Center	12,000		12,000
Army National Guard	Utah	St. Croix	Army Aviation Support Facility (AASF)	28,000		28,000
Army National Guard	Virgin Islands	St. Croix	CST Ready Building	11,400		11,400
Army National Guard	Virgin Islands	St. Croix	National Guard Readiness Center Add/Alt	11,600		11,600
Army National Guard	Wisconsin	Appleton	Unspecified Minor Construction	32,744		32,744
Army National Guard	Worldwide Unspecified	Unspecified Worldwide Locations				
Army National Guard	Worldwide Unspecified	Unspecified Worldwide Locations	Planning and Design	29,593		29,593
SUBTOTAL ARMY NATIONAL GUARD				321,437	49,835	371,272
AIR NATIONAL GUARD						
Air National Guard	Alabama	Montgomery Regional Air-port	Base Supply Complex	0	12,000	12,000
Air National Guard	Alabama	Montgomery Regional Air-port	F-35 Simulator Facility	11,600		11,600
Air National Guard	Guam	Joint Region Marianas	Space Control Facility #5	20,000		20,000
Air National Guard	Maryland	Joint Base Andrews	F-16 Mission Training Center	9,400		9,400
Air National Guard	North Dakota	Hector International Air-port	Consolidated RPA Operations Facility	0	17,500	17,500
Air National Guard	Texas	Joint Base San Antonio	F-16 Mission Training Center	10,800		10,800

SEC. 4601. MILITARY CONSTRUCTION
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2021 Request	Senate Change	Senate Authorized
Air National Guard	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	9,000		9,000
Air National Guard	Worldwide Unspecified	Various Worldwide Locations	Planning and Design	3,414		3,414
SUBTOTAL AIR NATIONAL GUARD				64,214	29,500	93,714
ARMY RESERVE						
Army Reserve	Florida	Gainesville	ECS TEMF/Warehouse	36,000		36,000
Army Reserve	Massachusetts	Devens Reserve Forces Training Area	Automated Multipurpose Machine Gun Range	8,700		8,700
Army Reserve	North Carolina	Asheville	Army Reserve Center/Land	24,000		24,000
Army Reserve	Wisconsin	Fort McCoy	Transient Training Barracks	0	2,500	2,500
Army Reserve	Wisconsin	Fort McCoy	Scout Reconnaissance Range	14,600		14,600
Army Reserve	Worldwide Unspecified	Unspecified Worldwide Locations	Unspecified Minor Construction	3,819		3,819
Army Reserve	Worldwide Unspecified	Unspecified Worldwide Locations	Planning and Design	1,218		1,218
SUBTOTAL ARMY RESERVE				88,337	2,500	90,837
NAVY RESERVE						
Navy Reserve	Maryland	Reisterstown	Reserve Training Center, Camp Fretterd, MD	39,500		39,500
Navy Reserve	Minnesota	MOSC Minneapolis	Joint Reserve Intel Center	0	12,800	12,800
Navy Reserve	Utah	Hill Air Force Base	Naval Operational Support Center	25,010		25,010
Navy Reserve	Worldwide Unspecified	Unspecified Worldwide Locations	MCNR Planning & Design	3,485		3,485
Navy Reserve	Worldwide Unspecified	Unspecified Worldwide Locations	MCNR Minor Construction	3,000		3,000

SUBTOTAL NAVY RESERVE		70,995	12,800	83,795
AIR FORCE RESERVE				
Air Force Reserve	Texas		25,000	25,000
Air Force Reserve	Texas	Fort Worth		14,200
Air Force Reserve	Worldwide Unspecified	Unspecified Worldwide Locations	14,200	3,270
			3,270	
Air Force Reserve	Worldwide Unspecified	Unspecified Worldwide Locations	5,647	5,647
SUBTOTAL AIR FORCE RESERVE		23,117	25,000	48,117
NATO SECURITY INVESTMENT PROGRAM				
NATO Security Investment Program	Worldwide Unspecified	NATO Security Investment Program	173,030	173,030
SUBTOTAL NATO SECURITY INVESTMENT PROGRAM		173,030	0	173,030
TOTAL MILITARY CONSTRUCTION		6,161,724	-50,000	6,111,724
FAMILY HOUSING CONSTRUCTION, ARMY				
Construction, Army	Italy	Vicenza	84,100	84,100
Construction, Army	Kwajalein	Kwajalein Atoll	32,000	32,000
Construction, Army	Worldwide Unspecified	Unspecified Worldwide Locations	3,300	3,300
SUBTOTAL CONSTRUCTION, ARMY		119,400	0	119,400
O&M, ARMY				
O&M, Army	Worldwide Unspecified	Unspecified Worldwide Locations	39,716	39,716
O&M, Army	Worldwide Unspecified	Unspecified Worldwide Locations	8,135	8,135

SEC. 4601, MILITARY CONSTRUCTION
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2021 Request	Senate Change	Senate Authorized
O&M, Army	Worldwide Unspecified	Unspecified Worldwide Locations	Furnishings	18,004		18,004
O&M, Army	Worldwide Unspecified	Unspecified Worldwide Locations	Miscellaneous	526		526
O&M, Army	Worldwide Unspecified	Unspecified Worldwide Locations	Maintenance	97,789	-27,000	70,789
O&M, Army	Worldwide Unspecified	Unspecified Worldwide Locations	Utilities	41,183		41,183
O&M, Army	Worldwide Unspecified	Unspecified Worldwide Locations	Leasing	123,841		123,841
O&M, Army	Worldwide Unspecified	Unspecified Worldwide Locations	Housing Privatization Support	37,948	27,000	64,948
			SUBTOTAL O&M, ARMY	367,142	0	367,142
CONSTRUCTION, NAVY AND MARINE CORPS						
Construction, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	USMC DPRI/GUAM PLANNING AND DESIGN	2,726		2,726
Construction, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Construction Improvements	37,043		37,043
Construction, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Planning & Design	3,128		3,128
			SUBTOTAL CONSTRUCTION, NAVY AND MARINE CORPS	42,897	0	42,897
O&M, NAVY AND MARINE CORPS						
O&M, Navy and Ma- rine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Utilities	58,429		58,429

600

O&M, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Furnishings	17,977	17,977
O&M, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Management	51,006	51,006
O&M, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Miscellaneous	350	350
O&M, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Services	16,743	16,743
O&M, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Leasing	62,658	62,658
O&M, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Maintenance	85,630	85,630
O&M, Navy and Marine Corps	Worldwide Unspecified	Unspecified Worldwide Locations	Housing Privatization Support	53,700	25,000
SUBTOTAL O&M, NAVY AND MARINE CORPS				346,493	25,000
CONSTRUCTION, AIR FORCE					
Construction, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Construction Improvements	94,245	94,245
Construction, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Planning & Design	2,969	2,969
SUBTOTAL CONSTRUCTION, AIR FORCE				97,214	0
O&M, AIR FORCE					
O&M, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Housing Privatization	23,175	25,000
O&M, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Utilities	43,173	43,173
O&M, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Management	64,732	64,732
O&M, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Services	7,968	7,968

SEC. 4601, MILITARY CONSTRUCTION
(In Thousands of Dollars)

Account	State/ Country	Installation	Project Title	FY 2021 Request	Senate Change	Senate Authorized
O&M, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Furnishings	25,805		25,805
O&M, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Miscellaneous	2,184		2,184
O&M, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Leasing	9,318		9,318
O&M, Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	Maintenance	140,666		140,666
SUBTOTAL O&M, AIR FORCE				317,021	25,000	342,021
O&M, DEFENSE-WIDE						602
O&M, Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Utilities	4,100		4,100
O&M, Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Furnishings	82		82
O&M, Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Utilities	13		13
O&M, Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Leasing	12,996		12,996
O&M, Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Maintenance	32		32
O&M, Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Furnishings	645		645
O&M, Defense-Wide	Worldwide Unspecified	Unspecified Worldwide Locations	Leasing	36,860		36,860
SUBTOTAL O&M, DEFENSE-WIDE				54,728	0	54,728

IMPROVEMENT FUND					
Improvement Fund	Worldwide Unspecified	Unspecified Worldwide Locations	Administrative Expenses—FHIF	5,897	5,897
SUBTOTAL IMPROVEMENT FUND				5,897	5,897
UNACCOMP HSG IMPROVEMENT FUND					
Unaccomp HSG Improvement Fund	Worldwide Unspecified	Unspecified Worldwide Locations	Administrative Expenses—UHIF	600	600
SUBTOTAL UNACCOMP HSG IMPROVEMENT FUND				600	600
TOTAL FAMILY HOUSING				1,351,392	1,401,392
DEFENSE BASE REALIGNMENT AND CLOSURE					
ARMY BRAC					
Army BRAC	Worldwide Unspecified	Base Realignment & Closure, Army	Base Realignment and Closure	66,060	66,060
SUBTOTAL ARMY BRAC				66,060	66,060
NAVY BRAC					
Navy BRAC	Worldwide Unspecified	Unspecified Worldwide Locations	Base Realignment & Closure	125,165	125,165
SUBTOTAL NAVY BRAC				125,165	125,165
AIR FORCE BRAC					
Air Force BRAC	Worldwide Unspecified	Unspecified Worldwide Locations	DoD BRAC Activities—Air Force	109,222	109,222
SUBTOTAL AIR FORCE BRAC				109,222	109,222
TOTAL DEFENSE BASE REALIGNMENT AND CLOSURE				300,447	300,447
TOTAL MILITARY CONSTRUCTION, FAMILY HOUSING, AND BRAC				7,813,563	7,813,563

SEC. 4602. MILITARY CONSTRUCTION FOR OVERSEAS CONTINGENCY OPERATIONS.

SEC. 4602. MILITARY CONSTRUCTION FOR OVERSEAS CONTINGENCY OPERATIONS (In Thousands of Dollars)						
Account	State/ Country	Installation	Project Title	FY 2021 Request	Senate Change	Senate Authorized
MILITARY CONSTRUCTION						
ARMY						
Army	Worldwide Unspecified	Unspecified Worldwide Locations	ED: Planning and Design	11,903		11,903
Army	Worldwide Unspecified	Unspecified Worldwide Locations	ED: Minor Construction	3,970		3,970
SUBTOTAL ARMY				15,873	0	15,873
NAVY						
Navy	Spain	Rota	ED: Expeditionary Maintenance Facility	27,470		27,470
Navy	Spain	Rota	ED: EOD Boat Shop	31,760		31,760
Navy	Worldwide Unspecified	Unspecified Worldwide Locations	Planning & Design	10,790		10,790
SUBTOTAL NAVY				70,020	0	70,020
AIR FORCE						
Air Force	Germany	Ramstein	ED: RAPID AIRFIELD DAMAGE REPAIR STORAGE	36,345		36,345
Air Force	Germany	Spangdahlem AB	ED: RAPID AIRFIELD DAMAGE REPAIR STORAGE	25,824		25,824
Air Force	Romania	Campia Turzii	ED: DANGEROUS CARGO PAD	11,000		11,000
Air Force	Romania	Campia Turzii	ED: POL INCREASE CAPACITY	32,000		32,000
Air Force	Romania	Campia Turzii	ED: ECAOS DABS-FEV STORAGE COMPLEX	68,000		68,000
Air Force	Romania	Campia Turzii	ED: PARKING APRON	19,500		19,500
Air Force	Worldwide Unspecified	Unspecified Worldwide Locations	ED: Unspecified Minor Military Construction	16,400		16,400

Air Force	Worldwide Unspecified	Various Worldwide Locations	ED: Planning & Design	54,800	54,800
SUBTOTAL AIR FORCE				263,869	263,869
TOTAL MILITARY CONSTRUCTION				349,762	349,762
TOTAL MILITARY CONSTRUCTION, FAMILY HOUSING, AND BRAC				349,762	349,762

**TITLE XLVII—DEPARTMENT OF ENERGY
NATIONAL SECURITY PROGRAMS**

TITLE XLVII—DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS.

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS (In Thousands of Dollars)

Program	FY 2021 Request	Senate Change	Senate Authorized
Discretionary Summary by Appropriation			
Energy and Water Development and Related Agencies			
Appropriation Summary:			
Energy Programs			
Nuclear energy	137,800	0	137,800
Atomic Energy Defense Activities			
National Nuclear Security Administration:			
Federal Salaries and Expenses	454,000	0	454,000
Weapons activities	15,602,000	0	15,602,000
Defense nuclear nonproliferation	2,031,000	0	2,031,000
Naval reactors	1,684,000	0	1,684,000
Total, National Nuclear Security Administration	19,771,000	0	19,771,000
Defense environmental cleanup	4,983,608	100,000	5,083,608
Other defense activities	1,054,727	-150,000	904,727

Total, Atomic Energy Defense Activities	25,809,335	-50,000	25,759,335
Total, Discretionary Funding	25,947,135	-50,000	25,897,135
Nuclear Energy			
Idaho sitewide safeguards and security	137,800		137,800
Total, Nuclear Energy	137,800	0	137,800
National Nuclear Security Administration			
Federal Salaries and Expenses			
Program direction	454,000	0	454,000
Weapons Activities			
Stockpile management			
Stockpile major modernization			
B61 Life extension program	815,710		815,710
W76 Life extension program	0		0
W76-2 Modification program	0		0
W88 Alteration program	256,922		256,922
W80-4 Life extension program	1,000,314		1,000,314
W87-1 Modification Program (formerly IW1)	541,000		541,000
W93	53,000		53,000
Total, Stockpile major modernization	2,666,946	0	2,666,946
Stockpile sustainment	998,357		998,357
Weapons dismantlement and disposition	50,000		50,000
Production operations	568,941		568,941
Total, Stockpile management	4,284,244	0	4,284,244

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS
(In Thousands of Dollars)

Program	FY 2021 Request	Senate Change	Senate Authorized
Production modernization			
Primary capability modernization			
Plutonium modernization			
Los Alamos plutonium modernization			
Los Alamos Plutonium Operations	610,599		610,599
21-D-512, Plutonium Pit Production Project, LANL	226,000		226,000
Subtotal, Los Alamos plutonium modernization	836,599	0	836,599
Savannah River plutonium modernization			
Savannah River plutonium operations	200,000		200,000
21-D-511, Savannah River Plutonium Processing Facility, SRS	241,896		241,896
Subtotal, Savannah River plutonium modernization	441,896	0	441,896
Enterprise Plutonium Support	90,782		90,782
Total, Plutonium Modernization	1,369,277	0	1,369,277
High Explosives & Energetics	67,370		67,370
Total, Primary capability modernization	1,436,647	0	1,436,647
Secondary Capability Modernization	457,004		457,004
Tritium and Domestic Uranium Enrichment	457,112		457,112
Non-Nuclear Capability Modernization	107,137		107,137
Total, Production modernization	2,457,900	0	2,457,900
Stockpile research, technology, and engineering			
Assessment science	773,111		773,111
Engineering and integrated assessments	337,404		337,404
Interl confinement fusion	554,725		554,725
Advanced simulation and computing	732,014		732,014
Weapon technology and manufacturing maturation	297,965		297,965
Academic programs	86,912		86,912

Total, Stockpile research, technology, and engineering	2,782,131	0	2,782,131
Infrastructure and operations			
Operating			
Operations of facilities	1,014,000		1,014,000
Safety and Environmental Operations	165,354		165,354
Maintenance and Repair of Facilities	792,000		792,000
Recapitalization			
Infrastructure and Safety	670,000		670,000
Capabilities Based Investments	149,117		149,117
Planning for Programmatic Construction (Pre-CD-1)	84,787		84,787
Subtotal, Recapitalization	903,904	0	903,904
Total, Operating	2,875,258	0	2,875,258
I&O: Construction			
Programmatic			
21-D-510, HE Synthesis, Formulation, and Production Facility, PX	31,000		31,000
18-D-690, Lithium Processing Facility, Y-12	109,405		109,405
18-D-650, Tritium Finishing Facility, SRS	27,000		27,000
18-D-620, Exascale Computing Facility Modernization Project, LLNL	29,200		29,200
17-D-640, UIa Complex Enhancements Project, NNSA	160,600		160,600
15-D-302, TA-55 Reinvestment Project—Phase 3, LANL	30,000		30,000
15-D-301, HE Science & Engineering Facility, LANL	43,000		43,000
07-D-220-04, Transuranic Liquid Waste Facility, PX	36,687		36,687
06-D-141, Uranium Processing Facility, Y-12	750,000		750,000
04-D-125, Chemistry and Metallurgy Research Replacement Project, LANL	169,427		169,427
Total, Programmatic	1,386,319	0	1,386,319
Mission enabling			
19-D-670, 1.38kV Power Transmission System Replacement, NNSA	59,000		59,000
15-D-612, Emergency Operations Center, LLNL	27,000		27,000
15-D-611, Emergency Operations Center, SNL	36,000		36,000

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS
(In Thousands of Dollars)

Program	FY 2021 Request	Senate Change	Senate Authorized
Total, Mission enabling	122,000	0	122,000
Total, I&O construction	1,508,319	0	1,508,319
Total, Infrastructure and operations	4,383,577	0	4,383,577
Secure transportation asset			
Operations and equipment	266,390		266,390
Program direction	123,684		123,684
Total, Secure transportation asset	390,074	0	390,074
Defense nuclear security			
Operations and maintenance	815,895		815,895
Security improvements program	0		0
Construction:			
17-D-710, West end protected area reduction project, Y-12	11,000		11,000
Subtotal, construction	11,000	0	11,000
Total, Defense nuclear security	826,895	0	826,895
Information technology and cybersecurity	375,511		375,511
Legacy contractor pensions	101,668		101,668
Total, Weapons activities	16,056,000	0	16,056,000
Adjustments			
Use of prior year balances	0		0
Total, Adjustments	0	0	0
Total, Weapons Activities	15,602,000	0	15,602,000

Defense Nuclear Nonproliferation		
Defense Nuclear Nonproliferation Programs		
Material management and minimization		
Conversion (formerly HEU Reactor Conversion)	170,000	170,000
Nuclear material removal	40,000	40,000
Material disposition	190,711	190,711
Laboratory and partnership support	0	0
Total, Material management & minimization	400,711	400,711
Global material security	0	0
International nuclear security	66,391	66,391
Domestic radiological security	101,000	101,000
International radiological security	73,340	73,340
Nuclear smuggling detection and deterrence	159,749	159,749
Total, Global material security	400,480	400,480
Nonproliferation and arms control	138,708	138,708
National Technical Nuclear Forensics R&D	40,000	40,000
Defense nuclear nonproliferation R&D		
Proliferation detection	235,220	235,220
Nonproliferation Stewardship program	59,900	59,900
Nuclear detonation detection	236,531	236,531
Nonproliferation fuels development	0	0
Total, Defense Nuclear Nonproliferation R&D	531,651	531,651
Nonproliferation construction		
U. S. Construction:		
18-D-150 Surplus Plutonium Disposition Project	148,589	148,589
99-D-143, Mixed Oxide (MOX) Fuel Fabrication Facility, SRS	0	0
Total, U. S. Construction:	148,589	148,589
Total, Nonproliferation construction	148,589	148,589
Total, Defense Nuclear Nonproliferation Programs	1,660,139	1,660,139
Legacy contractor pensions	14,348	14,348

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS
(In Thousands of Dollars)

Program	FY 2021 Request	Senate Change	Senate Authorized
Nuclear counterterrorism and incident response program			
Emergency Operations	36,000		36,000
Counterterrorism and Counterproliferation	341,513		341,513
Total, Nuclear counterterrorism and incident response program	377,513	0	377,513
Subtotal, Defense Nuclear Nonproliferation	2,052,000	0	2,052,000
Adjustments			
Use of prior year balances	-21,000		-21,000
Total, Adjustments	-21,000	0	-21,000
Total, Defense Nuclear Nonproliferation	2,031,000	0	2,031,000
Naval Reactors			
Naval reactors development	590,306		590,306
Columbia-Class reactor systems development	64,700		64,700
S8G Prototype refueling	135,000		135,000
Naval reactors operations and infrastructure	506,294		506,294
Program direction	53,700		53,700
Construction:			
21-D-530 KL Steam and Condensate Upgrades	4,000		4,000
14-D-901, Spent fuel handling recapitalization project, NRF	330,000		330,000
Total, Construction	334,000	0	334,000
Transfer to NE—Advanced Test Reactor (non-add)	0		0
Total, Naval Reactors	1,684,000	0	1,684,000
TOTAL, National Nuclear Security Administration	19,771,000	0	19,771,000

Defense Environmental Cleanup		
Closure sites administration	4,987	4,987
Richland:		
River corridor and other cleanup operations	54,949	54,949
Central plateau remediation	498,335	498,335
Richland community and regulatory support	2,500	2,500
18-D-404 Modification of Waste Encapsulation and Storage Facility	0	0
Total, Richland	555,784	555,784
Office of River Protection:		
Waste Treatment Immobilization Plant Commissioning	50,000	50,000
Rad liquid tank waste stabilization and disposition	597,757	597,757
Construction:		
18-D-16 Waste treatment and immobilization plant—LBL/Direct feed LAW	609,924	609,924
15-D-409 Low activity waste pretreatment system, ORP	0	0
01-D-16 D, High-level waste facility	0	0
01-D-16 E, Pretreatment Facility	0	0
Total, Construction	609,924	609,924
ORP Low-level waste offsite disposal	0	0
Total, Office of River Protection	1,257,681	1,257,681
Idaho National Laboratory:		
Idaho cleanup and waste disposition	257,554	257,554
ID Excess facilities R&D	0	0
Idaho community and regulatory support	2,400	2,400
Total, Idaho National Laboratory	259,954	259,954
NNSA sites and Nevada off-sites		
Lawrence Livermore National Laboratory	1,764	1,764
LLNL Excess facilities R&D	0	0
Separations Process Research Unit	15,000	15,000

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS
(In Thousands of Dollars)

Program	FY 2021 Request	Senate Change	Senate Authorized
Nevada Test Site	60,737		60,737
Sandia National Laboratories	4,860		4,860
Los Alamos National Laboratory	120,000	100,000	220,000
Execute achievable scope of work		(100,000)	
Total, NNSA sites and Nevada off-sites	202,361	100,000	302,361
Oak Ridge Reservation:			
OR Nuclear facility D & D	109,077		109,077
U233 Disposition Program	45,000		45,000
OR cleanup and waste disposition	58,000		58,000
Construction:			
17-D-401 On-site waste disposal facility	22,380		22,380
14-D-403 Outfall 200 Mercury Treatment Facility	20,500		20,500
Subtotal, Construction:	42,880	0	42,880
OR community & regulatory support	4,930		4,930
OR technology development and deployment	3,000		3,000
Total, Oak Ridge Reservation	262,887	0	262,887
Savannah River Site:			
Savannah River risk management operations	455,122		455,122
SR community and regulatory support	4,989		4,989
Radioactive liquid tank waste:			
Construction:			
20-D-402 Advanced Manufacturing Collaborative Facility (AMC)	25,000		25,000
20-D-401 Saltstone Disposal Unit #10, 11, 12	0		0
19-D-701 SR Security system replacement	0		0
18-D-402 Saltstone disposal unit #8/9	65,500		65,500

17-D-402—Saltstone Disposal Unit #7	10,716	10,716
05-D-405 Salt waste processing facility, SRS	0	0
Total, Construction, Radioactive liquid tank waste	101,216	101,216
Radioactive liquid tank waste stabilization	970,332	970,332
Total, Savannah River Site	1,531,659	1,531,659
Waste Isolation Pilot Plant		
Waste Isolation Pilot Plant	323,260	323,260
Construction:		
15-D-411 Safety significant confinement ventilation system, WIPP	0	0
15-D-412 Exhaust shaft, WIPP	50,000	50,000
21-D-401 Hoisting Capability Project	10,000	10,000
Total, Construction	60,000	60,000
Total, Waste Isolation Pilot Plant	383,260	383,260
Program direction—Defense Environment Cleanup	275,285	275,285
Program support—Defense Environment Cleanup	12,979	12,979
Safeguards and Security—Defense Environment Cleanup	320,771	320,771
Technology development and deployment	25,000	25,000
Use of prior year balances	0	0
Subtotal, Defense environmental cleanup	5,092,608	100,000
Rescission:		
Rescission of prior year balances	-109,000	-109,000
TOTAL, Defense Environmental Cleanup	4,983,608	100,000
Other Defense Activities		
Environment, health, safety and security		
Environment, health, safety and security mission support	134,320	134,320
Program direction	75,368	75,368
Total, Environment, health, safety and security	209,688	0

SEC. 4701. DEPARTMENT OF ENERGY NATIONAL SECURITY PROGRAMS
(In Thousands of Dollars)

Program	FY 2021 Request	Senate Change	Senate Authorized
Independent enterprise assessments			
Enterprise assessments	26,949		26,949
Program direction—Office of Enterprise Assessments	54,635	0	54,635
Total, Office of Enterprise Assessments	81,584	0	81,584
Specialized security activities	258,411		258,411
Office of Legacy Management			
Legacy management activities—defense	293,873	-150,000	143,873
Maintain current program administration		(-150,000)	
Program direction	23,120		23,120
Total, Office of Legacy Management	316,993	-150,000	166,993
Defense related administrative support	183,789		183,789
Office of hearings and appeals	4,262		4,262
Subtotal, Other defense activities	1,054,727	-150,000	904,727
Use of prior year balances	0		0
Total, Other Defense Activities	1,054,727	-150,000	904,727

LEGISLATIVE REQUIREMENTS

Departmental Recommendations

Three packages of legislative proposals on the National Defense Authorization Act for Fiscal Year 2021 were submitted as executive communications to the President of the Senate by the Assistant Secretary of Defense for Legislative Affairs of the Department of Defense and subsequently referred to the committee. Information on these executive communications appears below. These executive communications are available for review at the committee.

Executive Communication No. EC-4038

Dated February 27, 2020

Received in the Committee on Armed Services on February 28, 2020

Executive Communication No. EC-4193

Dated March 5, 2020

Received in the Committee on Armed Services on March 6, 2020

Executive Communication No. EC-4296

Dated March 17, 2020

Received in the Committee on Armed Services on March 18, 2020

The committee notes that an additional 9 packages of legislative proposals on the National Defense Authorization Act for Fiscal Year 2021 were submitted to the committee informally due to delivery restrictions related to the COVID-19 pandemic.

Committee Action

SENATE ARMED SERVICES COMMITTEE

ROLL CALL VOTES DURING FULL COMMITTEE MARKUP OF THE NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2021

In compliance with Rule XXVI 7(3)(b) of the Standing Rules of the Senate, listed below is a tabulation of the roll call votes.

1. MOTION: To include a provision that would require certain funds authorized to be appropriated by this Act be made available for projects related to reducing the time required to execute a nuclear test if necessary

VOTE: Passed by roll call vote 14-13

In favor: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, and Hawley

Opposed: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

2. MOTION: To include a provision that would express the sense of Congress that the Department of Defense should conduct port calls in Taiwan with the *USNS Comfort* and *USNS Mercy*.

VOTE: Passed by roll call vote 20-7

In favor: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cramer, McSally, Scott, Blackburn, Hawley, Kaine, King, Heinrich, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Perdue, Reed, Shaheen, Gillibrand, Blumenthal, Hirono, and Warren

3. MOTION: To include a provision that would direct the Secretary of Defense, in consultation with the Minister of Defense of Israel, to establish a United States-Israel Operations-Technology Working Group.

VOTE: Passed by roll call vote 27-0

In favor: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, Hawley, Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

4. MOTION: To include a provision to require a minimum of twelve year of experience in military justice assignment to qualify as a military judge on the Court of Criminal Appeals and require the entire Court of Criminal Appeals review a determination by a panel of the Court that a finding was against the weight of the evidence.

VOTE: Passed by roll call vote 26-1

In favor: Senators Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, Hawley, Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senator Inhofe

5. MOTION: To include a provision that would require the Commander of Navy Region Mid-Atlantic to establish and carry out a 5-year fire fighter alternative work schedule demonstration project.

VOTE: Passed by roll call vote 20-7

In favor: Senators Wicker, Fischer, Rounds, Ernst, Sullivan, Cramer, McSally, Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Inhofe, Cotton, Tillis, Perdue, Scott, Blackburn, and Hawley

6. MOTION: To include a provision that would prohibit the Secretary of Defense from approving the Secretary of the Army's determination of eligibility for burial or inurnment of a President or Vice President who is either not a member of the Armed Forces or a veteran.

VOTE: Failed by roll call vote 13-14

In favor: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, and Hawley

7. MOTION: To include a provision to state the policy of the United States with respect to the supply of strategic minerals and metals for Department of Defense purposes.

VOTE: Passed by roll call vote 23-4

In favor: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, Hawley, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Peters, Manchin, and Jones

Opposed: Senators Reed, Heinrich, Warren, and Duckworth

8. MOTION: To include a provision to require the Secretary of Defense to issue an official charter specifying the duties and re-

sponsibilities of the Chief Management Officer of the Department of Defense, and to provide a report to Congress describing the actions to be undertaken to reaffirm the independent authority of the Chief Management Officer.

VOTE: Failed by roll call vote 13–14

In favor: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, and Hawley

9. MOTION: To include a provision that would prohibit the use of funds authorized for Fiscal Year 2021 to provide support under section 284 or 2808 of title 10, United States Code, to construct or provide support for the construction of such a wall, fence, or road.

VOTE: Failed by roll call vote 13–14

In favor: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, and Hawley

10. MOTION: To include a provision to require the Department of Defense to prescribe in regulations a policy regarding the handling of minor collateral misconduct involving a member of the Armed Forces who is the alleged victim of sexual assault that applies to all members of the Armed Forces and cadets and midshipmen at the military service academies.

VOTE: Passed by roll call vote 20–7

In favor: Senators Fischer, Rounds, Ernst, Sullivan, Cramer, Blackburn, Hawley, Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Inhofe, Wicker, Cotton, Tillis, Perdue, McSally, and Scott

11. MOTION: To include a provision that would permit the Department of Defense to transfer individuals detained at United States Naval Station Guantanamo Bay, Cuba, to the United States temporarily for emergency or critical medical treatment not available at Guantanamo.

VOTE: Failed by roll call vote 13–14

In favor: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, and Hawley

12. MOTION: To include a provision that would modify the Insurrection Act.

VOTE: Failed by roll call vote 13–14

In favor: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, and Hawley

13. MOTION: To include a provision to require action by the Department of Defense with respect to the release of perfluoroalkyl substances and polyfluoroalkyl substances by the Department.

VOTE: Failed by roll call vote 13–14

In favor: Senators Reed, Shaheen, Gillibrand, Blumenthal, Hirono, Kaine, King, Heinrich, Warren, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, and Hawley

14. MOTION: To favorably report to the Senate the National Defense Authorization Act for Fiscal Year 2021.

VOTE: Passed by roll call vote 25–2

In favor: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cramer, McSally, Scott, Blackburn, Hawley, Reed, Shaheen, Blumenthal, Hirono, Kaine, King, Heinrich, Peters, Manchin, Duckworth, and Jones

Opposed: Senators Gillibrand and Warren

Congressional Budget Office Cost Estimate

It was not possible to include the Congressional Budget Office cost estimate on this legislation because it was not available at the time the report was filed. It will be included in material presented during Senate floor debate on the legislation.

Regulatory Impact

Paragraph 11(b) of rule XXVI of the Standing Rules of the Senate requires that a report on the regulatory impact of the bill be included in the report on the bill. The committee finds that there is no regulatory impact in the case of the National Defense Authorization Bill for Fiscal Year 2021.

Changes in Existing Law

Pursuant to the provisions of paragraph 12 of rule XXVI of the Standing Rules of the Senate, the changes in existing law made by certain portions of the bill have not been shown in this section of the report because, in the opinion of the committee, it is necessary to dispense with showing such changes in order to expedite the business of the Senate and reduce the expenditure of funds.